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SINO-TIBETAN LINGUISTICS

Critical Concepts in Linguistics

*Edited by
Randy J. LaPolla*

Volume I

Establishing the Relationships

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in Sino-Tibetan linguistics

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1933	Bernhard Karlgren	Word families in Chinese	<i>Bulletin of the Museum of Far Eastern Antiquities</i> 5, 9-120.	III	35
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1934	Yuen-Ren Chao	The non-uniqueness of phonemic solutions of phonetic systems	<i>Bulletin of the Institute of History and Philology. Academia Sinica</i> IV, 4, 363-97.	III	46
1937	Stuart N. Wolfenden	Concerning the variation of final consonants in the word families of Tibetan, Kachin, and Chinese	<i>Journal of the Royal Asiatic Society of Great Britain and Ireland</i> 4, 625-55.	I	14
1942	Paul K. Benedict	Thai, Kadai, and Indonesian: a new alignment in southeastern Asia	<i>American Anthropologist</i> 44, 576-601.	I	3
1945	Li Fang-kuei	Some old Chinese loan words in the Tai languages	<i>Harvard-Yenching Journal of Asiatic Studies</i> 8, 333-42.	II	20
1947	Charles F. Hockett	Peiping phonology	<i>Journal of the American Oriental Society</i> 67, 4, 253-67.	III	47
1955	Robert Shafer	Classification of the Sino-Tibetan languages	<i>Word</i> 11, 1, 94-111.	I	4
1956	Bernhard Karlgren	Cognate words in the Chinese phonetic series	<i>Bulletin of the Museum of Far Eastern Antiquities</i> 28, 1-18.	III	36
1957	Eugénie J. A. Henderson	Colloquial Chin as a pronominalized language	<i>Bulletin of the School of Oriental and African Studies</i> 20, 323-7.	IV	58

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1959	G. B. Downer	Derivation by tone-change in classical Chinese	<i>Bulletin of the School of Oriental and African Studies, University of London</i> 22, 1/3, 258-90.	III	37
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1962	Theodore Stern	Language contact between related languages: Burmese influences upon Plains Chin	<i>Anthropological Linguistics</i> 4, 4, 1-28.	II	26
1965	Eugénie J. A. Henderson	The topography of certain phonetic and morphological characteristics of South East Asian languages	<i>Lingua</i> 15, 400-34.	II	17
1965	John Okell	Nissaya Burmese: a case of systematic adaptation to a foreign grammar and syntax	<i>Lingua</i> 15, 186-227.	II	30
1966	Robbins Burling	The addition of final stops in the history of Maru (Tibeto-Burman)	<i>Language</i> 42, 3, 581-6.	IV	57
1966	Fang-Kuei Li	The zero initial and the zero syllabic	<i>Language</i> 42, 2, 300-2.	III	48
1967	Hla Pe	A tentative list of Mon loan words in Burmese	<i>Journal of the Burma Research Society</i> 50, 1, 71-94.	II	28
1970	Mei Tsu-lin	Tones and prosody in Middle Chinese and the origin of the rising tone	<i>Harvard Journal of Asiatic Studies</i> 30, 86-110.	III	38
1972	James A. Matisoff	Lahu nominalization, relativization, and genitivation	John P. Kimball (ed.), <i>Syntax and Semantics, Vol. 1</i> (New York: Academic Press), pp. 235-57.	IV	64

1973	Fang-Kuei Li	Languages and dialects of China	<i>Journal of Chinese Linguistics</i> 1, 1, 1-13; originally published in <i>The Chinese Year Book</i> (Shanghai 1937), pp. 121-8.	I	1
1973	James A. Matisoff	Notes on Fang-Kuei Li's 'Languages and Dialects of China'	<i>Journal of Chinese Linguistics</i> 1, 3, 471-4.	I	5
1973	James A. Matisoff	Tonogenesis in Southeast Asia	Larry M. Hyman (ed.), <i>Consonant Types and Tone</i> (Southern California Occasional Papers in Linguistics, No. 1) (Los Angeles, CA: UCLA), pp. 72-95.	IV	66
1973	Jerry Norman	Tonal development in Min	<i>Journal of Chinese Linguistics</i> 1, 2, 222-38.	III	50
1973	E. G. Pulleyblank	Some new hypotheses concerning word families in Chinese	<i>Journal of Chinese Linguistics</i> 1, 1, 111-25.	III	39
1973	E. G. Pulleyblank	Some further evidence regarding Old Chinese -s and its time of disappearance	<i>Bulletin of the School of Oriental and African Studies</i> 36, 2, 368-73.	III	40
1974	Jim Bauman	Pronominal verb morphology in Tibeto-Burman	<i>Linguistics of the Tibeto-Burman Area</i> 1, 1, 108-55.	IV	59
1974	Edward H. Bendix	Indo-Aryan and Tibeto-Burman contact: as seen through Nepali and Newari verb tenses	<i>International Journal of Dravidian Linguistics</i> 3, 42-59.	II	32
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1976	Mantaro J. Hashimoto	Southern Chinese dialects: the Tai connection	<i>Computational Analyses of Asian and African Languages</i> (National Inter-University Research Institute of Asian and African Languages and Cultures, Tokyo) 3, 49-66.	II	18
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1986-1987	W. South Coblin	<i>Fangyan</i> gleanings	<i>Monumenta Serica</i> 37, 113-43.	III	41
1987	Derek D. Herforth	A case of radical ambiguity in Old Chinese: some notes toward a discourse-based grammar	<i>Suzugamine Joshi Tanki Daigaku Bulletin of Humanities and Social Science Research</i> 34, 31-40.	III	43
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1990	James A. Matisoff	On megalocomparison	<i>Language</i> 66, 1, 106-20.	I	7

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1991	Paul K. Benedict	Comment on Matisoff's comparison between Greenberg and Benedict	<i>Linguistics of the Tibeto-Burman Area</i> 14, 2, 169-70.	I	8
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1999	Tej R. Kansakar	Verb agreement in Classical Newar and Modern Newar dialects	Yogendra P. Yadava and Warren W. Glover (eds), <i>Topics in Nepalese Linguistics</i> (Kathmandu: The Royal Nepal Academy), pp. 421-43.	IV	62

PREFACE

These four volumes grew out of the desire to gather together seminal journal articles in Sino-Tibetan linguistics to provide a useful source for those entering the field, or for those who want to understand more about the development of the field, or for those who are veterans in the field and want access to the classic works. I include or cite works that have been influential (or I think should have been), particularly from journals that were core to the field in the past but are no longer in existence or that younger scholars might not be familiar with, such as *Monumenta Serica*, *Acta Linguistica Hafniensia*, *The Bulletin of the Institute of History and Philology*,¹ and *Computational Analyses of Asian and African Languages*. I have also included a small number of articles from edited series that are hard to come by. Given space restrictions, we have limited the coverage to the twentieth century, when the scientific study of Sino-Tibetan languages began in earnest. There has been an explosion of work on Sino-Tibetan languages since then, due in part to the fact that key geographic areas, such as Northeast India and western China, which were earlier out of bounds politically, are more open to researchers, and so much more language data has become available. See Thurgood and LaPolla (2017) and the many references therein for some of that recent work. Another aspect is the new ways of thinking about language history stimulated by work in general linguistics in grammaticalization and contact linguistics.

The choice of articles is a personal one, reflecting my own understanding of the development of the field, based on more than 40 years of studying Sino-Tibetan languages and linguistics. I considered hundreds of articles and read and reread dozens of them in working on each volume to choose the few that were included in the volume and write up the introductions. I am sure there will be those who will think I omitted certain important articles or included some that might not be seen by all as important as the others, but I have tried to justify my selections in the introductions to the volumes, and have tried to mention many other articles that I was not able to include in the volume, to give pointers to people who want to go on to do further reading. I have also tried to weave the articles together to some extent in the introductions, to give readers a sense of the development of the field.

I sent a request for suggestions of articles to be included in the volumes to the Tibeto-Burman Linguistics Discussion Listserv (tibeto-burman-linguistics@listserv.linguistlist.org), but only heard back from a few people. I'd like to thank Zev Handel, Nathan Hill, Guillaume Jacques, James A. Matisoff, Graham Thurgood, William S-Y Wang and the *Journal of Chinese Linguistics* office, and Yap Fung Ha for suggestions. I'd also like to thank Anne Yue for help in sourcing her articles and also for information used in the introductions, and W. South Coblin for valuable advice.

As I mentioned in a recent article (LaPolla 2016a), I have tremendous respect for the pre-digital and pre-bibliometrics (pre-managerialism in the universities) era scholars, as they were allowed to and did take the time to immerse themselves in the primary sources, developing a deep personal understanding of the languages and the literature,² while staying up with the linguistics literature as well, even though both of these were difficult and time consuming. When they wrote of course it was also a tedious process, either handwritten or typed on a typewriter, with scraps of paper and notes everywhere, so they often didn't publish many papers per year, but what they did publish was often of amazing quality and erudition. So editing this set is something of a labour of love for me, a tribute to these great scholars, and that is why I have dedicated the volumes to them.

I would also like to mention to young scholars that they should be aware of the context in which the older scholars were working, and the particular constraints on their thinking or information at the time they were working, and not commit the "Historian's fallacy" of assuming that the scholars of that day had the same access, data, or understandings that we have today. I have seen some young scholars write things that are disrespectful of older scholars or miss the point of why the older scholar was writing what they were writing, which is inappropriate, as each of us is reacting to particular issues of our time, and constrained by the prevailing paradigm of the time. For example, even great scholars were constrained to think in terms of early generative or structuralist approaches in the late 1960s and early 1970s that we cannot imagine people going along with nowadays, but that was the paradigm of the time.

I'd like to thank Carly Jaques for her very efficient help in sourcing many of the articles, not only in the collection, but many of those I refer to in my introductions, and for her careful editing of the drafts of my introductions. I'd also like to thank Malcolm Campbell, Jillian Morrison, and Simon Alexander, of Routledge, for their help and their patience with me during the production of these volumes.

Notes

- 1 The nature of this journal changed somewhat when the Linguistics Section of the Institute of History and Philology split off and became the Institute of Linguistics at the Academia Sinica, and now has its own journal, *Language and Linguistics* (《語言與語言學》), which has become quite an important journal.

2 As an example of the sort of depth and breadth of knowledge I am talking about, back in the early 1980s, I was once discussing grammatical patterns that appeared in the 20-volume *Zu Tang Ji* (a Nan Tang dynasty [937–975 CE] Chinese vernacular text) with Prof. Tsu-lin Mei, and his knowledge of the text was so good that at one point, after I had suggested that a certain pattern might be found in the text, he said, “If I don’t know about it, it doesn’t exist”. And he may actually have meant that about all of the early vernacular literature! See Georg (2017: 377–378) for criticism of the sort of thing that sometimes passes for scholarship now. See also LaPolla (2016b).

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INTRODUCTION TO VOLUME I

Establishing the relationships

In this volume we present several of the articles that led to the understanding of the Sino-Tibetan family that we now have (Part 1), plus some of the reconstruction efforts based on that understanding (Part 2).

Part 1: Establishing the relationships

The first chapter is from Fang-Kuei Li, who laid out a basic outline of the languages of China in an article for *Journal of Chinese Linguistics*, originally published in *The Chinese Year Book* published by Commercial Press in Shanghai, 1937 (pp. 121–128). This became a very influential view of the family, and so when William S-Y. Wang established the *Journal of Chinese Linguistics (JCL)*, he included a slightly revised version of this paper as the first article of the first issue of *JCL* (Li 1973). In the article, Prof. Li includes Hmong-Mien and Kam-Tai within what he calls the Indo-Chinese family together with Chinese and Tibeto-Burman as major branches. Within Chinese he recognizes the Northern Mandarin group, the Eastern Mandarin group, the Southwestern Mandarin group, the Wu group, the Gan-Hakka group, the Yue group, the Xiang group, and the Min group, and also mentions isolated unnamed groups in Anhui, Guangxi, and Hunan, the latter recently investigated by Hillary Chappell (e.g. 2015). Prof. Li divides the Tibeto-Burman (TB) branch into the Tibetan group, the Bodo-Naga-Katchin group (presaging comments in Benedict (1976) and Burling (1983)), the Burmese group (within which he includes the Kuki-Chin languages), and the Lolo group.

Also in the late 1930s there was a government sponsored make-work project created by Robert Shafer to collect and compare materials on Sino-Tibetan languages. Paul Benedict later led the project, and writes about the project in Chapter 2 in this volume (Benedict 1975). It is included because of the pioneering nature of the work that was done on that project, and the foundation it gave to the development of Sino-Tibetan historical linguistics. Shafer and Benedict had somewhat different methodologies and came to different conclusions about some of the relationships within the family, reflected in the following

two chapters, Benedict (1942), which argues that the Kam-Tai and Hmong-Mien languages should not be included in the Sino-Tibetan family, and Shafer (1955), which is something of a response to that proposal, arguing that what Benedict was saying was actually his idea. Shafer argues that Chinese and the Tai languages (“Daic”) do not form a unit, and he expresses doubt that they are related at all, yet he still includes Tai within the Sino-Tibetan family, arguing that the main divisions of the family are “Sinitic (Chinese), Daic, Bodic, Burmic, Baric, and Karenic” (Shafer 1955: 99). He gives cognate counts to argue for a more or less close relationship between certain divisions of the family, for example claiming that Bodic is closest to Sinitic, but his high cognate counts for Sinitic and Tibetan are simply due to a bibliographic bias, as they are the two languages with the largest dictionaries and so it is easier to find cognates. Fang-Kuei Li and several others still had trouble accepting Benedict’s exclusion of Tai from Sino-Tibetan, pointing to unanswered questions about correspondence sets. See for example Li (1976) (in Volume II—see the discussion in the introduction), Li (1978), as well as Luo (2008) for the history of the debate and new data that Prof. Luo brings to bear on the question.

The work Benedict did on the project led to the monograph *Sino-Tibetan: A Conspectus* (initially drafted in the 1940s but edited by James A. Matisoff and published in 1972), which in turn stimulated the whole field of Sino-Tibetan comparative studies, and led to the development of a similar project on a greater scale, the Sino-Tibetan Etymological Dictionary and Thesaurus project led by Prof. Matisoff (see Matisoff (2003) and the STEDT website: <http://stedt.berkeley.edu>).

Chapter 5 is a follow-up to the re-printing of Li (1937) by Prof. Matisoff, published in the third issue of *JCL* (Matisoff 1973a). It is a critique of Prof. Li’s outline of the Indo-Chinese family, arguing that based on Benedict’s work, the Tai and Hmong-Mien languages should not be included in the family, now called Sino-Tibetan. Matisoff also argues that the outline of Tibeto-Burman given by Prof. Li is out of date, and gives the view current at the time, with Burmese and Lolo being closely related, and Kuki-Chin being more closely related to the Naga languages than Burmese or Lolo, Bodo-Garo being a separate group, and Katchin (Kachin/Jinghpaw/Chinghpaw) being “in a class by itself” (p. 473). Since that time much new data has appeared, and Matisoff himself has revisited the question of the position of Jinghpaw, arguing it is a Luish language (Matisoff 2013).

Chapter 6, “Sino-Tibetan: another look” was published by Paul K. Benedict (1976) four years after the publication of his *Conspectus*, and is due to the feedback and criticisms he received in reviews of that book and also from discussions at the annual Sino-Tibetan conferences (see Matisoff (1973b) for a review of the first five conferences, now called the International Conference on Sino-Tibetan Languages and Linguistics (ICSTLL), and LaPolla and Lowe (1994) for a bibliography of the first 25 conferences—the 50th ICSTLL was held in Beijing in November 2017). In the article he responds to critics and presents a large amount

of data, with the article structured around the following key questions: a) Is Sino-Tibetan clearly a family?, b) If so, does it include the Tai and Hmong-Mien languages?, and c) Should Chinese be set off against Tibeto-Burman (Tibeto-Karen) and then Karen from Tibeto-Burman? Benedict uses comparisons of core vocabulary (Swadesh 100 list) to assert that Sino-Tibetan does in fact form a clear family, but Tai and Hmong-Mien should not be included, and Chinese should be set off as a major branch from Tibeto-Burman, though there was contact with Tibeto-Burman languages after the split, and Karen should not be set off from the rest of Tibeto-Burman. There is also a lengthy discussion updating the *Conspectus* with new findings related to the influence of prefixes in Chinese and Tibeto-Burman languages.¹

Chapter 7, Matisoff (1990), is largely a criticism of Greenberg (1987), but it is included here because it is a discussion of the methodology used in determining genetic relatedness, and also compares and contrasts Greenberg’s methodology with that of Paul K. Benedict, treating Benedict’s methods quite critically. It also introduces the concepts of “Indosphere” and “Sinosphere” to identify the cultural spheres of the two major influences on the Tibeto-Burman languages. This paper is frequently cited in the Sino-Tibetan literature on methodology in historical and contact linguistics. Chapter 8 (Benedict 1991) is a two-page reply by Benedict to Matisoff’s comments about his methodology.

Chapter 9 is an overview of the state of the art of Sino-Tibetan linguistics around 1990, published by Prof. Matisoff in 1991. It covers the history of the development of the field and what had been done on all aspects of the family up to that point. Aside from genetic relations, it also includes discussion of areal and typological relations, including a discussion of the position of Tai and Hmong-Mien languages. It has copious (216!) references, giving a very good introduction to the literature up to that point. (See also the bibliography at <http://tibeto-burman.net/bib/> for more references.)

Chapters 10–12 are influential articles that deal with establishing subgroups within Tibeto-Burman. The first of these is Robbins Burling’s often-cited paper establishing the “Sal” languages as a separate grouping (1983). This grouping includes the Bodo-Garo and “(North)-Eastern Naga” (Konyak) languages, as well as Jinghpaw, and he compares forms from these languages with reconstructions in Benedict (1972) to show the uniqueness of some of the lexical items or their reflexes found in these languages. See Coupe (2012) for an up-to-date critical assessment of the different schemes for sub-grouping these languages.

Following that is Karen Ebert’s (1990) paper showing the remarkable similarities in the person marking affix paradigms found in Kiranti languages, rGyalrong (Gyarong), and Rawang-T’rung (problematically referred to as “Nungish”). She is very conservative in her conclusions, simply stating that she found:

striking similarities in the verbal paradigms of Gyarong and Eastern Kiranti on the one hand and Nungish and Khaling-Dumi on the other

hand . . . an independent invention of the complex verbal paradigms of Gyarong and Eastern Kiranti is most unlikely.

(p. 76)

She gives reasons why they are unlikely to be retentions from Proto-Tibeto-Burman, and argues that they must be a shared innovation. This hypothesis was later used as a test case for a more rigorous approach to establishing genetic relatedness in LaPolla (2013) (first presented at ICSTLL33 in 2000; see also LaPolla (2012)). The methodology is based on the fact that in Indo-European linguistics what was used to establish the family was not arbitrary word lists, but morphological paradigms (Nichols 1996). The results show strong statistical evidence that these three groups, plus the Western Himalayan languages, form one group within Tibeto-Burman due to the shared innovation of this paradigm, and the results also dovetail with work on the migrations of the Tibeto-Burman people (LaPolla 2001), where these groups are seen to have migrated from north-western China down along the river valleys skirting the eastern and southern sides of the Tibetan Plateau (see also LaPolla (2006, 2017) for the broader picture). The idea that this particular person marking paradigm² might be used to establish a subgroup within Tibeto-Burman was first mentioned by Paul K. Benedict in Chapter 6 (Benedict 1976), and LaPolla argues it defines what he calls the “Rung” group (distinct from the grouping by that name proposed in Thurgood 1984, 1985).

The last chapter in this part, Sun (1993a), is a summary of the findings of the UC Berkeley PhD dissertation of Jackson T-S. Sun (Sun 1993b). Through careful fieldwork and comparative work, it establishes the Tani languages (formerly known as Mirish or Abor-Miri-Dafla) as a branch within Tibeto-Burman. The dissertation also includes reconstructed Proto-Tani forms. Prof. Sun’s work on this group has been accepted by all scholars in the field, and it has laid the foundations for work done since its publication by Mark Post and others in elaborating on this family (see Post and Sun (2017) for a summary, and Post and Burling (2017) for the larger picture of the languages of Northeast India).³

Part 2: Sino-Tibetan historical reconstruction

The first chapter in this part is a two-page note by Jean Przyluski and Gordon H. Luce (1931) on reconstructing the Proto-Sino-Tibetan (PST) form for “hundred”. It is included here because it is one of the earliest published attempts at such reconstruction, and it is surprisingly modern in its approach, accepting the possibility of bisyllabic roots in the proto-language, when most scholars had assumed the roots to be monosyllabic.

Chapter 14, Wolfenden (1937), is a broader application of Karlgren’s idea (1933—see Chapter 35 in Volume III) of comparing word families as a first step in identifying cognate forms. In this paper, Wolfenden compares word families in Kachin, Tibetan, and Chinese with a view to understanding variations in the

final consonants of the forms, and argues, for example, that Written Tibetan *-s* represents **-ds* in a number of cases, based on comparisons with stop-final forms in the other languages. The idea of using word families as a way of identifying roots and cognates has become standard practice in the field, and as evidenced in many works assuming this methodology, it is the first step in identifying possible morphological forms (suffixes and prefixes and initial alternations), in that it gives us the forms we need to explain.

The particular question addressed by Wolfenden is returned to in LaPolla (1994), Chapter 15, though aside from giving many examples of word families, it discusses methodological issues related to the identification of word families and also to reconstruction methodology. Wolfenden, following Karlgren, limited his word families to only those where the final consonant had the same place of articulation, but LaPolla shows that this assumption is problematic, and would lead us to miss a large number of words that have the same meaning and form except for the final consonant. LaPolla also argues that instead of trying to account for all the variation found in the families by reconstructing overly complex systems or abstract symbols representing unknown variables, we should reconstruct a simple system (see the next paper for one example) and then try to explain the variation or accept it as is for the time being, if it cannot yet be explained. The paper then goes on to show the statistical preponderance of *-Ø ~ -k* variation, and attempts to explain this and other variations. The paper also argues for rigour in talking about variation, that is, variation can only be talked about in the context of regularity: if we want to say that two forms that differ in the final are cognate, we should make sure the other segments involved all correspond regularly, otherwise anything goes.

Our last chapter in this part, Gong (1980), is an independent comparison of just the three oldest written languages in Sino-Tibetan, Tibetan, Chinese, and Burmese, with a view towards reconstructing the vowels of Proto-Sino-Tibetan. Prof. Gong’s methodology differs from many other scholars, in that a) he reconstructs on the basis of only three languages, and b) he does not treat the finals (rimes) as units in opposition to the initials, as is usually done in Sino-Tibetan studies, but in this paper looks only at the vowels, regardless of the final consonant (or not) of the word. His results are quite straightforward, with clear cognate sets and the proposal of a simple system of four vowels (i, a, u, ə) and two rising diphthongs (ia, ua). He argues that within Sino-Tibetan (or at least within these three languages) only Chinese maintained **ə*, and the vowels *e* and *o* in Tibetan are secondary.

Notes

- 1 For other views of the structure of Tibet-Burman or Sino-Tibetan not represented here, see DeLancey (1987), Matisoff (1991), Bradley (1997, 2002).
- 2 Person marking has been independently innovated many times in Tibeto-Burman (see LaPolla (2001)); the relevant paradigm used here to identify what is called the “Rung” group in LaPolla (2013) is only one of them, though is the oldest identified.

3 After his work on the Tani languages, Prof. Sun turned to fieldwork on and comparison of the rGyalrong languages of northern Sichuan and has similarly given us a much better understanding of that whole group of languages (e.g. Sun 2000, 2017), and in the process has also been investigating the Tibetan and Qiang dialects in the same area (e.g. Sun 2014), improving our understanding of the language situation of the whole of northern Sichuan.

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Part 1

ESTABLISHING THE
RELATIONSHIPS

LANGUAGES AND DIALECTS OF CHINA*

Fang-Kuei Li

Source: *Journal of Chinese Linguistics* 1, 1, 1973, 1-13; originally published in *The Chinese Year Book* (Shanghai, 1937), pp. 121-8.

The languages and dialects of China present a complicated linguistic picture. In this article these languages are systematically classified into families and branches according to their characteristics. The simplified picture looks thus:

1. Indo-Chinese: a) Chinese, b) Kam-Tai, c) Miao-Yao, d) Tibeto-Burman
2. Austro-Asiatic: Mon-Khmer
3. Altaic: a) Turkish, b) Mongolian, c) Tungus
4. Indo-European: Tokharian (extinct)

0. Introduction

The linguistic situation in China is a very complicated one. Aside from the Chinese language with its numerous dialects, there are many other languages, our knowledge of which is incomplete. Some of them have not been adequately studied, some of them are scarcely known to us, and many of them have not been sufficiently recorded. The material of these languages is therefore scanty, their history unknown, and their relation with other groups very vaguely understood.

In the following description the languages in China are grouped into branches and families, and under each group some of the characteristics which distinguish it from the other groups are called to the reader's attention. We need a few words of introduction about the classification of these languages. Languages are classified into families, with the assumption that they are historically related. Among a group of languages, say, the Indo-European languages, we find some similarities or correspondence in word forms, in grammatical elements such as prefixes, suffixes, vocalic and consonantal alternations, etc., and in general syntactic structure. These

similarities and correspondences can sometimes be formulated precisely in the form of sound laws. With the relations among the different languages thus formulated, it is apparent that these similarities cannot be due to chance or mere borrowing, but are due to the fact that these languages are the descendents of a common parent speech. Over a period of time, this parent speech splits into various dialects and through successive evolutions will develop into such languages as English, Russian, and Bengali. Sometimes the changes that these languages undergo are far reaching. The farther they have become differentiated from each other, the more difficult it is to trace their relations unless ancient documents which describe the older stage are available. With languages which have no records and which are known only in their modern forms, we encounter great difficulty in establishing their relationships. Many languages in China not only lack records of their own, but are known to us very fragmentarily. Their classification is therefore tentative.

1. Indo-Chinese family

One of the largest language families in China is known as Indo-Chinese (Tibeto-Chinese, Sino-Tibetan, or Sinitic in a wider sense). Languages of this family are spoken throughout China Proper and Tibet, and extend into northeastern China and Xinjiang (Chinese Turkestan), as well as into Southeast Asia. One of the characteristics of this family is the tendency towards monosyllabism. By monosyllabism we do not mean that all words in these languages consist of single syllables, but that a single syllable is an important phonologic unit and often is a morphemic unit, the structure of which is rigidly determined by the phonologic rules of the language, and serves as the basis for the formation of words, phrases, and sentences. The Tibeto-Burman branch of this family still possesses some of the prefixes, sometimes syllabic and sometimes asyllabic, but the Chinese and the Kam-Tai group have lost all active use of the prefixes quite early. It is probable that prefixes, suffixes, vocalic changes, and consonantal alternations have been in use in primitive Indo-Chinese to form causatives, denominatives, and to modify the meaning of the stem in general as in classical Tibetan: *hgeñs-pa* (present), *bkañ* (perfect), *dgañ* (future), *khon* (imperative) 'to fill'. Such derivative processes have long been dead in most languages of this family, so that we have only inflexible monosyllabic stems such as are found in Chinese now.

The tendency to develop a system of tones is another characteristic of this family. We do not know whether tones existed in early Indo-Chinese speech, and it is doubtful whether tones existed in classical Tibetan. However, modern Chinese, the Kam-Tai languages, the Miao-Yao languages as well as varieties of modern Tibetan all possess tones. These tones are influenced by the nature of the initial consonant. Such has been the case with Chinese, Tibetan, Burmese, the Kam-Tai, and the Miao-Yao languages, and has been considered the most powerful argument for the common origin of these languages.

Another phonetic tendency that this family of languages shares in common is the unvoicing of the original voiced initial consonants, but this has not taken place in all dialects. It occurs in most Chinese dialects except the Wu 吳 and the Xiang 湘,

in practically all the Kam-Tai languages, and in many Tibeto-Burman languages, so that what was originally a voiced initial is now retained in the nature of the tone.

Aside from these there are, of course, many items in the lexicon which are shared in common in this family. Exact correspondences of sounds, however, have not been worked out. Four main branches are known in the family: Chinese, Kam-Tai, Miao-Yao, and Tibeto-Burman.

1.1. Chinese

Chinese is the most important member of this family. The earliest records consist of numerous bone and tortoise shell inscriptions dating around 1400 B.C., the excavation of which has been systematically carried out in Henan. The reading of these inscriptions is in progress but still presents many difficulties. Our knowledge of the archaic phonological system is largely derived from a study of the rimes in archaic texts, principally the *Shi Jing* 詩經, and of the phonetic compounds which determine a class of written characters 諧聲字. It has been shown that initial consonant clusters such as *gl-*, *bl-*, *ml-*, etc., and many final consonants such as *-b*, *-d*, *-g*, *-p*, *-t*, *-k*, etc., existed in Archaic Chinese.¹ But up to about 600 A.D., when we have the system of Ancient Chinese well represented by rime books such as *Qie Yun* 切韻, the initial consonant clusters were already simplified and final *-b*, *-g*, *-d* dropped. From that time on the Chinese language underwent a series of evolutions such as the unvoicing of the initial consonants, the dropping final *-p*, *-t*, *-k* and the simplification of rimes. The modern Peking dialect which is the National Language 國語 now has only 400 some possible syllables, and each syllable may have theoretically four tones. This phonetic simplification, which gives rise to many homophones, is counterbalanced by a great increase in the use of compounds, so that what was formerly expressed by one syllable must now be expressed in the colloquial by two syllables.

We may divide the Chinese dialects into the following groups:²

- (i) The Northern Mandarin group occupies a large area in North China, in the provinces of Hebei 河北, Shanxi 山西, Shanxi 陝西, Gansu 甘肅, Henan 河南, and Shandong 山東, and extends into Xinjiang 新疆, Inner Mongolia 內蒙古, and Manchuria 滿洲 in the north, and into Hubei 湖北, Anhui 安徽, and in Jiangsu 江蘇 in the south. It is characterized by the unvoicing of the ancient voiced stops, affricates, and fricatives, and by the disappearance of the 'entering tone' 入聲. There are as a rule only four tones: 'ying-ping' 陰平, 'yang-ping' 陽平, 'shang' 上, 'qu' 去. Further division into subgroups is possible.
- (ii) The Eastern Mandarin group is spoken along the lower Yangtze in the provinces of Anhui 安徽 and Jiangsu 江蘇. It is differentiated from the Northern group by the existence of the 'entering tone' as a short tone, but the original final consonants *-p*, *-t*, and *-k*, which accompanied the 'entering tone', are substituted by the glottal stop. It has, therefore, five tones.

- (iii) The Southwestern Mandarin group is a fairly uniform type of speech spoken in Sichuan 四川, Yunnan 雲南, Guizhou 貴州, and parts of Hubei 湖北 and Guangxi 廣西. It has as a rule no 'entering tone'. but in the central part of Sichuan 四川 along the Yangtze, the 'entering tone' is preserved as a special tone, but the final consonants have completely disappeared. Further division into subgroups is possible.
- (iv) The Wu 吳語 group of dialects is spoken south of the Yangtze in Jiangsu 江蘇, Zhejiang 浙江, and in a few districts in the eastern part of Jiangxi 江西. It is characterized by the preservation of the ancient voiced stops, etc., as aspirated voiced consonants and by the preservation of the 'entering tone' as a short tone with the loss, however, of the final *-p*, *-t*, *-k* (or rather, substituted by the glottal stop). It often has six or seven tones.
- (v) The Gan-Hakka group 贛客家 is spoken principally in the provinces of Jiangxi 江西 and Guangdong 廣東. It is characterized by the change of the ancient voiced stops, etc., into aspirated surds in all four original tone classes (aspirated in ping-sheng only in the three Mandarin groups.) The 'entering tone' is preserved and the final *-p*, *-t*, *-k* are more or less preserved according to different dialects and there are often six or seven tones. The Northern or Gan 贛 group, particularly around Boyang Lake 鄱陽湖, has the tendency to voice all aspirated surds in connected speech. The Hakka 客家 group preserved the final consonants such as *-m*, *-p*, *-t*, *-k* much better. Settlements of Hakka people can be found in various districts in Guangdong 廣東 and Guangxi 廣西, and in Southeast Asia, and the South Seas.
- (vi) The Min 閩語 can be further divided into two subgroups. The Northern group is spoken in the northern part of Fujian 福建 and the Southern group is spoken in the southern part of Fujian, in the eastern part of Guangdong, in Hainan Island 海南島, and in parts of the Leizhou Peninsula 雷州半島. It is characterized by the change of the original voiced stops, etc., into unaspirated surds, even in ping-sheng where the aspirated pronunciation is the prevalent one; by the preservation of the Ancient Chinese prepalatal plosives *ʃ*, *ʃ'*, *ʃ'* (知, 徹, 澄) as dental plosives which were the archaic forms from which the ancient prepalatals were derived; and by the preservation of final *-p*, *-t*, *-k* (sometimes in modified and simplified forms). It has as a rule seven tones. The Hainan dialects of the Southern group possess many phonetic peculiarities, possibly under the influence of an aboriginal speech, presumably a Tai language. Settlements of speakers of the Southern group (Amoy, Swatow, Hainan, etc.) may be found in large number in Formosa, Indo-China, Burma, Siam, Malay Peninsula, and the South Seas.
- (vii) The Cantonese or the Yue group 粵語 is spoken in the provinces of Guangdong and Guangxi. It is characterized by the preservation of the final consonants *-m*, *-n*, *-ŋ*, *-p*, *-t*, *-k*. It has a system of eight, nine, or more tones. This distinction of long and short vowels, as in Cantonese, is also a special

feature. Certain distinctions of tone depend on the length of the vowel. Settlements of speakers of this group can be found in large numbers in South-east Asia and the South Seas.

- (viii) The Xiang group 湘語 is spoken principally in Hunan 湖南. The Ancient voiced stops, etc., are as a rule kept as truly voiced consonants (except the Changsha 長沙 dialect). The final *-p*, *-t*, *-k* are usually lost, but the 'entering tone' is preserved as distinct tone classes.
- (ix) Certain isolated groups such as dialects spoken in the southern part of Anhui 安徽, certain dialects in Hunan 湖南 and in the northeastern part of Guangxi 廣西 may be mentioned here.

Aside from the phonological features specific to the groups mentioned above, there are also lexical items more or less peculiar to each of these groups, but these will not be discussed here. Among the various groups some are mutually intelligible.

1.2. Kam-Tai

The Kam-Tai branch is proposed by the author to include the Tai languages on the one hand and the Kam-Sui languages on the other.³ The term Tai is used here in a narrow sense and does not include languages whose kinship has not been sufficiently clarified, such as Annamite (studied by Maspero) and Miao-Yao (studied by Schmidt). The Kam-Sui languages, on the other hand, can be shown to be definitely related to the Tai, but must have separated from Primitive Tai sufficiently early to develop their particular features, while the Tai languages have developed fairly uniformly. This is illustrated by words such as Kam *q'wa:u*, *k'wa:u*, Sui *q'a:u*, *k'a:u*, *ha:u*, Mak *la:u*, T'en *la:u* against *lau* 'wine' in all Tai languages, or Kam *pa:u*, Sui *pa:u*, *qa:u*, Mak *ka:u*, T'en *pa:u* against *k'au*, *kau*, *xau* 'horn' in the Tai languages. It seems proper, therefore, to include the Kam-Sui and Tai languages under one general group Kam-Tai, keeping the other related languages, Siamese, Lao, Shan, Lu, Nung, Tho, Zhuang, etc., under Tai. It may be noted that the name Tai with its various dialectical pronunciations is only used by a portion of the Tai speakers, and are not known to Tho 土, Zhuang 僮, Zhong-jia 仲家, and Dioi.

This branch is closely related to Chinese and possesses four tone classes analogous to the 'ping', 'shang', 'qu', and 'ru' of the Chinese. These four tone classes are each further divided into two according to whether the initial consonant was originally voiced or voiceless, so that the modern Kam Tai languages often possess eight tones. There are sometimes nine or more tones as a further development according to vocalic length (I have counted those tones with final *-p*, *-t*, or *-k* separately according to the customary treatment of Chinese tones).⁴ It has a series of preglottalized consonants, limited to 'b', 'd', and 'j' in Primitive Tai but far more extensive as by evidence in Kam Sui. Several Sui dialects possess 'b', 'd', 'm', 'n', 'ŋ', 'ɣ', etc., beside the usual *b*, *d*, *m*, *n*, *ŋ*, *ɣ*, etc. Initial consonant clusters

such as *kl-*, *pl-*, etc., are preserved by some dialects to this day, i.e. Siamese and Tai languages of Wuming 武鳴 and Long-an 隆安 in Guangxi 廣西, but the original voiced stops, etc., have practically all become voiceless in the modern dialects. Word order in Kam-Tai is also slightly different from Chinese. For instance, 'good man' in Chinese becomes 'man good' in Kam-Tai. The earliest monument is a Siamese inscription in the thirteenth century. In China most of the Kam-Tai languages have no writing of their own, except those in Yunnan which use either the Shan alphabet (derived from Burmese) or one closely related to the Southern Tai alphabet, both derived from Hindu sources.

- (i) The Kam-Sui group is spoken in southeastern Kweichow and in a few districts in northern Guangxi, and may be divided into four subgroups, Kam, 洞話, Sui 水話, Mak 莫話, and T'en 羊苗話. Initial consonant clusters like *kl*, *pl*, etc., are not allowed but must have existed. There is a series of voiceless nasals in Kam and Sui, but it disappears in Mak and T'en. There is also a distinction of velar and palatal plosives in Kam and Sui, prepalatal and palatal in Mak, but confused in T'en. Furthermore, there is a series of preglotalized consonants, extensive in Sui, limited in Mak and T'en, but none in Kam. The lengthening of the corresponding short vowels in the Tai languages is apparent in this group in many words common to them both.
- (ii) The Tai group may be divided into two subgroups.⁵ (a) The Zhuang group consists of many dialects spoken in a great part of Guangxi 廣西 (known as Zhuang 僮 or Tho 土) and in the southern part of Guizhou 貴州 (known as Zhong-jia 仲家), Man 蠻, Bendi 本地, or Dioi, and also in the southeastern part of Yunnan 雲南 (known as Sha 沙 or Tho 土). The language of Shu Li 熟黎, spoken in the northern part of Hainan Island, in Ling-gao 臨高, Chengmai 澄邁, and Qiongsan 瓊山, belongs here also, but the Li 黎 languages in the center and in the south of the island seem to show great divergence from the rest of the Tai languages. Their relation to this group is therefore doubtful. The languages of this group are characterized by the lack of aspirated surds such as *p'*, *t'*, *k'*; the preservation of the distinction between original *k'*- and *x-*, *g-*, and *ɣ-*; and by the preservation of an original *hr-*, *thr-*, etc. as *r-* (in Wuming 武鳴), as *l-* (in Tianzhou 田州), as *ǎ-* (in Dioi of Guizhou 貴州), or *ɣ-* (in Qianjiang 遷江), corresponding to the *h-* of Shan, Siamese, Lao, Nung, etc. The development of vowels also shows many peculiar features.

(b) The Southwestern group consists of some of the best known of the Tai languages and lies mostly outside of China. We may divide this group into several subdivisions: (1) Ahom, once spoken in Assam but now extinct, (2) Kamti and Shan, spoken in Burma and western Yunnan, (3) Siamese and Lao spoken in Thailand and Laos, (4) Lü spoken in southern Yunnan, (5) Thai Blanc, Nung, Tho, etc. spoken in Laos and Cambodia, in the southwestern part of Guangxi, and in southern Yunnan. This group is characterized by the preservation of aspirated consonants, *p'*, *t'*, *k'*, by the change of the

original guttural spirants *x-* and *ɣ-* into stops, by the appearance of *hr-* as *h-* (except Ahom where *r-* is preserved), and by a very uniform system of vocalic correspondences shared between them.

1.3. Miao-Yao 苗瑤

The Miao-Yao branch of the Indo-Chinese family is monosyllabic like Chinese and Kam-Tai, and is known to possess tones.⁶ The relationship between Miao 苗 and Yao 瑤 seems to be definitely established with a study of the Yao languages in southern Guizhou where they are not so strongly influenced by Chinese or Tai as in Guangdong, Guangxi, Laos, and Cambodia. Word order resembles Kam-Tai. It is spoken by groups of mountaineers throughout the southwest. Aside from the occasional use of Chinese characters, there is no writing system of their own.

- (i) The Miao 苗 group is spoken under various tribal names in the western mountain regions of Hunan, in a large part of Guizhou, and is found scattered here and there in northern Guangxi, southern Sichuan, Yunnan, Indo-China, and Thailand. It is characterized by the dropping of the final consonants, so that only *-ŋ* and rarely *-n* are allowed to occur in final position. There is a distinction between palatal and velar consonants, *k-*, *q-*, etc.; a series of prenasalized consonants, *mp-*, *mp'*, *nt-*, *nt'*, *ŋk-*, *ŋk'*, etc.; and consonant clusters, *pl-*, *pr-*, *mpl-*, *mpr-*, *tl-*, *kl-*, etc., are still preserved by some dialects. The number of tones is usually eight or more. The Hei-Miao 黑苗 chiefly spoken in southeastern Guizhou seems to form a special subgroup. It allows no consonant clusters and no prenasalized consonants, but possesses a bewildering number of aspirated consonants, *p'*, *t'*, *k'*, *te'*, *q'*, *f'*, *s'*, *ɛ'*, *t'*, *m'*, *n'*, etc.
- (ii) The Yao 瑤 group is also spoken under various tribal names in the northwestern mountain regions of Guangdong, in southern Guizhou, and is scattered here and there among the various mountain regions of Guangxi, Yunnan, Indo-China, and Thailand. It preserves the final consonant better than the Miao; final *-m*, *-n*, *-ŋ*, *-p*, *-t*, *-k*, all exist. The number of tones varies from five to eight or more. It is greatly influenced by Tai and Chinese, and some have entirely adopted either the Chinese or Tai language.

There are certain features in common among the Chinese, Kam-Tai, and Miao-Yao groups. Notably the word order, subject-verb-object, stands in contrast to the Tibeto-Burman branch where we have subject-object-verb. The system of tones in Chinese and Kam-Tai consists of originally four tone classes, and this may ultimately prove to be the case with Miao-Yao. It seems possible to group them together under one branch, and it does not seem improper to give it the name Sinitic, since all the Kam-Tai and Miao-Yao languages have deep relationships and close contacts with China historically, geographically, and culturally. Annamite

(Vietnamese) may possibly be included in this group, although it shows strong affinities with the Mon-Khmer languages.

1.4. Tibeto-Burman⁷

This branch of the Indo-Chinese family is one which presents most clearly the use of prefixes, alternations of voiced and voiceless consonants, and the use of suffixes such as in classical Tibetan. Tones depend upon whether the initial is voiced or voiceless and are further influenced by the prefixes, but the system of tones seems to be much simpler than that of Chinese, Kam-Tai, or Miao-Yao. As a rule word order is subject-object-verb. Four known divisions comprise the Tibeto-Burman branch:

- (i) The Tibetan group is spoken principally in Tibet and Xikang 西康 and extends into Qinghai 青海 and the western part of Sichuan 四川. The earliest record of this group dates from the ninth century. The alphabet was derived from the devanagari form of the Hindu alphabet. A great amount of literature, largely Buddhistic, exists. The main groups of dialects may be distinguished. The Western group, Balti, Ladak, etc. preserves to a great extent the prefixes, initial consonant clusters, and final stops, generally transcribed as *-b*, *-d*, *-g*. The Central dialects, including that of Lhasa, are characterized by the loss of prefixes, simplification of consonant clusters, and the dropping of final consonants. The eastern dialects, the Khams and the Jarong, preserve the prefixes and final consonants very faithfully. There are some Tibeto-Himalayan dialects and some north Assam dialects spoken along the southern border of Tibet, and some Xifan dialects spoken in Xikang and Qinghai which belong to the Tibetan group. Of interest are Trung and Nung, called by Chinese Quzi 曲子 and Nuzi 怒子, in the northwestern corner of Yunnan 雲南. Like some Nepalese dialects, the reduced forms of the personal pronouns are used as prefixes and suffixes of the verb to form verbal conjugations as in Trung.

ŋa	ɣaŋ	dza	k'ai	teia-ŋ	'I can eat' < I food eat can
na	ɣaŋ	dza	k'ai	nə-teia	'you can eat'
ɣaŋ	ɣaŋ	dza	k'ai	teia	'he can eat'
?iŋ	ɣaŋ	dza	k'ai	teia-i	'we can eat' (pl.)
ne niŋ	ɣaŋ	dza	k'ai	nə-teia-n	'you can eat' (pl.)
ɣaŋ niŋ	ɣaŋ	dza	k'ai	teia	'they can eat' (pl.)

(The preceding examples were kindly furnished by Kun Chang.)

- (ii) Katchin of the Bodo-Naga-Katchin group is spoken in the northwestern border of Yunnan.
- (iii) Speakers of the various languages of the Burmese group, Burmese Kuki-Chin, 'Old Kuki', etc. are found mostly in Burma and Assam.

- (iv) Among the Lolo group, Lolo and its dialects is spoken in a large portion of Yunnan, in northwestern Guizhou, and in southern Sichuan and Xikang. It extends into Indo-China and Thailand. Lolo has an independent syllabic writing of its own, used largely in religious texts. Moso is spoken in the northwest of Yunnan and extends into Xikang. It possesses two systems of writing, one hieroglyphic and the other syllabic, like Lolo. This group is characterized by the simplification of the phonetic system, such as the complete disappearance of the final consonants and the rarity of diphthongs. Tones are usually five or six in number, and word order resembles Tibetan. Minkia may possibly belong to this group, but it shows strong Chinese influence in its vocabulary and word order, and its relationship remains doubtful.

2. Austro-Asiatic family

Of this large family, proposed by P. W. Schmidt, to which Munda, Mon-Khmer, and according to some authors, Annamite belong, we only mention the Mon-Khmer group of which there are representatives in China.⁸ The earliest records of this group are some Khmer inscriptions of the seventh century and a Mon inscription of the eleventh century, the alphabets being derived from Hindu sources. This group of languages has no tones, and makes use of prefixes and infixes for the derivation of words. The stem is generally monosyllabic; the word order is subject-verb-object.

Dialects of this group spoken in China are Palaung, Wa, and some others along the Yunnan-Burmese border. We know very little about Wa, but Palaung is known to have no tones, and has a number of prefixes, both syllabic and asyllabic, *p-*, *pan-*, *ra-*, *kar-*, as in *yam* 'to die', *p-yam* 'to kill', *pan-p-yam* 'the killing, one who is killed'. A special series of initials: *hl-*, *hr-*, *hm-*, and *hn-*, exists. The language shows close resemblance to the Tai languages.

3. Altaic family⁹

This family of languages is spoken along the northern territory of China from Chinese Turkestan through Mongolia to Northeastern China. It extends further southwest to Asia Minor and northeast to Siberia up to the Arctic coast. It consists of three main branches of languages, Turkish, Mongolian, and Tungus. The relationship among the three groups has not been decisively established, although their phonetic structure, syntax, and vocabulary show great similarities. The exclusive use of suffixes, either derivative or syntactical, is one of the characteristics, so that the stem or root always remains at the beginning of a word. The suffixes are loosely joined one after another according to a fixed order, for example, Turkish, *baba* (father) *-lar* (plural) *-um* (our) *-dan* (from) 'from our fathers'.

A specific phonetic feature known as vocalic or vowel harmony operates on the Altaic languages. Briefly, all vowels within a word must be either front vowels,

i, y, e, ö, or back vowels, *i, u, a, o*, as in Turkish *sev-il-dir-eme-mek* 'not to be able to cause to be loved' and *jas-il-dir-ama-mak* 'not to be able to cause to be written'. Different dialects, of course, possess slightly different rules for vocalic harmony. Vocalic harmony may influence the consonants, i.e., palatals in the neighborhood of front vowels and velars in the neighborhood of back vowels.

Word order is subject-object-verb, the verb always occurring at the end of the sentence. Modifying words are placed before the modified.

3.1. Turkish

This branch of the Altaic family is spoken in China in Chinese Turkestan, in the northwest corner of Mongolia, and in certain parts of Gansu. The Turkish dialects are divided into several groups, but the differences among them are slight. The eastern dialects are characterized by the wide application of the rules of vocalic harmony and by the existence of only surds in initial and final positions, and only voiced consonants in medial position. Dialects spoken in the northwest corner of Mongolia, (Tangnu Uriankhai) belong to this group. The central dialects possess voiced initials and have an indifferent /i/ with respect to vocalic harmony. They are chiefly spoken in Chinese Turkestan, and include Tarantchi, the dialects of Hami, Aksu, Kashgar, and Yarkand, among others. The dialects spoken in the northern part of Xinjiang 新疆, such as Kirghis, belong to the western group. The southern group of the Turkish dialects is not represented in China. The oldest texts are of some Siberian inscriptions from the eighth century, and a Latin-Persian-Turkish vocabulary from the fourteenth century. Several forms of writing have been known to be in use, including the Runiform, Uigur, Brahmi, Tibetan, etc., but most dialects have adopted the Arabic alphabet under the influence of the spread of Mohammedanism.

3.2. Mongolian 蒙文¹⁰

The Mongolian language is centered in Mongolia and extends to central Asia in the west, to Siberia in the north, and to the northern provinces of China in the south. We find here, as in Turkish, the use of suffixes; vocalic harmony, although distorted in certain ways, is still observable. There are several divisions of Mongolian, although the differences among them are very slight. The Khalkha group occupies a vast area in Outer Mongolia 外蒙古; the Buriat group is spoken chiefly in Siberia, but also in certain parts in northern Mongolia and in the western part of Heilongjiang 黑龍江; the Kalmuck group is spoken in western Mongolia and in the northern part of Xinjiang 新疆; the Southern (or Eastern) group is spoken in Chahar 察哈爾, Suiyuan 綏遠, Rehe 熱河, Ningxia 寧夏, and in some parts of Manchuria. Some Mongolian dialects are spoken in Qinghai 青海 and Gansu 甘肅; another one is spoken outside of China in Afghanistan.

The differences among these groups are slight. The most important one deals with the treatment of the palatal affricates *dz-* and *ts-* of literary Mongolian. The Southern group preserves the palatal position, Khalkha changes them to *dž-* and

tš except before *i*. Buriat changes *tš-* and *ts-* into *š-* and *s-* respectively, Kalmuck changes *dz-* into *z-*.

The Mongols adopted the Uigur alphabet in the thirteenth century. It is still in use with slight modifications. It writes from top to bottom like Chinese, but begins from the left side of the page. During the thirteenth and the fourteenth centuries another alphabet known as the hphags-pa, derived from Tibetan, was in use, but was soon discarded.

3.3. Tungus

The Tungus branch is spoken in eastern Siberia and northern Manchuria. An exact classification of the dialect is impossible on account of the lack of material. It is generally known to consist of two groups; the Northern group and the Southern group. Manchu, Gold, Oroch, and Solon, which form the Southern groups, are spoken in the provinces of Heilongjiang 黑龍江 and Kirin 吉林. Manegir and Birar, of the Northern group, are spoken in Heilongjiang also. Most of the languages of the Northern group are spoken in Siberia. A small group of Manchu speakers, the descendants of earlier Manchu garrisons, is found in Ili in Xinjiang.

The best known language of this group is Manchu 滿文. The writing is derived from Mongolian in the sixteenth century with slight modifications. Vocalic harmony in Manchu does not follow a uniform set of rules; we may however, summarize it briefly thus:

Back vowels: a, o, o
Front vowels: ä, ü
Indifferent vowel: i

In the above description of various languages in China I have purposely avoided many of the tribal names, particularly of the southwest, which are numerous and confusing. Our present knowledge of the many languages and dialects in China is still very limited. Field work and systematic studies of the various language groups should be done before we can have a more complete picture of the linguistic situation in China.

4. Extinct languages

Aside from the living languages in China, which were presented in this paper, there are several languages which have left records but are no longer in existence. Among them is Tokharian 吐火羅, an Indo-European language which was once spoken in Chinese Turkestan.¹¹ It seems to form an independent group among the Indo-European languages. It was written with a kind of Hindu alphabet, and there are a number of texts, mostly fragmentary. Some speakers of an Iranian dialect may still be found in western Chinese Turkestan. Another important language was Xixia 西夏, once spoken in Gansu.¹² It was written with

a system of characters evidently modeled after Chinese, but much more complicated. The deciphering of these texts, largely Buddhistic, is still in the early stages, but the language seems to belong to the Lolo group. Others such as the language of the Kitan 契丹 are still less known, although some inscriptions resembling those of the Xixia have been found.

Notes

* [A condensed version of this article first appeared in the Chinese Year Book, Shanghai, 1937. Since that time, it has been regarded as the standard reference on the subject. Although research over the past three decades has brought us a more refined understanding of the individual dialects, Li's broad outline remains essentially accurate and useful. The present version was contributed by the author with minor modifications of the original article, change of Wade-Giles romanization to the Pinyin system, and adapted for the Journal of Chinese Linguistics by Teresa M. Cheng - Editor]

- 1 For further details see Karlgren 1954 and 1957, Pulleyblank 1962 and 1963, and Li 1971.
- 2 For recent works on Chinese dialects, see Yuan et al 1960.
- 3 See Li 1964.
- 4 For a more detailed treatment of initials and tones see Zide 1966, Pp. 82-8.
- 5 More recently the author has divided the Tai group into three subgroups. See Diamond 1960, Pp. 951-9.
- 6 For a thorough study of Miao-Yao tones, see Chang 1973 (in print) where an extensive bibliography of recent works on Miao-Yao may be found.
- 7 A recent general treatment of the Tibeto-Burman languages may be found in Benedict 1972.
- 8 See Schmidt 1905, and Zide 1966.
- 9 See the recent work of Poppe 1960.
- 10 See Poppe 1955.
- 11 See Pedersen 1941.
- 12 Xixia studies have made great progress in recent years. See Nishida 1964-66, and Sofronov 1968.

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WHERE IT ALL BEGAN
 Memories of Robert Shafer and the
 "Sino-Tibetan Linguistics Project"
 Berkeley 1939–40

Paul K. Benedict

Source: *Linguistics of the Tibeto-Burman Area* 2, 1, 1975, 81–92.

I first met Robert Shafer in the winter of 1938–39, after I had gone to Berkeley to assume supervision of the "Sino-Tibetan Philology Project." I had been invited by Professor A. L. Kroeber, at the time the dominant figure in American anthropology, to take over where Shafer had left off, completing the work of the project. Kroeber was under the erroneous impression that I was a master of Oriental languages, hence his apparent delight when I readily consented to leaving my doctoral (anthropology) program at Harvard for the Berkeley scene. I had other — largely extraneous — reasons for wanting to be on the Berkeley campus, so I eagerly accepted the offer and set off for Berkeley in the late fall of 1938.

Shafer was not in town when I arrived and I had to fend for myself. Kroeber greeted me with much warmth and even enthusiasm, and naturally took me around to the Project offices at the first opportunity. Being an impostor of sorts, I felt some trepidation on this first visit. Apparently I carried it off well enough, though, since I have reason to believe that Kroeber never became aware of the deception — nor Shafer later.

The Project was located in a small frame house (see photo) near the campus, with work being carried out in two or three large rooms, as I recall. Kroeber had assured me that everything was shipshape, and that in view of my extensive knowledge of the field there should be no problem about completing the Project. Knowing that the second part of this proposition was fallacious, I was hoping that the first part would hit the mark, but my first visit to the Project dispelled that notion also. I was confronted by what appeared to be mountains of linguistic data in all shapes and forms: dictionaries, articles (some torn out of journals, others offprinted or xeroxed), and a vast array of papers, much of it covered with what I quickly came to recognize as the Shafer scrawl — firm enough and fairly legible.

(JAM informs me that much of it is still to be found in the margins of books in the Berkeley library.) There were piles of papers everywhere, on the floor as well as on tables, but hardly any appeared to be other than the roughest kind of "working paper." Shipshape it was not. Organized, maybe, but only in the sense that any of Shafer's productions were ever organized. Shafer himself, I was later to learn, took a certain pride in his ability to "organize" materials, but certainly for me, at that small crisis in my academic life, all was a monstrous mess that left me utterly dismayed. I strongly considered simply telling Kroeber to go find himself another whipping boy — but then, as I have said, there were compelling reasons for me to stay on campus. So I smiled as brightly as possible under the circumstances, assured Kroeber that everything was under control, and set about seeing what I might be able to salvage from the wreckage (as I saw it).

It wasn't easy — especially for an impostor! At that time, despite my spurious reputation, I had only a mediocre knowledge of Chinese, an even poorer acquaintance with Japanese and a smattering of Vietnamese, having worked on the language earlier that year (1938) in Hanoi. But I hadn't the slightest scrap of knowledge about Thai, Tibetan, Burmese or the like. I remember Kroeber escorting me about the Project offices, waving at various mountains of material here and there, and ending up with expressions such as, "But of course you know all that, Benedict." A worker came up to us with a question about Burmese transcription. Having never gazed upon Burmese before, I was rather taken aback at this, but I did come up with a quick, arbitrary response (luckily I had been given a choice, say, between k- and kh-), and we continued on our journey of inspection. I simply should have packed my bags and left Berkeley. But I decided to stay, to go along with the unwitting deception. I managed to bluff my newly acquired staff, who had been "set up" for it by the reputation that had preceded me to Berkeley, by working frenetically, often long into the night after the staff had left, acquiring sufficient mastery of these "other" languages for carrying on comparative linguistic work. By the time that Shafer had arrived on the scene, a matter of a few months, I had become a complete "expert" on Oriental languages, willing to discuss anything from Tibetan a-chung to Burmese auk-myit.

Shafer never really filled me in on the details concerning his leaving the Project, nor his subsequent return to Berkeley, nor do I recall any comments from Kroeber on the subject. One of the stories had him inheriting a large sum of money from a deceased uncle, but he never appeared well off, even by the modest standards of a scholar. He spent a good deal of time around Berkeley, hovering about the Project in the manner of a midwife about an expectant mother. The Himalayish volumes had been completed or were in the final stages of typing, and the Tibetan materials were also in fairly good shape, so that Shafer was able to give these volumes his last, loving touches. We spent a considerable amount of time together, often along with Don Walters, the senior (and only) "linguist" on the Project staff, mostly in the Project offices or in nearby lunchrooms. The talk was largely "shop talk" with an admixture of politics.

I never really got acquainted with Shafer on any personal basis, and his private life hardly ever entered into our conversations. I never met anyone whom he

described as a friend, nor remember his talking about friends, and in general he impressed me as an isolated person in many ways. He was amiable enough, however, and highly verbal, talking in rather staccato fashion, very intent in manner, with flashing brown eyes darting ceaselessly about. He walked in a brisk manner, much like the late President Truman on his morning strolls, even bouncing at times. The general picture was that of a tireless, machine-like man, constantly ferreting about, forever asking questions and looking for answers. As I write this, I realize that I am also drawing the portrait of a newspaperman, or perhaps the caricature of one, as played by a Cary Grant. Shafer was a newspaperman — or should we say, he had been one — this much I learned, but little more. At heart, however, he was a linguist, and in later years he turned to teaching, not to newspaper work, when his fortune (if he ever had one) became depleted. He retained the cigars, along with a certain carelessness in dress, from his newspaperman days, and talked about politics and politicians (he was against them both, as aren't we all) when not holding forth on his favorite subject of languages and linguistics. In the photograph he is shown sitting on the right, socks about his ankles. I remember him as sitting in strange postures, more or less folded up and “holding on,” possibly another reflection of his sitting about newspaper offices.

Shafer's attitude toward me was very much that of a father yielding up his child to a foster parent. He wanted to see the Project completed, but at the same time he appeared to be clinging to it, as if reluctant to entrust this prized possession to a stranger. I do not recall his actually interfering in the operation of the Project, but he did, as I have said, hover about much of the time. I remember him as patient in dealing with me, as he had always been with his staff, whether in explaining his system of transcription (see below) or in advising me about some detail of the operation. He appeared to see me as something of a young upstart (I was nearly a generation younger and already the “perpetual graduate student”), and, very clearly on occasion, as a member of the Eastern Establishment. At times he would become almost irrational on the subject of Harvard and the Establishment élite, to the point where I would feel compelled to defend a social institution about which I harbored my own misgivings. He was also anti-academic to a fault, given to long discourses on the smugness of the professional scholars and their incestuous relationships whereby all honors — and opportunities for publication — were kept within the academic family. I would listen to these expostulations with only mild demurrals from time to time. Over and over the theme of publication would come up, with Shafer insisting that the Project volumes would never be published (here you can still get odds) and that none of his articles would ever be accepted. Although I half suspected that he was right, I kept urging him to send in articles for publication. As we now know, Shafer did send in articles — and articles — and books — and they got published here, there and everywhere, with the ironic twist that Shafer finally succeeded in proving that he was wrong about the Establishment. Or was he, altogether?

Shafer's work habits were remarkable. I myself had acquired something of a reputation as a hard worker, and I do admit to having been afflicted with bouts of exhausting work — a condition which has continued to cast a shadow over what

might otherwise have been a happy, carefree life — but I found myself feeling positively otiose when confronted with Shafer, who appeared to live one long life of work interrupted only by hasty eating, scant sleep, and probably at times other of the more rudimentary physiological functions — in other words, the nightmare of the graduate student struggling with his Ph.D. dissertation. But the man seemed to thrive on this diet of work, and certainly never complained about it. He habitually carried about with him an assortment of papers of one sort or another, seemingly in complete disarray, along with reprints, pamphlets or the like, and when not otherwise engaged (usually in talking) he would work on these papers, scribbling notes — he was a great marginal note writer — or roughing in the outlines of a table. I am not sure just what his record-size chart was, but I recall having seen tables composed of several standard size (8 1/2 × 11) sheets of paper stuck together somehow, at times trailing behind him to the floor as he moved about or spread across a desk — or two! Shafer thought primarily in terms of tables, the longer the better — and damn the white spaces! As told to me by Walters, who was much closer to him, Shafer would work on these tables for hours at a time, into the small hours of the morning, then return to the task after a brief sleep. He would also spend countless hours scrounging up sources — and I use the term advisedly. Shafer must certainly be rated as one of the great scroungers of all time, determined and tireless, a master of the art. The unrivalled sources at the disposal of the Project were a monument to this aspect of Shafer's genius, just as the huge amount of research turned out on the Project was a testimony to his prodigious capacity for work, at a level hardly ever reached by an amateur, perhaps never by a professional.

Shafer and his Project staff were something else again. I write “his” staff rather than “my” staff, because all these people had been hired by Shafer and a kind of family bond had developed, still very much in evidence when I arrived on the scene. All were on a first-name basis, and there was a certain amount of socializing outside the office, which at times had also included Shafer in the days before he left the Project. In many ways I became a kind of younger sibling (only Walters, perhaps, was younger than I), despite my role as director of the Project. There was very little disciplining to be done, since this was a “make work” project, as were all WPA operations, and the general idea was that any work that could be extracted from the staff was better than the dole system. I had anticipated finding a group of complete non-workers, as one might encounter around a political clubhouse, and I was pleasantly surprised to discover that the staff actually did work, mostly to please Shafer, the father figure (or was he only an older brother figure?). They had been trained to do specific things, and took a special pride in their “specialties.” I do not recall all the details, or all the names, but I do remember the people, as I look at them now in the photograph.

The two Chinese, at least one of whom was a Lee, formed their own little Chinese clique within the extended family, much as our Sinologist brethren constitute a distinct grouping within our great Sino-Tibetan family (pace everyone). They were well trained, but unfortunately as laundrymen rather than Sinologists — as

in the Army, WPA assignments did not necessarily match the individuals' backgrounds! They did know Chinese characters — at least some of them — and this gave them a certain allure for Shafer, who never really got into this arcane field of study. I never quite understood just what their function on the Project was. Shafer seemed to be groping toward a comparative study of Chinese dialects, anticipating later developments in this area, and I believe that these two workers might have been developing Cantonese materials for this aspect of the Project. My knowledge of characters, rather better than theirs, gave me a special relationship to them, but I was never able to satisfy myself as to just what they were up to on the Project — and Shafer, if he knew, never revealed the secret to me. They did keep busy enough, mostly producing what passed for Chinese calligraphy, and I quickly learned that it was better to be discreet about pressing my workers for details.

The second person from the left, a tall and rather taciturn man by the name of Frank or Henry (I think), also remained something of an enigma for me. He talked in a grave manner about various aspects of the Project, and perhaps was better educated than the average worker (that would be high school graduate), but I'm not sure that he was ever really trained for any specific function. As I remember, I had him "looking for" various things for me, from among the mountainous piles of papers littering the offices, and I believe that Shafer had used him a good deal as someone to talk to — Shafer tended to have unidirectional conversations — so it can be seen that the man served some valuable functions.

The third person from the left is Marie, a pleasant French housewife. When I arrived on the Project she was busy erasing paper. Shafer had a tendency to mark up piles of paper with headings, e.g. "East Himalayish Final *-ak," intended for tables but frequently left with just headings. The goal of any WPA project was to hire people, and if anything useful (a road leading from Podunk to Podunk Corners, park benches for the elderly in Paducah, Sino-Tibetan Philology) came of it, well so much the better. I quickly learned, as Shafer had before me, that WPA funds were for people, not things. So we scrounged for everything — and Marie erased paper — as Shafer had performed prodigious feats in obtaining the necessary source materials for the Project. Finally the day came when all the paper had been erased, and I then put Marie to work at a job in which her language facility would be of some help, probably copying entries from some French source, thus affording her proper status in the extended family.

Next to her in the photograph, fourth from the left, is "Smiddie," whose lack of formal education was especially in evidence. As I recall, he worked mainly with the typists (none shown in the photograph), serving as a proofreader of sorts, a function which he carried out much better than one would have anticipated.

Finally, the sixth from the left in the photo is "Doc," a man of sufficient bearing to have gained that title, and possibly college-educated to some extent. (I believe that none of us pressed him for details of his education.) He had been ensconced as the reigning Tibetan expert on the Project, and actually knew how to transcribe Tibetan. Shafer had used him primarily in working with Tibetan dialects, and he

reacted to questions in other areas like a true expert - "Please, ask! I do Tibetan." "Doc" also had attained a kind of minimal status as a linguist, although well below that reached by Walters. Doc had a penchant for turning up cognate pairs involving English words like "hare" and "hair" — i.e. if a word meant "hare" in Language A, and "hair" in Language B, they were potential cognates, if they bore some similarity in phonetic appearance. Walters had been assigned by Shafer to comb such nits as this out of the system — and there were lots and lots of nits and nuts and bolts and the like, many entered carefully onto "official" Project papers, to be expunged finally by Shafer himself, or later by me.

As I have said, not everyone connected with the Project was in the photograph, which probably dates from 1938 or 1939. "Rosie," our Burmese expert, somehow didn't make it for the picture, although he was the unofficial "PR man" of the Project as well as its preeminent Burmese expert. He had no visible qualifications for either function, but was inordinately proud of his ability to transcribe Burmese, which he would carry out with a grand flourish, letter by letter. He also fancied himself as a comparativist, but was never officially entrusted with this function since he was given to straightforward comparisons by broad categories, matching "rat" and "horse" (animals), "toe" and "esophagus" (body-parts) with nary a question. (No, this never affected me, in case any of you are wondering!) Only once did I see Rosie at a loss for words. He had, without our advice or consent, committed our Project "spelling team" to a challenge on radio to the champion spelling team of the University, the prize being ten silver dollars. The sponsors accepted the challenge on the theory, no doubt, that any group representing the "Sino-Tibetan Philology Project" ought to be able to spell well, at the very least. The big night finally came, and we went to the radio station across the bay in Frisco — Walters, myself, and three non-spellers (Rosie, Smiddie, and Doc). We were introduced to the radio audience in grandiose terms, something like "one of the most gifted spelling teams of all time." Rosie, leading off, was asked "an easy one — just to warm you up — FRIEND." Walters and I looked at each other as Rosie spelled out the expected "F-R-E-I-N-D," then at the face of the MC as a look of utter astonishment spread over it, to be followed by one of disgust. Rosie couldn't think of a word to say at that moment, but later explained he had had "an off night — like the best of us." Walters and I upheld the honor of the Project, however, by spelling down the other team and gaining the ten silver dollars, which sufficed to provide for an evening of debauchery for the five of us. (Debauchery was much cheaper in those days.)

There were others, all Shafer people, although none so colorful as Rosie. Walters, who was taking a Master's in history at the University, was a key part of the Project. Shafer had trained him to carry out comparative work at a fairly high level, and I continued in this tradition, using him especially for the Bodo-Garo (Barish) volume preparation. This volume, which is (for me) the most satisfactory in the whole STL series, owes much to Walters, who actually served as a second linguist, although he was always very modest about his ability and probably would have refused to accept the designation. He remained

primarily an historian in his interests, and turned down suggestions made by me — and by Shafer before me — that he take formal linguistic training and go into the field.

The Project was also fortunate in having the services of two first-rate typists, able to set up on the special Project typewriters (I wonder how Shafer ever came by them!) the complicated tables fed to them by Shafer — and in the mad transcription that was “official” on the Project (see below). One of these typists, a man of about 30, had spent some time traveling about the Far East with a companion, a man of about the same age, and they both had been hired on the Project some time before I got there. They both had got into TM, or the equivalent of the time, and the typist would prepare himself each morning by sitting cross-legged upon a stool for an hour or so, in deep meditation, before doing any typing at all. He would more than make up for this loss of time, however, with a fantastic display of typing each day. I have never seen his like since, and I wish he would interrupt his meditations, wherever he is, and come back to do some more typing for me! His friend, the “intellectual” member of the twosome, carried out his own research on the Project, and I never quite knew what he was up to. He left in a jealous rage one day after his friend had got himself married.

I have spent some time on the Project staff because they constituted, as it were, extensions of the Master himself. They were all beautiful people (you can ignore my attempts at description if there is any discrepancy) and they made the Project go. But Shafer was the heart of it. I have described the manic pace at which he worked — until his death, I daresay. I should now write something about how he worked, his methods, his ways of handling material. Some may wonder about this, saying, “Whaddya mean, methods?” Shafer has been called “disorganized” or words to that effect (in reviews here and there). Actually, he was too organized, it has often seemed to me, in looking back on it. He had adapted a mad (I believe originally French) transcription system precisely because it was completely logical and “organized.” Little did it matter to Shafer that so many of the common sound units with which he was working came out festooned with otiose diacritics, like so much phonetic bric-a-brac! The most common vowel symbol in the sources (mostly older ones by non-linguists), for example, was a, often probably for ə, especially in unstressed or prefixial syllables. This comes out ê, and the pages of the early (pre-Benedict) volumes of STL are literally covered with ê, and the like. Shafer was too organized here to be practical. For me, the product of an (ultimately) Yankee background in which “resourceful” was the highest word of praise that one could utter about a man, this transcription was almost criminally stupid, and I probably told Shafer so in about those words. (I was given to plain talk in those early days.) But he would hear none of it, countering to the effect that I was the stupid one, unable to see the beauties of a logical transcription. But Shafer was a great scrounger, as I have said, and that is a good Yankee trait, so that I was able to overlook his sins of transcription — but I did throw the whole system out in the later STL volumes, a crime for which Shafer probably never really forgave me.

In the area of classification, also, Shafer was very fond of setting up all sorts of hierarchical systems, with much attention to arbitrary suffixes and to historical names, hence terms such as “Daic” (the root is reconstructed with initial *d-, whence “Tai” or “Thai”). I felt (and still feel) that it is preferable (i.e., more practical) to operate with “nuclei” or the like (as in the Conspectus), but Shafer saw this as a chaotic approach and we would often argue about the point.

Shafer was also methodical (and traditional) in approaching the task of reconstructing PTB or PST, working from the local groupings, even dialects, to broader and broader supergroupings. He made a stab (JAOS articles) at setting up a vocalic system for PST, but it is clear that he regarded this as very provisional, and he contented himself with trying to work out certain “correspondences,” with suggestions that the ultimate system would be much more complex, with three-vowel clusters, etc. Like all Tibeto-Burman scholars who had preceded him (and many since), he was markedly Tibetocentric, spending endless time mulling over Tibetan dialects. I soon got the impression that little was to be gained from this Tibetobsessionalism, hence I set about working out a framework of some sort, for PST as well as PTB, with a consideration also of Karen (largely ignored by Shafer). Shafer never really approved of this change in emphasis, preferring to continue along conventional lines. He would never have approved of “teleo-reconstruction,” having been extremely critical of Simon’s attempt at a direct comparison of Tibetan with Chinese.

Actually, Shafer was basically conservative at heart, as shown by his papers on such distinct groups as Nahali, Li, and Miao-Yao. True, he did turn out a few “wild” things indicating possible connections of Sino-Tibetan with one or another group of Amerindian languages. But even here he was following in the path of a fairly well-known linguist (Sapir!). He continued to plug along with Tai as one of the ST groups, despite an apparently growing uncertainty about the matter, never accepting the suggestion that Tai is basically related to Austronesian, this again reflecting a fundamental spirit of conservatism on his part. As for details of his comparative work, here too he was extremely conservative in approach, admitting very few semantic shifts and expressing a negative view of my published opinion that more leeway should be allowed in semantics than in phonology when making these broader comparisons. I point this out because of what seems to have become a widespread view that Shafer was a “wild” linguist in some sense, possibly because he was a pioneer in the field.

His conservatism perhaps was mainly responsible for his not accepting a fully phonemic approach, along with an insistence upon literal transcriptions, e.g. the writing of Thai (Siamese) medial oo as “əəə”, the idea that Written Burmese ui was somehow phonetically [ui], and that â (with the glottalized auk-myit accent) was a “short a.” Shafer also refused even to consider Karlgren’s reconstructions for Archaic Chinese — again an indication of his basic conservatism — but in all fairness I should add that when the Grammata Serica first came out, and I had George Trager (then at Yale) take a look at it, he quickly pronounced it a “non-language.”

Haudricourt, in his review of the *Conspectus*, has described Shafer's approach as "analytical," as contrasted with mine as "synthesizing," but I feel that this misses the mark, the difference lying primarily in the way we approach the problem — the conservative vs. the radical, if you will: the working up to a framework, dialect by dialect and language by language, as opposed to the setting up of a series of provisional frameworks, then working within these frameworks to modify them as need be. (This accounts for many of the "contra Benedict's" in Benedict.) Shafer and I often discussed this basic difference in approach, and even the irony, as we both saw it, in the circumstance that he, the outsider and anti-academician, was actually the conservative one while I, a member of the academic élite (Shafer's point of view!), was the radical one. Shafer simply thought I was unsound, I suppose, an opinion that has clung to me in certain circles over the years.

What more can I write about Shafer? He was the explorer, the pioneer, venturing ever further and further into virgin fields. Wolfenden had come by that way some years before, it is true, but he had been looking for rather different things. They were the first whom we can fairly label "Tibeto-Burmanists," each having left the Tibetan "nest" and flown to distant ranges. In a still broader context, Shafer surely is to be regarded as the first "Sino-Tibetanist" ever, without the need for qualification. He had an idea — a seemingly preposterous idea — that if given the opportunity he would be able to train a group of WPA workers sufficiently to enable them to collect meaningful data on languages as esoteric as Tibetan, Burmese, and Chinese.

It is very probable that only one scholar in the world in a position to sponsor such a project would have done so. By some quirk of fate Shafer got to this scholar, Professor Kroeber, and convinced him that the project was practicable. Kroeber never really discussed this aspect of the Project with me in any detail, but I soon learned that he was a fervent believer in "mass" research. One of his dicta, which I have never forgotten, went like this: Never do anything yourself which you can get someone else to do for you. He was not being Machiavellian here, but was simply pointing out that there are levels of research, and that one shouldn't work at lower than his true level (an argument which generations of graduate students have been using with their wives). Kroeber did admit one day, however, when I was complaining about the "impossibility" of completing the Project, that he had been pushing the method to the limits when he accepted Shafer's proposal. He also remarked that a thing isn't "fun" unless it is difficult.

I think that Shafer also felt that way about his work. He gave his life to it, and I can't imagine his ever having any regrets. He made it possible for me to go even deeper into untrodden areas, and for all of us to go our separate ways in this still primeval wonderland of Tibeto-Birmanica and Sino-Tibetica. His goals were monumental, but they fitted the man, and few have lived to find so large a measure of achievement. May we all fare so well!

THAI, KADAI, AND INDONESIAN

A new alignment in southeastern Asia

Paul K. Benedict

Source: *American Anthropologist* 44, 1942, 576-601.

In the present paper the writer presents a general solution to the complex problem of the affinities of the Indonesian languages. The two following premises are basic to the thesis developed here:

1. The true Indonesian substratum on the Asiatic mainland is represented by four scattered languages in southern China, northern Tonkin, and Hainan, all of which constitute a single linguistic stock (Kadai).
2. The recognition of the Kadai stock, which shows numerous points of contact with Thai, opens the way to a new interpretation of the latter as a more distant member of an archaic Thai-Kadai-Indonesian linguistic complex.

Although these suggestions are new and perhaps unexpected, it can be said that they accord with the general picture as reconstructed from historical and cultural data. It is generally agreed that the Indonesian migrations have proceeded from the Asiatic mainland, but the evidence brought forward has been of a generic rather than specific nature, and the area of departure has not been delimited. The linguistic speculation has been notable for range rather than relevancy,¹ and the cultural treatment has in some instances been equally unsound.² It is hoped that the argument developed below will provide a number of solid *points d'appui* from which further ramifications can be anticipated.

The newly recognized Kadai stock comprises the Li dialects of the island of Hainan, the Kelao language of southcentral China, and the Laqua and Lati languages of the China-Tonkin border region. The term "Kadai" has been compounded by the writer from "Dai," one of the forms of the Li term for themselves,³ and the *kā-* prefix found in Laqua *kādāū*, Kelao *kātsü* "man (homo)." These languages, with the exception of Li, are not generally known to the scientific world, and our available sources are rather meager. The Li dialects have been described by a number of European observers, the most thorough of whom have been

Savina and Stübel-Meriggi.⁴ Bonifacy has published word-lists of Kelao, Laqua, and Lati,⁵ while additional material on all three languages has been supplied by his compatriot, Lunet de Lajonquière.⁶ A third Kelao source has been furnished by Samuel R. Clarke, the author of a popular account of the little-known tribal groups in southern China.⁷

The Kedai languages have received scant attention from anthropologists and linguists. Li has evoked occasional comment, yet no real analysis has been attempted. The obvious Thai element in the language was noted by Parker over half a century ago,⁸ and this theme was further developed by Strzoda.⁹ The less apparent Indonesian affinities were first pointed out by Terrien de Lacouperie, who suggested a relationship with the Indonesian languages of Formosa.¹⁰ In more recent times P. Mus¹¹ and H. Maspero¹² have further extended this line of thought and have supplied the first concrete bits of evidence. Maspero, a sound and generally conservative scholar, concludes that the Li numerals "certainly" belong to the Indonesian family (*op. cit.*, p. 230).

The three mainland languages (Kelao, Laqua, Lati) have attracted still less attention. Bonifacy, who recorded Laqua, noted the analogy between the Laqua and Cham numerals,¹³ but this observation seems to have been overlooked by Maspero and other scholars. Kelao and Lati have gone almost entirely unnoticed, although W. Schmidt has seen fit to classify the latter as an independent linguistic entity.¹⁴ It was Bonifacy's observation on Laqua that led to the writer's discovery of the relationship between Laqua and Li, and thus ultimately to the concept of a single unified Kadai stock.

The Kadai-speaking groups are all of marginal type, as should be expected on the basis of our substratum theory. The Li, who inhabit the mountainous central and south-central parts of Hainan, are under economic pressure from their powerful Ong-Be (Thai-speaking) and Hoklo (Chinese-speaking) neighbors. The Kadai groups on the mainland rank even below the Miao and Lolo, and generally regard themselves as autochthonous. The Laqua, who call themselves Ka Beo, in the upper Rivière Claire valley of northern Tonkin, are described by Lunet de Lajonquière as follows:

Ils se considèrent comme aborigènes et il est certain qu'ils sont venus dans la contrée avant toutes les autres tribus montagnardes (cit. supra, p. 339).

C'est une variété [of economic life] en complète décadence. La plus grande partie des terres qu'ils cultivaient ont été déjà cédées aux Meo, qui paraissent devoir les absorber.

(*ibid.*, p. 341)

Of the Lati, also in the upper Rivière Claire valley, the same writer states simply that "*Ils se prétendent aborigènes*" (*cit. supra*, p. 358). Bonifacy places his estimate of the number of Lati at only 450 (76 families).

The Kelao or Lao, who call themselves Thü, range over an extensive area in south-central China and northern Tonkin, but their true home appears to be



Kueichou province, whence they have migrated into the northern Tonkin border region (cf. Lunet de Lajonquière, *cit. supra*, p. 356). Clarke, who has given us the fullest available account of the Kelao, stresses the aboriginal nature of the group:

The Keh-lao, however, are now nearly extinct; many of them have married into Chung-chia [Thai] and Old Chinese families. Some writers have spoken of them as extinct. As far as we know, there are now only several hamlets of them in the Anshun prefecture [west-central

Kueichou], which altogether do not number more than two or three hundred families. These people claim, and rightly, we believe, to be the real aborigines of that region. In some parts of the province the Miao claim to be the aborigines, but where the Miao and Keh-lao occupy the same district, the Miao allow that the Keh-lao were there before themselves (*cit. supra*, p. 13).

Another missionary writer, Aloys Schotter, also attributes a low rank to the Kelao:

*Le plus bas dans l'échelle sociale c'est peut-être le groupe des Blancs [White Miao]. La tribu des Kē-lao est peut-être plus dégradée encore surtout quant aux moeurs.*¹⁵

The languages spoken by these primitive groups fall into two major divisions, viz. Li-Laqua and Lati-Kelao, which together constitute the Kadai stock. Dialectical differences can be established both for Li and Kelao, and are of such magnitude that they must fully be taken into account. The numerous Li dialects can be classified under the headings of "Southern Li" and "Northern Li" on the basis of their treatment of original nasal initials. In Northern Li these initials tend to be transformed into the homorganic stops, whereas in Southern Li they are uniformly retained; cf. N. Li *ba-pa*, S. Li *ma* "dog" (Thai **hma*); N. Li *dau-tau*, S. Li *nau* "long" (Thai **ñau*); N. Li *ka*, S. Li *nga* "horse" (Annamite *ngüa*). The "Central Dai" dialect recorded by Savina and most of the dialects recorded by Jeremiassen and Stübel belong in the Northern Li group, while the "Southern Dai" dialect of Savina, the Yulinkau dialect of Swinhoe and Calder, and the K'iung-Shan dialect of Parker belong in the Southern Li group. Kelao similarly shows a dialectical cleavage between "Northern Kelao" (dialect recorded by Clarke) and "Southern Kelao" (dialect recorded by Bonifacy and Lunet de Lajonquière). The distinctions here, both lexical and phonetic, are even more marked than those that obtain in Li, but conform to no easily recognizable pattern. It is apparent that a full treatment of the linguistic problems of Kadai would require detailed phonetic information on a wide range of dialects for at least four languages, and it is not unlikely that further exploration in the Tonkin-China border area will reveal still other members of this stock. Unfortunately, we lack the materials necessary to implement a complete study of the whole stock,¹⁶ and must content ourselves with a survey of the more salient points.

All four Kadai languages are of monosyllabic, isolating type, with full tonal systems as in Thai. The Kadai word-order, like that of Thai and Indonesian, shows object following verb, and modifying elements (including genitive constructs) following modified elements; thus, Malay *mata hari*, Li *sa ven*, Thai **ta wǎn* "sun," lit. "eye (of the) day." Kadai, like Thai, lacks the affixation apparatus of Indonesian, yet prefixed forms abound in the Lati-Kelao branch of the stock, e.g. Lati prefixed *m-* in *m-tšua* "moon," *m-bo* "sky," *m-ti* "earth," *m-ni* "ox," *m-go* "cat," *m-so* "elephant," *m-si* "beak, mouth," *m-tšu* "eye," *m-ngá* "oil"; Lati prefixed *a-* in *a-ña* "rain," *a-lia* "rat," *a-k'o* "monkey," *a-ti* "tiger," *a-kü* "bird," *a-li*

"fish," *a-k'e* "frog," *a-k'u* "man," *a-sa* "hair," *a-ñu* "salt." Kelao has prefixed *bu-* occasionally corresponding to Lati prefixed *m-*, as in Kelao *bu-to* "earth," *bu-tsüe* "beak" (*bu-tsü-lüa* "mouth"). Laqua has prefixed *kã-* in *kã-dǎü* "man," *kã-zio* *kã-pǎ* "boy," *kã-zio ka-mǎi* "girl," where *zio* stands for "child" and *pǎ* and *mǎi* are the sex modifiers.

On the phonetic side, the Kadai languages present a fairly uniform pattern of relatively simple type, though mixed (indeterminate) and front-rounded vowels are uncommonly abundant. Li exhibits the greatest range of initials and finals, with Laqua not far behind, while Lati and Kelao have undergone a process of extreme modification, in the course of which almost all final nasals and stops have been eliminated.¹⁷ The phonetic attrition shown by Lati and Kelao has proved to be one of the chief stumbling blocks in our analysis of Kadai phonology. When it is realized that Li and Laqua, the better preserved pair of languages, stand in much the same relationship to Indonesian, some inkling of our difficulties can be gained. The investigation of the phonetic shifts exhibited by the Thai roots in Li, the best recorded of the Kadai languages, has brought to light a number of significant variations, especially as regards initials, which are useful in the study of Thai itself. Thus, the writer has reconstructed a separate phoneme **hr* (surd *r*) for archaic Thai on the basis of the equation Ahom *r-* = Siamese *h-* = Tho *t'-*; in this series Li significantly has *s-*, suggesting an original **sr-*:

	Ahom	Siamese	Tho	Li
stone	<i>rin</i>	<i>hñ</i>	<i>t'in</i>	<i>sien</i>
louse	<i>rau</i>	<i>hǎu</i>	<i>t'au</i>	<i>sǎu</i>
break	<i>rak</i>	<i>hǎk</i>	—	<i>sǎk</i>
carry	<i>rap</i>	<i>hap</i>	<i>t'ap</i>	<i>sap</i>

The variations in initials between S. Li and N. Li are often of unusual type, e.g. S. Li *d-* = N. Li *f-*, corresponding to Thai *ǎ-* (Siamese *ǎ-* = Shan *l-* = Khamti *n-*):¹⁸

	Siamese	Shan	Khamti	S. Li	N. Li
earth	<i>ǎn</i>	<i>lin</i>	<i>nin</i>	{ <i>dǎn</i> <i>den</i>	<i>fan</i>
bone	<i>kǎduk</i>	<i>luk</i>	<i>nuk</i>	<i>drü</i>	<i>füök</i>
raw	<i>ǎp</i>	<i>lip</i>	<i>nip</i>	<i>diep</i>	<i>fiep</i>

Aspiration of initial stops is characteristic of Li; cf. Li *hǎn*, Thai **guǎn* "smoke"; Li *ha*, Thai **ga* "thatching grass"; Li *hang*, Thai **gang* "jaw"; Li *hǎn*, Thai **k'ǎn* "crow of a cock"; Li *hǎu*, Thai **k'ǎu* "horn," also "mountain"; and Li *k'ǎu*, Thai **kǎu* "old"; Li *k'ǎi*, Thai **kǎi* "fowl." Li often simplifies the complicated diphthongs and triphthongs of Thai, but note Li medial *-ie-* = Thai *-i-*, *-ě-*, as in Li *dien-ñien*, Thai **ñin* "tongue"; Li *diep-fiep*, Thai **ǎp* "raw"; Li *liep*, Thai **lǎp* "fingernail," and Li *-öü* = Thai *-aü*, as in Li *böü*, Thai **bǎü* "leaf"; Li *tšöü*,

Thai **tšai* "heart"; Li *t'öü*, Thai **taü* "low." S. Li retains final *-k* after short vowels but substitutes a glottal stop¹⁹ after long vowels, while N. Li uniformly retains the final velar stop; cf. Li *p'äk*, Thai **väk* "hatch"; Li *t'ök*, Thai **tök* "fall"; Li *fī*, Thai **pik* "wing"; Li *t'o*, Thai **t'ok* "pour"; Li *sa*, Thai **sak* "pestle"; S. Li *drü*, N. Li *füök*, Thai **duk* "bone."

The morphological and phonological points developed above point to Thai rather than to Indonesian, yet the lexical elements of Kadai bear the unmistakable imprint of the latter stock, along with an equally deep imprint of the former. In brief, the numerals and a scattering of nouns, pronouns, and adjectives show Indonesian affinities, while many of the remaining elements show Thai affinities. On the basis of this distribution, the writer at first regarded Kadai as a composite of Indonesian and Thai, with the former as the more likely substratum. Further analysis of Thai, however, has led to the view presented below; to wit, that Thai, Kadai, and Indonesian together constitute a single linguistic complex. Kadai is the "transitional" member of this triune, though in the main it approaches Thai rather than Indonesian. Both Thai and Kadai have reduced a number of disyllabic roots to monosyllables, have developed complete tonal systems, and have discarded the original morphological apparatus of affixes.²⁰ Throughout this elaborate linguistic metamorphosis, however, a number of basic lexical landmarks have persisted and it is to these that we shall direct our attention.

The Kadai numerals are of fundamental importance in the present connection, since the Indonesian affinities of the stock are more apparent there than elsewhere. The following table of Kadai numerals, in which reconstructed Indonesian (IN) roots taken from O. Dempwolff's recent work²¹ have been incorporated, serves to illustrate this point.

	IN	Laqua	S. Li	N. Li	S. Kelao	N. Kelao	Lati
one	* <i>it'a'</i>	<i>tiä</i>	<i>kü</i>	<i>ü</i>	<i>tsi</i>	<i>si</i>	<i>tšäm</i>
two	* <i>äuwa'</i>	<i>de</i>	<i>dau</i>	<i>trau</i>	<i>dü</i>	<i>so</i>	<i>fu</i>
three	* <i>təlu'</i>	<i>täu</i>	<i>su</i>	<i>su</i>	<i>tö</i>	<i>da</i>	<i>si</i>
four	* <i>ə(m)pat</i>	<i>pe</i>	<i>sau</i>	<i>so</i>	<i>pu</i>	<i>bu</i>	<i>pu</i>
five	* <i>lima'</i>	<i>mö</i>	<i>ma</i>	<i>pa</i>	<i>mlěn</i>	<i>mbu</i>	<i>ng</i>
six	* <i>ənam</i>	<i>nam</i>	<i>nom</i>	<i>tom</i>	<i>tšö</i>	<i>nang</i>	<i>nä</i>
seven	* <i>pitu'</i>	<i>mö täu</i>	<i>t'u</i>	<i>t'au</i>	<i>ši</i>	<i>ši</i>	<i>ti</i>
eight	* <i>walu'</i>	<i>mö dü</i>	<i>du</i>	<i>au</i>	<i>šič</i>	<i>vleu</i>	<i>be</i>
nine	* <i>t'üwa'</i>	<i>mö diä</i>	<i>pöü</i>	<i>föü</i>	<i>ku</i>	<i>su</i>	<i>lu</i>
ten	* <i>puluh</i>	<i>pät</i>	<i>p'uot</i>	<i>fuot</i>	<i>tsü</i>	<i>beu</i>	<i>pa</i>

The following variants are worthy of comment: S. Kelao *mlěn* "5" but *tsü mu* "15" (cf. N. Kelao *mbu* "5"); Lati *tšäm* "1" but *pa tšä* "11"; Lati *pa* "10" but *fu pe* "20", *sie pe* "30" (*si* "3").

Some of the leading features of Kadai phonology are illustrated in the above table of numerals. N. Li *pa* < *ma* "5," *tom* < *nom* "6," and *föü* < *pöü* "9," *fuot* < *p'uot* "10" are all regular developments (see the discussion above). Li *kü-ü* "1" are

probably independent of the IN root, and the analysis of Li *su* "3," *sau-so* "4" is not certain. For the latter, Maspero suggests a development comparable with that found in Tarema (Formosa), which has *suatto* < **suat* < **səwat* < **səbat* < **s-pat* "4." Li *du-au* "8" belong to a puzzling series in which S. Li initial *d-* corresponds to N. Li initial *h-* or vocalic anlaut, e.g. *dai-hai* "iron," *dai-hiai* "a Li," *duoi-ui* "fat" (n.), *döü-öü* "thin." These forms seem to have been derived from roots with labial+liquid initial cluster; cf. the variant form *b'lai* "a Li," and the frequent correspondences with Thai initial *r-*, as in S. Li *da*, Thai **rüa* "boat"; S. Li *dät*, Thai **rät* "squeeze"; S. Li *düön*, Thai **rüan* "house" (N. Li *plong*). We can infer a bifurcate development of the type **walu'* > **wlu'* or **blu'* > *du* (S. Li), and **walu'* > **wau'* > *au* (N. Li). Li *p'uot-fuot* "10" attest to a pair of shifts, viz. final *-h* > *-t*, as in IN **darah*, Li *dat-tlat* "blood," and medial *-u-* > *-uo-*, as in Thai **nüng*, Li *nuong* "mosquito." The development here has been of the type **puluh* > **p'luh* > *p'lut* > **p'ut* > *p'uot*.

Laqua parallels Li in the developments *mö du* > **walu'* "8" and *pät* > **puluh* "10." Laqua *tiä* < **it'a'* "1," *täu* < **təlu'* "3," and *mö dia* < **t'üwa'* "9" reveal IN affinities not apparent in Li. The Laqua vocalic shift *a* < *e-ö* is found in the forms *de* "2," *pe* "4," and *mö* "5"; cf. Laqua *pö*, IN **batu'* "stone"; Laqua *pe*, IN **bapa'* "father"; Laqua *te*, IN **mata'* "eye"; Laqua *ne* Li *na-ta*, Thai **na* "rice-field"; and, medially, Laqua *dön*, Li *dan* "100"; Laqua *nen*, Li *ňan* "moon." The appearance of *mö* "5" in the Laqua numerals "6" to "8" is suggestive of a quinary system; cf. the S. Kelao numerals cited by Lunet de Lajonquière: *sü-u* "2," *to-u* "3," *pu-u* "4," *nlě-u* "5," but *tšě-ni* "6," *dž-ni* "7," *suo-ni* "8," *ku-ni* "9."²² Laqua and Li have a common root for "100" (*dön-dan*), which is independent of the IN root (**ratut'*).

The Kelao and Lati numerals are, in general, further removed from the IN system as reflected in Laqua and Li. Notable, however, are S. Kelao *mlěn* (Bonifacy)~*nlě* (Lajonquière) < IN **lima'* "5," and N. Kelao *vleu* < IN **walu'* "8," which show retention of the liquid phoneme *l*. Kelao *pu-bu*, Lati *pu* "4" reflect an *a* > *u* vocalic shift, which is especially characteristic of Lati; in the table below, the contrast with the Laqua *e-ö* vocalism is made clear:

	IN	Li	Laqua	Lati
four	* <i>ə(m)pat</i>	—	<i>pe</i>	<i>pu</i>
five	* <i>lima'</i>	<i>ma-pa</i>	<i>mö</i>	<i>ng(u)</i>
father	* <i>bapa'</i>	<i>fa-ba</i>	<i>pe</i>	<i>pu</i>
eye	* <i>mata'</i>	<i>sa</i>	<i>te</i>	<i>m-tšu</i>

The variability reflected in the Kadai numerals appears also in other aspects of the vocabulary. Scarcely any roots prevail everywhere, and there are a number of confusing "partial equations," yet many significant features emerge. One of the most notable of these features is the regularity shown in the roots for "dog," "pig," and "horse," the first two with Thai affinities, the last with Annamite:

		Laqua	S. Li	N. Li	S. Kelao	N. Kelao	Lati
dog	* <i>hma</i> (Thai)	<i>mǎ</i>	<i>ma</i>	<i>pa</i>	<i>χmǎ</i>	<i>mu</i>	<i>mu</i>
pig	* <i>hmu</i> (Thai)	<i>mu</i>	<i>mau</i>	<i>pau</i>	<i>χmüǎ</i>	<i>ma</i>	<i>me</i>
horse	* <i>ngüa</i> (Ann.)	<i>rre</i>	<i>nga</i>	<i>ka</i>	<i>ngüǎ</i>	<i>niau</i>	<i>ngo</i>

Note the N. Kelao and Lati shift $u < a$ in $mu < *hma$ "dog," and N. Li $p- < m-$, $k- < ng-$ (vide supra). These loan-words, if such they be, must be of some antiquity, in view of the selective nature of the distribution (there is no trace of the prominent Thai-Chinese root **ma* "horse"), as well as the note-worthy equation S. Kelao $\chi m-$ = Thai *hm-*, the latter a reconstructed phoneme (surd *m*) not found in any of the modern Thai languages. In the same general class belongs the correspondence between Laqua *k'ai*, Li and N. Kelao *k'ai*, Lati *ka* "fowl," and the Thai root **kāi*; contrast the earlier stratum reflected in the series IN **manuk* "fowl, bird," Laqua *nuk*, S. Kelao *nie* "bird," and Thai **nōk* "bird."

The following group of comparisons, arranged roughly according to natural lexical divisions, is intended to serve as an index of the Kadai-Indonesian relationship:

1. Laqua *vuon* (Lajonquière *mo ven*) "sun," Li *ven* "day," *sa ven* "sun" ("eye of the day"), S. Kelao *du vuǎ* "sun," IN **wari* "day, sun" (IN medial $-r- < \text{Laqua and Li } -n$). Cf. also N. Kelao *vlei* "sky," which shows a contrasting type of development (**wari* < **wli* < *vlei*).
2. S. Li (*pa*) *pūn* "rain," IN **ə(m)bun* "atmospheric precipitate" (Tagalog *'ambon* "fine rain").
3. Li *nom-nam*, IN **danum* "water."
4. Laqua *pǎi*, Li *pei-fei*, S. Kelao *p'i*, N. Kelao *bai*, Lati *pie*, IN **apuy* "fire." For the Li development (**apuy* > **api* > *pei*), cf. Li *ngei*, IN **tangit* "weep"; Li *nei*, IN **ini* "this."
5. Laqua *pung*, IN **bunga* "flower."
6. Laqua *kǎ-dǎü*, Li *ǎu*, IN **tawu* "man (homo)."
7. Laqua *pe*, Li *fa-ba*, S. Kelao *ǎ-ba*, Lati *pu*, IN **bapa* "father." For the vocalism, see the analysis above.
8. Laqua *ru* (Lajonquière), S. Li *dau*, N. Li *fo-o*, IN **ulu* "head." The Li development has been **ulu* > **wlu* > *du-o*, exactly paralleling IN **walu* > Li *du-au* "8."
9. Laqua *δam*, S. Kelao *lǎ so*, N. Kelao *ma sang*, Lati *a-sa*, IN **d'a(m)but* "hair." The original palatal initial has everywhere been assibilized: **d'a(m)but* > **d'am* > *δam* and *sang-sa-so*. For the Laqua initial $\delta-$, cf. Laqua *δǎu*, IN **hud'an* "rain."
10. Laqua *te*, Li *sa*, N. Kelao *dau*, Lati *m-tšu*, IN **mata* "eye." Li appears to have developed a sibilant initial through aspiration (**mata* > **m-t'a* > *sa*); see the

discussion below of the Thai root **ta*. S. Kelao perhaps retains the root in the compound *du vuǎ* "sun," paralleling Li *sa ven*, Malay *mata hari* ("eye of the day"), yet this dialect also has *du die* "moon," *du dē* "star." The picture is further complicated by the evidence from Lati, which has *m-tšu* "eye," *m-tšu* "month" (on different tones as recorded by Bonifacy), but *m-tšua* "moon" and simply *tšua* "star."

11. Laqua *rō*, Li *yǎi-t'ǎi*, N. Kelao *rau*, Lati *lu*, IN **talinga* "ear." For Laqua *rō* < **talinga*, cf. Laqua *rre*, Annamite *ngüa* "horse" (Laqua $-ō < -a$; see the analysis above). The Li forms point to an original **hǎi* or **niǎi* with palatalized nasal initial, whence S. Li *yǎi* (through further palatalization) and N. Li *t'ǎi* ($n- > t-$ is the regular N. Li shift). This reconstruction is supported by two outside comparisons, one with Thai (Dioi) and the other with IN, as shown in the table below (Central Li from Savina, Shaved Head Li and White Sand Li from Stübel):

		S. Li	C. Li	Shaved Head	White Sand
ear	* <i>talinga</i> (IN)	<i>yǎi</i>	<i>t'ǎi</i>	<i>t'ai</i>	<i>džai</i>
finger	* <i>niang</i> (Dioi)	<i>yeng</i>	<i>t'leǎng</i> <i>t'eng</i>	<i>t'ěng</i>	<i>džing</i>
snake	—	<i>ya</i>	<i>t'a</i>	<i>t'a</i>	<i>dža</i>
yellow	* <i>kuning</i> (IN)	<i>yěng</i> <i>hieng</i>	—	<i>t'ěng</i>	<i>džiang</i>

12. S. Li (*hai*) *p'en*, S. Kelao *du pio*, N. Kelao *bang*, IN **ipən* "tooth."
13. Li *k'ok*, N. Kelao *k'au*, IN **kaki* "foot."
14. Lati *tšu*, IN **t'ut'u* "breast."
15. Li *dat-tilat*, IN **darah* "blood." For the final, cf. Li *p'uo-t-fuot*, IN **puluh* "10."
16. Laqua *nen* "fat" (n.), S. Kelao *nuǎ*, Lati *m-ngǎ* "oil," S. Kelao *nu χmüǎ*, Lati *m-ngǎ me* "fat" ("oil of pig"), IN **miñak* "oil" ~ **məñak* "fat."
17. Laqua *küön*, N. Li *k'an*, S. Kelao *kǎ mön-mön kǎ* (*mön* perhaps for *mo* "rice"), N. Kelao *ka*, Lati *k'o*, IN **ka* ~ **ka'ən* ~ **ka'i* "eat." Note also Laqua *ngām* "drink," IN **pangan* "eat" (cf. Lati *k'o* "eat," also "drink").
18. Li *sop-sap*, Lati (*ngua*) *so*, IN **rabi* "night." Cf. also Javanese *séráp* "twilight,"²³ and the equation Li $s-$ = Thai *hr-* analyzed above.
19. Li *ngei*, IN **tangit* "weep."
20. Laqua *tie*, IN **matay* ~ **patay* "die." For the vocalism, cf. Laqua *te*, IN **mata* "eye."
21. Li *diēp-fiep* "raw," IN **huḍip* "live." Note "raw" = "green" = "alive" a semantic association appearing also in the Thai root **ḍip* (vide infra). For the medial diphthong in Li, see the analysis above.
22. Laqua *dām*, Li *döm* "black," IN **i(n)təm* "black," **dəḍəm-tidəm* "dark."

23. Laqua *nin*, S. Li *yěng*-hieng, N. Li *t'ěng*, S. Kelao *t'e ni*, N. Kelao *nyi*, Lati *a-hni* (recorded as *an hi*), IN **kuning* "yellow." Li **ńeng* or **nieng* > *yěng* ~*t'ěng* (vide supra); **nieng* < **kuning*, with medial diphthong as in No. 21.
24. Li *tik-tok*, IN **đikih*~**ə(n)tik*~**itik* "small."
25. Laqua *k'ău*, S. Li *hau*, Lati *ku-kui*, IN **aku* "I." Li *hau* < **k'au* (vide supra).
26. Li *nei*, IN **ini* "this."

In addition to the above, a number of significant correspondences exist within the Kadai stock itself, thus serving to tie the group together. The more important of these lexical agreements are listed below:

1. Laqua *nen*, Li *ńan* "moon." Possibly related to IN **bulan* "moon"; thus, **bulan* > **wulan* > **dan* (paralleling **watu* > *du* "8," **ulu* > *du* "head") > *ńan* (through assimilation to the final nasal). Cf. Li *nuk*, IN **bəluk* "monkey."
2. Laqua *mõn* "sky," *mõn dõng* "thunder," S. Kelao *mõn dũã* "rain," Lati *m-bo* "sky" (Lajonaquière *bũõn*).
3. Laqua *mõn dõng*, Li *pa dang om*, S. Kelao *zũ dõng* "thunder."
4. Laqua *hõng*, S. Kelao *ngã-ye* "water" (but *zõng ngũã* "drink"); N. Kelao *u*, Lati *i* "water"; cf. N. Kelao *du*, Lati *m-ti* "earth." S. Kelao retains the element *u* in the compounds *u ngẽ uã* "tears" (Lati *i m-tũu*), *i lã-pu* "milk" (Lati *i tũu*). A possible comparison exists with IN **wayar* "water."
5. Laqua *dãm*, Li *sam* "fruit"; S. Kelao *mã*, Lati *mi* "fruit."
6. Laqua *pěõ* < **plõ*, Li *da-tla* "fish"; S. Kelao *lũ*, Lati *li* "fish." Cf. Thai **pla* "fish."
7. Laqua *kăuk*, Li *hău* < **k'ău*, S. Kelao *pã-ku*, Lati *kui* "horn." Cf. Thai **k'ău* "horn."
8. Laqua *mã-mãi*, Li *mei*, S. Kelao *mu* (*vě*), Lati *mia* "female, mother." Cf. Thai **me* "mother."
9. Laqua *mon*, S. Li *mom*, N. Li *pãm-bãm* "mouth." Cf. Annamite *mõm* "muzzle, snout."
10. Laqua *mun*, Li *mũõm-pũõm* "beard" (cf. the treatment of nasal finals in the foregoing example). Cf. Thai **mũm* "beard" (only in the northern Thai speeches: Dioi *mum*, Tho *kang mum*, Nung *mom*).
11. Li *p'a mõũ*, N. Kelao *mau* "hand." Cf. Thai **mũ* "hand."
12. Laqua *nie*, S. Li *yeng*, N. Li *t'eng-tleãng* "finger" (Li **nieng*, vide supra). Cf. Dioi (Thai) *niang* "finger."
13. S. Kelao *plã*, Lati *pio* "blood"; cf. S. Kelao *ple u*, Lati *p'i* "die."
14. Laqua *đi*, S. Kelao *đũ tu* "urine."
15. Laqua *ńung*, Li *ńau*, S. Kelao *ńu*, N. Kelao *nyõ*, Lati *a-ńu* "salt." Cf. IN **uyah* "salt."
16. Laqua *yeu*, S. Kelao *hã*, N. Kelao *a*, Lati *ho* "meat, flesh." Li has the puzzling forms *mam-am*.
17. Laqua *mãi*, Li *mau-pau* "year."
18. N. and S. Kelao *vu*, Lati *vu* "go."

19. S. Li *mũõn*, N. Li *pũõn-pũõ*, S. Kelao *ɣm*, N. Kelao *mu* "come." Cf. Malay *mari*, Cham *mõrai-mai* "come," indicating the development IN medial *-r-* > Li *-n*, as in **wari* > *ven* "day."
20. Laqua *neng*, Li *děng-t'leãng* "red." Cf. Thai *đeng* "red."
21. Laqua *mi*, Li *mũ-mũũ* "thou." Cf. Thai **maũ* "thou," Annamite *mãi* "thou" (pejorative).

We have, finally, to consider the nature of the affinity of Kadai and Indonesian with the Thai group of languages, spoken over a wide area in southern China, Siam, French Indochina, Burma, and Assam. The Thai family includes Ahom, Khamti, and Shan, in the west; Siamese and Lao, in the south; White Tai and Black Tai, in the east; Nung and Tho, in the northeast; and Dioi, in the north. Despite the geographical extent of this group, the several languages are closely interrelated, and thus rather detailed reconstructions of the parent speech can be made. The earliest systematic investigation in this field was Maspero's study of the Thai tonal system.²⁴ This study was supplemented by several brief articles by G. Coedès and J. Burnay,²⁵ but no comprehensive review of the problem appeared until almost a quarter of a century later, when K. Wulff published his monumental work on Chinese and Thai.²⁶ The writer has further extended the analysis undertaken by Wulff and has filled in certain lacunae in that scholar's work,²⁷ so that our present knowledge of Thai phonology may be regarded as reasonably complete.²⁸

As regards the affiliations of Thai, the generally accepted view has been that Chinese and Thai constitute a single "Eastern" division of the Sino-Tibetan or Indo-Chinese stock, in opposition to the Tibeto-Burman or "Western" division. It is this view that has been developed by Maspero, Wulff, and, most recently, R. Shafer (largely on the basis of Wulff's work),²⁹ and that has given rise to attempts at direct Siamese-Tibetan comparisons, such as those of O. Schrader.³⁰ The writer must plead guilty on the same charge, though in modified form.³¹ Almost alone among students of the Thai languages, Coedès and Burnay have evinced a healthy skepticism of the dogma of a Chinese-Thai relationship. Conrady, a pioneer in Far Eastern linguistics, sought to connect Indo-Chinese, including Thai, with the Austric stock (Mon-Khmer, Khasi, Munda, et al.) established by Schmidt, in terms of a "common substratum" (*gemeinsame Unterschicht*).³² Wulff, apparently under the influence of Conrady, has attempted to demonstrate the existence of infixes in Siamese, which he compares with those characteristic of the Austric languages. Of Conrady's proposed Indo-Chinese-Austric grouping, Wulff makes the following assertion:

The similarity of the formations [infixes] in both languages [Siamese, Javanese] rests not on chance, since the relationship of Malayo-Polynesian with Indo-Chinese, which Conrady sought to show with insufficient means, is certain [sicher].

(*cit. supra*, p. 17, note 1)

Maspero, in a review of Wulff's work,³³ has convincingly dismantled the thesis of Thai infixion, and with it much of the Conrady-Wulff hypothesis. A similar hypothesis has been brought forward by J. Przyluski in the well-known account in *Les Langues du Monde*.³⁴ Przyluski suggests that Thai is transitional between Sino-Tibetan (Chinese and Tibeto-Burman) and Austric, yet offers no support for this view, other than a few comparisons of demonstrative pronouns in Siamese, Annamite, Khasi, and Palaung.

The writer's conclusions differ significantly from any of the above. The thesis presented here holds that Thai has a truly genetic linkage with Kadai and Indonesian rather than with Chinese and Tibeto-Burman (Sino-Tibetan), but has undergone extensive modification under Chinese influence. A similar view was propounded many years ago by Gustav Schlegel, in a highly unsystematic and unscientific fashion.³⁵ Schlegel was unaware of the existence of the Kadai group, but pointed out many analogies with Malay, and in general seems have been on the right track. The writer has developed the present hypothesis entirely independently of Schlegel, and largely as a by-product of his own synthesis of the Kadai stock.

The writer has long been aware of the fact that the lexical resemblances between Chinese and Thai are of a restricted range which fails to support the generally held view of a genetic relationship between the two languages. A careful analysis of the material assembled by Wulff, in addition to his own supplementary material, has made this fact still clearer. The primary lexical agreements lie in the numerals, especially from "3" to "10" and "100," a few words for parts of the body, certain animal names, and a number of terms for cultural objects and the like. Let us examine these loosely defined categories in some detail.

The Thai numerals from "3" to "10" and "100" are in fairly close agreement with the Chinese: Thai **sam*, Ch. **sâm* "3"; Thai and Ch. **si* "4"; Thai **ha*, Ch. **nguo* "5"; Thai **hrök*, Ch. **liuk* "6"; Thai **tšēt*, Ch. **ts'iet* "7"; Thai **pet*, Ch. **pwat* "8"; Thai *kău*, Ch. *kiəu* "9"; Thai **sīp*, Ch. **zīəp* "10"; Thai **pak*, Ch. **pāk* "100." Thai ordinarily agrees with Chinese as opposed to Tibeto-Burman, yet shows interesting variations in the direction of the latter, e.g. Thai **ha*, TB **l-nga* "5," with *h-* < *ng-* as in Thai **han*, Ch. **ngan*, TB **ngan* "goose"; Thai **hrök*, TB **d-rug* "6." The Chinese forms for "7," "9," and "10" illustrate the diphthongization characteristic of that language, the *-ău* = *-iəu* equation being particularly well attested: Thai **k'ău*, Ch. **k'ieu* "hill"; Thai **k'ău*, Ch. **kiəu* "pigeon"; Thai **kău*, Ch. **g'ieu* "old"; Thai **gău*, Ch. **g'ieu* "owl" (Tibeto-Burman has final *-u* in this series). On the basis of the above phonetic evidence, the borrowing of this numeral system must be assigned to an early period antedating the *r- > l-*, *-a > -uo* shifts in Chinese. The Thai forms are still irregular, however, with **pet* "8" rather than **puăt*, and **sīp* "10" rather than **zīp*, and cannot be reconciled on any scheme of genetic relationship (for the latter, cf. Thai **suk*, Ch. **ziuk* "ripe."

The regular Thai numerals for "1" and "2" are **hnüing* and **song*, respectively, which appear to be remnants of the original Thai numeral system. The corresponding

Chinese terms, significantly enough, appear only in the combinations **sīp* *ēt* "11" (Ch. **'iet* "1"), and **hi sīp* "20" (Ch. **'izi* < **'hi* "2"). In addition, a basic root **đzau* "20" is preserved in Lao and the western Thai languages, and **roi* "100" is found in Siamese, Lao, and some of the eastern Thai languages.³⁶ The evidence from the numeral system, therefore, cannot be held to speak in favor of the theory of a genetic Thai-Chinese relationship.

The common roots for parts of the body are as follows: Thai **xen* "arm," Ch. **kien* "shoulder"; Thai **veng* "leg," Ch. **yieng* "shin, shank"; Thai **fa*, Ch. **pa* "palm of the hand"; Thai **eu*, Ch. **'iäu* "waist, loins." In this group belong also Thai **hnong*, Ch. **nuong* "pus"; Thai **niau*, Ch. **nieu* "urine, urinate." Thai **nga* "tusk, ivory," Ch. **nga* "molar tooth," must be considered in relation to the loan-word for "elephant" (infra), the regular Thai roots for "tooth" being **k'riäu* and **văn*. Similarly, Thai **p'iu* "cuticle, epidermis" is connected with Ch. **piu* "skin, hide," but the regular Thai root, **hmăng*, "skin, hide," has no Chinese correspondence. Basic roots for parts of the body such as "eye," "nose," etc. are significantly lacking in this list.

The group of common roots for animal names is equally enlightening in its exclusiveness. Here we find Thai and Ch. **ma* "horse," and the associated roots: Thai **an*, Ch. **'än* "saddle"; Thai **k'i*, Ch. **g'yię > k'i* "ride (a horse)." These correspondences strongly indicate that the Thai peoples borrowed the horse-complex directly from the Chinese. This group also includes Thai **đzang*, Ch. **ziang* "elephant,"³⁷ Thai **nguă*, Ch. **ngiəu* "bull, ox, cow";³⁸ Thai **t'ö* (restricted distribution), Ch. **t'uo* "hare"; Thai **kăi*, Ch. **kiei* "fowl";³⁹ Thai **p'rüing*, Ch. **p'iwong* (equivalent to **p'üong* "bee";⁴⁰ and, from the above discussion, Thai **han*, Ch. **ngan* "goose (wild)";⁴¹ Thai **k'ău*, Ch. **kiəu* "pigeon"; Thai **gău*, Ch. **g'ieu* "owl"; perhaps also Thai **ngüăk* "crocodile, dragon, siren," Ch. **ngăk* "crocodile." Significantly lacking are roots for "dog," "fish," "bird," "snake," and the like.

The fourth and last of the groups mentioned above includes Thai **ngön*, Ch. **ngiën* "silver" (Tibetan *ngul*); Thai **gram* (restricted distribution), Ch. **lâm* < **glâm* "indigo" (Tibetan *rams*);⁴² Thai **tšię*, Ch. **t'šie* "paper"; Thai **hmük*, Ch. **mök* "ink"; Thai **băi*, Ch. *b'ăi* "cards (for playing)." Here also may be placed Thai **gēm*, Ch. **iäm* < **giäm* "salt," and Thai **guăn*, Ch. *xiuən* "smoke"; it should be noted that the regular Thai root for "salt" is **klüa* rather than **gēm*. It is apparent that no great importance can be attached to this group of roots.

The above lists of the principal Thai-Chinese correspondences have been carefully drawn up, and should give an accurate picture of this aspect of the problem. There are, to be sure, additional correspondences, some of which have been cited above, but these hardly affect the picture as a whole. Below, by way of contrast, are listed the basic Thai-Indonesian correspondences on which our conclusions have been built. That these are truly basic correspondences as compared with those between Thai and Chinese is sufficiently clear even after a cursory inspection of the material.

1. Thai *wǎn "day," *ta wǎn* "sun" ("eye of the day"); IN *wari' "day, sun"; Laqua *vuon*, Li *ven* "day, sun."
2. Thai *blüǎn "moon"; IN *bulan; Laqua *nen*, Li *ñan*.
3. Thai *đau "star"; IN *'a(n)daw~*ha(ŋ)g'aw "sun"; Li *tšēm drau* "star."
4. Thai *fōn "rain" ("fine rain," as opposed to *hra "heavy rain, shower"); IN *'ə(m)bun "atmospheric precipitate" (Tagalog *'ambon* "fine rain"); Li (*pa*) *pǔn* "rain."
5. Thai *nǎm "water"; IN *danum; Li *nom~nam*.
6. Thai *vai "fire"; IN *'apuy; Laqua *pǎi*, Li *pei~fei*.
7. Thai *na "rice-field"; IN *bəna "low-lying land, flooded land"; Laqua *ne*, Li *na~ta* "rice-field."
8. Thai *nōk "bird"; IN *manuk "fowl, bird"; Laqua *nuk* "bird."
9. Thai *rǎng "nest"; IN *'t'alang (Toba-Batak, Javanese, Malay, Dayak *sarang*).
10. Thai *rüǎ "boat"; IN *pałahu (Malay *pərahu* "prau"); Li *da*.
11. Thai *tu "door" (often in composition with *pak "mouth, opening"); IN *pintu'; Laqua *tu*.
12. Thai *hruǎ "head"; IN *'ulu'~*hulu'; Laqua *ru*, Li *du~o*.
13. Thai *ta "eye"; IN *mata'; Laqua *te*, Li *sa*.
14. Thai *đǎng "nose"; IN *'ug' ung~*ig'ung (Malay *hidong*, Cham *idung*); Laqua *tang*.
15. Thai *vǎn "tooth"; IN *'ipən; Li (*hai*) *p'en*.
16. Thai *pot "lungs"; IN *put'uh "heart" (Tagalog *puso*, Toba-Batak *pusu* "heart," Javanese *pusuh* "lungs").
17. Thai *gǐng or *grǐng "body"; IN *daging "body, flesh."
18. Thai *đuk "bone"; IN *ta(n)duk "horn"; Li *drü~füök* "bone."
19. Thai *lüǎt "blood"; IN *darah; Li *dat~tlat*.
20. Thai *mǎn "fat, oil"; IN *miñak "oil"~*məñak "fat"; Laqua *nen* "fat," Lati *m-ngǎ* "fat, oil."
21. Thai *pu, "grandfather"; IN *'ə(m)pu "grandfather, grandchild" (reciprocal term).
22. Thai *đǎm "black"; IN *'i(n)təm "black," *dəđəm~*tiđəm "dark"; Laqua *dām*, Li *dōm* "black."
23. Thai *sōm "sour"; IN *'atəm.
24. Thai *bot "blind"; IN *buta'.
25. Thai *tai "die"; IN *matay~*patay; Laqua *tie*.
26. Thai *đíp "raw, green, alive" (Ahom has the doublet forms *dip* "living, to be alive," *lip* "unripe"); IN *huđip "live"; Li *diep~fiep* "raw."
27. Thai *kīn "eat"; IN *ka'~*ka'ən~*ka'i; Laqua *küön*, Li *k'an*.
28. Thai *tōt "flatus ventris"; IN *'ə(n)tut~*'u(n)tut~*kə(n)tut; Li *t'uo*.
29. Thai *ku "I" (pejorative); IN *'aku'; Laqua *k'āu*, Li *hau*.
30. Thai *ni "this"; IN *'ini'; Li *nei*.

In the above set of correspondences, the most obtrusive single feature is the development of monosyllabic roots in Thai from the disyllabic roots typical of

Indonesian. It must not be assumed that all the roots involved were originally disyllabic, since in some instances monosyllabic roots can be postulated for proto-IN itself, e.g. *tə m~*dəm "black, dark" (No. 22), *tay "die" (No. 25), *ka' "eat" (No. 27), *tut "flatus ventris" (No. 28), and cf. *danum "water" with *inum "drink," apparently from a root *num.⁴³ The real criterion here lies in comparison with Thai and Kadai, as well as with the more remotely related Mon-Khmer languages, e.g. IN *mata', Thai *ta < *m-ta (vide infra), Mon-Khmer *mat (Annamite *măt*) "eye," where *mata is the only feasible reconstruction for the parent stock. The material assembled in this paper lends itself to the view that the majority of Thai-Kadai-Indonesian roots were disyllabic rather than monosyllabic, and that Thai and Kadai have undergone extensive phonetic reduction. The writer has elsewhere called attention to a parallel reduction in the aberrant Cham dialect spoken on the island of Hainan, and to similar phenomena in the standard Cham speech of the mainland, e.g. Cham *bulan-lan* "moon," *apuěi-puěi* "fire" (through aphaeresis).⁴⁴ This aspect of Thai-Kadai phonology, therefore, calls for no especial demonstration.

The varying types of phonetic development shown by the Thai roots under consideration are in part explicable in terms of stress variations. Kadai offers an excellent instance of this in the bifurcate development shown by S. Li *du*, N. Li *au* "8," from IN *walu', where we must reconstruct as follows: *walú' > *wlu > *du*, *wálu' > *wau > *au*. Similarly, for Thai we must postulate shifts of the type: *danum > *nǎm "water," *pintú' > *tu "door," *matá' > *ta "eye," but *pút'uh *pot, "lungs," *məñak > *mǎn "fat, oil," *búta' > *bot "blind," etc. The stress seems normally to have been on the last syllable, but certainly not always so.

The finals of this group of roots present fewer problems than the initials. Among the vocalic finals, we have Thai -a = IN -a (Nos. 7 and 13); Thai -u = IN -u (Nos. 11, 21, and 29); Thai -i = IN -i (No. 30); Thai -au = IN -aw (No. 3); Thai -ai = IN -ay (No. 25). Thai *vǎi, IN *'apuy "fire" suggest a simple -ǎi = -uy equation, perhaps via an intermediate form -uei (cf. Cham *apuěi*), yet Thai has both -ui and -uei series, the latter of some importance. Two independent bits of evidence indicate that Thai *vǎi was developed from a root *vi, probably via an intermediate form *viei, thus paralleling the development shown by Thai *kǎi, Ch. *kiei* "fowl" (see note No. 39). Firstly, Dioi and a group of related dialects⁴⁵ have the form *fi* rather than the regular *fǎi (contrast Dioi *kǎi* "fowl"); secondly, Li has *pei~fei*, from *pi~fi (cf. the discussion above), rather than *pai~fai (contrast Li *k'ai*, Thai *kǎi "fowl"; Li *lai*, Thai *klǎi "far"). The lone possible analogy here is furnished by Thai *hǎi, Li *ngei*, IN *tangit' "weep," with Thai *h-* < *ng-* as discussed above.

Nos. 10 and 12 must be considered in relation to each other. These two comparisons are, admittedly, uncertain ones, but the parallelism between them, extending even into Kadai (Li), has led to their inclusion in our list of correspondences:

	Indonesian	Thai	Kadai (Li)
boat	*pałahu	*rüǎ	<i>da</i>
head	*hulu *ulu	*hruǎ	<i>du</i>

The aspiration in these roots seems to have played a role in the $l > r$ shift. For the final of Thai **riü* "boat," a possible parallel exists in IN **'at'u* "dog," Thai **siü* "tiger."

The consonantal finals are regular for the most part. Final *-r*, which is lacking in Thai, is replaced by *-n* (**wari* > **wän* "sun, day"), as in loan-words from Khmer or Pali, e.g. Siamese *k'änun* < Khmer *k'nur* "jack-fruit." In this connection, cf. Siamese and Lao *pun*, IN **'apur~*kapur* "lime" (probably a loanword in these southern Thai speeches). Final *-h*, also foreign to the phonemic system of Thai, is represented by *-t*, as in Kadai (**darah* > **lüät* "blood"). Final stops and nasals are preserved in Thai, with the exception of *-t* > *-t* (No. 16). The most likely instance of interchange of nasal finals is furnished by IN **rumah*, Li *düön*, Thai **rüän* "house," perhaps via the forms **ruam* > **ruan*.

Short medial vowels are predominant in the Thai roots under consideration, and must be regarded as characteristic of these basic roots as a group. IN medial *-a-* is represented by *-ä-* (Nos. 1, 2, and 9); cf. also IN **balakang*, Thai **hläng* "back" (n.). Thai ordinarily has *-ä-* for IN medial *-ə-* (Nos. 15, 20, and 22), yet has *-ö-* in one instance (No. 23); for the latter, cf. In **tirəm*, Siamese *hoi iröm* "oyster," undoubtedly a loan-word in Siamese (in composition with the Thai root **hoi* "shellfish"). IN medial *-u-* is represented by *-ä-* (Nos. 5 and 14) and *-ö-* (Nos. 4, 8, and 28), as well as by *-u-* (No. 18).⁴⁶ After the labial stop initials *p-* and *b-*, Thai has *-o-* rather than *-ö-* for IN medial *-u-* (Nos. 16 and 24). An additional equation is furnished by Nos. 17 and 26, yielding IN medial *-i-* = Thai *-i-*. The medial vowel of Thai **kin* "eat" (No. 27) cannot be satisfactorily explained on the basis of our present knowledge, though the contrast with the *-a-* vocalism of Li is matched by Thai **dän*, Li *däb-fan* "earth," perhaps related to IN **tanah~*tanəh* "earth, land."

The treatment of initial consonants in Thai presents a number of interesting features. The first of these to come to the writer's attention is the peculiar aspiration of the Thai roots for "eye" (No. 13) and "die" (No. 25) in the Tho-Nung group of dialects.⁴⁷

	IN	Laqua	Siamese	Tho	Nung
eye	<i>*mata'</i>	<i>te</i>	<i>ta</i>	<i>t'a</i>	<i>t'a-ha</i>
die	<i>*matay</i>	<i>tie</i>	<i>tai</i>	<i>t'ai</i>	<i>t'ai-hai</i>

With one partial exception, these are the only roots so treated in Tho and Nung,⁴⁸ hence this phenomenon cannot be explained in terms of Thai itself. On the basis of Indonesian, however, we can postulate a development of the type: **mata'* > **m-ta* > **m-t'a* > *t'a-ha*; **matay* > **m-tay* > **m-t'ay* > *t'ai-hai*, with secondary aspiration after the nasal prefix.⁴⁹ The Li form *sa* "eye" can be explained along the same lines. The remarkable parallelism shown in the treatment of these two roots constitutes perhaps our most significant single piece of evidence for a Thai-Indonesian linkage.

The reconstruction of initial *bl-* for Thai, as in the root **blüän*, represents a new advance in Thai phonology. As ordinarily reconstructed, Thai has initial *bl-*, *pl-*,

p'l, and *br-*, *pr-*, *p'r*; but neither *bl-* nor *br-*. The typical Thai initial *ä-* series shows the following equation: Siamese and Lao *ä-* = Ahom, White Tai, Tho, Nung, Dioi *d-* = Shan and Black Tai *l-* = Khamti *n-* (vide supra). Three roots, however, diverge from this equation in the direction of the initial *ö-* series, and in one of these roots *bl-* is actually preserved in the archaic Ahom language, hence we can safely reconstruct all three roots with initial *bl-*:

- Siamese and Lao *đok* "flower," but Ahom *blok*, Tho *biok*, Nung *beok* Black and White Tai *bö* < *bok*, Shan *mok* < *bok*.
- Siamese and Lao *đüän*, Ahom *dön*, Shan *lön* "moon," but Tho and Nung *büön* "month," Black Tai *büän*, White Tai *bön* "moon."
- Siamese *đi*, Ahom, Tho, Nung *di*, Shan *li* "bile," but Lao and White Tai *bi*, Dioi *di* "animal bile" ~ *bi* "human bile."

Reconstructions: **blok* "flower," **blüän* "moon," **bli* "bile."⁵⁰ Note that initial *bl-*, which is of labial type, is best preserved before the labial vowel *o*, and worst preserved before the front vowel *i*; also that Black and White Tai preserve *b-* in all three roots. Initial *br-* cannot be reconstructed for Thai, and may be represented simply by *ö-*; cf. Thai *đöm* "ripen fruits," IN **pələm* "ripen fruits artificially" (Toba-Batak *porom*, Malay *pəram*), perhaps via a form **pəram*.⁵¹

Some interesting equations appear among the stop consonants, especially in the labial series. Thai ordinarily has *t < t* (Nos. 11, 13, 25, and 28), and *đ < d* (Nos. 3, 18, and 26), while the correspondence shown in Thai **đäng* IN **'ug'ung~*ig'ung* "nose" (No. 14) must be considered in connection with the IN doublet forms **'a(n) daw~*ha(n)g'aw* "sun" (No. 3). Thai **đäm* "black" must therefore be equated directly with IN **dədəm~*tiqəm* "dark" rather than with **'i(n)təm* "black" (No. 22). The palatal stop (*t'*) of IN is represented in Thai by *s-* as an initial (No. 23), but by *-t* as a final (No. 16).⁵² The velar correspondences are regular: Thai *k* = IN *k* (Nos. 27 and 29); Thai *g-* = IN *g* (No. 17). In the labial series, however, we find two types of correspondences, viz. Thai *ö-* = IN initial *b-* (Nos. 2 and 24), Thai *p* = IN initial *p-* (No. 16), but Thai *f* = IN medial *-b-* (No. 4), and Thai *v* = IN medial *-p-* (Nos. 6 and 15). Thai **pu*, IN **'ə(m)pu* "grandfather" (No. 21) would seem to run counter to this scheme, but in this instance IN has the doublet roots **tumpu'* "forefather, sir" and **pu'* "sir," the latter evidently the basic etymon from which Thai **pu* was derived. This explanation of Thai *f* and *v* as secondary phonemes derived from medial labial stops clears up one of the most abstruse aspects of Thai phonology. Li (southern dialect) and the Kadai languages in general have preserved the labial stop in these roots:

	Indonesian	Li	Thai
rain	<i>*'ə(m)bun</i>	<i>pün</i>	<i>*fön</i>
fire	<i>*'apuy</i>	<i>pei</i>	<i>*vái</i>
tooth	<i>*'ipən</i>	<i>p'en</i>	<i>*văn</i>

It is a striking fact that, in the above set of comparisons, initial *b̄* and *d̄* appear to the exclusion of the sonant stops *b* and *d*. An examination of the stock of Thai roots assembled by the writer shows an overwhelming predominance of basic roots with initial *b̄* and *d̄*, some of the most important of which are listed below:

Initial *b̄*:- **b̄on* "arum," **b̄li* "bile," **b̄au* "bridegroom," **b̄ö* "butterfly," **b̄ëk* "carry (on shoulders)," **b̄öt* "cloud" (v.), **b̄iä* "cowrie shell," **b̄äu* "crucible," **b̄o* "pit, well, mine," **b̄lok* "flower," **b̄in* "fly" (v.), **b̄ët* "fish-hook," **b̄aiü* "leaf," **b̄äu* "light (not heavy)," **b̄uä* "lotus, water-lily," **b̄a* "mad," **b̄a* "shoulder," **b̄ok* "speak," **b̄ok* "tube," **b̄uei* "cocoanut spoon," **b̄an* "village," **b̄at* "wound," **b̄ong* "hole," **b̄ot* "blind," **b̄lüän* "moon."

Initial *d̄*:- **d̄üät*, "boil" (v.), **d̄ëk* "child," **d̄in* "earth," **d̄äp* "extinguish," **d̄üä* "fig," **d̄öng* "forest," **d̄i* "good," **d̄am* "handle" (n.), **d̄on* "high, hill," **d̄ong* "kind" (n.), **d̄äi* "ladder," **d̄u* 'l'ook," **d̄oi* "mountain," **d̄ong* "parents of in-laws," **d̄eng* "red," **d̄äng* "shield" (n.), **d̄öm* "smell" (v.), **d̄ut* "suck," **d̄et* "sun, sunshine," **d̄ap* "sword," **d̄äi* "thread," **d̄äng* "pillar," **d̄uäng* "fish-trap," **d̄öng* "winnowing instrument," **d̄üän* "worms," **d̄äi* "obtain, be able."

In contrast to this impressive array, the sets of roots with initial *b* and *d* seem restricted indeed. With initial *b*- we find **bë* "goat" (but **bë* in Lao and White Tai), **be* "raft," **bu* "mountain" (but Siamese has *b'u*, as in loan-words) **bän* "seed, kind," **brük* "tomorrow," **bra* "large knife," **bi* "fat, big," **bi* "elder sibling" (perhaps etymologically connected with the foregoing), **bo* "father," while with initial *d*- we find **dong* "belly," **drai* "sand, gravel," **dak* "leech," **diäng* "true, correct," **dang* "road," and **do* "weave." The contrast is so marked that one is tempted to conclude that roots with *b̄*- and *d̄*- belong to the older Thai-Kadai-Indonesian stratum, and roots with *b*- and *d*- to one or more younger superimposed strata, including Chinese loan-words such as **bäi* < Ch. **b'ai* "cards" (vide supra). The existence of the roots **bi* "elder sibling" and **bo* "father," with initial *b*-, does not constitute a conclusive argument against this view, inasmuch as the Thai kinship nomenclature as a whole appears to have no intimate connection with the Indonesian. The presence of initial *b̄*- or *d̄*- in a given root may even be used as supporting evidence for a proposed Indonesian comparison, e.g. Thai **b̄a*, IN **bara* "shoulder" (**bara* > **baa* > **d̄ä*, contrasting with the development shown in **wari* > **wän* "day, sun"); Thai **d̄ëk* "child," IN **äkih* ~ **ä(n)fik* ~ **it* "small" Li *tik-tok* "small."

Still another problem is presented by Thai **lüät* < IN **darah* "blood" (No. 19), apparently via a form **dlat* (*d̄l*- is not retained in Thai). A possible analogy here is furnished by the Thai root for "tongue," which the Li dialects treat in a parallel manner:

	Indonesian	S. Li	N. Li	Shaved Head	Thai
blood	* <i>darah</i>	<i>dat</i>	<i>ilat</i>	<i>slat</i>	* <i>lüät</i>
tongue	* <i>dilah</i>	<i>dien</i>	<i>tlien</i>	<i>slien</i>	* <i>l̄in</i>

Yet Thai has **pla* "fish," corresponding to S. Li *da*, N. Li *tla*, Shaved Head Li *sla*, with initials as in the above series, hence no certain conclusions can be drawn.

The above discussion does not exhaust the possibilities of the complex Thai-Indonesian field, and it is possible that a more searching analysis of Indonesian material will yield further comparisons, yet it is believed that most of the important lexical correspondences have been uncovered. The writer has eliminated from the discussion certain obvious loan-words in Siamese, e.g. *muäng* "mango" < IN **manga*. Attention should be called, however, to the noteworthy agreement between Thai **nga* and IN **lōga* "sesame." The Thai root **nga* is widely extended in that stock (Siamese, Lao, Shan, Ahom, White Tai, Nung), hence cannot be regarded as a recent loan from Indonesian.

It is apparent that our judgment must be based almost entirely on lexical rather than morphological analogies, inasmuch as the rather elaborate affixation system of Indonesian is not represented in Thai. We must remember, however, that the reduction of disyllabic or trisyllabic roots to monosyllabic forms, as in Thai, necessarily involves the loss or incorporation of affixed elements. Thus, if a root **tay* "die" be reconstructed for proto-IN on the basis of the doublet roots **matay* ~ **patay*, and the elements *ma*- and *pa*- be regarded as prefixes, the purely phonetic development **matay* > **m-tay* > **tai*, paralleling **mata* > **m-ta* > **ta* "eye" (vide supra), necessarily entails the loss of this prefixed element. In other instances, the affix may have been incorporated in the derived form; cf. IN **miñak* "oil" ~ **məñak* "fat," Lati *m-ngä*, Thai **män* "fat, oil" (No. 20), and IN **ka* ~ **ka'an* ~ **ka'i*, Thai **k̄in* "eat" (No. 27).

Of some interest in this connection are the traces of prefixes preserved in Siamese. Siamese prefix *k̄ä*-, by far the most prominent of the lot, is found with a few words for parts of the body (*k̄ä-duk*, *k̄ä-äiau* "bone," *k̄ä-äo* "male genitals," *k̄ä-bö-bö* "stomach"), and with some animal names (*k̄ä-tai* "hare," *k̄ä-tšok* "sparrow," *k̄ä-te* "tupaya"), but is characteristically associated with curious derived forms, e.g. *bong* "stick" ~ *k̄ä-bong* "cudgel," *dong* "oscillating" ~ *k̄ä-dong* "distorted, twisted," *išün* "push" ~ *k̄ä-tšün* "touch lightly," *tün* "mole" ~ *k̄ä-tün* "kind of large rat." No great importance can be attached to this prefix, yet one possible IN correspondence has been uncovered, viz. Siamese *k̄ä-duk* "bone," IN **ta(n)duk* "horn"; cf. the *k̄ä* ~ *tä*- interchange in *k̄ä-böng* ~ *tä-böng* "mussel."

The problem of the development of tones in Thai cannot satisfactorily be handled until good material on Kadai tones is made available. As reconstructed, the Thai tonal system includes two series of tones, one connected with roots having surd initials, the other connected with roots having sonant initials (a similar system is found in Annamite and Chinese). Each of these series, furthermore, includes three tonemes, the original values of which are uncertain. It is probably significant that almost all the Thai roots having IN correspondences are associated with a single toneme, represented in Siamese by the mid-level tone (with sonant and unaspirated surd stop initials) or the high-rising tone (with other surd initials). The only exceptional roots here are **nām* "water," **ni* "this," **pu* "grandfather," and **söm* "sour."

Aside from the rudimentary prefixes found in Siamese, the Thai stock closely conforms to the classical type of monosyllabic, isolating languages. Maspero has successfully refuted Wulff's thesis of infixation in Siamese (see note No. 33), hence no comparison with Indonesian infixes can be made. As pointed out above, Thai agrees with Indonesian and Kadai, and sharply diverges from Chinese, in placing modifying elements after rather than before modified elements. This significant agreement in syntax contributes no little support to our Thai-Kadai-Indonesian hypothesis. Attention must also be called to the traces of a distinction between inclusive and exclusive forms for the 1st pers. pl. pronoun in Thai, as represented by the exclusive form **tu* "we" in Khamti, Lao, and archaic Siamese.⁵³ This distinction is paralleled in Indonesian in the forms **kita* "we" (inclusive), **kami* "we" (exclusive).

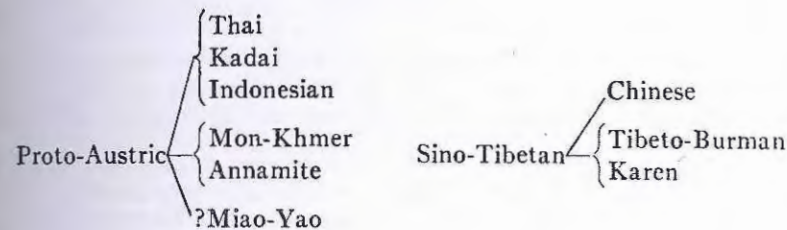
The Thai-Kadai-Indonesian hypothesis, as outlined in the present paper, bears far-reaching implications for the history of the peoples of southeastern Asia and Oceania. If we accept the view that these three linguistic stocks are genetically related, we must place the center of their dispersion somewhere in the South China area, the present home of the Kadai tribes as well as the early home of the Thai peoples.⁵⁴ On the basis of this distribution we can conclude, with a high degree of probability, that the proto-IN-speaking peoples migrated from the South China coast, perhaps via the island of Hainan, to Formosa on the north, the Philippines on the east, and Annam, Borneo, Java, Sumatra, and the Malay Peninsula on the south. The Cham and Malay linguistic areas, in southern Annam and the Malay Peninsula, respectively, surely are to be regarded as Indonesian enclaves on the Asiatic mainland, not as possible points of departure for the Indonesian migrations.

In still broader perspective, Thai-Kadai-Indonesian appears in its true light as the northern division of Schmidt's Austric superstock.⁵⁵ The archaic cleavage between Thai-Kadai-Indonesian on the one hand, and Mon-Khmer on the other, must have come about in the South China-Indochina area, with subsequent localizations of these two divisions in the north and south, respectively. The anomalous position of Malay at the present day, south of the main body of Mon-Khmer speeches, can be explained only on the basis of a seaborne migration from the islands of Indonesia. Thai and Kadai in the north, Cham in the east, and Malay in the south, show a peripheral distribution with respect to the Mon-Khmer languages. As suggested above, Cham and Malay fall into their place in this picture as intrusive Indonesian languages overlying a Mon-Khmer substratum.

Annamite, too, takes its proper place as the northeasternmost member of the Mon-Khmer stock. Annamite stands in relation to Mon-Khmer somewhat as Thai stands in relation to Indonesian. Like Thai, it has suffered much phonetic attrition, has developed a complete tonal system, and has lost its morphological apparatus of affixes. These changes must be attributed to Thai influence, in view of the not inconsiderable body of Thai roots in the language. The overwhelming majority of basic roots, however, are of Mon-Khmer rather than Thai origin. On the analogy of our analysis of Thai, there can be no question as to the genetic nature of the Mon-Khmer-Annamite relationship.⁵⁶

With Thai, Kadai, and Annamite in their proper settings, the linguistic picture of southeastern Asia assumes definitive shape for the first time. There remains only one linguistic problem of major importance, viz. the affinities of the Miao-Yao stocks of languages, spoken throughout much of central and southern China and northern Siam and Indochina. Our material on these languages is scanty and generally poor, and almost no comparative work has been done on the group.⁵⁷ Miao and Yao are well differentiated divisions of a single stock, and each appears in a number of dialectical varieties, with Miao showing the greater variation. Pateng, spoken in the Rivière Claire section of Tonkin, is a subsidiary member of the stock.⁵⁸ Miao-Yao resembles Thai-Kadai and Annamite in its monosyllabism and tonality, and further investigation may reveal a relationship with Proto-Austric or with one of its later divisions. A final judgment here must await the reconstruction of Mon-Khmer and the assembling of more material on the Kadai languages.

The proposed classification of Southeast Asiatic languages is as follows



On the ethnological side, the Kadai group offers the most promise for future investigation. At present, our material on this group is confined to the scraps of information gathered by Bonifacy and Lunet de Lajonquière, together with Stübel's fairly extensive study of the Li tribes (see sources cited above). Stübel points out a number of Indonesian and Micronesian parallels, e.g. in weaving (cit. supra, p. 293) and basketry (id., p. 294), and expresses his astonishment at the general cultural similarity to the tribes of Formosa (id., p. 296). It may be that the Li retain certain Indonesian culture traits that have been discarded by the Sinicized Kadai tribes of the mainland. It is fairly evident, however, that the general ethnological picture of Thai-Kadai-Indonesian has been destroyed beyond repair, and that our linguistic thesis must stand or fall on its own merits.⁵⁹

Notes

- 1 For some of the earlier speculation, see W. Churchill, *The Polynesian Wanderings* (Washington, 1911), largely devoted to a criticism of MacDonald's Semitic theory.
- 2 An outstanding example is furnished by Handy's derivation of the Polynesian Tanga-loa cult from southern China (*Polynesian Religion*, Bulletin of the Bernice P. Bishop Museum, no. 34, 1927, pp. 312-330).

- 3 Other variants are: B'lai, K'lai, S'lai, S'ai, Hiai, Lai, Loi, Le, Dli, B'li. The Chinese character employed for this name is pronounced *li* in North China dialects, *lai* in Cantonese, and *loi* in Hoklo.
- 4 R. Swinhoe, *The Aborigines of Hainan* (Journal of the North China Branch of the Royal Asiatic Society, Vol. 7, 1871), pp. 25–40; J. Calder, *Notes on Hainan and its Aborigines* (China Review, Vol. 11, 1882), pp. 42–50; E. H. Parker, *The Li Aborigines of K'uing Shan* (China Review, Vol. 19, 1890), pp. 383–387; C. C. Jeremaisse, *Loi Aborigines of Hainan and their Speech* (China Review, Vol. 20, 1892), pp. 296–305; F. M. Savina, *Lexique d'ay-français, accompagné d'un petit lexique français-d'ay et d'un tableau des différences dialectales* (Bulletin de l'École Française d'Extrême-Orient, t. 31, 1931), pp. 103–199; H. Stübel, *Die Li-Stämme der Insel Hainan; Ein Beitrag zur Volkskunde Südchinas, unter Mitwirkung von P. Meriggi* (Berlin, 1937).
- 5 A. Bonifacy, *Étude sur les langues parlées par les populations de la haute Rivière Claire* (Bulletin de l'École Française d'Extrême-Orient, t. 5, 1905), pp. 306–323; *Étude sur les coutumes et la langue des La-ti* (*Ibid.*, t. 6, 1906), pp. 271–278; *Étude sur les coutumes et la langue des Lolo et des La-qua du Haut Tonkin* (*Ibid.*, t. 8, 1908), pp. 531–558.
- 6 E. Lunet de Lajonquière, *Ethnographie du Tonkin Septentrional* (Paris, 1906). Word-lists on pp. 357 (Kelao), 340 (Pen-ti-Lolo = Laqua), and 359 (Lati).
- 7 *Among the Tribes in South-west China* (London, 1911).
- 8 E. H. Parker, *Siamese Words in Hainan and China* (China Review, Vol. 18, 1889), p. 198.
- 9 W. Strzoda, *Die Lie auf Hainan and ihre Beziehungen zum asiatischen Kontinent* (Zeitschrift für Ethnologie, Bd. 43, 1911), pp. 193–236. Strzoda concludes, however, that “Die meisten Li-Numeralia . . . sint Rätsel und lassen sich nirgends unterbringen” (pp. 219–220).
- 10 *The Languages of China before the Chinese* (London, 1887). See especially his conclusions on p. 73: “In the numerals, for instance . . . similarities exist with those of some tribes of Formosa. But they are remote, and do not come from a direct relationship; they are apparently survivals of a former state of things, previous to their respective migrations, when their various ancestors had relations between themselves on the continent.” An English traveller in Hainan, B. C. Henry, had somewhat earlier sought to connect the Li with the Malay on onomastic grounds (B'lai or B'lay = Malay), in his article, *The Close of a Journey through Hainan* (China Review, Vol. 12, 1883), pp. 109–124, esp. p. 115.
- 11 Review of Savina, *Monographie de Hainan* (1929), in Bulletin de l'École Française d'Extrême-Orient, t. 30, 1930 (pp. 436–444). Of his own Cham and Malay comparisons, however, Mus remarks: “Ces rapprochements sporadiques restent jusqu'ici de simple curiosité.”
- 12 Review of Savina, *Lexique d'ay-français* (1931), in Bulletin de la Société de Linguistique de Paris, t. 34, pt. 3, 1933, pp. 228–236.
- 13 Cit. supra, 1908, p. 557. Bonifacy adds the following remark: “Là paraissent s'arrêter les ressemblances entre les deux langues [Laqua and Cham], à supposer même que celles que nous signalons ne soient pas purement fortuites.”
- 14 *Die Sprachfamilien und Sprachkreise der Erde* (Heidelberg, 1914). Schmidt places Laqua in an artificial “Eastern Thai” group.
- 15 *Notes ethnographiques sur les tribus du Kuey-tcheou* (Anthropos, Bd. 6, 1911), pp. 318–344; citation from p. 318.
- 16 None of our records of Kadai languages is satisfactory as regards transcription. Savina employs the cumbersome and inadequate *qu'ôc-ngü* system of Anamite, while Bonifacy makes use of a modified version of the same system. In the present study open vowels are written as short vowels (*ĕ, ô*), and the “bearded o” (*o*) and “bearded u” (*u*) as front rounded vowels (*ö, ü*).

- 17 Lati has retained the final stop only in *a-liep* “claw” (Thai **lĕp* “fingernail”) and the Annamite loan-word *but* “pen.”
- 18 Thai *đ-* and *ḥ-* are best reconstructed as lenis surd stop initials, since they belong in the high tonal series along with the regular surd stops (*f-* and *t'-*, *p-* and *p'-*). Li agrees with the majority of Thai languages proper in having *b-* for Thai *ḥ-*, as in Li *bōü*, Thai **ḥaiü* “leaf.”
- 19 Represented in Savina's transcription by the Annamite tone *nāng*.
- 20 For the general argument here, see the Thai discussion below.
- 21 *Vergleichende Lautlehre des austronesischen Wortschatzes; Bd. III; Austronesisches Wörterverzeichnis* (Beihefte zur Zeitschrift für Eingeborenen Sprachen, Bd. 19, 1930). Forms as cited by Dempwolff, with the exception of *y* for *j*, *w* for *v*, and *r* for *ɣ*. “Facultative” nasal infixes are enclosed in parentheses.
- 22 The IN system is decimal rather than quinary, yet the Formosa languages show irregular features suggestive of the latter, e.g., Sek-hwan has 5+1 = 6, 5+2 = 7, etc., and Tsui-hwan and Bu-hwan have 3×2 = 6, 4×2 = 8; vide T. L. Bullock, *Formosa Dialects and their connection with the Malay* (China Review, Vol. 3, 1875, pp. 38–46).
- 23 Cited in R. Brandstetter, *Malaio-polynesische Forschungen; IV: Mata-Hari, oder Wanderungen eines indonesischen Sprachforschers durch die drei Reiche der Natur* (Luzern, 1908), p. 6.
- 24 *Contribution à l'étude du système phonétique des langues thai* (Bull. de l'École Française d'Extrême-Orient, t. 11, 1911), pp. 153–169.
- 25 The most important of these are: *Note sur les tons et les initials du vieux siamois à l'époque de Sukhodaya* (Journal of the Siam Society, Vol. 21, 1927), pp. 103–117; [*v*] et [*χ*] et leur origine (*Ibid.*), pp. 119–126.
- 26 *Chinesisch und Tai: Sprachvergleichende Untersuchungen* (Det Kgl. Danske Videnskabernes Selskab., Historisk-filologiske Meddelelser, Vol. 20, pt. 3, 1934).
- 27 Notably in Ahom, where Wulff failed to make use of the most important lexicon on that language (Borua, *Ahom-Assamese-English Dictionary*, Calcutta, 1920); Tho, completely neglected by Wulff but for which we have two utilizable sources, viz. E. Diguët, *Étude de la langue Thô* (Paris, 1910), and Fr. Th. Gordaliza, *Estudio sobre el dialecto Thô de la región de Lang-sôn* (Anthropos, Bd. 3, 1908), pp. 512–532; White Tai, for which an excellent source has recently appeared, viz. G. Minot, *Dictionnaire t'ay blanc-français* (Bull. de l'École Française d'Extrême-Orient, t. 40, fasc. 1, 1940, pp. 1–237.)
- 28 The writer has in preparation a comparative dictionary of the Thai languages, based in large part on materials collected by the Sino-Tibetan Philology Project of the Works Progress Administration, sponsored by Prof. A. L. Kroeber of the University of California during the years 1935–40. The writer here wishes to record his indebtedness to Prof. Kroeber for having made possible this investigation of Far Eastern languages, of which the present paper may be regarded as a by-product.
- 29 R. Shafer, *The Vocalism of Sino-Tibetan* (Journal of the American Oriental Society, Vol. 60, 1940), pp. 302–337; (Vol. 61, 1941), pp. 18–31.
- 30 *Transcription and Explanation of the Siamese Alphabet* (Asia Major, Bd. 1, 1924), pp. 45–66; *Siamese Mute H* (*Ibid.*, Bd. 3, 1926), pp. 33–48.
- 31 Vide the occasional references to Thai problems in his articles, *Semantic Differentiation in Indo-Chinese* (Harvard Journal of Asiatic Studies, Vol. 4, 1939), pp. 213–229, and *Studies in Indo-Chinese Phonology* (*Ibid.*, Vol. 5, 1940), pp. 101–127.
- 32 A. Conrady, *Eine merkwürdige Beziehung zwischen den austrischen und den indochinesischen Sprachen* (Kuhn Festschrift, München, 1916), pp. 475–504; *Neue austrisch-indochinesische Parallel* (Asia Major, Introductory Volume, 1922), pp. 23–66.
- 33 Bulletin de la Société de Linguistique de Paris, t. 36, pt. 3, 1935, pp. 183–187.
- 34 Edited by A. Meillet and M. Cohen (Paris, 1924), pp. 361–384 (*Le Sino Tibétain*).
- 35 *Siamese Studies* (T'oung Pao, t. 2, n. s., 1902, Supplement).

- 36 Cf. the penetrating study by Coedès and Burnay, *Notes d'étymologie Tai, No. 1: Le nom de nombre "Cent"* (Journal of the Siam Society, Vol. 20, 1926), pp. 49–52. Coedès and Burnay identify **roi* "100" with the root **roi* "to string." They further conclude that **pak* "100" is common Thai because of the concordance of tones, yet admit the possibility of its having been borrowed from Chinese by the parent Thai speech.
- 37 Cf. the associated correspondence between Thai **nga* "tusk, ivory" and Ch. **nga* "molar tooth." The root for "elephant" has a restricted extension in Tibeto-Burman (Burmese *ts'ang*).
- 38 Ch. **ngiəu* should have produced Thai **ngäu* rather than **nguä*. The latter corresponds rather to the root **ngua* "bull, ox, cow" of the Kachin-Nung-Burmese division of Tibeto-Burman.
- 39 For the finals, cf. Thai **gǎi* "who, which," Ch. **viei* "why, how, what"; Thai **k'ái*, Ch. **k'iei* "to open." The Thai root for "egg" (**k'rǎi*) is independent of the Chinese roots (**luán*, **d'án*).
- 40 The interesting Chinese root **miēt* "honey," an ancient loan-word from Indo-European (Sanskrit *madhu*; Old Slavic *med ū*; Tocharian *mit*, whence Ch. **miēt* through diphthongization; Greek *μέθυ* "wine"; English *mead*), is not found in Thai, which makes use of the periphrasis "bee-water" (Siamese and Shan *nām p'üng*), or even equates "bee" with "honey" (Ahom, Tho) or with "wax" (Lao).
- 41 In view of the correspondences for "fowl" and "goose," it is somewhat surprising to find distinct roots for "duck" (Thai **pēt*, Ch. **ap*).
- 42 The prototype must have been **ram-s* rather than **gram-s*, since the latter could have yielded only **grams* in Tibetan. On this line of reasoning, Chinese **lām* < **glām* includes a prefixed *g-* element, and the Thai borrowing can thus be dated as posterior to this prefixation, but anterior to the subsequent **grām* > **glām* > **lām* development in Chinese (completed ca. 500 B. C.).
- 43 Cf. the remarks in R. O. Windstedt, *Malay Grammar* (Oxford, 1927), p. 20, and S. H. Ray, *A Comparative Study of the Melanesian Island Languages* (Cambridge, 1926), pp. 38 and ff.
- 44 See the writer's article, *A Cham Colony on the Island of Hainan* (Harvard Journal of Asiatic Studies, Vol. 6, 1941), pp. 129–134.
- 45 The form *fi* "fire" is cited for the Tai Yoi, Kon Yai, and To-jen dialects in W. C. Dodd, *The Tai Race* (Cedar Rapids, Iowa, 1923), word-lists on pp. xiv–xxi.
- 46 Note Thai medial *-ǎ-* < *-u-* only before final nasals. Thai medial *-ǎ-* < *-u-* seems to be the normal development before final stops; cf. Thai **hrök*, Chinese **liuk* "6"; Thai **mōt*, Malay, Javanese, Karo *sēmüt* "ant" (cited in Brandstetter, cit. supra, p. 37). For Thai medial *-u-* < *-u-* before final velar stop, cf. Thai **luk* "anything round," IN **kəluk*-**pəluk* "bend, curve."
- 47 Our sources for Tho and Nung are in agreement on this point, and there can be no doubt as to the reality of the phenomenon in question. An additional check is furnished by the form *t'a* "eye" cited for a dialect of Tho-Nung type by Yu Wên, *A Vocabulary of a Non-Chinese Tribe inhabiting the Tapingfu Area of Kwangsi Province, with Chinese Transliterations and Notes* (Academia Sinica, Bulletin of the Institute of History and Philology, Vol. 6, pt. 4, 1936), pp. 505–552 (in Chinese).
- 48 Tho and Nung *t'en* "wasp" correspond to the general Thai root **ten*, but the doublet form in initial *h-* is lacking in Nung. The regular development with unaspirated initial *t-* is observed in a long series of Thai roots, including **tǎp* "liver," *tām* "low," *tǎng* "glue," *tǎu* "turtle," *tāt* "cut," *tēm* "full," *tin* "foot," *tök* "fall," *tōm* "mud," *tōn* "tree trunk," *tōt* "flatus ventris," and *tuǎ* "animal."
- 49 A good parallel here is furnished by Tibetan, which has aspirated all initial surd stop or affricate consonants after prefix *m-*, e.g., Tibetan *mīš'in* "liver", corresponding to Tibeto-Burman **m-šin*.

- 50 For Thai **blok* "flower," cf. the subsidiary IN root represented by Bisaya *bolak*, Tagalog *bulaklak* "flower," which Brandstetter (cit. supra, p. 22) derives from a root **lak* "to unfold." No IN comparison has been uncovered for Thai **bli* "bile."
- 51 This comparison is semantically too specific to be trusted, and we should expect Thai **pōm* rather than **bōm*. IN *l > r* as in **pəlahu* > **rüä* "boat," **t'alang* > **rǎng* "nest"; IN *ə > ó* as in **at'am* > **sōm* "sour."
- 52 Dempwolff's reconstruction of *t'* rather than *s* for IN is open to criticism; cf. the review by A. Capell, in Bull. of the School of Oriental Studies, Vol. 9, 1938, pp. 459–462. Thus, IN **at'am* "sour" is represented by Tagalog *asim*, Toba-Batak *asom*, Javanese *asēm*, Malay *asam*, Dayak *asem*, all with initial *s*.
- 53 Cf. the discussion in G. Coedès, *Nouvelles notes critiques sur l'inscription de Rāma Khamheng* (Journal of the Siam Society, Vol. 17, 1923), pp. 113–120.
- 54 The general Thai movement southward into Indochina appears to have begun on a large scale only toward the close of the first millennium A. D. The first group of Siamese inscriptions, the Sukhodaya, are from the 13th to 16th centuries, and the famous Rāma Khamheng inscription, the earliest monument of the Siamese language, is dated no earlier than 1292; cf. G. Coedès, *Notes critiques sur l'inscription de Rāma Khamheng* (Journal of the Siam Society, Vol. 12, 1918), pp. 1–27, and *Recueil des Inscriptions du Siam; Première Partie: Inscriptions de Sukhodaya* (Bangkok, 1924).
- 55 The writer accepts Schmidt's postulation of an Austric superstock including Mon-Khmer and Austronesian, even though this relationship has not yet been thoroughly demonstrated. In the present instance, the Austric hypothesis is useful in interpreting certain roots which Thai and Mon-Khmer have in common, notably Thai **yo*, Mon-Khmer **go* (Annamite *ko*) "neck." Cf. the Thai-Khmer comparisons listed in Wulff, cit. supra, pp. 68–70, and the Dioi-Khmer and Dioi-Bahnar comparisons in D. Doutreigne, *Contributions à l'étude des populations Dioy du Lang Long* (Anthropos, Bd. 26, 1931), pp. 35–53.
- 56 H. Maspero, *Études sur la phonétique historique de la langue annamite* (Bull. de l'École Française d'Extrême-Orient, t. 12, 1912), pp. 1–126, was so impressed by the monosyllables and tones of Annamite that he postulated a genetic kinship with Thai, even in the face of the dominant Mon-Khmer lexical element. Przyluski, in *Les Langues du Monde* (cit. supra), rightly breaks with Maspero on this point and classifies Annamite with Mon-Khmer.
- 57 Limited comparative notes on two Miao dialects are found in Yu Wên, *The Influence of Liquids upon the Dissolution of Initial Consonant Groups in the Indo-Sinic Family* (Journal of the North China Branch of the Royal Asiatic Society, Vol. 69, 1938), pp. 83–91. A brief and somewhat confused study of two Miao and two Yao dialects has been made by Fang-kuei Li, *A Yao Dialect in Ling-Yün, Kwangsi Province* (Academia Sinica, Bulletin of the Institute of History and Philology, Vol. 1, 1930), pp. 419–426 (in Chinese).
- 58 Vide A. Bonifacy, *Monographie des Pa-teng et des Na-ê* (Revue Indo-Chinoise, n. s., t. 10, 1908), pp. 696–706, 773–786.
- 59 The writer has not had access to the most recent comparative study on the Li, viz. Chun-see Liu, *Preliminary Study of the Origins of the Tribes of Hainan Island* (Meridio-Occidentale Sinense, Vol. 1, No. 1, 1940), pp. 1–23.

CLASSIFICATION OF THE SINO-TIBETAN LANGUAGES

Robert Shafer

Source: *Word* 11, 1, 1955, 94-111.

The present world-wide misconception that the Sino-Tibetan family of languages is divided into an eastern "Chinese-Siamese" sub-family and a western "Tibeto-Burman" sub-family¹ has resulted from two distinguished scholars working on opposite sides of the area and their almost total ignorance of the languages in their colleague's field.

Since about 300 Sino-Tibetan languages and dialects have been recorded, some division of labor has naturally occurred in their investigation. And this has followed geographical lines. In southeast Asia, great streams—the Mekong, Salween, Irrawaddy, and Chindwin—flow in a generally southerly direction, and the intermediate ridges, the monsoon forests, the Malay peninsula extending far southward, and the political division with Indo-China under France and Burma and India under Great Britain have hindered communication and have tended to compartmentize knowledge into one division facing toward the Pacific Ocean and another facing toward the Indian Ocean.

Henri Maspero, the last great scholar to hold to the "Siamese-Chinese" division, was a product of the *École Française d'Extrême-Orient* at Hanoi. He published brilliant work on both the Chinese and Daic (Thai) languages. If one knows two languages one is bound to note some resemblances between them whether they are related or not.² Maspero noted a considerable number of parallels between Daic words and the corresponding Chinese forms—enough, he thought, to consider these languages to be closely related genetically. But Maspero knew practically nothing of the "Tibeto-Burman" languages which had been studied for some time primarily under the patronage of the British in India, and so Maspero naturally accepted "Tibeto-Burmic" as a sub-family on the authority of those who had been studying those languages.

And Sten Konow, a Norwegian scholar primarily interested in Iranian languages, was engaged by the British government in India to handle the non-Aryan

languages for the *Linguistic Survey of India*. Konow was so fully occupied in making grammatical analyses from the specimens of text of the many non-Aryan languages and dialects that he had little time for anything else.³ Konow had very little to do with Chinese and Daic for the *Linguistic Survey*, and since the Sino-Daic numerals correspond so closely that even an amateur can see the resemblance, it was only natural for him to accept the "Chinese-Siamese" division for these languages that he knew so little about.

But Konow, the Iranist, brought to his work on the Sino-Tibetan languages the Indo-Europeanist's point of view of comparative grammar: that morphology is the primary criterion of genetic relationship. Now some Sino-Tibetan languages, like Chinese, have almost no morphology. So Konow substituted what seemed to him the closest thing to morphology—the word order—as a criterion.

Thus the "division," actually made by scholars working at opposite sides of the field and ignorant of the languages at the opposite end, was rationalized by Konow as resting upon the position of words in the sentence; he stated⁴ that "the Tibeto-Burman family arranges the words of a sentence in the order of subject, object, verb, while the order in Chinese and Tai is subject, verb, object."

This statement that the fundamental division in the Sino-Tibetan family rested almost altogether upon the shift in position of one part of speech—let us say that the object precedes the verb in one division and follows it in another—is rather surprising, coming from an Indo-Europeanist. For any English-speaking beginning student of German can describe how annoying the German "displacement" of the verb is. Yet would anyone contend that German and English should be placed in different divisions of the Indo-European family because of differences in the position of the verb in the sentence?

If Sino-Tibetan languages do not have anything resembling Indo-European morphology, naturally we cannot use morphological correspondences as a primary criterion of linguistic relationship. But an alternative solution is possible. Students of Chinese will be familiar with the concept of "empty words", those which theoretically, at least, have lost their specific meaning and have come to be used as particles. Since the precise use of many of these "empty words" is still disputed even in languages studied for so long as Chinese, no special study of them in all the Sino-Tibetan languages has yet been made. But they are separate words and generally follow the same phonetic development as "full words," and since some of them are found over widely scattered parts of the Sino-Tibetan area, this writer has included a considerable number of them in his work on the phonetic development of the Sino-Tibetan languages, where they at the same time offer evidence of a common Sino-Tibetan "morphology"—as nearly as the family can be said to have one. If any one group showed no, or very few, morphological elements (pronouns, interrogatives, etc.) in common with other Sino-Tibetan languages, we should be very skeptical of genetic relationship.

But Indo-European comparative grammar is not based on morphology alone. A great part of it consists in working out the phonetic equations for the various

languages. Neither Konow nor Maspero had attempted to work out such equations and their comparisons consisted only of "look-alikes," a good many of which were erroneous. The greater part of this writer's work on Sino-Tibetan has consisted in working out such equations.⁵ Only common words, numerals, parts of the body, verbs, adjectives, morphological elements, etc., have been considered and comparisons showing pronounced semantic divergence have been rejected.

A rough tally of such comparisons so far published⁶ shows 216 between Bodish⁷ and Chinese, 191 between Bodish and Burmese, 122 between Chinese and Daic, 101 between Burmese and Chinese, 63 between Bodish and Daic, and 38 between Burmese and Daic. Of course this will not be the final figure, but there is no reason to believe that the relative figures will vary greatly from those given above.

If we take the first two figures—216 comparisons between Bodish and Chinese but 191 between Bodish and Burmese—it would indicate that Bodish is genetically closer to Chinese than it is to Burmese. To anyone not led by the exotic appearance of Chinese characters to regard the language as a thing apart, this conclusion should not come as a surprise in view of geography and history. For while Tibet is somewhat closer to Burma than to China, to go from Lhasa to Mandalay by the shortest route one would have to cross the Himalayas and the mountain range on the Indo-Burmese frontier and cross two rather formidable rivers, the Brahmaputra and Irrawaddy. Historically we know there has been contact between China and Tibet for many centuries, but I know of no such contact between Tibet and Burma.

We may also note that in contrast to the 216 comparisons between Chinese and Bodish, we find only 122 between Chinese and Daic. That is, Chinese is considerably closer to Bodish than it is to Daic. In fact, almost since I began work on the Sino-Tibetan languages some 20 years ago, I have held that if Daic is related to the (other?) Sino-Tibetan languages, the relationship is very distant.⁸ When Benedict cast doubt on the genetic relationship of Daic to Sino-Tibetan, he was merely repeating and expanding my own unpublished view and, ironically enough, in part with my own unpublished materials.

Benedict dismissed the some 200 comparisons between Daic and "other" Sino-Tibetan languages which had been adduced by Maspero, Wulff, and myself as non-basic, while he held that his own 30 Daic-Indonesian comparisons (including such cultural words as those for "rice-field" and "door") were basic.

More recently André G. Haudricourt has noted, regarding the Daic languages, that "les mots de la langue commune incontestablement proches de mots chinois sont les noms de nombres, des techniques militaires (cheval, selle, éléphant, jouet) et des techniques artisanales (métier à tisser, ouvrier, papier), bref un vocabulaire de civilisation susceptible d'emprunt. Au contraire le nom des parties du corps et le vocabulaire agricole ont peu d'affinité avec le vocabulaire chinois correspondant."⁹ Haudricourt thought that the relationship of the Daic languages was to be sought in the north in the Man-Yao languages, and in the south in the Annamese-Muong. Since Haudricourt is working in these latter fields it is to be hoped that he will bring forward Daic comparisons with these groups of

languages. For it is only by searching for lexical and morphological parallels on all sides and by establishing the phonetic equations for such parallels that we can finally decide the genetic relationship of a doubtful group such as Daic.

While we cannot dismiss Haudricourt's suggestion of Chinese loan words in Daic without investigation, such precise phonetic correspondences as Burmese *k'ye*, Siamese and Lao *k'i* "dung", or Lao *hnü*, Luṣei *hru-*, breast,¹⁰ for example, cannot by any semantic juggling be considered words of civilization likely to be borrowed. And too many of the comparisons are of that type to dismiss them off-hand. So in consideration of the very substantial number of comparisons between Daic and "other" Sino-Tibetan languages I shall continue to present Daic as Sino-Tibetan—if only as a challenge to accept such evidence as conclusive or to produce contrary evidence.

And while we have seen above that on a statistical basis Daic is closer to Chinese than to any other Sino-Tibetan group, we have also seen Chinese is not closest to Daic but to Bodish. So we should abandon the Sino-Daic division in contrast to the Tibeto-Burmic division. Rather we should set up the following main divisions of Sino-Tibetan: Sinitic (Chinese), Daic, Bodic, Burmic, Baric, and Karenic.¹¹ The languages composing each division, as far as known, will be given below. Altogether we have some published material on about 300 languages and dialects of this family. Most of them are unknown even to scholars and it seems imperative to give the reader some clew to the relative position of groups in the descending scale of importance by adopting a uniform system of nomenclature; thus the descending order of the groups within a family were designated as follows:

Family (ending *-an*, as Sino-Tibetan); division (ending *-ic*, as Sinitic); section (ending *-ish*, as Bodish); branch (no specific ending); unit (no specific ending). Moreover, some of the languages are known under various names—the name they give themselves and the names other peoples give them, or under various spellings, as the Siamese spelling *Dai*, which is today pronounced Thai in Siam, for example, but *Tai* in some other languages of the division. It has been the custom for many years on the railroad maps of Europe to place the names in the language of the country, and scholars could do well to accord the same courtesy to each people, which will at the same time give the scholar a standard. This means abandoning the names given a people by its neighbors, changing *Aka* to *Hruso*, *Miri* to *Mising*, *Digaro* to *Taying*, etc. I have also taken as standard the oldest spelling of the name of a people, usually the written rather than the spoken word, when it is known; thus the Bodish dialect *Lhoskad* rather than the spoken *Hloke*, and *Dbus* rather than *Ü*.

Sino-Tibetan family

Sinitic division [China]

MANDARIN SECTION¹² [N and W China]

WU SECTION [E coast of China]: Shanghai, Ningpo, Wenchow.

S. ANHWEL.

MIN SECTION [SE coast of China] : Foochow, Amoy, Swatow.

HUNAN.

YUE SECTION [S coastal] : Canton, Kiangsi, Hakka.

*Daic division*¹³

[W China, Tonkin, Kgd. of Laos, Siam, Shan St. of Burma]

SOUTH: Siamese, Lao.

NORTH: Tai noir, Tai blanc, Tho, Dioi, Ahom.

NORTHWEST: Shan, Khamti.

Bodic division

BODISH SECTION.

*Bodish Branch*¹⁴.

West Bodish Unit [Kashmir] : Sbaliti (Balti); Burig (Purik); Ladwags (Ladakhi);
Šam, Leh, Rong ;¹⁵ Lahul.

Central Bodish Unit [S Tibet, N. India, Nepal, Bhutan] : Lhoskad, (Lhoke),
Šarpa, Kagate, Garhwal, Spiti, Mnyamskad (Nyamkat), Džad, Gtsang, Dbus
(Ü) : Lhasa, Sikkim, Āba (Batang), Choni, Tseku, Dartsemdo (Tatsienlu),
Nganshuenkuan, Sotati-po, Paurong, Dru, Panakha, Panags, Nyarong,
Ngamdo (Amdo), Khams¹⁶.

South Bodish Unit¹⁷ [Sikkim].

Groma (Twomowa) : Upper, Lower.

Sikkimese¹⁸

Dandžongka.

East Bodish Unit : Dwags (Takpa).

Tsangla Branch.

Rgyarong Branch.

Rgyarong : Pati, Wassu.

Gurung Branch [C Nepal] : Gurung, Murmi, Thaksya.

WEST HIMALAYISH SECTION [scattered, mostly W Himalaya].

NNW Branch.

Bunan.

Thebor : Sumtsu, Zangram, Sungnam, Kanam, Lippa.

NW Branch.

Kanauri : Upper, Lower, Tšitkhuli, Tukpa, Kanaši.

Mantšati, Tšamba Lahuli, Rangloi.

Almora Branch.

Rangkas, Darmiya.

Tšaudangsi, Byangsi.

Džangali Branch.

*Eastern Branch*¹⁹: Thami, Bhramu.

WEST CENTRAL HIMALAYISH SECTION²⁰ [C Nepal]: Vayu, Tšepang, Magari.

EAST HIMALAYISH SECTION²¹ [E. Nepal].

Western Branch.

Bahing, Sunwari²², Thulung, Tšaurasya.

Dumi Unit:²³ Dumi, Khaling, Rai.

*Eastern Branch*²⁴.

Khambu Unit : Khambu,²⁵ Natšhereng.

Bontawa Unit: Rodong; Waling: Rungtšhenbung, Kiranti, Dungmali;

Lambitšhong;²⁶ Lohorong,²⁷ Limbu,²⁸ Yakha.

Not definitely classified in a division; probably sections of Bodic, possibly of
Burmic, certainly not of Baric:²⁹

NEWARISH [C Nepal]: Newari, Pahri.

DIGARISH [NE Assam and into Tibet]: Taying (Digaro), Midu.

MIDŽUISH [in Tibet beyond NE Assam].

HRUSH [N Assam].

Hruso (Aka) : Dialect A,³⁰ Dialect B³¹.

DHIMALISH [Darjeeling and Jalpaiguri]: Dhimal, Țoto.

MİŠINGISH [NE Assam and into Tibet].

Mišing (Miri), Abor.

Yano.

Nyising (Dafla) : E,³² C,³³ Tagen.

DZORGAISH (DZORGAIC?)³⁴ [NE Tibetan plateau and Szechuan, Kansu]: Dzorgai,
Kortse, "Outer Mantse," Pingfang.

Burmish division

BURMISH SECTION.

Burma Branch [Burma].

Southern Unit: Burmese, Arakanese, Tavoy, Taungyo, Intha, Danu, Yaw.

Northern Unit: Phun (Megyaw, Samong dialects), Atšang (Ngatšang, Maing-
tha), Lawng (Maru), Letsi (Lashi), Tsaiwa (Atši, Szi).

Lolo Branch [N Burma, Tonkin, SW China].

Southern Unit :³⁵

Phunoi : Phunoi, Pyen, Khaskhong, Hwethom. Akha: Akha, Ako, Asong,
Phana, Menghwa, Woni, Lahu, Lahuna, Lahushi, Kui.

Central Unit.

Lisu : Lisu, Lishaw, Lipha, Lipo, Kesopho, Kosopho.

Nyi, Tšökö, Weining, Ahi, Lolopho.

Northern Unit : Thongho, Pakishan, Kangsiangying, Kiaokio, Nee, Ulu, Lai-
chau, Tudza, Nuoku.

Tonkin Unit : Mung ;³⁶ White, Black, Khoany.

Unclassified :³⁷ Manyak (Menia); Mosso, Đion ; Duampu ; Phupha ; Nameji.

Hor Branch [E Tibet?]: Hor (Horpa)³⁸.

*Hsihsia (Sihia) Branch*³⁹.

MRUSH SECTION⁴⁰ [Arakan Hills].

NUNGISH SECTION⁴¹ [N Burma]: Rawang, Metu, Melam, Tamalu, Tukiumu.

KATŠINISH SECTION [N Burma] : Katšin, Khauri ; Džili.⁴²

TŠAIRELISH SECTION⁴³ [SE Assam].

LUIŠH SECTION [SE Assam and adjoining Burma districts] : Andro, Sengmai, Sak, Kadu.

TAMAN.⁴⁴

KUKISH SECTION⁴⁵ [Indo-Burmese frontier regions].

Southern Branch.

Šo : Sandoway, Thayetmyo, Minbu, Tšinbon, Chittagong,⁴⁶ Lemyo.⁴⁶

Yawdwin ; Tšinbok.

Khami : S., Khimi,⁴⁷ N.

Lakher Branch.

Mara, Tlongsai,⁴⁸ Hawthai.

Sabeu.⁴⁹

Zeuhngang.

Šandu.⁵⁰

Old Kuki Branch.

Central Unit : Tširu, Aimol, Purum, Langrong.⁵¹

Kyau.⁵²

Western Unit : Hrangkhoh, Biate, Hallam ; S Luhupa.⁵³

Kolhngeng (C. Peripheral) Unit : Kolhngeng, Kom, Tarao.⁵⁴

Lamgang (Southern) Unit : Lamgang, Anal.⁵⁵

*Langel.*⁵⁶

Central Branch.

Lušei Unit: Lušei (Dulien dialect, Ngente dialect), Zahao Hmar, Pankhu,⁵⁷

Bom.

Haka Unit: Haka (Lai), Šonše, Taungtha,⁵⁸ Bandžogi.

Kapwi Unit.⁵⁹

Northern Branch.

Thado, Ralte;⁶⁰ Šiyang (Siyin), Vuite (Paite).

*Luhupa Branch.*⁶¹

Maring Unit :⁶² Maring, Khoibu.

Tangkhuul Unit : Ukhurul, Phadang; Tšamphung.⁶³

Kupome Unit : Kupome, Khunggoi, Central Luhupa, Northern Luhupa.

*Western Branch.*⁶⁴

Maram, Kwoireng; Kabui, Khoirao; Empeo.⁶⁵

Northern Naga Branch.

Hlota;⁶⁶ Ao Unit : Tšungli; Longla; Mongsen, Tšangki, Khari; Tengsa, Rong

(Leptša)⁶⁷ (Sikkim), Yatšam; Yatšumi,⁶⁸ Thukumi.

Eastern Branch.

Rengma.⁶⁹

Simi (Sema) : Kežama, Sopvoma ; Zumomi, Dayang.

Angami : Tengima ; Tšakrima : Dzuna, Kehena, Mima.

*Meithlei Branch.*⁷⁰

*Mikir Branch.*⁷¹

Baric division (Assam)

BARISH SECTION.

North Central Branch.

Garó : Atšik (Standard), Kamrup, Abeng, Dacca.

Jalpaiguri Branch.

South Central Branch: Atong, Rabha, Ruga, Kontš, Tintikeya, Cooch Behar,

Kotš.

Western Branch : Bodo, Metš ; Dimasa, Hodžai ; Tipura ; Lalung ; Moran.

Eastern Branch : Tšutiya.

NAGISH SECTION.

Mošang, Šangge.

Namsangia.

Banpara, Mutonia.

Tšingmegnu (Tamlu).

Angwanku (Tableng), Mulung.

Tšang.

*Karenic division*⁷² [C and Southerly Burma].

Yeinbaw ; Karenni : Yintale, Manö, Sinhmaw Mapauk ; Pwo : Bassein, Maulmein ;

Mopwa : Dermuha, Bilitš ; Taungthu ;⁷³

Zayein : Sawntung, Padeng, Banyang ; Kawnsawng ; Gheko, Bwe, Sgaw,

Wewaw, Padaung, Karenbyu.

Conclusion

Sten Konow was the first scholar to attempt to cover almost the entire Sino-Tibetan field. But his routine duties on the *Linguistic Survey of India* and his grammatical analyses made from texts permitted him to make lexical comparisons almost exclusively on modern Bodish dialects, and he did not attempt to work out phonetic equations in a serious way. Thus he did not have a broad basis of comparative work for his classification, but he appears instead to have taken into consideration geographical location, grammatical similarities, and a few random lexical comparisons made by other authors or observed by himself but not published.

Konow's classification was sometimes remarkably good when correct alignment did not involve a knowledge of phonetic shifts, a knowledge Konow did not possess. Thus his classification of the West Himalayish languages is excellent, and all his Kuki-Chin languages are indeed Kukish. It was when severe phonetic shifts occurred so that parallels were disguised, as in the Naga languages, or when there were no closely related languages apparent, that Konow was most likely to go astray.

Of the Naga languages Konow confused the West Kukish and Luhupa branches and misclassified Mikir. He included Empeo, Kabui, Khoirao, Kapwi (which he confused with Kabui),⁷⁴ and Mikir in what he called the "Nägä-Bodo group,

bridging over the difference between the characteristic features of the two forms of speech"⁷⁵ while "Mikir clearly belongs to the same group as Kachchā Nāgā,⁷⁶ Kabui, and Khoirao." But the position of Mikir could not have been as clear as he thought, for later he transferred Mikir from his Nāgā-Bodo to his Nāgā-Kuki group,⁷⁷ though still recognizing⁷⁸ Mikir "affinities with Bodo," he considered it "much more closely connected with Kuki," yet that "it occupies a somewhat independent position."

Actually Mikir occupies the most independent position of any of the Kukish languages, both lexically and phonetically. And instead of being a connecting link with Barish, as one might expect from its geographical position and as Konow thought, it is a slight connecting link with the more distant Bodish. And whether Konow included or omitted Mikir, his Nāgā-Bodo group had no more connection with Barish (his Bodo) than have any of the other Kukish languages.

Konow's transfer of Mikir to his Nāgā-Kuki group only aggravated the latter's heterogeneity, for the group already included members of three different branches: Sopvoma (really Eastern Kukish),⁷⁹ Maram and Kwoireng (really Western Kukish), and Maring, Tangkhul (Ukhrul), Phadang, and Khunggoi (really Luhupa), while the addition of Mikir brought in a fourth branch. With such diversity of languages in one supposed group, Konow's statement⁸⁰ that the Nāgā-Kuki bridges over the gulf between Angami and the Kuki languages is meaningless, for languages from three or four groups would naturally link almost any distantly related languages.

As Rong has borrowed perhaps the greater part of its vocabulary from Bodish, with some elements from surrounding Himalayish languages, and as it is separated by some 400 miles from the Ao languages to which it belongs, its separation from the latter in the *Linguistic Survey* is understandable. Yet one may classify Rong rather precisely as belonging not only to the Ao Unit of the Northern Naga Branch, but as belonging to the Tengsa subunit, and within this subunit as being slightly closer to Tengsa than to Yatśam.⁸¹ However, Tengsa and Yatśam are often closer in form to each other than either is to Rong—for during its period of separation Rong has developed some independent phonetic peculiarities.

The correct classification of Rong presents an interesting problem for Indian anthropologists and historians: Were the Rong left behind when the Northern Naga branch (and perhaps all the Kukish peoples) migrated from the Himalayas to their present location on the Indo-Burmese border, or are the Rong a remnant left behind from a time when the Northern Naga extended clear across the Valley of Assam?

I shall not take up here all the other languages which Konow mis-classified as the reader may note them by comparing Konow's classification with the one presented here, and I have rectified some of his errors in papers already published.

Relationships outside Sino-Tibetan

I have presented a considerable number of comparisons, with some phonetic equations, between Sino-Tibetan and Vietnamese,⁸² Athapaskan,⁸³ Khasic and Palaungic

(as representing Austroasian).⁸⁴ I am inclined to agree now with André G. Haudricourt, however, that Vietnamese is probably basically Austroasian, and I think that the comparisons I made between Vietnamese and Sino-Tibetan should probably be added to those I made between Sino-Tibetan and two of the Austroasian languages.⁸⁵

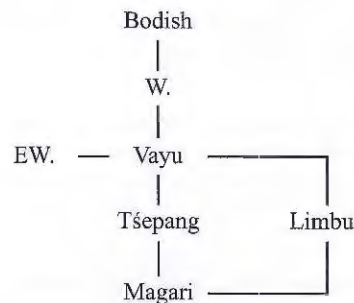
Yet one might infer that I was attempting to set up a macro-Sino-Tibetan family consisting of Sino-Tibetan, Austroasian, and Athapaskan. I have not had a chance to examine the evidence critically, but I believe if it were done it would show that the Sino-Tibetan and Athapaskan roots were practically all different from those in the Sino-Tibetan and Austroasian comparisons. Does this indicate that Sino-Tibetan is really some kind of mixture from two more primitive families of languages, let us say of Pacifican and Austroasian?

Notes

- 1 Konow carelessly stated that Daic and Chinese "form one distinct family as compared with the Tibeto-Burman forms of speech" (*Linguistic Survey of India*, 3 [1909], p. 1). Of course he meant sub-family, but the absurdity of having families within a family of languages has been repeated in the *Encyclopedia Britannica* down to the last edition, which refers to the "Tibeto-Burman family" and the "Siamese-Chinese family" (1953, v. 22, p. 187, and v. 20, p. 596 a).
- 2 Ambrogio Ballini and Carlo Tagliavini correctly refer to sub-families but these are Konow's Sino-Siamese and Tibeto-Burman (*Enciclopedia Italiana*, v. 19, pp. 46 and 129ff. The *Diccionario Enciclopedico U. T. E. H. A.* mistakenly applies "tibeto-birmano" and "siamochino" to race. All have obviously been following Konow and the *Linguistic Survey of India*).
- 3 Thus after 20 years the close resemblance of Old Japanese *wata* "sea" to English *water* still sticks in my memory, although I do not believe any genetic relationship exists between the languages.
- 4 Personal communication from Konow.
- 5 *Encyclopedia Britannica*, 11th ed. (1911), v. 26, p. 929.
- 6 For bibliography, see Shafer, "East Himalayish," *Bull. Sch. Or. Afr. Sl.* 15 (1953), 357 n., or "Newari and Sino-Tibetan," *Studia Linguistica* (Lund, 1952), 92, n. 1, and 93, n. 3, par. 2 ff.
- 7 "The Vocalism of Sino-Tibetan," *Journ. Amer. Or. Soc.* 60 (1940), 302-337; 61 (1941), 18-31; "Problems in Sino-Tibetan Phonetics," *JAOS* 64 (1944), 137-143; and "The Initials of Sino-Tibetan," *JAOS* 70 (1950), 96-103.
- 8 Bodish refers to Old Bodish (classical Tibetan) and languages closely related to it; for definition see below.
- 9 In 1938 I prepared a list of words showing the lack of precise phonetic and semantic correspondence between very common words in Daic and other (?) Sino-Tibetan languages, words such as those for parts of the body, celestial luminaries, pronouns, etc., and I tried to convince Maspero that Daic was not Sino-Tibetan. It was Maspero's insistence on Sino-Daic genetic relationship which caused me to work over Maspero's and K. Wulff's comparative data and to add my own, which nearly doubled the number of comparisons and filled in to some extent the gaps Wulff's work left in many series of finals. These Sino-Daic comparisons were presented in "The Vocalism of Sino-Tibetan" and subsequent articles with no statement regarding interrelationships.

I had discussed my skepticism regarding the relationship of Daic to Sino-Tibetan both before leaving for Europe, after talking with Maspero, and after publication of my article, so that there was no basis for Benedict's statement that I followed Maspero and Wulff in setting up an Eastern Division composed of Chinese and Daic in opposition to Tibeto-Burmic (Benedict, "Thai, Kadai, and Indonesian," *American Anthropologist* 44 (1942), 588).

- 9 "Les phonèmes et le vocabulaire du thai commun," *Journal Asiatique* (1948), 235 ff.
- 10 Cited in "Vocalism" (see n. 4 above), Table 4, no. 18, and Table 6, no. 26 respectively. Many comparisons of a similar nature will be found in the essays referred to above.
- 11 I use Sino-Daic, Tibeto-Boric, Tibeto-Burmic always to refer to two or more divisions.
- 12 For some of the recorded Mandarin dialects see Bernhard Karlgren, "Études sur la phonologie chinoise," *Archives d'Études Orientales* 15 (1915), pp. 230-1. The classification of the Chinese dialects given here is Karlgren's but with certain modifications by Yuen Renn Chao. For a dialect map of China see *Shun Pao*, 60th anniversary edition.
- 13 Daic languages show little divergence except in phonetic development, which Maspero used in his classification, "Contribution à l'étude du système phonétique des langues thai," *Bull. Éc. Fr. Ext.-Or.* 11 (1911), 158, n. 1. Tai Noir, according to Maspero, and Ahom, in my opinion, are intermediate. A good part of the vocabularies of many of the Hainan languages and dialects is also probably Daic.
- 14 Progressive phonetic degeneration of Bodish dialects from west to east through the dialect of Nganshuenkuan, after which archaic aspects increase through Khams.
- 15 Not to be confused with the Rong which is geographically in the Himalayas and linguistically in the Northern Naga Branch of the Kukish Section (see below).
- 16 The Hanniu of von Rosthorn also belongs somewhere in the Central Bodish Unit; it is not a Rgyarong dialect.
- 17 Characterized by the shift of *-r-* to *-y-*, also a characteristic of most of Burmish.
- 18 Not to be confused with Sikkim in Central Bodish.
- 19 Thami and Bhramu, which had been separated by Konow, belong together. From the limited vocabularies of them one can only say that they are placed in West Himalayish because they appear to be closer to that group than any other.
- 20 A poorly defined section of which it can only be said that the languages are related to each other more than to languages of other groups; see "Classification of Some Languages of the Himalayas," *J. Bihar Res. Soc.* 36 (1950), 192ff. Interrelationships are approximately:



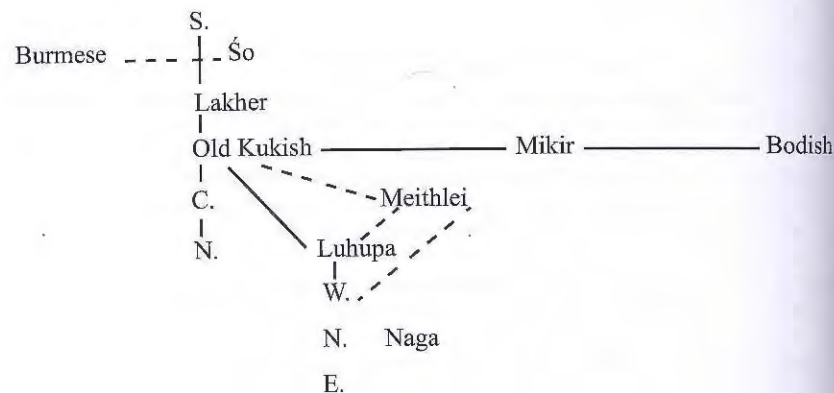
W. is West Himalayish, and EW. is the Western Branch of East Himalayish.

- 21 Konow mixed in some languages that do not belong here and omitted some that do. See my "East Himalayish," *Bull. Sch. Or. Afr. St.* 15 (1953), 356 f.
- 22 Phonetically degenerate compared to Bahing.
- 23 Diverges considerably.
- 24 Approaches Burmish phonetically.
- 25 Kulung and Sangpang are the same language recorded in different localities.
- 26 Tshingtang is the same language in another locality.
- 27 Balali is the same language in a different locality.
- 28 Limbu and Yakha diverge somewhat from other East Himalayish languages.
- 29 None of these groups seems to possess features distinctive from Bodic or Burmic and it is a question of classifying them under one or the other. This may have to be done on a weighted statistical basis, similar in principle, perhaps, to that proposed by A. L. Kroeber and C. D. Chrétien in "Quantitative Classification of Indo-European Languages," *Language* 13 (1937), 83-103, but weighted to allow for the criticisms made by A. Meillet.
- 30 By Campbell. Comparatively archaic. See my "Hruso," *Bull. Sch. Or. Afr. St.* 12 (1947), 184-196.
- 31 By the other three recorders of Hruso. Phonetically degenerate.
- 32 By Needham, Hamilton.
- 33 By Robinson.
- 34 This group occupies at least a portion of the Sifan plateau. It probably forms the most northeastern outpost of the Tibeto-Burmic peoples today. The vocabularies I have seen have been short and poorly recorded. Lexically these languages seem to be predominantly Tibeto-Burmic but with some peculiar features. In recent years, Chinese scholars—notably Wên Yu in *Studia Serica*—have given some attention to these languages under the name of Ch'iang, assuming that they are spoken by a people mentioned in old documents. But only one bit of the recent literature on the subject has come to my attention. Perhaps some parts of the vocabulary of Sotati-po are Dzorgaish; see Central Bodish Unit above.
- 35 The Northern Unit of the Burmese Branch approaches phonetically and sometimes lexically the Southern Unit of the Lolo Branch; see Shafer, "Phonétique historique des langues lolo," *T'oung Pao* 41 (1952), 191-229. In fact the transition may be said to be gradual in the loss of final consonants from the Burmese Branch to the Northern Unit of the Lolo Branch, while inversely the loss of initial sonancy is progressive from the Northern Unit of the Lolo Branch to the Burmese Branch. But the languages of the Burmish Section are remarkably uniform lexically considering the vast stretch of territory they cover.
- 36 Perhaps partly non-Lolo.
- 37 Too little data or too irregularly recorded.
- 38 Preserves some prefixes lost in the Burmese and Lolo Branches; somewhat degenerate regarding finals.
- 39 Uncertainty regarding transcription and limited vocabulary make definite classification impossible at present, but Hsihsia appears to be the most northern extension of the Burmish section.
- 40 See my article on "The Linguistic Position of Mru," *Journ. Burma Res. Soc.* 31 (1941), pt. 2, no. 2.
- 41 Closer genetically to the Burmish than to the Kukish Section.
- 42 More archaic in its prefixes. Only a extremely short vocabulary has been published.
- 43 Records of the Luish languages vary so in extent and the ability of the recorder that it is difficult to establish interrelationships within the section. The finals of Sak are considerably altered compared to those of other Luish languages, and this is perhaps not altogether due to poor recording. It preserves medial **l* as *r*, this phoneme being

lost in the rest of the section. Certain Sak forms common to Kukish, such as those for "mother" and "bird," and not found in the other Luish languages, may be borrowings from Kukish.

- 44 The Taman recorded by R. Grant Brown, *JRAI* 41 (1911), 305 f., is archaic in prefixes but the phonetics of Taman is not generally clear from the brief vocabulary and probably will not be until we have sufficient data to be able to eliminate loan words. We may not be able to classify it until we have larger vocabularies of it and its dialects and of the surrounding languages. It appears to have been under Burmish influence but has a number of rather rare stems found in Luish, but not exclusively there, as words for "buffalo," "elephant," "horse," "salt," and "father."
- 45 One of the major points on which Konow's classification errs is in setting up a Naga group. The Naga languages are all Kukish except the northeastern-most, which is Baric. The proof of the first part of this statement was contained in my article on "The Naga Branches of Kukish," *Rocznik Orientalistyczny*¹⁶ (Krakow, 1950), 467-530, and of the last part of the statement in "Classification of the Northernmost Naga Languages," *J. Bihar Res. Soc.* 39 (1953), 225-264.

The interrelationships within Kukish are approximately as follows:



Solid lines represent genetic relationship, broken lines borrowing. Burmese loan words in Śo, and Meithlei loan words in Old Kuki, Luhupa, and West Kuki, are largely due to administrative dominance of Burmese and Meithlei.

Old Kukish, taken collectively, appears to very nearly represent proto-Kukish, while phonetic degeneration, particularly in finals, has occurred to the south in Lakher and S. Kukish, and particularly in prefixes in the north in Central and Northern Kukish. But all the groups along the vertical axis are essentially the same except for varying degrees of decay and the extent of borrowing. The number of stems peculiar to individual branches along the main vertical axis are almost negligible. So I term these languages Central Core languages or Kukish proper. Kukish languages to the right of the vertical axis have decayed and diverged semantically and morphologically.

- 46 Slightly better preserved than most recordings of Śo.
- 47 A slight link with N. Khami. Data on Khami will be found in "Khami Grammar and Vocabulary," *Bull. Sch. Or. Afr. St.* 11 (1944), 386-434.
- 48 Although Parry thought he was recording the same dialect as the Mara of Savidge, there are a few phonetic differences.

- 49 The Lakher vocabulary of Lewin approaches the Sabeu of Parry but does not correspond exactly. It is probably somewhat intermediate between Sabeu and some of the other dialects recorded by Parry.
- 50 Slightly more archaic than the other Lakher recordings, as it was taken down earlier.
- 51 Precise classification here is doubtful.
- 52 Belongs here? Eliminating borrowings from Southern Kukish, Kyau is probably close to the Western Unit of the Old Kuki Branch.
- 53 Provisional classification. Certainly not a Luhupa language, although it has borrowed a few words from that group, as those for "horse" and "cow," and has undergone some vocalic changes—particularly to *u and *ui—which are not characteristic of Old Kuki.
- 54 Precise classification doubtful. Probably transitional to Lamgang Unit, but in its main characteristics belongs with the Kolhreg Unit.
- 55 A slightly degenerate form of Lamgang; see the author's "Phonetik der Alt-Kuki-Mundarten," *ZDMG* 102 (1952), 262-279.
- 56 A "Central Core" Kukish language whose precise classification is doubtful. It is spoken in southern territory but probably by migrants from the Central Branch of Kukish.
- 57 Has some special links with Bandzōgi, but probably mainly in the vocabularies of Lewin, because both languages are more archaic there than in later recordings.
- 58 Spoken in Southern Kukish territory but belongs essentially to the Haka Unit of Central Kukish. This is not clear from a cursory examination, as Taungtha has borrowed some words from Southern Kukish languages and has developed to some extent along individual lines.
- 59 Precise classification here questionable. But not to be confused with Kabui, as Konow did.
- 60 Has a few minor links with Vuite.
- 61 Probably genetically closest to Old Kuki, but not its Western Unit.
- 62 Diverges toward Kukish proper more than the two following Luhupa units, as already noted by Konow, p. 451.
- 63 Sharply divergent.
- 64 The subordination of Kwoireng and Khoirao noted below is not marked.
- 65 Butler's Empeo is a different dialect from that of Soppitt and Stewart.
- 66 Kyō or Kyontsū would perhaps be a better designation.
- 67 Rong is slightly closer to Tengsa than Yatsam, but the latter are closer to each other.
- 68 Perhaps better designated Yimtsurr.
- 69 Perhaps better Nzong or Nzonyu. Grierson's Rengma is slightly more altered than Butler's. Ntenyi, of the northern group of Western "Rengma," actually forms a connecting link between Hlota and Simi, while the Iseni-Kotsenu of Hutton is intermediate between Ntenyi and Anyo (Eastern or Naked "Rengma"). These meagerly recorded languages cannot be more definitely placed at present.
- 70 In accord with the standard outlined above of using the oldest form of the native name known, I use *Meithlei* instead of the usual *Meithe*, the present pronunciation. For the Assamese call these people *Mēklē* (Konow, p. 20), which is about as close to *Meithlei as the Assamese could make (the Kukish lateral affricates are frequently written *kl*, *kʰl*). Singh (p. 71) recorded the Thado name of the Manipuris as *Maithai*, i. e., *Mei-hlei*; and *lʰ is usually recorded as *hl* in Thado. And since *lʰ became *t* in the language of Manipur, we must conclude that the earlier name was **Meithlei*, which became the present *Meithe* by regular phonetic change.
- 71 Greatly aberrant, but definitely Kukish.
- 72 Lexically predominantly Burmic, but also strongly Bodic, although it is one of the most southern of the Sino-Tibetan groups. It might almost be called intermediate between Bodic and Burmic, but certain phonetic and lexical peculiarities make it preferable to regard it for the present as a separate division. Due to lack of any sharp division of the Karenic languages and the inadequate materials on some of them, the following classification is only tentative.

- 73 Not to be confused with Taungtha in Central Kukish.
 74 P. 418.
 75 P. 379.
 76 I. e., Empeo.
 77 Vol. 1, pt. 1, p. 66, n. 2.
 78 P. 69.
 79 But Konow observed (p. 451) that "Sopvomā is so closely connected with all the languages of the Western sub-group, that it might with equal propriety be classed as belonging to it as to the Nāgā-Kuki one" and in following pages all Konow's comparisons are between Sopvoma and Angami. One may suspect that Konow discovered Sopvoma's correct classification too late to change it without inconsistency in the text, so he resorted to compromise.
 80 P. 451.
 81 One may get some idea of the correct classification of Rong in "Classification of Some Languages of the Himalayas," *Journ. Bihar Res. Soc.* 36 (1950), insert between pp. 173 and 174.
 82 "L'annamite et le tibéto-birman," *Bull. Éc. Fr. Ext.-Or.* 40 (1940), 439-442, or "Annamese and Tibeto-Burmic," *Harv. Journ. As. St.* 6 (1942), 399-402; "Le vietnamien et le tibéto-birman," *Dân Việt Nam*, No. 1 (Hanoi, 1948), 1-10.
 83 "Athapaskan and Sino-Tibetan," *Internat. Journ. Am. Ling.* 18 (1952), 12-19.
 84 "Études sur l'austroasien," *Bull. Soc. Ling.* 48 (1952), fasc. 1, pp. 133-158.
 85 I make this statement on the basis of some manuscript pages sent me by M. Haudricourt. It is probable that the Manic languages are also Austroasian, judging from his "Introduction à la phonologie historique des langues miao-yao," *BEFEO* 44 (1954), 554-576.

NOTES ON FANG—KUEI LI'S 'LANGUAGES AND DIALECTS OF CHINA'

James A. Matisoff

Source: *Journal of Chinese Linguistics* 1, 3, 1973, 471-4.

In the first issue of *JCL* last January, there reappeared an article by Fang-Kuei Li entitled 'Languages and dialects of China' (pp. 1-13). This article was originally published back in 1937 (*Chinese Yearbook*, Shanghai), and for a long time was considered the last word on the genetic affiliations of the various languages and dialects spoken within the vast borders of China. By way of justifying the inclusion of a 36-year old article in the first issue of a new journal, the editor comments (p. 1):

'Although research over the past three decades has brought us a more refined understanding of the individual dialects, Li's broad outline remains essentially accurate and useful.'

This is undoubtedly true as far as the internal classification of the Chinese dialects is concerned (pp. 3-5). Furthermore, Li's discussion of the Kam-Tai languages (pp. 5-6) may be taken as perfectly authoritative—after all it was Professor Li's brilliant researches into the Kam-Sui languages which established the reality of the Kam-Tai grouping in the first place.

On the other hand, three decades of scholarship—notably by Robert Shafer and Paul K. Benedict—have made Li's internal classification of the Tibeto-Burman family (pp. 8-9) quite obsolete.¹ Even more unfortunate is the resurrection of the all-inclusive 'Indo-Chinese' grouping (p. 2), into which Li lumps Chinese and Tibeto-Burman together with Kam-Tai and Miao-Yao, largely on the basis of shared phonological and morphological characteristics (monosyllabicity and lexically contrastive tone).

1. The 'Indo-Chinese' pseudo-stock

The hypothesis of a genetic relationship between Chinese and Tai was widely accepted by scholars before 1940. Although efforts were made to document this relationship by actual lexical comparisons, the words involved were not 'core vocabulary', so that alternative explanations in terms of borrowing or diffusion were at least equally likely.² More impressive to students of the problem was the demonstrable similarity between the Chinese and the Tai tonal systems. As Professor Li says (p. 2), '... this has been considered the most powerful argument for the common origin of these languages.'

Yet recent investigations have confirmed that the development of lexically contrastive tone proceeds according to quite general phonetic principles, involving the influence of the syllable-initial and/or final consonants on the pitch of the vocalic nucleus.³ This influence remains subphonemic until the consonantal system itself undergoes a drastic merger or loss (typically the devoicing of an initial voiced series, or the loss of a final laryngeal). At this stage the language may compensate by utilizing the formerly redundant pitch-differences (which remain after the merger or loss) for contrastive purposes. The point is, **this process of 'tonogenesis' operates independently of the particular genetic affiliations of the language in question.**⁴ Conditions which favor the process (besides the consonantal perturbations we have mentioned) are that the language be basically monosyllabic in structure, and that it be in contact with other languages that are already tonal.⁵

Many examples could be adduced to demonstrate that tonal convergence and genetic relationship are totally independent things: languages may have extremely similar tonal systems and still be genetically unrelated; conversely, closely related languages may differ radically in the extent to which they exploit pitch for contrastive purposes.⁶

Reacting against the shaky 'Indo-Chinese' idea, Benedict long ago proposed a bold new genetic grouping of the languages of Southeast Asia, aligning Tai not with Chinese, but rather with Austronesian (= Malayo-Polynesian).⁷ Over the last thirty years he has amassed conclusive and detailed evidence for his theory,⁸ and now includes in his superstock 'Austro-Thai' not only Kam-Tai and Austronesian, but Miao-Yao as well.⁹ Even though Benedict's world-view has not yet received universal acceptance—after all, very few linguists command the breadth of data that would entitle them to an opinion one way or the other—it seems safe to predict that his ideas will eventually prevail. (Nobody else is offering any serious alternatives at the moment.)

2. Subgrouping the Tibeto-Burman family

Li (pp. 8–9) divides Tibeto-Burman into 'four known divisions': (a) the 'Tibetan group'; (b) Bodo-Naga-Katchin; (c) the 'Burmese group', comprising both Burmese and Kuki-Chin; and (d) the 'Lolo group'. In a footnote the editor adds:

'A more general treatment of the Tibeto-Burman languages may be found in Benedict 1972.'¹⁰

While much remains unclear about the finer subgrouping of Tibeto-Burman, we have learned a huge amount since 1937.¹¹ The scheme presented by Professor Li does not reflect any of our hard-won new knowledge. The Lolo languages belong with Burmese in a tight-knit family now called Burmese-Lolo or Lolo-Burmese by Tibeto-Burmanists. Kuki-Chin belongs to a totally different branch of Tibeto-Burman from Burmese, and is now known to have very close affinities with the Naga languages, so that Kuki-Chin-Naga may be regarded as a unitary grouping. 'Bodo-Naga-Katchin' is an obsolete lumping together of languages which really belong to three separate subgroups of Tibeto-Burman: Bodo belongs to Bodo-Garo or 'Barish'; Naga, as we have said, belongs with Kuki-Chin; and 'Katchin' or Jinghpaw is in a class by itself. In addition there are several other branches of Tibeto-Burman which Li does not mention at all.

* * *

We are now embarking on an exciting new era in Sino-Tibetan linguistics, and in Southeast Asian linguistics in general. There is an explosion of new knowledge, as modern, accurate data become available through new fieldwork and as the insights of general linguistic theory begin to penetrate this once highly esoteric field. Increasingly we will be in a position to distinguish among three types of structural similarities in the languages of the region: (a) those due to real genetic relationship; (b) those due to areal diffusion or borrowing; and (c) those due to mere chance, or parallel independent development, reflecting universal tendencies in human language.¹²

In the present context, where we are looking forward to the future, it is a disservice to a great linguist like Professor Li to republish his thoughts of thirty-five years ago with so little aggiornamento.

Notes

- 1 See Shafer and Benedict, 1939–41; also Benedict 1972.
- 2 See for example Wulff 1934.
- 3 See especially Haudricourt 1954, 1961.
- 4 See Matisoff 1970, 1973a.
- 5 Yet neither of these conditions is absolutely necessary. Witness the very recent development of tones in Punjabi, due to the loss of its former voiced aspirated series of initial consonants.
- 6 The clinching example is modern Tibetan, where some dialects have tone while others do not. See Matisoff 1973a.
- 7 Benedict 1942.
- 8 Benedict 1966, 1967a, 1967b.
- 9 Benedict 1968, 1973.
- 10 The reference is to Benedict's monumental book *Sino-Tibetan: a conspectus*, which was finally published in 1972, even though it had existed in manuscript form as early as 1942–3.

11 See Benedict 1972, pp. 4–11.

12 For a recent attempt to disentangle these various possibilities with respect to tonal developments in Tibeto-Burman, see Matisoff 1973b.

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6

SINO-TIBETAN

Another look

Paul K. Benedict

Source: *Journal of the American Oriental Society* 96, 2, 1976, 167–97.

The main findings of another look (after *Conspectus* [1972] - reviews noted) are that Sino-Tibetan is now a well-established family; Tai and Miao-Yao must still be excluded, although each has made early borrowings (especially numerals) from Chinese dialects or related languages; lexical analysis (Swadesh 100-word list) supports the taxonomic arrangement (*Conspectus*) setting Chinese apart from Tibeto-Burman, but the position of Karen remains indeterminate; the Sino-Tibetan reconstruction (*Conspectus*) remains largely unchanged despite some refinements, but recent studies have uncovered an extensive prefixation pattern (mainly *s-*, also *ʔ-* and *m-*) for Archaic Chinese, radically altering the 'look' of the language in the direction of Tibetan and other Tibeto-Burman languages; finally, a review of comparative Sino-Tibetan studies reveals that data (sources) are less often at fault than scholars.*

Sino-Tibetan Studies, which had long languished in a state of academic torpor, came to life in the later 1960's, in part as a result of interest generated by the annual S[ino]T[ibetan] conferences held each October since 1968.¹ A by-product of this *risorgimento* was the *Conspectus* (Benedict 1972; hereafter *STC*), an early (1942–43), unpublished effort brought up to date (ca. 1968–69) by the writer and by the contributing editor, J. Matisoff. As noted in the *STC* review by Egerod (1973), the annual conferences have provided "an important forum for testing the ideas put forth in the *Conspectus*," and it seems appropriate at this time to take some note of these developments, as well as of the substantive material contained in the available *STC* reviews to date.² There have also been new findings (below) relating to groupings within ST and to prefixation in Arch[aic] Ch[inese], both of which may require modifications in our view of the field. Additionally, it appears

that the history of ST studies, although still at a relatively early developmental stage, can shed some light on the nature of the reconstruction process itself. With these general points in mind, then, we propose to take another look at the field.

To begin with the broadest possible questions, can we now, after these many years, consider ST to be a firmly established family? If it is in fact a family, does it include Kam-Tai and or M[iao] Y[ao]? Matisoff (1973), after reviewing the first five annual ST conferences, makes the following observations:

At the first couple of meetings some people still did not seem convinced about the genetic relationship of Chinese to Tibeto-Burman at all. After five years the voices of skepticism have been stilled, utterly.

(p. 158)

With the recent publication of Benedict's book [*STC*], . . . the last shreds of diffidence of this matter may be cast to the winds.

(fn. 14)

Well, not *utterly*—not the *very* last shreds. Miller (1974) still writes of the “*possibility* [my italics] of an original Sino-Tibetan linguistic unity”; Chang (1973) still insists, “Despite the assiduous efforts of many scholars a genetic relation (sic) for Tibeto-Burman and Chinese is still to be established”; while Lehman (1975) seems to vacillate, stating, “. . . I believe that Benedict has *all but* [his italics] proved the ST hypothesis,” followed immediately by, “He has listed so many fairly obvious cognate sets . . . , that their cumulative effect alone precludes serious doubt.” Despite their demurrals, the above cited writers appear in fact to regard ST as an established linguistic entity (cf. the remarks on Chang, below) and there is now a firm consensus backing ST as a fully demonstrated language family. The key point here, as widely recognized today (cf. the discussions in Downer 1971, Egerod 1973, Matisoff 1973bis), is the amount of “core” vocabulary shared by the languages under consideration. In the present case, although Lehman stresses this feature of cognate sets (see *cit. supra*) both Chang and Miller indicate some dissatisfaction in their *STC* reviews. Chang finds that the semantic matchings are in part “farfetched” but his examples miss the mark: T[ibeto] B[urman] ‘word, speech’ and Ch. ‘song’, overlooking the significant Lahu gloss ‘sing’, (*STC*: fn. 487); TB ‘hot’ and Ch. ‘ill’, overlooking the extensive TB evidence, e.g., W[ritten] T[ibetan] *tsha* ‘hot; illness’ (*STC*: 27); TB ‘nose’ and Ch. ‘self’, overlooking the clear evidence for the ‘nose’ > ‘self’ semantic shift in Ch. *dz’u* (*STC*: fn. 417). Miller places heavy and repeated emphasis on the lack of any semantic association in Chinese of Ch. *k’o*^b ‘bitter’ with *ká*^c ‘liver’, from P[roto] ST **ka* and *[prefix] *ka-n* (cf. Garo *k’a* ‘bitter’, *bi-ka* ‘liver’, with aspiration conditioned by initial position, as in Ch.), as if the linguist would anticipate the retention of a semantic link in entirely dissimilar, ‘frozen’ forms of this type (here dating from the pre-Archaic period)! The other example (TB ‘tree, wood, firewood’ and Ch. ‘firewood’) selected by this reviewer for illustration is equally disastrous for his cause (cf. Matisoff 1975).

Actually, the *STC* understates the case for basic lexical agreement between TB or T[ibeto] K[aren] and Chinese. A continuing search through the comparative material, greatly aided by new findings regarding prefixed **s-* in Chinese (below), has brought to light a host of cognate sets in addition to those described in *STC*. The vast majority of the basic Ch. kinship terms and body part words can now be shown to have TB cognates, generally with little if any semantic change—so much so that it is the *lack* of a known cognate set in any given ‘slot’ (e.g., ‘father’s sister’ or ‘cheek’) that is to be noted. The cognate sets become less numerous only as we approach the less basic areas of the lexicon, e.g., the color words are only partially represented (‘white’ but not ‘black’; ‘red’ but not ‘green’ or ‘yellow’; see *STC*: Appendices I and II). As pointed out by Miller (1974), the *STC* employs the phrase ‘core vocabulary’ without attempting to define it, and it is indeed difficult to place this concept within a precise framework. By way of illustration—and without any intent of raising glottochronological issues—a survey of the TB (and TK) and Chinese cognate sets (earliest reconstructed levels) from the widely utilized Swadesh 100-word list of basic (= ‘core’) roots³ yields the following figures: 59 cognate pairs without significant semantic shift; 12 cognate pairs with significant semantic shifts (‘nose’ > ‘self’; ‘tree’ > ‘firewood’; ‘burn’ > ‘fire’ [the latter pair both paralleled in TB]); 29 pairs without apparent cognation. This tabulation, based almost entirely on material already available in *STC* and very much on the conservative side, indicates that almost three-quarters of these Swadesh roots are represented by cognate sets—a very sizeable proportion, indeed. In this connection—and again without wishing to make an issue of possible dating—attention is called to the curious coincidence presented by Burling and Bhattacharya’s paper (1956) on lexicostatistic dating of the Bodo-Garo split, with the Swadesh list there showing 51 [certain] cognates, 8 doubtful cases [51 + 8 = 59] and 41 non-cognates (yielding a time span of almost 1,900 years). The Bodo-Garo figure is somewhat too low, since the authors failed to recognize certain cognate pairs (for Bodo *ga-ham*, Garo *nam-a* ‘good’, marked as non-cognate, see *STC*: fn. 250), but in any event the comparison is instructive, since Bodo-Garo (Barish) is one of the most closely knit TB groups.

To return to our second question above, ST now appears to have attained full status as a language family—the world’s second largest in number of speakers after Indo-European—but can it be defined (as in *STC*) as including only TB, Karen and Chinese? The traditional view, embodied in a classical paper by F. K. Li (1937), grouped Tai (later Kam-Tai) and MY with ST, mainly because of their monosyllabism and their congruent tonal systems. This view has generally been favored by Chinese scholars, e.g., Li’s article was reprinted in the first issue (January, 1973) of the *Journal of Chinese Linguistics* with the editorial comment, “. . . Li’s broad outline remains essentially accurate and useful,”⁴ while K. Chang includes both Kam-Tai and MY forms in articles on ST words for ‘needle’ (1969) and ‘iron’ (1972). A change now appears to be taking place here, however, e.g., the eminent scholar, Chou Fa-kao, in a long review article of *STC* (1972), expresses some doubt on this general point: “As to whether or not the Tai and Miao-Yao languages are related to Sino-Tibetan, we still must wait for deeper research” (transl.

from p. 165). The European scholars (notably Egerod 1973, 1974; Forrest 1973; Haudricourt 1954, 1973) as well as the American (notably Bodman 1967, 1975; Matisoff 1973bis) generally are in agreement with *STC* in keeping Kam-Tai apart from ST, without necessarily endorsing the writer's view on Austro-Thai.⁵ The MY languages, which have attracted much less attention from linguists, are still included in ST in recent papers by Chang (*op.cit.*) while G. B. Downer (1971), another authority on these languages, reaches the following cautious conclusion: ". . . the relationship with Sino-Tibetan . . . may eventually be shown to be a genetic one." Like R. Shafer, who had earlier (1964) attempted to set up phonological correspondences between PTB and P[roto] MY, Downer was especially impressed by the similarities in the numerals between these two language groups. As pointed out in *STC* (fn. 14), the MY numerals for 'four' and 'six' through 'ten' closely resemble TB (rather than Chinese) numerals, but the forms for 'four' are the product of a startling convergence (below) while the remaining numerals were early loans into PMY. Continuing analysis in this area, with the aid of Purnell's (1970) reconstruction of PMY, strongly indicates that these PMY loans were from a distinct (TB or ST) language (Arch.-LMY), quite different from the early Chinese dialect (Arch.-LPT) which gave rise to the parallel P[roto] [T[ai] loans. The table below presents the pertinent reconstructed forms; PT *+*et* and *+(h)ñii* used only in comp. ('11', '20', etc.), the general PT roots here being **(h)ñii* 'one' and **soŋ* 'two', the latter a back-loan from Arch.-LPT **so-ŋ* = Arch./Anc. *sũŋ/sɔŋ*^d 'pair', from PAT **[pa]ts[a]ŋ*, id. (> **saŋ* through regular shifts; Arch.-LPT regularly has medial **o* rather *u* or *ũ* for earlier long **a*); the PMY 'look-alike': **plei* 'four' is from PAT **šu(m)p/l/at* (Atayal [Formosa] also shows this infix); the bracketed forms under PST/PTB are the conjectural prototypes.

	PT	Arch.-LPT	PST/PTB	Arch.-LMY	PMY
1	<i>+*et</i>	<i>*iět</i>	<i>*s-kat</i>	—	<i>*ali</i>
2	<i>+*ñii</i>	<i>*ñiay</i>	<i>*g-nəy(s)</i>	—	<i>*(ə)war</i>
	<i>+hñii</i>	<i>*hñjəy</i>	<i>*[s-nəy]</i>	—	
3	<i>*saam</i>	<i>*sám</i>	<i>*g-sum</i>	—	<i>*pua</i>
4	—	—	<i>*b-ləy</i>	—	<i>*plei</i>
	<i>*sii</i>	<i>*sijəy</i>	<i>*[s-ləy]</i>	—	
5	—	—	<i>*l-ŋa</i>	—	<i>*pra</i>
	<i>*haa</i>	<i>*hŋa</i>	<i>*[s-ŋa]</i>	—	
6	—	—	<i>*d-ruk</i>	<i>*dluk</i>	<i>*dluz</i>
	<i>*hrok</i>	<i>*hrjök</i>	<i>*[s-ruk]</i>	—	<i>*tluz</i>
7	<i>*cet</i>	<i>*tsiět</i>	<i>*snis</i>	<i>*znjə(t)</i>	<i>*znia</i> <i>*znia(t)</i>
8	—	—	<i>*(b-)g-ryát</i>	—	—
	<i>*peet</i>	<i>*piat</i>	<i>*[s-b-ryát]</i>	—	—
			<i>*[s-ryát]</i>	<i>*hiat</i>	<i>*hyat</i>
9	<i>*kaw</i>	<i>*kǎw</i>	<i>*d-kaw</i>	<i>*gyuə</i>	<i>*gyua</i>
10	—	—	<i>*gip</i>	<i>*gyjəp</i>	<i>*gyiap</i>
	<i>*sip</i>	<i>*ziəp</i>	<i>*[s-gip]</i>	—	—

Notes on table

- 'three': Arch.-LPT **sám* is the likely (dialectal) source of the irregular Anc. *sám*, for the anticipated **sám*, corresponding to Arch. *səm* < PST **[g-]sum*.
- 'four': the characteristic *s-* prefixation of Chinese is well illustrated here and in 'two', 'five', 'six', 'eight' and 'ten'; the indicated shifts are generally of 'cluster' rather than 'prefixial' type (see below).
- 'five': here and in 'six', Arch.-LPT simply replaced the earlier prefix with **s-*; PT **haa* < **hŋaa*, but Ong-Be (Kadai language on Hainan) has *ŋa*.
- 'six': Arch./Anc. *[g]liök/liuk* shows replacement of prefix **d-* by **g-*, as in WB (*khrok*) and Kachin (*kru?* < **kruk*), possibly in relation to **g-sum* 'three' ('six' is two 'three's'); the reconstruction is based on the identity of *[g]liök/liuk*^c (from 'six' series: GSR-1032) and *gliök/liuk*^f (from GSR-1069, which has well-attested initial *gl-*) 'grain sown late and ripening early' (contra *STC*, which cites *mliök/mliuk*^s 'accord' = *m-klök/mjuk*; see below).
- 'seven': note the contrasting developments in this numeral root, reconstructed with the rare initial **sn-* cluster; Arch.-LPT parallels the regular Ch. (*tsiět*) development, with the anticipated *-t* for final **-s* but with unaspirated initial, as shown by the PT loan (**cet* for **tset*, lacking in PT); Arch.-LMY, on the other hand, shows an entirely different type of handling of the initial cluster, with secondary voicing⁶; this is clearly reflected in the PMY loan, which can readily be reconstructed on the basis of the parallel PMY root for 'heavy' (Purnell reconstructs separate roots for PY **sia* and PM **syŋ*) and does not even cite the YHN form!) (low tone noted by '):

	PMY	YCR	YHN	MCF	MWN	MPT	MSY
heavy	<i>*hnia</i>	<i>hnia</i>	<i>hni</i>	<i>hñŋ</i>	<i>hñai</i>	<i>hña</i>	<i>hñaŋ</i>
seven	<i>*znia</i>	<i>sia</i>	<i>ni</i>	<i>syòŋ</i>	—	—	—
	<i>*shia(t)</i>	—	—	—	<i>syai</i>	<i>sya</i>	<i>syəŋ</i>

The Miao forms show typical secondary nasalization (and some unvoicing of the initial); the MWN tone points to a PM/PMY final stop doublet such as **sñia[t]*, suggesting a basic **znia ~ *znjət* doublet for Arch.-LMY (PMY regularly drops final **-s* or replaces with *-i*).⁸

'eight': again the two 'Archaic' sources show contrasting lines of development, with Arch.-LPT nearly paralleling the regular (Ch. *pwát*) line, both with secondary unvoicing of the 'new' initial **b-* by prefixed **s-*, but with early loss of the **-r-* (**s-byat* < **s-bryát*) rather than the **-y-* (**s-bwát* < **s-bryát*); the same feature is found in the early loan into Min-chia (*piat*) and is faithfully reflected in PT, which regularly has **ee* < **ia* (**peet* < **piat*); Arch.-LMY, however, shows simple replacement of the original **g-* prefix by **s-*, followed by **sry-* > **hj-* (PMY, as reconstructed by

Benedict [1975], has initial **sr-* as well as **hr-*, hence would have maintained a prototype of either kind).

'nine': again a contrast, with Arch.-LPT showing the regular development (Ch. *kjəw*) (ambiguous for *j*, not reflected in PT); Arch.-LMY shows secondary voicing after the prefix, found also in WT (*dgu*), as well as palatalization of the initial and diphthongization of the final; the PMY initial **gy-* is clearly indicated here by PY **dua* ~ PM **jua* (the MY languages tend to shift velars to dentals/palatals).

'ten': still another contrast, with Arch.-LPT probably paralleling the regular form (Ch. *d'jəp*), although PT shows typical secondary unvoicing of the initial (cf. Mak [Kam-Sui] *zip*); the Arch.-LMY form shows the anticipated palatalization and diphthongization; the PMY forms are kept apart by Purnell but can be fitted into a single scheme under the reconstruction PMY **gyiap*; cf. the following table, showing parallel vocalism in the PMY root for 'cloth' (low tone ', high tone '):

	PMY	YCR	YHN	MWN	MCF	MPT	MSY
ten	* <i>gyiap</i>	<i>tsiəp</i>	<i>sap</i>	<i>dyau?</i>	<i>kyü?</i>	{ <i>käu?</i> <i>čäu?</i>	{ <i>käu?</i> <i>čäu?</i>
cloth	* <i>ntia</i>	<i>dia</i>	—	—	<i>thyu</i>	<i>ntau</i>	<i>ntau</i>

The prototypes labeled 'Arch.-LMY' hardly look Chinese and probably should be classified as TB, yet they do show several characteristic Ch. features, including *l* for **r* as well as extensive palatalization and diphthongization. An interesting trio of roots, all 'calendrical' in nature, would at first glance appear to be early loans from ST (in whatever form): PMY **hnəi* 'sun/day', PST **[s-]nəy* (cf. Stau *shí*; fn. 6); PMY **hla* 'moon/month', PTB **s-gla* [initial uncertain] but WT *hla*, P[roto] K[aren] **hla*; PMY **shiaŋ* 'year', PST **s-ni-ŋ*.⁹ The 'sun/day' correspondence can hardly be ruled out on phonological grounds (*-*ɔi* < *-*əy* is not unlikely for PMY); it implies an Arch.-LMY prototype **hnəy* or **hnjəy*, with PST **s-n-* > **hn-* contrasting with PST **sn* > **sh-* (in 'seven', above) — but the 'year' correspondence, with PST **s-n-* > **sh-* (see below), *certainly* reflects an early loan, hence we must remain in doubt here. The 'moon/month' correspondence, a very obvious similarity which has attracted the attention of many scholars, including both Shafer and Downer, is almost certainly another 'look-alike', since there is an excellent PAT (Formosan) correspondence: **q[i]las* "white/moon" (a semantic association repeated in two other PAT roots), with regular sound shifts into PMY: **q-* > **h-*, **s-* > **~* **-i*, the latter explaining the YHN doublet *la* 'moon' ~ *lai* 'month' as well as the curious added MCF gloss 'white (of egg)'. For 'year' the PMY reconstruction clearly is **shiaŋ* (contra *STC*: fn. 251; for the initial, cf. 'seven', above), although here again Purnell failed to unite the roots; note the parallel PMY root for 'tree' (**ntiaŋ*),¹⁰ with YNH maintaining medial *-*ia-* but YCR simplifying to *-*a(a)-*:

	PMY	YCR	YHN	MCF	MWN	MPT	MSY
year	* <i>shiaŋ</i>	<i>hñaan</i>	<i>hñaŋ</i>	<i>hnau</i>	<i>syau</i>	<i>syon</i>	<i>syon</i>
tree	* <i>ntiaŋ</i>	<i>dyáŋ</i>	<i>dyiaŋ</i>	<i>tau</i>	<i>ntau</i>	<i>nton</i>	<i>nton</i>

The indicated Arch.-LMY prototype here would be the anticipated **shiaŋ*. The marked tendency for PMY medial *-*ia-* to be simplified to *-*aa-* after initial **h-* also serves to explain another early loan, viz. PMY **ñaan* 'silver', for **hian*, pointing to an Arch.-LMY prototype **hjaŋ* < PST **[d-]ŋul*, similar to the regular form: Ch. *ŋien/ŋjēn** (PMY **h-* < **ŋ-* is regular shift); a possible doublet here, suggesting Arch.-LMY **huan* (with PST *-*u-* retained), is represented by the irregular L[ing] C[hun] Y[ao] *nwan* < PMY **h[ua]n*. The parallel loan from Arch.-LPT is PT **hə(ə)n* (with the rare, barely 'naturalized' vowel **ə*), suggesting that the two lending 'Archaic' sources had the same form here: **hjaŋ*.

The above material is of great interest for the light that it throws upon early ST dialects/languages but it scarcely constitutes evidence for a genetic link-up of the Tai or MY languages with ST. In point of fact, the exclusiveness of the correspondences, even in the numerals, speaks very much *against* the genetic hypothesis, e.g., the PST/PMY correspondences involve the numerals *above* rather than *below* 'five'; even in Tai, where the resemblances extend below 'five', the loans for 'one' (**et*) and 'two' (**hii* ~ **hiii*) are used only in composition, hence do not 'count' in the Swadesh 100-word list score (see below). One does not really have to make any analysis of 'core' vocabulary in connection either with Tai or with MY since there are virtually no substantial ST resemblances (other than those noted above) in this basic part of the lexicon, hence Shafer felt compelled to compare PST **s-na* 'nose' with PT **hna* 'face' (< PAT **q/ndza[q]ais* 'face/forehead'), while Downer was driven to citing PMY **mbrui* 'nose', Ch. *b'jəd/b'jɪ* (Downer 1971); Yao [YCR] *kyu* 'dog', Ch. *ku/kəu*^m (Downer 1973) even while conceding that the PMY root has initial **kl-* [YHN *klo*]. The real problem here has always been why anyone (including the writer once upon a time) has ever seriously taken the Kam-Tai and/or MY languages to be true 'blood cousins' of ST, given the almost total lack of any basic ties in the respective lexicons.

In turning now to ST itself, still another basic question arises: is there support for the *STC* scheme of setting off Chinese from TK as a unit, and then of setting off Karen from TB? Although the latter point has always been in considerable doubt (cf. *STC*: fn. 350), the need for separating Chinese from the other ST languages has scarcely been questioned. Recently, however, N. Bodman (1973) suggested that Chinese stands in a special relationship to Tibetan: "It is also my subjective impression that the group comprising Tibetan and its near relatives is closer to Chinese than are many other groups of the Tibeto-Burman languages" (*op.cit.*: 386). Although the arguments adduced in that paper, from phonology and morphology, did not appear conclusive the suggestion did seem to have some merit inasmuch as the writer himself, like Bodman, had long been

impressed by the numerous special lexical links between Chinese and Tibetan. With this in mind—and primarily looking for support for the *STC* scheme—the writer drew up a table of cognate sets from the Swadesh 100-word list (fn. 3) for M[andarin] (Peking), P[wo Karen] (Moulmein), T[ibetan] (Lhasa = Central), B[urmese] (Rangoon), K[achin], G[aro] (Achik) and L[ushai] (Dulien), making use only of the modern spoken languages. The plan was *not* to establish glottochronology but rather to determine whether Chinese and/or Karen shared significantly more of these basic roots with any of the given TB languages. Burling (1971) pioneered in the use of this approach for four TB languages (Kachin, Maru, Lushai and Garo), dispensing with the time scale (“Let me assert with all possible vigour that I have no faith in the Swadesh list as a technique of absolute dating, or even for very accurate relative dating,” *op.cit.*: 13). Although he had to rely largely on ‘guess work’ for the determination of cognate pairs (and many of his assignments to pairs must now be set aside on the basis of comparative phonology; cf. *STC*), it is noteworthy that he was able to find support for a special link between Kachin and Garo (credited by him to Shafer, but noted by the writer in the early 1940’s: see *STC*; 7, 11).

The Swadesh 100-word list has serious disadvantages as a tool in studying ST languages, e.g., it includes such unlikely entries as ‘who?’, ‘what?’ and even ‘we’ while omitting many more ‘basic’ items, including one (‘dream’: PST *[r-]ma(:)ŋ) which qualifies for membership in that select group of roots represented by a plus (= ‘retained in listed meaning’) in all seven languages under study (see below). It does offer the great advantage, however, of having become a standard in the field, so that one can turn to it without wondering whether or not his analysis is being distorted by an unconscious bias in his selection of ‘basic’ roots. An effort was made to follow the rules that customarily obtain in the field, especially as regards accepting only the ‘usual’ or ‘most common’ word under any entry, e.g., under ‘all’ no set has been accorded a plus, including a possible T/B set under PTB *(m-)kul (in *STC*) and a possible T/K/L set under PTB *yoŋ (not in *STC*): WT yoŋs ‘all, whole’; K yoŋ ‘all, the whole’, yoŋ-yoŋ, id.; L zoŋ-zoŋ ‘all’ only the K word qualifies here). Entries were given a plus if the listed meaning (underlined) is retained in composition despite a semantic shift in the root; note here especially P *θe* ‘skilled; (comp.) know’; L *lam* ‘way, direction, place’ (paralleling the basic Karen shift); (comp.) road. The dialect specifications given above were strictly adhered to, with the result that L ‘lost’ a plus in the set under ‘heart’ (only in Ngente dialect: *niŋ*) and G a plus under ‘dog’ (only in ‘Garo A’ dialects: Koch and Ruga *kui*, Rabha *ki*). The *STC* framework was followed in determining cognation and almost all the relevant material can be found in that work.¹¹ As might be anticipated, however, there remain a number of problem assignments in which cognation is uncertain. It is very probable that no two scholars would find themselves in complete agreement on all these problem assignments, and in any event the number of such cases is too small to make any significant change in the findings as a whole. The main points to be noted here are outlined below for each of the seven languages under study:

- BURMESE: *krai* ‘star’ possibly related to PTB *s-kar = *s-kar (L *ar-*) (Matisoff 1974, No. 49) but considered too vague to rate a plus; *na* ‘listen’ vs. *nà* ‘ear’ but distinct word (*krà*) for ‘hear’; contrast K *nà* (low-tone) ‘hear’ vs. *nā* (mid-tone) ‘ear’, which was given a plus in relation to G *kna* ‘hear’ (*na-tsil* ‘ear’).
- TIBETAN: *lo-ma* ‘leaf’, from *lob-ma, as shown by West T *lob-ma*, from PTB *lāp (K *lap*); *duma* ‘to smoke’, *dud-pa* ‘smoke’ possibly related to PTB *kəw (Matisoff 1974: fn. 119) but considered unlikely, the T representative of this root probably being *khu-ba* ‘fluid, liquid’, with parallels elsewhere.
- LUSHAI: *ha* ‘tooth’ given a plus in the general set from PTB *(s-)wa although the initial remains unexplained (*STC*: 106).
- KACHIN: *kəra* ‘hair’ < PTB *s-kra given a plus in set with T *skra*, with *sam* (specialized use) an apparent early loan from B *tsham* < PTB *tsām (as indicated by the *ts- > s- shift); K *ren* (< PTB *(s-)riŋ) ‘too long’ (not ‘long’, as glossed in *STC*: 106), the regular word for ‘long’ (*gəlu*) showing a plus in relation to G *ro* < PTB *low; contrast B, which has retained the first root in the general meaning ‘long’ (*hrañ*) but has modified the latter (*lu* ‘disproportionately tall’); *n-* ‘not’ from *m(a)- (*STC*: 97) given a plus in this set with T and B; *lədi* ‘nose’, perhaps from *[s-]na-di as suggested by Khauri dialect *nədi*, but considered uncertain (dialect data lacking) and not given a plus in the general set from PTB *s-na; *nra* ~ *nraŋ* ‘bone’ (fn. 11), also *nrut* < PTB *(-)rus (*STC*: 16) and *nrut nra* (typical K couplet formation) but latter considered secondary term, the plus given for *nra* ~ *nraŋ* (set with G).
- GARO: *baʔaŋ* ‘many’, from *ʔbaŋ, directly cognate to WT ‘*bəns* ‘the people, the subjects’ (= ‘the many’) < PTB *a-baŋ, a doublet of PTB *maŋ: WT *maŋ-ba* ‘much’, *maŋ-po* ‘much, many’, *dməŋs* ‘the common people’; L *maŋ* ‘very, much’ (but not ‘many’); K *maŋ* ‘the inhabitants of a village’,¹² but no plus given any language under this entry (‘many’); *mikka* ‘rain’ < PTB *m-ka, cognate to WT *mkha* ‘the heavens’, with the basic meaning preserved at times: *mikka sim* ‘to be cloudy’ (*sim* ‘black’), *mikka kim* ‘to thunder’ (*kim* not glossed separately); also *mikka wa* ‘to rain’ (*wa* < PTB *r-wa(-s) not glossed separately); given a plus in the set with B/L/M.
- PWO: *nə* ‘horn’ < PK *nuŋ has been compared (*STC*: 143) with the general TB set from *rwā ~ *rwāk ~ *rwāŋ (see below) but not given a plus in view of the divergent initial; *khla* ‘ashes’ perhaps related to the PTB root *pla (B/G set) via a root *(-la), which might be analyzed as a derivative of *tap-la (PTB *tap ‘fireplace’), especially in view of G *tapra*, Dimasa *thapla* (but Mikir *phelo* < *phla) (*STC*: 133 and fn. 364, which cites Taungthu *pha*, possibly from *phla), but this considered too uncertain to rate a plus; *xwe* ‘full’ (< PK *bray) possibly cognate to the PTB root *bliŋ (*STC*: fn. 377) but this also considered too uncertain to be given a plus.
- MANDARIN: given a plus for ‘horn’: Arch./Anc. *kūk/kək* < *klūk (the cluster well attested by dialects [Yang]), with the doublet *klāk/kək* ‘deer’s horn’, from *kl[wā]k < *k-rwāk, fitting in with the PTB *rwā ~ *rwāk ~ *rwāŋ series (for *STC* *rwa ~ *rwaŋ, and add Dzorgai [Thochu] *rak* ‘horn’ < PTB

**r[wá]k*, contrasting with *niek* 'black' < PTB **nak*); also for 'person': Arch./Anc. *ńjěn/ńziěn*, a doublet of *mjěn/mjěn* ~ *mjən/mjěn* 'people' < PST **mi-n* (STC: fn. 428), with parallels for this shift in initial nasals; also for 'one': Arch./Anc. [*s-k*]jět/?jět^{aa}, cognate with L *khat* (contra STC: 94); also for 'smoke': Arch./Anc. [*s-k*]jen/?ien^{ab} (STC: fn. 441). As regards the personal pronouns, however, present analysis indicates that the M forms for 'thou' as well as 'I' have been developed from distinct PST roots relating to 'self' (contra STC: 160, which handles them as doublet forms), the comparative evidence coming primarily from WT: 'I': Arch./Anc. *ńá/ńá^{ac}*, cognate with WT *ńo* 'face, countenance, air, look; self, the thing itself; the self, the I' < PST **ńi-t*¹³, 'thou': Arch./Anc. *ńia/ńzie^{ae}* (loan use), cognate with WT *nyid* (< **ńi-t*) 'self, same' (e.g., *ma nyid* 'the mother herself'), in more recent literature used resp. for *k'yod* 'thou, you'; WB *ńàń* (< **ńin* < **ńi-n*) 'you' (fem.), all from PST **ńi(-t, -n)*; note the parallel development shown by PTB **ńay* (perhaps ultimately from **ńá-i*): L *ńei* 'self', WT *ńed* (< **ńe-t*) 'I, we' (elegant), K *ńai* 'I' (STC: 65) (scored as plus for the K/M pairing).

The following tables show the roots for which cognate sets have been uncovered, arranged by number of languages represented, beginning with a select group of three roots ('die', 'name', 'fish') with plus scores in all seven languages under study (abbreviations: Ar. present in Archaic only; cp. in composition only; dl. present in another dialect only; lw. present as loanword only; rp. replaced as main word; sm. semantic difference (no plus):

	PST/PTB	B	T	L	K	G	P	M
die	(7) * <i>səy</i>	+	+	+	+	+	+	+
name	* <i>r-min</i>	+	+	+	+	+	+	+
fish	* <i>(s-ńya</i>	+	+	+	+	+	+	+
eye	(6) * <i>(s-)myək</i>	+	+	+	+	+	+	sm.
moon	* <i>s-gla</i>	+	+	+	+	+	+	—
kill	* <i>(g-)sát</i>	+	+	+	+	+	—	+
dog	* <i>(s-)kwəy</i>	+	+	+	+	dl.	+	+
two	* <i>[g-]ńay(-s)</i>	+	+	+	cp.	+	+	+
ear	* <i>[r-]ńa</i>	+	+	—	+	+	+	+
blood	* <i>(s-)ńywəy</i>	+	—	+	+	+	+	+
smoke	* <i>(s-)kəw(-n)</i>	+	sm.	+	+	+	+	+
tail	* <i>r-may</i>	+	—	+	+	+	+	+
road	(5) * <i>lam</i>	+	+	+	+	+	sm.	—
tooth	* <i>(s-)wa</i>	+	+	+	+	+	rp.	—
liver ^l	* <i>m-sin</i>	+	+	+	+	—	+	—
stone	* <i>(-)luŋ</i>	+	—	+	+	+	+	—
eat	* <i>dza(-s)</i>	+	+	sm.	+	+	sm.	+
louse ^l	* <i>śrik</i>	—	+	+	+	+	—	+

	PST/PTB	B	T	L	K	G	P	M
bone ^l	(4) * <i>(-)rus</i>	+	+	+	rp.	—	+	+
breast	* <i>nəw</i>	+	+	+	—	—	+	+
-nail	* <i>m-syen</i>	+	+	+	+	—	—	—
meat ^l	* <i>śa(-n)</i>	+	+	+	+	—	—	sm.
hand	* <i>(g-)lak</i>	+	+	—	+	+	—	sm.
feather	* <i>(-)mul</i>	+	sm.	+	+	+	—	sm.
fire ^l	* <i>(s-)mey</i>	+	+	+	cp.	—	+	—
tree ^l	* <i>siŋ</i>	+	+	+	—	—	+	sm.
know	* <i>syey(-s)</i>	+	+	—	sm.	+	+	—
warm	* <i>lum</i>	+	—	+	+	sm.	+	—
tongue ^l	* <i>(-)lay</i>	—	+	+	rp.	+	+	—
horn	* <i>rwa(-k, -ŋ)</i>	—	+	—	+	+	—	+
rain	* <i>(r-)wa(-s)</i>	+	—	+	—	+	—	+
new	* <i>sar</i>	—	+	+	—	—	+	+
thou	* <i>na(-)ŋ</i>	rp.	—	+	+	+	+	Ar.
fat, n.	* <i>sa-w</i>	—	—	+	+	sm.	+	+
neck ^l	(3) * <i>(-)liŋ</i>	+	+	+	—	—	—	sm.
sun	* <i>nəy</i>	+	+	+	sm.	—	sm.	sm.
not	* <i>m(a)-</i>	+	+	—	+	—	—	Ar.
round	* <i>zlam</i>	+	+	sm.	+	—	—	—
sit	* <i>(-)du-ŋ</i>	+	+	—	+	—	—	—
star	* <i>s-ka-r</i>	—	+	+	+	—	—	—
nose	* <i>s-na</i>	+	+	—	—	—	+	sm.
foot	* <i>r-kaŋ</i>	—	+	—	+	—	+	—
head	* <i>(-)gaw</i>	—	+	—	—	+	+	—
I ^l	* <i>ńa</i>	rp.	+	—	—	+	+	Ar.
egg	* <i>(-)təy</i>	—	sm.	—	+	+	+	sm.
night	* <i>(-)ya(-n)</i>	+	—	+	—	—	sm.	+
full	* <i>(s-)bliŋ</i>	+	—	—	+	—	—	+
stand ^l	* <i>(g-)ryəp</i>	+	—	—	+	—	—	+
person	* <i>mi(-n)</i>	—	+	+	—	—	—	+
leaf	* <i>(s-)láp</i>	—	+	—	+	—	—	+
fly, v.	* <i>(s-)pur</i>	—	+	—	—	+	—	+
fire ^{ll}	* <i>(-)pwár</i>	—	sm.	—	+	+	—	+
bird	* <i>(-)tow</i>	—	—	sm.	—	+	+	+
water ^l	(2) * <i>təy</i>	—	sm.	—	sm.	+	+	sm.
skin/bark	* <i>(-)pik</i>	—	—	—	+	—	+	—
tongue ^{ll}	* <i>(-)lyak</i>	sm.	rp.	sm.	+	sm.	—	+
I ^{ll}	* <i>ńá(-i)</i>	—	sm.	sm.	+	—	—	+
liver ^{ll}	* <i>(-)ka(-n)</i>	sm.	sm.	sm.	sm.	+	sm.	+
mouth ^l	* <i>ku</i>	—	—	—	—	+	—	+
white ^l	* <i>(-)b[o]k</i>	—	—	—	—	+	—	+
meat ^{ll}	* <i>s-ńa[k]</i>	—	—	—	—	—	+	+
black	* <i>nak</i>	+	+	—	—	—	—	—
heart	* <i>(s-)niŋ</i>	+	+	dl.	—	sm.	—	sm.

(continued)

	PST/PTB	B	T	L	K	G	P	M
long ^I	*(s-)riŋ	+	+	—	sm.	—	—	sm.
one ^I	*[g-]tik	+	+	—	—	—	—	—
give ^I	*(s-)bəy(-n)	+	+	—	—	—	—	rp.
hair ^I	*(-)isām	+	sm.	+	lw.	sm.	—	sm.
seed	*džəy	+	—	+	—	—	—	—
dry	*krok	+	—	—	+	—	—	—
sleep	*yip	+	sm.	—	+	—	—	—
ashes	*pla	+	—	—	—	+	—	—
louse ^{II}	*sar	+	—	—	—	—	+	Ar.
mouth ^{II}	*s-mut	+	—	—	—	—	+	—
hair ^{II}	*s-kra	—	+	—	+	—	—	sm.
that	*day	—	+	—	+	—	—	—
knee	*(-)put(-s)	—	+	—	+	—	—	sm.
see	*(s-)m[u, əw]	—	—	+	+	—	—	—
stand ^{II}	*di-ŋ	sm.	—	+	sm.	+	—	sm.
give ^{II}	*pe(k)	—	—	+	—	—	+	—
white ^{II}	*(-)pwār	—	—	+	—	—	+	rp.
drink ^I	*(s-)əm	—	—	+	—	—	sm.	+
one ^{II}	*(s-)kat	—	—	+	—	—	—	+
water ^{II}	*(s-)twəy ^b	sm.	—	+	sm.	—	—	+
bone ^{II}	*(-)raŋ	—	—	—	+	+	—	—
drink ^{II}	lu(-k, -ŋ)	—	—	—	+	+	—	—
earth	*(r-)ka	—	—	—	+	+	—	—
hear	*(-)nā	sm.	—	—	+	+	—	—
long ^{II}	*(-)low	sm.	—	—	+	+	—	—
neck ^{II}	*(-)twāk	—	—	—	+	+	—	—
sun ^{II}	*tsar	—	—	—	+	+	—	—
tree ^{II}	*(s-)bul	—	—	sm.	+	+	—	sm.

The following table shows the number of cognate sets shared by any given pair of languages. The [Garó] bracket suggests the anomalous position of this language in the scheme of relationships. The 18/19 entry for K/P and P/K serves as a reminder that two words ('bark' and 'skin') from the Swadesh list are alternative glosses for the same root [*(-)pik] in these two languages.

	Burm.	Tib.	Lush.	Kach.	[Garó]	Pwo	Mand.
Burm.	—	32	29	28	20	22	17
Tib.	32	—	24	23	19	20	16
Lush.	29	24	—	23	19	23	18
Kach.	28	23	23	—	29	18/19	19
[Garó]	20	19	19	29	—	19	18
Pwo	22	20	23	18/19	19	—	15
Mand.	17	16	18	19	18	15	—

The above table lends itself to the following conclusions:

1. Chinese (Mandarin) does indeed appear to lie well outside the ordinary range of Tibeto-Burman and even of Tibeto-Karen. The 'flat' distribution (15 to 19) of the Mandarin scores also suggests that Chinese has retained a sizeable share of these basic roots but in essentially a random fashion, as consistent with the view that this language was the first to split off from the ancestral ST proto-language. The score (16) for the M/T pairing is actually on the low side and appears to preclude the idea (above) that Chinese and Tibetan have any special *genetic* relationship apart from their membership in the ST language family. Ironically, however, the very *absence* of a cognate pair, in terms of the Swadesh list scoring, can in a given case be significant, e.g. neither M nor T has the PST root *(-)mul 'body hair' (> 'feather' in list) in this core meaning for the very good reason that each has made the identical semantic shift to 'eyebrow' with the same medial *-i- doublet (STC: fn.'s 53, 461), hence neither gets a plus under this entry ('feather')! Again, M does not receive a plus under 'knee' since the basic root here [PTB *(-)put(-s): WT *pus-mo* < **put-s*, K *ləphut*] underwent a semantic shift to 'knee-cover': Arch./Anc. *pjwət/pjwət^{af}~pjět/pjět^{ag}* (cf. West T *pis-mo* for the doublet), yet the languages do share one highly specific cognate set in this area, viz. Arch./Anc. *sjět/sjět^{ah}* 'knee', from **sgyit* (contra STC: fn. 455); WT *sgyid(-pa)* 'knee-joint, knee-hollow; calf'; cf. also Arch./Anc. *b'jěn/b'jěn^{ai}* 'knee-cap' (Anal. Dict. also 'knee, leg'); WT *byin-pa* 'calf' (cf. the WT gloss for *sgyid*); also *kwek/kwek^{ai}* 'hollow at back of knee', apparently from **krwak* < **r-kwak*, comparable with WB *khwak* 'concave/sunken'.
2. The above conclusion necessarily leads to a second, viz., that *after* Chinese split off from the parent ST stock it came in close contact with Tibetan for an extended period of time, of sufficient duration to permit of marked (probably mutual) linguistic influence. It would appear impossible to explain on any other basis the numerous and often detailed resemblances between the two languages, as long noted by this writer as well as by Bodman (above) and other scholars. It should be emphasized that this *antedated* the Archaic period, as can be seen from the sound shifts often involved, e.g., Tibetan shows a highly idiosyncratic pattern of kinship terms derived through *s-* prefixation and *-n*, *-d* suffixation (STC: fn. 284); this pattern is reflected elsewhere only in Lepcha, directly under Tibetan influence, with sporadic appearance of suffixed *-n* forms in Burmese and other languages, yet the early Chinese kinship terminology reflects this pattern in several areas, including one term tying in directly with Tibetan, viz., Arch./Anc. *sk'yjwət/ts'juět^{ak}* (loan use in *Erh ya*) 'sister's son (man sp.)' (contra STC: fn. 428; see below for reconstruction), from **s-kəw-t*, from the basic PST root **kəw* 'mother's brother' = 'the descendants of the mo's bro' (through the terminological equations ensuing from x-cousin marriage: 'si's

- son' = 'mo's bro's son'), morphologically identical with WT *skudpo* 'brother-in-law' (Jäschke, but Das glosses 'wife's brother' and Desgodins has 'frater uxoris'; in x-cousin marriage = 'mo's bro's son').
3. The Karen (Pwo) scores are consistent with the hypothesis that this language split off from a parent TK stock (*STC*: 2) yet are hardly distinctive enough to rule out the view that Karen is simply another division of the TB family. The score for the P/B pairing (22) is greater than that for P/T (20) but smaller than that for P/L (23), hence this evidence tends to preclude another possible view (*STC*: fn. 350), viz., that Karen represents an early split from the Burmese-Lolo group of TB. Especially worthy of note are the low scores (18/19 and 19) for the P/K and P/G pairings, suggesting that these splits date from an early period.
 4. The Garo scores are in a very low range (18 to 21), with the striking exception of the score (29) for the G/K pairing, one of the highest scores in the table. The conclusion here must be that Garo also represents an early split from the parent TB group but one that *also included Kachin*, with at least nine of the shared items being considered innovative (above table: 'fire'¹¹, which has M parallel, and 'bone'¹¹, through 'tree'¹¹).
 5. The writer has long suspected that the key 'crossroads' position of Kachin (*STC*: 5) reflects its pivotal geographical setting (N. Burma) rather than any basic linguistic makeup. Quite unlike Garo, which has only low scores apart from its high G/K pairing score, Kachin has fairly high scores for the K/T (24) and K/L (23) pairings and a definitely high score for the K/B pairing (28). These higher scores point to the existence of newer levels within Kachin, especially to a Burmese level since it is clear that the language has long been under heavy influence from the culturally dominant Burmese speech, with the result that is difficult to determine the precise status ('native' vs. loanword) of many lexical items (see the discussion of 'hair', above, under KACHIN).
 6. Burmese has notably high scores for both the B/T pairing (31) and the B/L pairing (29), comparable with the K/G pairing score (29). There is a fundamental distinction here, however, in the fact that very few of these shared items can be considered innovative in any sense: perhaps 'black' and 'one'¹¹ for B/T (both 'heart' and 'long' involve, rather, retention of general TB roots) and 'seed' for B/L ('hair' is widespread TB root). There hardly seems to be sufficient evidence here for a *genetic* grouping, say, of Burmese/Tibetan vs. Lushai, yet the L/T pairing score does seem unexpectedly low (24). The scores as a whole do strongly indicate, however, that a basic cleavage line must be recognized within TB between B/T/L on the one hand and K/G on the other, the latter ('Kachin-Garo' supergroup) probably also including the Konyak ('Naked Naga') languages as well as the obsolete Chairel (*STC*: 6-7).¹⁴

The above analysis, in furnishing a measure of support for the general taxonomic arrangement put forward in *STC*, also shores up the 'teleo-reconstruction'

procedure adopted in reconstructing a two-tone system for PST (*STC*: fn. 494) before undertaking a reconstruction of the PTB system itself, since this procedure is logically dependent upon the classification. This gap has now been bridged over in part, since in addition to the earlier described correlation of the (basically) two-tone Burmese-Lolo system with Nungish tones (*STC*: fn. 494) the writer has now (1973) demonstrated an excellent correlation with the Kukish tonal system as well as a tentative rapprochement with the Tamang-Gurung-Thakali (Nepal) system, both basically of two-tone type. A massive effort (Matisoff 1974) to establish a further correlation with the three-tone Kachin system, however, has been only partially successful, but note that this language presents problems related to secondary voicing (see discussion below), which might well be implicated in those relating to tone.

The special position of Chinese in the classification is also of crucial importance in reconstructing other phonological features at the PST level, especially in relation to the vowel system.¹⁵ The PTB/PTK system sets up in general as */aeiou/ plus vocalic length · whereas the additional vowels */əâ/ are required to handle the Chinese/TB correspondences, with further light thrown upon vocalic alternation in Tibetan (*STC*: fn. 344). Further study in this area (Benedict 1973bis and to appear) has emphasized the role of vocalic length at the PST level, with distinct Arch./Anc. reflexes not only for PST *-əy and *-əɣ (falling together with *-oy and *-oɣ) and for *əw and *əɰ (falling together with *-əw and *-əɰ), as suggested in *STC* (fn. 486), but also for PST *-əy (> -əd/âi) and *-əɣ (> -âd/âi), with the regular Arch. final -d for Anc. -i. The important PST *â > a (but *â > â) shift previously noted before dental finals (*STC*: 488) must also be recognized before labial finals, e.g., PTB *lâp 'leaf' (see note, above, under TIBETAN) is cognate to Arch./Anc. [l]iap/iâp^{ad}, id., from PST *lâp. PST medial *o fell together with PST medial *u, yielding the same reflexes in Chinese (*STC*: fn. 479); cf. PTB *s-[o, o']ŋ 'empty' (WT *ston-pa*); Arch./Anc. t'jôŋ/t'jun ~ d'jôŋ/d'jun^{am}, id. < PST *(s)-toŋ, as contrasted with PTB *s-d[o, o']ŋ 'unite, join' (WT *sdoŋ-ba*); Arch./Anc. d'uŋ/d'uŋ^{an} 'together, join' < PST *(s)-doŋ. Finally, as regards PST medial *e, a length distinction can be reconstructed on the basis of distinct reflexes in Chinese, with PST *e yielding Arch./Anc. ia/iä before dentals (original or secondary) and labials but *e yielding ia/ie (contra *STC*: fn. 481, which is incomplete), e.g., PTB *s[e, e']r 'hail' (WT *ser-ba*); Arch./Anc. sian/sien^{ap} 'sleet' < PST *ser; PTB *l[e, e']p 'butterfly' (WT *phye-ma-leb* [cf. *leb-mo* 'flat'], WB *lip-pra* [cf. *prâ* 'flat, level']; Arch./Anc. [l]iap/d'iep^{ap}, id., from PST *lep. Before velar finals, on the other hand, PST *e fell together with *i (*STC*: fn. 481) but PST *e yielded Arch./Anc. io/ie before final -k (reflex before final -ŋ not certain), as shown by the following pair:¹⁶

	PST	Arch./Anc.	WT	Lep.	Kach.	WB	Lush.	Garo
pheasant	*(s)-re-k	[l]iok/d'iek ^{aq}	sreg	hryak	ri?	rats	hrit	rik
sink, v.	*(s)-ne-k	niok/niek ^{ar}	—	—	—	{nats hnats	—	—

As a final note on vocalic length in PST, it is possible that certain doublets reflect an original length distinction, e.g., *p̄w̄ar/pyw̄ēi*¹¹ 'fly', *p̄w̄an/p̄jūan*¹² 'fly, soar' < PST **pu(·)r*. Arch. Ch. also appears to show a trend towards loss of final velars after original (PST) long medial vowels; cf. *s-gliu/s̄ju*¹³ (perhaps for **s-gliug*) (C) 'number; some, several'; (B) 'to count, calculate; (tell the faults of:) reprimand', also read *s-glük/s̄ok* 'a number of times', possibly cognate (P. Yang: pers. comm.) to WT *sgr̄aη-ba* (also 'gr̄aηba' 'to enumerate, count; to upbraid, reproach' (cf. the Ch. gloss), *gr̄aηs* 'number', from PST **s-graη*, with shift to stop in Arch./Anc. (see discussion below). There is also evidence for loss of final **-r* after long vowel; cf. WT *mgur* 'throat, neck; voice' (resp.) (WT also has *mgul* (-pa) 'neck, throat'); Arch./Anc. *g'u/γ̄əu*¹⁴ 'throat' < PST **(m-)gu[r]*.¹⁷

The reconstruction of the PST consonant system, as opposed to that of the vowel system, relies primarily upon TB rather than Chinese data. The schema employed in *STC* is as follows:

PST consonants									
Labial	<i>p</i>	<i>b</i>						<i>w</i>	<i>m</i>
Dental	<i>t</i>	<i>d</i>	<i>ts</i>	<i>dz</i>	<i>s</i>	<i>z</i>	<i>l</i>		<i>n</i>
Palatal	<i>c</i>	<i>j</i>			<i>ś</i>	<i>ź</i>	<i>r</i>	<i>y</i>	<i>ń</i>
Velar	<i>k</i>	<i>g</i>							<i>ŋ</i>
Glottal				<i>h</i>					

Note: glottal stop (?) is non-distinctive feature of vocalic onset.

The reviews to date have indicated relatively little dissatisfaction with this schema, apart from the setting up of a simple two-manner voiced vs. unvoiced opposition for the initial stops. As pointed out in the *STC* (pp. 20–21), within TB itself there are two 'problems' about this, one involving the presence of a small number of forms with unaspirated initial obstruents in WT (where by 'rule' they should be aspirated), the other concerned with some apparently secondary voicing, especially in Kachin and Garo. Miller (1974) expresses serious reservations about both points, while Coblin (1972–73) is primarily concerned with the first point, Bodman (1975) with the second. It should be pointed out that none of the forms (WT or other) involved fits into any other 'system' of correspondences, and this is precisely why one cannot simply set up other phonemes, as Miller apparently would like to see done. A special study of the WT forms with initial unaspirated stops, as suggested by Coblin (*op. cit.*), would probably reveal that most of them fall under category (c) of the *STC* (= prefixed forms).¹⁸ Similarly, for the secondarily voiced stops in Kachin (see the forms tabulated by Bodman, *op. cit.*) and probably also for those in Garo, earlier prefixation appears to have played a role, as already indicated by the writer (Benedict 1973: 131); cf. Kachin *gwi* 'dog', Jili (extinct Kachin dialect) *təkwi*, Rawang (Nungish) *təgi* < PTB **kwəy*, and it seems possible that Kachin first unvoiced all or most initial

obstruents, then secondarily voiced some of them, with consequent disruption of the tonal system (cf. the remarks above). As for the extra-Tibetan evidence for a two-manner system, requested specifically by Coblin (*op. cit.*), Matisoff has reconstructed such a system for Proto-Burmese-Lolo (*STC*: fn. 76, and cf. Egerod 1973: 501), and Burling for Proto-Bodo-Garo (*STC*: fn. 21). The Chinese reflexes have always presented special problems, especially since Karlgren reconstructed both **g* and **d* (but **b* only marginal) for Arch. Ch., contrasting with *g'*- and *d'*- as initials and with *-k* and *-t* as finals. The contrast in finals has led a number of scholars, including Miller, to attempt to find 'correspondences' for both sets of stops in TB or Karen, with a special fondness for Maru, which has final *-k* for WB *-ui* < PTB **-əw*, final *-t* for WB *-e* < PTB **-əy*. These are pseudo-archaic finals, as recognized by all the linguists who have reconstructed Proto-Burmese-Lolo,¹⁹ while the Karen (Taungthu) final *-t* cited by Miller (for 'four') is unquestionably a late numeral suffix, appearing also in the Taungthu forms for 'five' (*ηat*) and 'nine' (*kat*) as well as in 'four' (*lit*) (*STC*: 131). The reconstruction of a separate set of voiced stops for PST, as Miller and others seem to prefer, does in fact involve an 'insuperable difficulty' (contra *STC*: 186, cited by Miller, *cit. op.*) inasmuch as we would be left with a bizarre system with the glides **w* and **y* appearing *only in medial position*, being required there to handle PST roots with medial glides, e.g., TB **gwa* 'fox'; Arch./Anc. *g'wo/γuo*²⁰ < PST **gwa*. The *STC* solution, which recognizes **w* > *g* and **y* > *d* shifts for Arch. Ch. both in initial and final position, obviates this difficulty, and the parallelism with Maru simply furnishes further support for this line of reconstruction, accepted at least in part by Bodman (1975).

The recognition of an extensive **s* (cluster or prefix) pattern for Arch. Ch. (Li 1971; Bodman 1973, 1974; Benedict 1974, 1975bis, Yang 1975), far beyond that previously recognized (*STC*: fn.'s 419, 457 and cf. Bodman 1969), has vastly complicated the problem of establishing reflexes for stop and other consonants of the language. The writer (*cit. supra*) has hypothesized that in order to account for the bewildering variety of reflexes (*xie-sheng* and comparative TB evidence) it is necessary to set up a basic distinction between a cluster (non-syllabic) and a prefixial (syllabic) combination, e.g., *sn*, *sk* as opposed to *s-n*, *s-k*. As shown above (text and fn.'s 6 and 9), the cluster **sn* fell together with **st*, both yielding Arch./Anc. *ts* or *ts'*, whereas the prefixial **s-n* yielded Arch./Anc. *[s-n/n]*, as suggested by the Proto-Min high tonal series reflex (**hn*, perhaps better reconstructed as **sn*), with *ts* or *ts'* as an alternative reflex (actually the more frequent reflex in the comparative material; see the table in Benedict 1974). To further complicate matters, there is also evidence for secondary voicing of the prefixial variety (**s-n* = **sən-* > *dz*'; see fn. 8), paralleling a similar reflex shown by the dental stop combination; cf. PTB **s-tay* 'navel' (Chepang *toy* < **[s-]tay*, Garo *ste*, Kachin *dai* ~ *śadai* [second. voicing]), Arch./Anc. *dz'iar/dz'iet*²¹, id. (Bodman 1973); the cluster **sd* produced unvoicing (**sd* > *ts*), as might be anticipated; cf. PTB **s-di-k* 'scorpion' (WT *sdig-pa* 'scorpion', *sdig-srin* 'crab,

crawfish'; Lushai *ti-t* < *[s-]ti·k 'scorpion'; Garo *na-tik* 'shrimp' < 'centipede fish [nā]'); Arch./Anc. *tsək/tsjək*^{bf} 'scorpion'; PTB **s-dep* (WT *sdeb-pa* 'join, unite'); Arch./Anc. *tsjap*^{bs} 'connect' (Bodman). Before non-dental nasals, the cluster **s* combinations yielded *x* clusters: **sm* > *x(i)m/x(i)w* (see fn. 12 for example, from PST prefixed **s-*); **sn* > *xn/x* (cf. 'goose', cited in *STC*: fn. 419); also **sn* > *xn/t'*; cf. PK (Taungthu) **hna* < **s-na* 'red'; PTB *(*s*-)*na*: WB *na* 'to respect' (= 'to show shame'), *hna* (< **s-na*) 'to be considerate'; Arch./Anc. *xhəg/t'*^{bh} 'shame, disgrace' (= 'red [face]') (*xhəg/hzi*^{bi} 'ear' is phonetic) < PST *(*s*-)*na* (with 'intensive' rather than 'causative' prefixed **s-*). The 'gap' in the nasal series was filled by a newly formed *xn/t'*; cf. the minimal pair under GSR-94: *snjo sjo*^{bi} 'coarse raw silk', also read *xnjo t' iwo*^{bi} 'to season' (with palatalized initial, probably from an original **s-* causative form such as **s-na*). The prefixial type was retained before non-dental nasals as well, again with evidence supplied by Proto-Min; cf. PTB **s-mel* 'face' (Lushai *hmel*); Arch./Anc. [s-]*mjan mjän*^{bk} (Proto-Min **hm-* = **sm-*), id.; WT *so-ma* 'hemp' (Jäschke cites Skr. *soma*), Arch./Anc. [s-]*ma/ma*^{bl} (Proto-Min **hm-* = **sm-*), id. (an early loan into Chinese, as shown by the vocalism, since PST *-*a* yields -*o* after labials); PTB *(*s*-)*myək* 'eye' (see fn. 16; the PBL root is *(*s*-)*myak*), Arch./Anc. [s-]*mjök/mjuk*^{bs} (Proto-Min **hm-* = **sm-*), id.; PK **hna* < **s-na*·[k] 'flesh/meat', Arch./Anc. [s-]*hök/hzjuk*^{bm} (Proto-Min **hn-*, for **hn-* = **sn-*), id.; but note Arch./Anc. *s-ŋ/s*, paralleling *s-g/s* (below), as shown by GSR-67: *s-ŋo/suo*^{bn} 'gather sheaves', with *ŋjo/ŋiwo*^{bp} 'fish' as phonetic (the 'gap' then filled by a newly formed [s-]*ŋ/ŋ*, with corresponding [rare] Proto-Min **hŋ-* = **ŋ-*). The complex picture presented by these nasal combinations is tabulated below:

	<i>m</i>	<i>n</i>	<i>ń</i>	<i>ŋ</i>
* <i>s</i> (cluster)	<i>x(i)m/x(i)w</i>	<i>ts/ts</i>	<i>xn/t'</i>	<i>xn/x</i>
[pattern fill]	—	<i>xn/t'</i>	—	—
* <i>s-</i> (prefixial)	[s-] <i>m/m</i>	[s-] <i>n/n</i>	[s-] <i>ń/ń</i>	<i>s-ŋ/s</i>
	<i>smjw/sjw</i>	<i>snj/sj</i>	<i>snj/sj</i>	<i>snj/sj</i>
[dial. variant]	—	<i>dz'/dz'</i>	—	—
[pattern fill]	—	—	—	[s-] <i>ŋ/ŋ</i>

As indicated above, the dental stop shifts (**st*, **sd* > *ts*, **sth* > *ts'*, **s-t*, **s-d* > *dz'*) appear to have been in large part completed in the pre-Archaic period, but there is scattered *xie-sheng* evidence of 'pattern filling' through newly formed *st*, *s-t* and the like; it also seems that dental-initial forms with medial -*w-* (whether primary [< PST *-*w-*] or secondary) underwent a special development in Arch./Anc., accounting for such bizarre-appearing series as GSR-11 (*d'wá/d'uá*^{bp} phonetic),

with the triplet form *t'wá/t'uá* ~ *stwia/swię* ~ *st'wia/xywie*^{bq} 'shred (= chopped up/minced meat'; cf. PTB **s-tw[á]* 'chop/mince' Lepcha *tyót* < *stot* 'chop, mince with numerous pieces as meat', from **s-t[wá]-t*; WB *t'wa* (< *[s-*t*] *wá*) 'mince with a knife' < PST *(*s-*)*twá*; also the enigmatic doublet under GSR-171 (*t'wán/t'uán*^{br} phonetic); *t'iwad/ts'iwái* ~ *st'iwád/xjwn*^{bs} 'snout'; cf. also under GSR-576 (isolated form) *s[t']iwər/swi*^{bt} 'water'; PTB **twəy*, id. < PST *(*s-*)*twəy*. In the parallel form with voiced initial the 'regular' shift occurred in at least one basic root; cf. PTB **s-d[w]á-t* 'sit' (WT *sdod-pa*, pf. *bsdad*), Arch./Anc. *dz'wá/dz'uá*^{bu}, id. < PST **s-dwá*.

The comparative evidence relating to labial stops shifts after **s* (cluster or prefixial) is rather meagre, and it is difficult to determine whether the apparent voicing changes (paralleling those with dental stops) had already been completed in the pre-Archaic period, the *xie-sheng* being of little value here, e.g., PTB *(*s-*)*bəy* 'give' (WT *sbyinpa* 'give; gift', with partially lapsed function of the nominalizing -*n* suffix), Arch./Anc. [sb]*iəd/pji*^{bv}, id. < PST *(*s-*)*bəy*; PTB **ba·k* 'bat (animal)', Arch./Anc. [sb]*iuk/pjuk*^{bw}, id. < PST *(*s-*)*ba·k* (with PST 'animal prefix' **s-*), contrasting with PTB **p(w)a* 'father', PK **ba* ~ **pha* (Taungthu), id., from *(*s-*)*p(w)a* (regular loss of medial *-*w-*), Arch./Anc. [s-*p*] *iwo/b'iu*^{bx}, id. < PST *(*s-*)*p(w)a*; PTB **pw[á]* 'grandmother' (WB *əphwà* ~ *əbhwà*), Arch./Anc. [s-*p*] *wá/b'uá*^{by} 'old woman' (> 'grandmother') < PST *(*s-*)*pwá* (see above for prefixed **s-* with kinship terms); see also below for (secondary) *s-b/s*, paralleling *s-bl/s*. As in the dental stop series, medial -*w-* appears to have produced a special shift: **sphw* > *xw*, paralleling **sthw* > *xw* but completed in the pre-Archaic period; cf. especially PTB **pwār* ~ *(*s-*)*bwār* 'burn; fire', Arch./Anc. *xwār/xuá*^{bz} 'fire', from **sphwār* < PST *(*s-*)*pwār* ~ *(*s-*)*bwār*.

In contrast to the situation as regards dental and probably also labial stops, the **s* element with velar stops was maintained well into the Archaic period, giving rise to two distinct series of reflexes, one for cluster **s* (shift to dental/palatal stop) and the other for prefixial **s-* (simple loss of stop or replacement by ? or *x*). The evidence here, which is unusually extensive in all respects, comes both from the *xie-sheng* and from comparative TB material. There is also very intriguing confirmation from Proto-Min, which (unlike Arch./Anc.) maintained a distinction between aspirated voiced stops (**bh-*, **dh-*, **gh-*) from PST initial voiced stops, and unaspirated stops (**b-*, **d-*, **g-*) from PST prefixed voiced stops, paralleling a similar distinction in the corresponding unvoiced stops. Norman (1973) has reconstructed additional 'softened' stops (written **-b*, **-p*, etc.) for Proto-Min primarily on the basis of special reflexes (continuants or zero) in the northwestern dialects of Kienyang and Kienow, with the suggestion that prefixation of some kind was the underlying factor in the development. The same dialects also exhibit two different reflexes (*k-* and *x-*) for Proto-Min **k-* as reconstructed by Norman, who states simply, 'The origin of this split is unclear'. If we postulate prefixial **s-* to account for the Proto-Min features, however, we will at the same time have an excellent reconstruction to explain the above split, with a remarkable parallelism

with the Arch./Anc. development (x for x reflex, and ø for ? reflex), as shown in the following table ('prefix' = 'other than *s- or [below] *a-):

	Arch./Anc.	Proto-Min	Foochow	Kienyang	Kienow
*k = *kh-	k'/k'	*kh	k'	k'	k'
prefix + *k-	k/k	*k	k	k	k
*s-k	s-k/?	*s-k	k	k/ø	ø
*s-kh	s-k'/x	*s-kh	k	x	x
*sk-	sk/t	*t	t	t	t
*skh-	sk'/t'	*th	t'	h	t'
*g = *gh-	g'/g'	*gh	k'	k'	k'
prefix + *g-	g'/g'	*g	k	k	k
*s-g	s-g/s	*s	s	s	s
*sg = *sgh-	sg'/d'	*dh	t'	h	t'

The comparative material for Proto-Min prefixed *s- before stops is fairly limited, especially for labials and dentals, but does tend to support the suggested reconstruction:

- *s-b[ø?] 'thin': Arch./Anc. *b'âk/b'âk*^{ca}; cf. PTB *s-b[ø]k: WT *sbeḡ-pa* 'lank, thin'; PST *s-bâk ~ *s-bâk (for the doublet, cf. 'cough' in *STC*: fn. 482).
- *s-b[iŋ] 'vase'; Arch./Anc. *b'ieŋ/b'ieŋ*^{cb}; cf. WB *phyân* (< **phyiŋ* < *[s-b]iŋ) 'large open-mouthed pot'; PST *s-bi-ŋ.
- *s-p[ui] 'to fly'; Arch./Anc. *piwər/pywət*^{ca}, from PST *(s-)pur (see above for doublet in -n), with additional evidence for prefixed *s- in this word from early texts (Yang 1975) but with 'intensive' rather than the 'causative' function seen in WT ('*p'ur-ba* 'fly', *spur-ba* 'make fly').
- *s-d[uiŋ] 'bronze'; Arch./Anc. *d'uiŋ/d'uiŋ*^{cc}; Cf. WT *sdoŋ-ba* 'unite, join' (> 'alloy'); PST *s-do-ŋ (see above for the vocalism), or perhaps from an earlier *(s-)luŋ < *(s-)lo-ŋ < *(s-)looŋ < (s-)lu[y]aŋ as suggested by the AT evidence (Benedict 1975: *Introduction to Glossary*).
- *s-k[ow] 'dog'; Arch./Anc. *ku/kəu*^m; PST *(s-)kwəy (with 'animal prefix' *s-).
- *s-k[oy] 'jar'; Arch./Anc. **kūŋ/kəŋ*^{cd} 'earthen jar' (not in GSR), a doublet of *s-kun/ʔuŋ*^{ce} 'jar', [s-k]un/ʔuŋ ~ [s-k]iun/ʔiwoŋ^{cf} 'pitcher, jar'; cf. PK **kəŋ* (< **-koŋ*) 'earthen jar' (possible loan from Ch.); PST *[s-]ko-ŋ (with vocalism as in 'bronze', above).
- *s-kh[âŋ] (< *s-kh[ân]) 'liver'; Arch./Anc. *kân/kân*^c; cf. PTB **ka* 'bitter' (Bodo-Garo **b-ka* 'liver'); PST *(s-)ka(-n) (for vocalism, see *STC*: fn. 488) with 'body part prefix' *s-).
- *s-kh[iu] 'type of leek'; Arch./Anc. *kiôg/kiəu*^{cg} 'Allium, leek, onion'; cf. PTB *s-k[a, a']w: WT *sko-tse* 'wild onion', Kanauri *go-ze* 'wild garlic' (app. loan from Tibetan); Kachin *săkau* (free form) ~ *gau* (comb. form) 'onion, leeks',

Maru *khau* ~ *hau* (< **s-khau*) 'onion' (app. loan from Kachin); PST **s-kâw* (see above for vocalism).²⁰

The evidence for *s (cluster or prefixial) with velar stops comes primarily from the *xie-sheng* but is supported also by TB comparisons. The prefixial type presents much less of a problem, e.g., GSR-122 has *k'ju/k'ju* ~ *s-ku/ʔəu*^{ch} 'conceal' as phonetic, with the likely cognate WB *khui* (< *[s-k]ui < *[s-k]əw) 'take shelter, refuge' (= 'conceal oneself') < PST **s-kəw*; note that this series includes *k'ju/k'ju*^{ci} 'body, person', *s-kju/ʔju*^{ci} 'to warm the body (as a mother a child)', with 'causative' *s- prefix contrasting with the 'body part prefix' *s- found in the cognate WT *sku* 'body' (WB *kuiy* = *kui* 'body' < *[-]kəw), from PST *(s-)kəw. The numerous Arch./Anc. series with initial ? (GSR writes ·) are for the most part to be reconstructed with initial *s-k; cf. the following trio showing 'animal prefix' *s- (Arch. forms bracketed when the series contains no initial velars):

- [s-k]iəŋ/ʔiəŋ^{ck} 'eagle, falcon'; cf. WT *skyiŋ-ser* 'eagle, vulture' (*ser* for *gser* 'gold'); PST **s-kiŋ* (contra *STC*: fn. 225; for the vocalism, see *STC*: fn. 476).
- [s-k]iwän/ʔiwän^{cl} 'Mandarin duck'; cf. WT *skyarpo* 'snipe, wood-cock', *skyar-mo* 'heron', *tshu-skyar* 'duck, bittern' (*tshu* 'water'); PST **s-ky[w]* *a-r*; cf. also the apparent doublet: *kwân/kuân*^{cm} 'heron' < *[-]kwär.
- [s-k]ian/ʔien^{cn} 'lizard'; cf. WT *skyin-gor*, id. (not analyzed); PST **s-ke-n* ~ **s-ki[-]n*.

The *s-k reconstructions obtained in this manner are often confirmable through doublet forms in other series (cf. 'jar', above), e.g., GSR-253 (the 'lizard' series, above), with phonetic [s-k]an/ʔan^{co} 'tranquillize', includes [s-k]at/ʔat^{cp} 'pull up' (< *[-]k[an] + suffix with obstruent initial), a doublet of *kian/kjân* ~ *kjân/kjôn*^{cd} (tone B) 'pull up' and *kjân/kjân* ~ *kjân/kjôn*^{ce} (tone B) 'lift' (etym. same word) as well as *s-k'jân/xjôn*^{cs} (tone A) 'lift' (with the anticipated tone B > A shift after s-); the same series (GSR-253) also includes [s-k]ian/ʔien^{ct} (tone C) 'to rest, repose' (doublet of the phonetic, above), the same word as [sk]ian/ʔien^{cu} (tone C) (loan) 'to rest, at ease', the phonetic of GSR-243 (see below for 'to swallow' from this series), a doublet of [s-k]ân/ʔân^{cv} 'peace, peaceful, tranquil', the phonetic of GSR-146, which includes both [s-k]an/ʔan ~ [s-k]ân/ʔân^{cw} (tone C) 'late', cognate to *kân/kân*^{cx} (tone C) 'sunset, dark, evening', and [s-k]ât/ʔât^{cy} 'root [= 'saddle'] of the nose' (< *[-]k[ân]; cf. 'pull up', above) and *[-]k[ân] 'shallow valley, saddle of a hill', *hna-r-kon* 'the indentation [= 'saddle'] above the nose [hna-r]'; PST *(s-)kân.

As illustrated in the concatenation above, the relationships often are of a complex nature and frequently include significant links between prefixial and cluster types (as in 'swallow'); cf. *kun/kun*^{da} 'father' (> 'grandfather'), phonetic in two cognate words: **s-kun/ʔuŋ*^{db} 'old man, sir, father' (> 'grandfather') (not in GSR) and *skyiŋ/ʔsiwoŋ*^{dc} 'father-in-law' (< 'grandfather' through teknonymy, a feature of Chinese kinship terminology) (listed separately as GSR-1189); cf. PTB *k[a, a']ŋ* 'father, grandfather'; PST *(s-)ka-ŋ. The basic phonetic series here (GSR-1173) also includes *s-kun/ʔuŋ*^{ce} 'jar' (above), tying in with GSR-1184, which includes

[*s-k*]iŋ/ʔuŋ ~ [*s-k*]iŋ/ʔi-woŋ^{af} ‘pitcher, jar’ (above) as well as [*s-k*]iŋ/ʔi-woŋ^{ad} ‘to cover, conceal’; cf. PTB **s-k*[*u,u*]ŋ: WT *skuŋ-ba* ‘to hide in the ground; to bury, inter; PST **s-ku*-ŋ. This phonetic series (GSR-1173) should be expanded to include not only GSR-1189 (‘father-in-law’, a bove) but also GSR-1190 (as recognized by Li 1971), which includes *s-giōŋ/siŋ*^{de} (tone A) ‘high’, the same word as [*s-g*]iōŋ/siŋ^{df} (tone A), id. (listed separately as GSR-1012) (both graphs have ‘mountain’ as signfic); cf. PTB **s-g*[*a,a*]ŋ: WT *sgaŋ* ‘projecting hill or spur on side of mountain’; WB *khaŋ* (<*[*s-g*]aŋ) ‘knoll, rising ground’ (obs.), *khaŋ-rui* ‘strip of high ground, spur of mountain’ (-*rui* app. for (ǎ-*rui* ‘bone’) PST **s-ga*-ŋ (for the vocalism, see *STC*: fn. 488). The recognition of **s* combinations clarifies the phonetic role of certain elements in many characters; cf. the following:

sgaŋ/iaŋ^{de} ‘sheep’ (GSR-732), phonetic in *kjaŋ/kjaŋ*^{dh} ‘family name’ (GSR-711) and *k’iaŋ/k’iaŋ*^{di} ‘Western tribe’ (GSR-712), also in *kāŋ/kwŋ*^{di} (tone A) ‘soup’ (GSR-747; the graph is said to include a ‘lamb’); the last is cognate to *s-k’iaŋ/xiaŋ*^{dk} (tone A) ‘beef soup’ as well as [*sk*]āŋ/t’āŋ^{di} (tone A) ‘hot liquid’ (note tone A throughout; see below for the last two series).

[*s-g*]iōg/siū^{dm} ‘laugh’ (GSR-1150), to be added to GSR-1141: [*s-k*]iōg/ʔiū^{dm} ‘bend’ phonetic.

*s-g*ʔ/ʂa^{do} ‘breaking voice’ (GSR-1236c), to be added to GSR-36: *g’*ʔ/ʂa^{dp} ‘summer’ phonetic.

skyiər/t’s^{da} ‘fine cloth’ (GSR-1237k), to be added to GSR-549: *s-k’iər/xjē*^{dt} ‘thin, rare’ phonetic.

sk’am/t’ām^{ds} ‘cove’ (GSR-645), to be added to GSR-651: *kjām/kjām*^{dt} ‘now’ phonetic; cf. WT *skam-pa* ~ *rkam-pa* ‘to long for; longing’, app. a doublet (‘to thirst for’) of *skyem-pa* ‘to be thirsty’, *skyems* ‘thirst’ (resp.), from PTB **s-kām* (as shown by the vocalic alternation; see *STC*: fn. 344); PST **s-kām* (also cited in part in Yang 1975).

The reconstruction of the cluster type of **s* presents no difficulties when the phonetic series has only a single entry of this kind, especially if a TB comparison is available; e.g., *sk’iēŋ/t’iēŋ*^{du} ‘red’, in an otherwise velar-initial series (GSR-831: *kjēŋ/kjēŋ*^{dv} phonetic); cf. PTB **s-kyeŋ*, id. PST **s-kyeŋ*; also *sgyiēŋ/zjēŋ*^{dw} ‘kidney’, in an otherwise velar-initial series (GSR-368: *k’iēŋ/k’iēŋ*^{dk} phonetic); cf. PTB **s-gal*: WT *sgal-pa* ‘small of the back’, Chepang *gal*, Lushei *kal* ‘kidney’; PST **s-gal*. In some instances only a TB comparison is available; cf. *sgyiəp/zjəp*^{dv} ‘ten’, phonetic in a series (GSR-686) with only one other palatal-initial form; cf. PTB **gip*, id.; PST *(*s*-)*gip*. An intermediate type of case is illustrated by GSR-496, which has *sky’iwət/t’s’iuē*^{ak} ‘go out, come out, bring out’, also read *sky’iwəd/t’s’wi* ‘bring out, take out’; PTB **ku*(-*s*) ‘take up or out, lift up’ (*STC*: fn. 281); PST *(*s*-)*ku*(-*s*), as phonetic in a series evenly divided between dental- or palatal-initial forms and velar-initial forms; cf. also GSR-672: *g’em/yām*^{dz} ‘small pit’ phonetic, which includes five velar-initial as opposed to nine dental- or palatal-initial entries, yet the initial velar in this series is ‘proved’ by the doublet *sg’am/d’ām*^{em} (tone B) ‘lotus flower’, *g’am/g’ām*^{eb} (tone B), id. (without the anticipated tone shift); also GSR-758: *sgyām/ziam*^{ec} phonetic, with only three

velar-initial as opposed to ten dental- or palatal-initial entries, yet the initial velar is well supported by the comparative TB data (*STC*: fn. 464). Finally, certain series entirely lacking velar-initial entries are to be reconstructed with **s* cluster initials, e.g. GSR-686 (‘ten’, above) and cf. the following:

[*sk*]ien/t’ien^{ed} ‘heaven’ (tone A), a doublet of *[**s-k*]ien/xien^{ee} (tone A), id. (poss. phonetic; not in GSR); cf. PTB *(*m*-)*ka*(-*n*): WT *wkha* ‘heaven’, *nam-mkha* ‘heaven, sky’; Magari *nam-khan* ‘sun’, Garo *mikka* = *mka* ‘rain; (comp.) sky’ (with ‘collective’ plural **n*; see *STC*: fn. 428); PST *(*s*-, *m*-)*ka*(-*n*); this word (‘heaven’) is phonetic in a series (GSR-361) which includes only [*sk*]ən/t’an ~ [*sk*]ien/t’ien^{ed} (tone A) ‘to swallow’, a doublet of [*s-k*]ien/ʔien^{es} (tone A) ‘gullet’ (= ‘the swallower’), (tone C) ‘to swallow’ (from earlier suffixed form) (see also ‘smoke’, above, from this GSR-370 series); cf. PTB *(*s*-)*kyəw*(-*t*): WT *skyugaŋ* ‘a gulp, draught’, *skyud-pa* ‘to swallow’; WB *kyuik-khyá* (< **kyui-khyá*) ‘to swallow, gulp’; PST *(*s*-)*kyəw*(-*n*, -*t*) (see *STC*: 98–103 for these dental suffixes).

[*sg*]aŋ/iaŋ^{eh} (tone A) ‘South side’ is phonetic in a series (GSR-720) which includes [*sg*]aŋ/iaŋ^{ei} (tone A) (etym. same word) ‘South side of a slope; North bank of a river; light; the light cosmogonic principle [*yang*]’, cognate to *s-k’iaŋ/xiaŋ*^{ej} (tone C) ‘to face, turn towards; drawn towards; (face side:) window; (the facing side:) South; (the time ‘turning towards’ the speaker:) a little while ago’ (from earlier suffixed form) and *s-k’jaŋ/xjaŋ*^{ek} (tone C) (etym. same word) ‘window facing North; turn towards’; cf. Garo *skan* ‘before’ [both spatial and temporal senses] < PST **s-kan*; this series (GSR-720) also includes [*sk*]āŋ/t’āŋ^{di} ‘hot liquid’ (see above under ‘soup’); also [*sg*]aŋ/iaŋ^{ei} ‘to roast, heat’; cf. PTB *(*-*)*gaŋ* (*STC* cites **kaŋ*) ‘to roast, toast, broil, fry’ < PST *(*s*-)*gaŋ*; also [*sg*]aŋ^{em} (tone A) ‘lift, raise; winnow’, etc., a doublet of *s-k’iəŋ/xiəŋ*^{em} (tone A) ‘lift, raise; rise’, etc. and also used as loan for ‘hawk’, a doublet of [*s-k*]iəŋ/ʔiəŋ^{ek} ‘eagle, falcon’ (above)²¹, and as loan for ‘metal frontlet of a horse’, a doublet of [*s-k*]iəŋ/ʔiəŋ^{eu} ‘strap on breast of horse or ox’ (establishing [*s-k*] for this series: GSR-718) and of [*sk*]iəŋ/ʔiəŋ^{ev} ‘breast, breast-plate’, etc. (from the ‘eagle’ series: GSR-890, above); the GSR-718 series also includes [*s-k*]āŋ/ʔāŋ^{ew} (loan) ‘full, ample’; cf. PTB *(*s*-)*gāŋ* ~ (*s*-)*kāŋ*: WT *gaŋ(-ba, -po)* ‘full’, *sgaŋ-ba* ‘to grow or become full’, *skan-pa* ~ *skon-pa*, pf. *bskans* ‘fulfill’; Kachin *kon* ‘to be full, extended [udder with milk]; to be full, well-developed [fruit]’ WB *kāŋ* ‘to form [= ‘become full’], as fruit in earliest stage’ < PST *(*s*-)*kāŋ* (WT also has medial -*e*- doublets, from earlier medial **-ə*- forms).

[*sg*]u/iu^{ex} ‘agree’ is phonetic in a series (GSR-125) which includes three entries for which initial velars are to be reconstructed:

[*sk*]u/t’zu^{ey} (tone A) ‘steal’ (with the regular tone B > A shift after *s*-), a doublet of *k’u/k’zu*^{ez} (tone C) ‘rob’ (from earlier suffixed form) as well as *k’u/k’zu*^{eu} (tone B) ‘strike, lay hold of’ and *s-ku/ʔzu*^{eb} (tone B) ‘beat’ (from the ‘body’ series: GSR-122, above); cf. PTB **r-kə-w*^b ‘steal’ < PST *(*s*-, *r*-)*kə-w*^b.

[*sk*]u/t’zu^{ec} (tone A) ‘to slight, despise’ (tone B > A shift after *s*-), a doublet of *s-k’u/xəu*^{ed} (tone B ~ C) ‘disgrace, insult’ as well as *s-k’u/xəu* ~ *k’u/k’əu*

(both tone C) ~ *ku/kəu*^{6c} (tone B) 'revile, disgrace' and *s-k'u/xəu* ~ *g'u/γəu*^{6f} (both tone C, from earlier suffixed forms, the latter with second. voicing; see fn. 21) 'revile, insult, disgrace'; cf. PTB **a-k[u, əw]*: WT 'khu-ba 'to offend, insult' (cited also in Bodman 1974) < PST *(*s,-a*)*k[u, əw]*.²²
[*sg*u/iu⁶ⁱ 'sheep'; cf. PTB **s-g[u, əw]*: Kachin *səgu* 'sheep' < PST **s-g[u, əw]*.

PTB has prefixed **a* = ?*a*- (non-phonemic vocalic onset for initial vowels) as a morphological feature of considerable prominence, the unstressed form (?*a*-) frequently yielding ?, notably in WT (*a-chung*; see *STC*; fn. 339), WB (*auk-myt* = glottal accent; see *STC*; fn. 260), Kachin and Garo (*STC*: fn. 78).²³ Karen shows this prefix in vestigial form (*STC*: 130 and fn's 352, 354) but Chinese superficially appears to lack this element, apart from a late but possibly related stressed form found with kinship terms and kin numeratives (*STC*: 156 and fn's 422–24). Scholars have long called attention to the frequent alternation of nasals and stops in the language, both as initials and as finals (see *STC*: 156–57 for the latter). A closer study of the *xie-sheng* reveals that the overwhelming majority of instances of interchange in final position involved replacement of nasal by stop (voiced or unvoiced), apparently through assimilation to an earlier suffix, indicating that most suffixes in the language had an initial obstruent (cf. forms for 'pull up' and 'root of nose', above). In initial position, however, the common replacement was that of stop by nasal, and here it seems that we must posit a series of preglottalized stops for the Archaic stage, thus bringing it very much into alignment with TB languages, notably WT and Kachin. A parallel development has taken place in Tibetan, the Khams dialect having prenasalized obstruents as reflexes for the preglottalized (*a-chung*) obstruents (both voiced and unvoiced) of WT. The further step to nasal is found in Vietnamese and Shan, which have initial *m*- and *n*- for the earlier *?*b*- and *?*d*- of Mon-Khmer and Tai, respectively. None of this, of course, means that anything of the kind occurred in Arch./Anch., yet a considerable body of evidence stands in favor of the hypothesis. We cannot be certain whether, as in Tibetan, both voiced and unvoiced stops were subject to preglottalization but the evidence as a whole favors this view (we write ?*t*/*n* or ?*d*/*n*, etc. for Arch./Anc. where cognate forms are available, otherwise [?*t*,*d*]/*n*, etc.). The *xie-sheng* themselves are highly informative, e.g., ?*giog*/ηieu^{6j} (tone A) 'high', a doublet of *g'jog*/*g'jäu*^{6k} (tone A), id., is phonetic in a long series (GSR-1164) with more stop-initial than nasal-initial entries; note particularly the doublet ('triplet') ?*djan*/ñjän^{6l} (tone B) 'trample', ?*djan*/ñjän ~ ?*dian*/nien ~ *d'ian*/*d'ien*^{6m} (all tone B) 'tread, trample' (note the same tone throughout), written not once but twice with characters from series (GSR-201 and GSR-453) which otherwise have only stop-initial entries! The interpretation of certain series presents difficulties, notably GSR-152 with *t'ân*/*t'ân*⁶ⁿ 'sigh' as phonetic but with entries almost exclusively with nasal initials (*n*- or *ñ*-); a close study of this series shows conclusively that the stop initial is basic and that the nasal initials were all derived from preglottalized stops, making this a distinctively 'preglottalized' series, just as other series were characterized by initial *s*- (cluster or prefixial; see above); cf. the following cognate groups, with ties especially to GSR-147, another series with original final *-r* (> *-n* in most entries):

- (GSR-152) *t'ân*/*t'ân*⁶ⁿ (above) 'sigh' (phonetic in this series; the graph has 'mouth' and 'distress'); ?*tân*/*nân*^{6o} (tone A) 'difficult', (tone C) 'difficulty, calamity' (this character used as loan for 'ample' and 'expel' below, both with final *-r*); (GSR-147) *t'ân*/*t'ân*^{6p} 'exhausted, fagged out'; *tân*/*tân*^{6q} 'exhaust'; *tân*/*tân* ~ *târ*/*târ*^{6r} 'disease, suffering, distress'; (GSR-148) *tân*/*tân*^{6s} 'suffering, distress'; cf. WT (medical texts) *thor-pa* ~ ?*thor-pa* 'small-pox' (*dmar-thor* 'measles'), *thor-bu* 'a class of diseases, comprising dypepsy and cutaneous disorders' < PST *(*a*-)*târ*.
(GSR-152) ?*târ*/*nâr*^{6t} 'rich, ample, fine'; GSR-147) *tân*/*tân*^{6u} 'ample' (this character also glossed as 'single, simple', see below, and as 'exhaust', see above); (GSR-350) [?]*târ*/*nâr*^{6v} 'much, ample; fine, beautiful'; cf. WT *thor-mo* 'the growing fat [= 'ample/rich/fine'] of cows, goats, in consequence of sterility' < PST *(*a*-)*târ*; for the final, cf. *tân*/*tân*^{6u} (above) 'single, simple'; WT *thorbu* 'single, separate' < PST *(*-*)*târ*.
(GSR-152) ?*târ*/*nâr*^{6w} (above; add. gloss) 'expel demons and noxious influences'; cf. WT *gor-ma* 'strewing-oblation', an offering brought to malignant demons (whence the Lepcha loan: *tor* 'an offering and ceremony of casting out evil spirits'), also the related ?*or-ba* 'to be scattered, dispersed' ?*dor-ba* 'throw or cast away; esp. to throw out, eject' < PST *(*a*-)*târ* ~ *(*a*-)*dâr*.
(GSR-152) ?*dâr*/*niei* (< *?*djâr*) ~ ?*dâr*/*nâr*^{6x} 'pickled meat with bones in it'; cf. WT *sdor* ~ *rdor* 'that which gives relish to food, seasoning, condiment, esp. *t'ug-sdor* that which gives substance to soup [*t'ug*], viz. meat; *ts'a-sdor* 'salt [*ts'a*] and meat; spice' < PST *(*s,-a*-)*dâr*.²⁴
(GSR-152) ?*t'jan*/ñjän^{6y} (tone A) 'burn'; (GSR-217) [?]*t'jan*/ñjän^{6z} (tone A), id. (etym. same word); (GSR-147) *t'jan*/*tsjân*^{6a} (both tone B) 'to heat; to flame'; cf. Lepcha *tor* (< **tar*) 'to be burned, as house' < PST *(*a*-)*tar*.
(GSR-152) ?*t'jan*/ñjän^{6b} (above; add. reading) 'respectful' [= 'fearful']; ?*tan*/*nan* ~ ?*t'jan*/ñjän^{6c} 'to fear'; (GSR-147) *t'jan*/*tsjân*^{6e} 'battle, to fight; to fear' < *(*a*-)*tar* (no known TB cognate; contra *STC*: fn. 461).

The case for reconstructing preglottalized stops for the Archaic stage is greatly strengthened when TB comparisons are available, as in four of the above five roots; cf. also the sizeable GSR-1031 series, which contains only one nasal-initial entry, viz. ?*tiök*/*niek*^{6d} 'hungry for, desirous; hungrily, dissatisfied'; cf. WT *ltogs-pa* 'hunger; hungry' < PST *(*-*)*[o]k*; also the very long GSR-139 series (27 entries), which contains only three nasal-initial entries, including ?*kân*/*hân*^{6e} 'wild dog'; cf. Kachin *tsyākhyon* 'fox, wolf or wild dog', from **-khon* (second. palatalized by the prefix) < PST *(*-*)*kâ:n*; also GSR-405, with mainly stop-initial entries but with one group of nasal-initial forms, including ?*piēt*/*mjēt*^{6f} 'silent, quiet; secret; near, close', a doublet of *piēd*/*pyiē*^{6g} (< **piēt* + suffix) 'secret' and *piēd*/*pyiē*^{6h} 'to shut, close' (etym. same word); cf. WB *pit* 'shut up, close, stop up' < PST *(*-*)*pit*; including also ?*piēt*/*mjēt*⁶ⁱ 'to wipe a vessel clean'; cf. WT ?*phyi-ba* ~ ?*phyid-pa* 'to wipe, blot out', *phyi-bdar* 'clean, cleanse; (comp.) wash [face]' (*bdar* 'rub'), *byi-dor* 'the wiping, cleaning' (an app. second. form); Lushai *phī?* (< **phis* < **phi-s*) 'to wash (the face)' < PST *(*a*-)*pi(-s,-t)*.

Another possible source of confirmation is supplied by Chinese-Tai loanwords, in either direction, since PT has roots with initial *ʔb- and *ʔd-, including one significant early loan into Chinese ('piebald/variegated', below). PT also has nasal-initial roots on 'high' tones (< surd initials), conventionally reconstructed with initial *hm-, *hn-, etc., but the closely related Kam-Sui languages show two distinct reflexes here, indicating that some of these roots were preglottalized rather than preaspirated (PT or pre-PT level): PT *hma, Sui hma 'dog' but PT *hmaay, Sui ʔme 'mark'; PT *hmaaw, Sui hmo 'cold' but PT *hna, Sui ʔna 'thick'. This is of special significance in connection with the following comparison, involving another root of 'cultural' type (see 'expel demons', above), this with Kachin as well as Tibetan cognates:

[ʔb]iwo/mju^{ai} (tone A) 'magician', from *ʔba (regular vocalic shift), in a series (GSR-105) which contains only [ʔb]iwo/mju^{ak} (tone A) 'deceive' (etym. same word); cf. WT ʔba-po 'magician, sorcerer, conjurer'; Kachin ba ~ dzāba ~ tsyāba 'to divine', sāba 'divination, augury' < PST *(a-)ba.

For the above root PT has the early loan *hmo (tone A) 'sorcery/sorcerer/magician' (note the tonal agreement), for *ʔmo (see above; Kam-Sui cognates app. lacking), not from Arch.-LPT (which retains final -a < PST *-a) but from the Archaic 'lineage' itself, indicating a development ʔbiwo > *ʔmwo (> PT *ʔmo) > mju rather than ʔbiwo > *ʔbiu > mju. Proto-Min presents a parallel situation inasmuch as the nasal-initial roots on 'high' tones also appear to have been derived in part from preglottalized forms; note especially the three velar roots (initial *hŋ- = *sŋ), two of which correspond to Arch./Anc. forms with initial *[k,g]/ŋ-, viz. *[ʔk,g] ian/ŋien^{ai} 'ink-stone' (not in GSR), with phonetic kian/kien^{am} 'see' (phonetic in the all stop-initial GSR-241 series as well as in GSR-244: [sk]ian/t'ien^{ap} 'face'); *[ʔk,g]lāk/ŋpk^{ao} 'forehead' (not in GSR), with phonetic klāk/kāk^{ap} 'each' (phonetic in the lengthy, almost exclusively stop-initial GSR-766 series).

The possibility of reconstructing still other (non-obstruent) preglottalized consonants for the Archaic language must be considered. PTB/PST prefixed *a-, the ultimate source of these preglottalized forms, seems to have occurred freely before all classes of consonants, on the basis of comparative TB evidence (STC: 121-23), and Tibetan itself presents clear evidence for at least some of these classes, e.g., *ʔs- < 'ts'- (STC: fn. 90), *ʔr- < 'dr- and *ʔl- > 'ld- (STC: fn. 338), also *ʔly- > 'dz- (STC: fn. 104). It is possible that the frequent alternation between initial sibilants and affricates in Chinese (cf. STC: fn. 455) reflects preglottalization in a manner parallel to that of Tibetan (above), e.g., ʔsōg/ʔsau^{ao} 'claw, nail', phonetic in GSR-1112, which includes the cognate sōg/sāu^{ap} 'scratch', but a reconstruction of this kind must remain highly speculative. Similarly, there is extensive xie-sheng (and some comparative) evidence for affricates (ts, ts', dz' and dz > z) as alternative reflexes of *s (cluster or prefixial) combinations with velar stops, accounting for certain of the 'odd' GSR series, e.g., GSR-280, with [s-k]āt/ʔā^{ap} 'crush under the wheels' and [sk]āt/ʔā^{at} 'a slip, a strip', the latter for the anticipated *[sk]āt/tāt; one possible reconstruction here is *[ʔsk]āt/ʔā^{at}, paralleling the

above example from GSR-1112, but again there appears to be no possibility of confirmation. In addition, there is a modicum of xie-sheng evidence suggesting that preglottalized nasals, perhaps along with ʔl- (see below), occurred marginally at the Archaic level, giving rise to homorganic surd stops, with velar shift to glottal stop also a possibility; cf. ŋo/ŋa^{au} 'tooth', phonetic in ʔŋo/ʔa^{av} 'raven, crow'. These shifts would necessarily have had to precede the preglottalized stop > nasal shifts, e.g., ʔm- > p(-), followed by ʔb-, ʔp- > ʔm- > m- (for this development, see 'magician', above); cf. miwo/mju^{aw} 'not, no', from *ma (regular vowel shift); PTB *ma, id. < PST *ma (establishing the initial *m- as original), phonetic in GSR-103, with exclusively initial m- or xm- entries apart from ʔmiwo/p'iwō^{ax} 'lay the hands on', etc.; contrast the following GSR-104 series; with [ʔp,b]iwo/mju^{av} 'martial' as phonetic, containing only ʔbiwo/mju^{az} 'parrot', from *ʔbya, app. cognate to PTB *bya 'bird' < PST *(a-)bya, and piwo/piu^{ha} 'tax', from *pya; cf. WT dpya 'tax, duty, tribute' < PST *[d-]pya.

Both prefixial (rarely cluster) s- and ʔ are to be reconstructed before Archaic stop + l clusters, with the same sound shifts as noted before simple stops, with evidence of frequent doublet formation, e.g., s-[gy]iər/sith 'excrement', also read as s-[k]iər/xvi 'groan', pointing to an old doublet (cf. Bodman 1973); cf. PTB *(s-)kləy, id. < PST *(s-)kləy (with 'body part prefix' *s-); the first form shows secondary voicing (see fn. 21), found also in s-[gy]iōg/si^{hu} 'head'; cf. PTB *s-kra 'head hair' (also 'head' in Tamang-Gurung-Thakali [Nepal]; see STC: fn. 487 for vocalism) < PST *s-kra. In both these examples, as in many others, the xie-sheng series involved is very brief or is otherwise ambiguous as regards reconstruction of medial -l- (< PST *-r-, *-l-), but it appears that by the Archaic period this medial element had already been replaced (*-ly- > -j-) in many roots through palatalization, a characteristic feature of this language; contrast s-gliug/sju^{av} 'number' (above) and s-k'lik/xpk ~ s-k'luk/xuk^{ad} 'vomit'; cf. WT skyug-pa (< *sklug-), id. < PST *s-klu-k (also cited in Bodman 1974), with s-k'jəm/xjəm^{te} 'set forth, display'; cf. WT 'grem(s)-pa, pf. bkram 'to put or lay in order; to spread out, display' < PST *(s-,a-)krəm; also s-[k']o/xuo^{hf} 'tiger' (isolated under GSR-57), an early loan from Mon-Khmer (khla ~ kla forms) via PBL *(k-)la (STC: fn. 83) with 'animal prefix' *s-, phonetic in [sk'y]io/ts'iwō^{he} 'dwell, stay; keep still; to place; a place' (a doublet of kjo/kjwoth 'sit down; dwell; settlement; repose'), with a basic doublet loan *s-klā (with final -ā rather than the regular -o for PBL *-a) reflected in the use of the same graph as phonetic in [s-k]ia/xjie^{hi} (< *[s-k]iā) 'earthenware vessel', from *s-k'yā < *s-k'lā. It appears, however, that the most common combination of this kind was Arch. s-gl, yielding Anc. s- (rarely s-), but these forms are generally well 'disguised' in apparently unrelated series ('grove/forest', below) as well as in series with Anc. s- ~ l- alternation (GSR-498, -878, -975) or even with Anc. s- or s- alone; cf. the following:

s-[gl]jəm/sjəm^{hi} (tone A) 'dense trees, thicket, grove' (GSR-664), the prefixed doublet of gliəm/liəm^{hk} (tone A) 'forest, grove' (GSR-655); cf. Garo -grim 'suffixed added to a noun meaning grove, thicket', bol-grim 'forest' (bol 'tree') < PST *(s-)grim.

s-[g]l̥iwət/s̥iue̯t ~ *s*-[g]l̥iwəd/s̥wi̯h̥l̥ 'go along, follow', etc. (GSR-498); cf. WT *sgrod-pa* = 'grod-pa 'to go, travel' < PST *(*s*-)grot; also, from the same series, [g]l̥iwət/l̥iue̯t^{hm} 'fat around intestines'; cf. WT *grod-pa* 'belly, stomach' < PST *grot.

s-[g]l̥iəg/s̥i̯h̥m̥ 'recorder, scribe; record'; cf. WT *sgrig-pa* 'to lay or put in order, arrange; to put or fit together, join; to compile, write books'²⁵ < PST **s*-grik.

s-[g]l̥āk/s̥āk^{hm} 'twist a rope' (*Anal. Dict.* also 'rope, string; bind') (isolated under GSR-770); cf. WT *sgrog-pa*, pf. *bsgrags* 'to bind', *sgrog(s)* 'cord, rope' < PST **s*-grāk.

The corresponding combinations of velar stop and cluster *s* appear to have been rare in Archaic, although the *xie-sheng* enable us to set up some forms along these lines; cf. **s*[g]l̥iəg/d̥z̥^{h̥} 'spittle (of dragon)' (fn. 25), also *sk*'l̥iam/ts̥i̯ām^{h̥} 'all', phonetic in a series (GSR-613) of velar stop + *l* type, suggesting that the affricate perhaps should be considered the 'regular' reflex here, yet another series of this type (GSR-1069) has a stop reflex: *sk*'l̥iōg/t̥'īz̥u ~ *gliōg/liēu*^{hm} 'get cured, recover', a doublet of *glōk/lāk* ~ *gliōg/liäu*^{hx} 'to cure', also read [ʔk.g]l̥ōk/ŋōk 'music' and [ʔk.g]l̥ōg/ŋau 'joy, rejoice', phonetic in GSR-1125, which includes another doublet: *sgliōk/iak*^{hy} 'medicinal plant; medicine; to cure; for the reflex in the latter, cf. *sgliam/iām*^{hz} 'salt', from another series (GSR-609) of velar stop + *l* type, cognate to PTB **gryum*, id. (contra the analysis in *STC* fn. 472).²⁶ The stop reflex also appears in three words with early loan relationships with PT and PMY, with support for the velar stop in the case of both 'moss' (series [GSR-976] includes **[s-k]əg/xāi*^o 'laugh', listed under 1240a) and 'tripod' (series [834] includes [*sk*]i̯ēŋ/t̥'jēŋ^{id} 'red' = *sk*'i̯ēŋ/t̥'jēŋ^{du} 'red' [same tone], above); note the tones (irregular in 'tripod' as result of unvoicing):

	Proto-Tai	Proto-Kam-Sui	Proto-Miao-Yao	Arch./Anc.
<i>moss</i>	* <i>glay</i> ^A	—	—	[<i>sg</i>]əg/d'āi ^o (tone A)
<i>peach</i>	—	—	* <i>glaaw</i> ^A	[<i>sg</i>]og/d'āu ^{if} (tone A)
<i>tripod</i>	* <i>glian</i> ^A	*(<i>ʔ</i>) <i>glian</i> ^A	—	[<i>sk</i>]ien/tien ^{ie} (tone B)

Palatalization played a role here comparable with that noted for prefixal *s*- (above); cf. *g*'i̯ak/g'jak^{h̥} 'tongue', with doublets [*sg*'y]i̯at/d̥z̥'jār^{h̥} (< **sg*'yjak through assim.), id. (isolated character under GSR-288) and *sp*'y̯jēg/d̥z̥'ie̯^{h̥} (tone B) 'pick up with the tongue, lick' (in GSR-867, which includes initial *g*'- entries) and **sg*'y̯jēg/d̥z̥'ie̯^k (tone B) 'lick' (same word; character under GSR-1238e) < PST *(*s*-)g-lyak (the doublet forms are typical reflexes of PST **-yak*); cf. PTB **s*-lyak ~ **m*-lyak 'lick; tongue'; also **[sg*'y]i̯āg/d̥z̥'ia^{h̥} 'musk deer' (not in GSR); cf. WT *glaba*, id. < PST *(*s*-)gla (with 'animal prefix' **s*-; for the vocalism, see *STC*: fn. 487).²⁷

Preglottalization appears at times in series of stop + *l* type, as in GSR-1125 (above), but here as elsewhere the relationships are often well hidden, with two series (GSR-768 and -788) showing only Anc. initial ŋ-, from Arch. ʔgl- (or ʔkl-)

but with cross-ties especially to GSR-766 and -769 (this belongs in GSR-788, since the same phonetic is involved; see below); cf. the following:

[ʔgl]i̯uk/ŋiwokⁱⁿ 'jade', a doublet of [g]l̥iuk/liwok^{io} 'precious stone, precious', a derivative of [g]l̥iuk/liwok^{ip} 'green'; note that the 'jade' series (GSR-1216) includes [*s-k*'l]i̯uk/xiwok^{iq} 'disconcerted', perhaps cognate (= 'to be disturbed') to WT *dkrug-pa* = West T *śrug* < **skrug* 'to stir, stir up, agitate; to trouble, disturb, confound' < PST *(*s*-)kru.k.

(GSR-788) [ʔgl]āk/ŋāk^{ir} 'osprey' (= 'sea eagle') a doublet of (GSR-766) *glāk/lāk*^s 'a kind of bird'; cf. WT *glag* 'eagle, vulture' < PST *(*a*-)glāk.

(GSR-788) [ʔgl]āk/ŋāk^{it} 'scared', a doublet both of *glāk/lāk*^{is} (above) 'fear' this gloss only in *Anal. Dict.*) and (GSR-769) **s*[gl]ek/šek^{iu} (< **s*-glāk or **s*-grāk) 'fear' (phonetic is *s*-[gl]āk/sōk^{iv} 'first day of the moon', with phonetic [ʔgl]i̯āk/ŋipk^{im}, as in GSR-788); cf. PTB *(*s*-)grāk 'fear' < PST *(*s*-, *a*-)grāk.

(GSR-788) *s*-[gl]āg/suo^{iu} (tone C) (< **s*-glāk + suffix) 'inform, complain' (another reading; cf. **s*[gl]ek/šek 'fear', above); cf. PTB *(*s*-)grāk: WT *sgrog-pa*, pf. *bsgrags* 'to call, call out; publish, proclaim, promulgate; to shout, scream'; WB *krak* (< **[g]rak*) 'honor, glory' < PST *(*s*-)grāk.

(GSR-788) [ʔkl]āk/ŋāk^{ix} 'beat the drum and make a noise'; cf. WT *skrog-po* 'to beat (the drum)' < PST *(*s*-, *a*-)krāk.

In addition to the numerous *xie-sheng* series characterized by velar stop + *l* initials, Archaic also had several series with labial stop + *l*, with evidence of cluster and prefixial *s*- as well as preglottalization. The shifts closely parallel those noted for the velar stop + *l* combinations, indicating 'neutralization' of the stop between *s*- and *l*. Prefixial *s*-, represented (along with preglottalization) in only one series (GSR-178), presents no problems; cf. *blwân/luân*^{iv} 'bells on horse's trappings' (Bodman [1975bis] cites Thai *bruan* neck bells for domestic animals'), phonetic in ʔblwan/mwan^{iz} 'Southern barbarian' and *s*-blwan/šwan ~ *s*-bliwan/šiwân^{is} 'twins'; cf. also *s*-bjēt/sje^{ib} 'lute; (loan) rustling of the wind', under GSR-411 (isolated) but with *pjēt/pjēt*^{io} (GSR-405; see above) as phonetic (Bodman [1973] cites WT *sbrid-pa* 'to flutter before one's eyes'); the great scarcity of examples of this kind indicates that the **sb*- > *p*- development (see above) had already been completed by the Archaic period. As might be anticipated, it is the cluster combinations that present difficulties, with direct evidence for the -*l*- present only in two of the series ('dragon' and 'pen', below), but the comparative TB data are useful here, along with the evidence from one early loanword from Tai; cf. the following:

bl̥iun/l̥iun^{id} 'dragon'; cf. WT 'brug' 'thunder; dragon' (< *'brun; fn. 11) < PST *(*a*-)bruŋ, phonetic in **b*l̥un/b'ɔŋ^o 'high edifice' (not in GSR), also in *sp*'l̥iun/t'iwon^{if} 'favor' and *blun/lun*^{is} 'deaf'; cf. WT *lan-ba* ~ *ldon-ba* (< *'blon) ~ *mdon-pa* (< **mblon*) 'blind'²⁸ < PST *(-)bloŋ (for the semantics, cf. PAT 'blind' ~ 'deaf' and [diff. root] 'blind' ~ 'mute'; see Benedict 1975: *Glossary* under DEAF).

ʔbl̥ŋ/moŋ^{jd} (tone A) 'mixed black and white color, variegated' (another reading; cf. *bl̥iŋ/liŋ* 'dragon', above); cf. (GSR-1201) [*ʔbl̥*] *ũŋ/moŋ*^{ji} (tone A) 'shaggy dog; particolored, motley' (same word; Cant. *p'oŋ ~ moŋ*, app. reflecting the earlier stop), also [*ʔbl̥*] *ũŋ/moŋ*^{jl} (tone A) 'particolored animal, variegated' (etym. same word), from **ʔblaŋ* (regular vowel shift), an early loan from PT **ʔblaŋ* 'spotted; piebald (as horse)'; cf. also from the same series (GSR-1201) [*ʔbl̥*] *ũŋ/moŋ*^{jk} (tone A) 'great; ample' (*Anal. Dict.* also 'thick; richly abundant') (Cant. *p'oŋ* [low tone] < **b'oŋ ~ moŋ*); cf. WB *pruiŋ* (< **[b]* *ruŋ*) 'full, abundant' < PST *(*a*-)*bruŋ*^A.

sbl̥iwət/iuē^{tl} 'writing stylus or pencil', a doublet of *bl̥iwət/iuē*tm 'pitch-pipe', etc. (both from 'quill') as well as of *pl̥iət/piē*^{tn} 'writing stylus', from an earlier (pre-Archaic) **sbl̥i[w]ət* (see above for **sb-* > *p-*), an early loan (with **s-* prefix added) from PAT **bulut* 'body hair, fur, fibre' (contra the analysis in *STC*: fn. 474, and note WT *pir* < **pit* as a relatively late loan [Bodman 1975]).

[*sbl̥*] *iēŋ/iāŋ*^{jo} 'full, fill', isolated under GSR-815 except for one homophone, a doublet of [*sbl̥*] *iāŋ/iāŋ*^{jp} (loan) 'full (sc. ear of grain)'; cf. PTB *(*s-*)*bl̥iŋ* 'full/fill' < PST *(*s-*)*bl̥iŋ* (contra the analysis in *STC*: fn. 469 for this and the following comparisons).

*[*ʔbl̥*] *iēŋ/moŋ*^{ja} 'toad' (not in GSR), phonetic in GSR-892, which includes [*sbl̥*] *iāŋ/iāŋ*^{jr} 'a fly'; cf. PTB *s-brəŋ*, id. < PST **-brəŋ* (with 'animal prefix' **s-*); also in [*sb*] *ly*] *iāŋ/dz̥* *iāŋ*^{jp} (above as loan) 'string, cord'; cf. PTB (Nungish) **a-br̥iŋ* 'cord' < PST *(*s-*, *a-*)*br̥iŋ*.

Both cluster and prefixial *s-* are to be reconstructed for Archaic before *l* (< PST **l* and **r*), perhaps along with preglottalization, with the following typical reflexes:

<i>l</i>	> <i>l/d'</i>	* <i>s-l</i>	> * <i>[s-l]</i>	* <i>sl</i> > <i>sj</i>
* <i>r</i>		* <i>s-r</i>		[* <i>sr</i> > <i>x̥l̥</i>]

The shift to *d'* - perhaps occurred only before high (or palatalized) vowels (*STC*: fn. 458); cf. PTB **lyiŋ* = **liŋ* 'field' (WT *z̥iŋ*, Lepcha *lyāŋ*; see *STC*: fn. 246), Arch./Anc. [*l*] *ien/d'ien*^{js} 'field; to hunt' < PST **li*(*·*)*ŋ*²⁹; also PTB *(*s-*)*re·k* 'pheasant', Arch./Anc. [*l*] *iok/d'iek*^{qa} < PST *(*s-*)*re·k* (see table above), but before palatalized *a* (< PST **a* or **ā*) **l(y)-* merged with **y-* (> *d̥i/j-*) in *i-*; cf. PTB **lāp* 'leaf', Arch./Anc. [*l*] *iap/iāp*^{al} < PST **lāp* (see above). As in the case of nasals (above), the prefixial *s-* is reflected in Proto-Min (**hl-* = **sl-*); cf. the variant **[s-]* form for 'six' (above) and the following pair:

PTB **s-rap*: WT *sraŋ* 'pair of scales; weight; ounce'; Arch./Anc. [*s-*] *liap/liap*^{jt} 'two; a pair' (*Anal. Dict.* also 'ounce'; graph is picture of scales); Proto-Min **hl[a]* *ŋ* = **sl[a]* *ŋ* < PST **s-rap*.

PTB *(*s-*)*rwa*: WT *sro-ma* 'nit', Kachin *tsi?-ru* 'louse [*tsi?*] egg'; Arch./Anc. [*s-*] *lwān/lwān*^{ju} 'egg'; Proto-Min **hl[ua]* *ŋ* = **sl[ua]* *ŋ* < **sl[ua]* *n*, from **s-lwa-n* ('collective' plural **-n*, with unanticipated vowel length; see *STC*: fn. 428) < PST *(*s-*)*rwa(-n)*.

This schema implies that Ancient forms with initial *l-* are in most cases to be reconstructed [*m-l*], [*g-l*], [*s-l*] or the like; cf. PTB **liŋ* 'neck'; Arch./Anc. *m-liēŋ/liāŋ*^{iv} 'neck, collar' (phonetic is *m-liēŋ/liāŋ*^{iw} 'command'; see *STC*: fn. 419) < PST *(*m-*)*liŋ* (cf. PTB **m-* prefix with body-part words in WT and elsewhere); also PTB **[i,e]* *p* 'turtle' (WB *lip*); PK **khl̥i?*, id., from **g-lip*] (see *STC*: 135 for PK **kh-* < **g-*); Arch./Anc. [*g*] *liap/liāp*^{jk} (loan) 'a kind of turtle' (graph for the phonetic of this series [GSR-637] depicted a turtle) < PST *(*g-*)*lep*; also PTB **la* 'salt' (Miri *əlo* < **a-la*); PK **hla* (< **s-la*), id.; Arch./Anc. [*s-*] *lo/luo*^y 'salty' (*Anal. Dict.* also 'rock-salt', but used in graphs as general signifier for 'salt') < PST *(*s-*)*la* (Proto-Min form not available; initial **l-* possibly maintained here before the low, unpalatalized vowel).

The regular reflex of cluster *s + l* appears to have been *sl/sj-*; cf. PTB **sryam* 'sharp' (Lushai *hriam*, Garo *sram ~ srem-srem*); Arch./Anc. *s[l]* *iam/siām*^z, id., with 'hidden' phonetic *(*s-*)*[l]iam/d'iem*ⁱⁱ 'tongue' (usu. read [*sg'y*] *iāt/dz̥* 'iāt'; see above) < PST *(*s-*)*lyam* [PTB *(*s-*)*lyam* 'tongue; flame'], phonetic also in [*l*] *iam/d'iem*^{ks} 'sweet' < PST **le·m* [PTB (Proto-Kiranti) **[e,e-]* *m*, id.], with palatalization before PST **i*; cf. PTB *(*s-*)*riŋ* 'long/elongate' (WT *riŋ-ba* 'long', *sriŋ-ba* 'extend, stretch, postpone'); Arch./Anc. *s[ly]* *iēŋ/siēŋ*^{kb} 'stretch, extend, prolong' < PST *(*s-*)*riŋ*. This Archaic cluster (**sl-*) represented a 'filling in' of the pattern, the earlier (pre-Archaic) cluster having been shifted to *xl/t-*, with support for this reconstruction from the early loanword **[xl-iet/t'iet*^{kc} (Arch. form not cited in GSR) 'iron', from PAT *(*m*)*baxliaq* (via **xliat* through assim.); cf. the following pair of similar (perhaps cognate) roots:

PTB **sri(-t)*: WT *srid-pa* 'existence, state of being, life; things existing, the world; also a single being', WB *hri* (< **sri*) 'to be (in some place)'; Arch./Anc. *xliar/t'iet*^{kd} 'body' (phonetic is [*s-*] *liar/liet*^{ke} 'ritual vase'), a doublet contra *STC*: fn. 428) of *s[ly]* *iēŋ/siēŋ*^{kt} 'body, person' < 'being'), with suffixed **-n*³⁰, from PST **srəy ~ *sri(-n,-t)*.

PTB **sri(-n)*: WT *sri* 'a species of devil or demon, a vampire', *sriŋ-po* (fem. *sriŋ-mo*) 'demons'; Lushai *hri* (< **sri*) 'the spirit supposed to cause sickness'; Arch./Anc. *xliat/t'ie*^{ks} 'a mountain demon' (phonetic in GSR-23, with otherwise initial [*s-*] forms), PST **sri(-n)*, the suffixed form perhaps represented by [*ly*] *iēŋ/dz̥* *ien*^{kh} 'spirit; divine, supernatural' < **[s-*] *rin* (from GSR-385, which includes 'stretch, extend', above, as well as [*l*] *ien/d'ien*^{ki} 'lightning', app. related [loan] to Proto-Yao **liŋ*, id.).

The occasional appearance of doublet forms with Anc. *x-* in series containing initial *l/d'* - entries presents a reconstruction problem, and it is suggested that Archaic still had marginal *sr-* (~ regular *sl-*) doublets, from an earlier **sr-*, yielding Anc. *x̥l̥-*, as indicated by the following pair:

[*l*] *iap/iāp* ~ **[sr]* *iap/x̥iāp*^{kl} 'small, insignificant', with (GSR-633) [*l*] *iap/iāp*^{al} 'leaf' (above) as phonetic; cf. PTB **srap* or **s-rap*: WT *sra-ba* 'thin, tender, fine, e.g., skin, cloth, leather, paper, clouds', WB *hrap* (< **srap*) 'to graze, pass over slightly touching; cursory, slight' < PST *(*s-*)*rap*; also the related [*l*] *iap/d'iep*^{kk} (< **liap*) 'unlined (= thin) garment' (cf. the WT gloss)

as well as $s[ɿ]iap/siep^{kl}$ 'bottom inlay in sole, shoe', directly comparable with WT *srab-mthil* 'inner sole, welt' (= 'the thin inlay') (*mthil* 'bottom'). $[ɿ]iet/d'iet \sim *[sr]iēd/xj^{km}$ (< $*[sr]iēt$ + suffix) 'laugh', from the 'special' GSR-413 series noted in *STC*: fn. 458 (containing $[ɿ]iet/d'iet \sim [ɿ]iēt/d'jē^{kn}$ 'nephew/niece', cognate to PTB $*(b-)lāy$ [*STC* $*b-lāy$, but note Garo *-ri*, Chang *li*] 'grandchild, nephew/niece'); cf. PTB $*(s-)rya(-t)$, id., for *STC* $*rya-t$ (note Bunan *sred* < $*sryat$, Nachereng *hres* < $*sryat-s$) 'laugh' < PST $*(s-)rya(-t)$.

The above series (GSR-413) also contains a group of entries with initial *t-* or *tś-*, three of which have apparent TB cognates with initial $*l-$ or $*r-$, and it is suggested that these forms might be reconstructed with initial $?l/t-$, paralleling the indicated $?n/t-$ (above); cf. the following:

$[?ɿ]iēd/ti^{ko}$ 'heavily weighted down' (Couvreur dict. also 'heavy'); PTB $*(s-)lāy$ 'heavy' < PST $*(s-,a-)lāy$.

$*[?ɿ]iēt/tśjē^{kp}$ 'leech' (not in GSR); PTB $*(m-)li-t$ 'water-leech' (*STC*) = $*[i,i]t$ (Chepang *lit*, Kachin *lip* < $*lit$) $\sim *m-l[i,i]t$ (Mikir *iyliit*, Ao Naga *melet*) $\sim *s-li-t$ (Lepcha *hlet-bū*, Lushai *hli-t*) < PST $*(s-,a-)li(-)t$.

$[?ɿ]iēt/t'jē^{ka}$ 'beat, a stroke' (Couvreur dict. 'couper la moisson, couper les épis, bruit de la faucille'); PTB $*ri-t$ 'reap, cut, scrape, shave' (WB *rit* 'to reap, mow, shave', Miri *rit* 'to cut, as small jungle') < PST $*(a-)ri(-)t$.

As a result of this extensive reconstruction of Archaic we are faced with a radically new picture of the language. It now seems certain (contra *STC*: 155) that prefixed *s-* (< PST $*s-$), phonologically distinct from cluster *s* + consonant, played a morphological role of some kind, perhaps also $?(< \text{PST } *a = ?a-)$, as indicated by the occasional doublet formations ('tread/trample', above). It should be remembered that only a certain fraction of such elements have been reconstructed to date, on the basis of *xie-sheng* and/or Proto-Min data, along with the help of early loans as well as comparative TB evidence, so that the language might well have looked something like WT, with suffixes (giving rise to the sandhi tone C) and with even more prevalent *s-* prefixation.³¹ There is also some evidence that prefixed $*m-$ and possibly $*b-$, both important TB prefixes (*STC* 110–12 and 117–21), played a role in Archaic morphology; the few recovered examples have survived simply because they happened to precede consonant clusters, e.g., *m-kljōk/mjūk* 'accord' (above), *m-kljōg/mjēu^{kr}* 'bind round', also read *kljōg/kjēu* 'twist' (the unprefix form) or to come before $k(i)w-$; cf. the following pair:

m-kwæg/muât^{ks} (tones A, C) 'meat on sides of spine', the same word (originally) as *mwæg/muât^{kt}* (tones A, C) (GSR-947), id., from an earlier shift, paralleling *mju* < *m-[k]ju* 'despite, insult' (fn. 22; phonetic from the same series); this word is in GSR-950, which has *s-k wæg/xuât^{ku}* 'ashes' as phonetic and includes *k wæg/kuât^{kv}* 'great, extend'.

kiwat/kiwet^{kw} 'sleeve', also read *mjad/mjāi*, id., for the affixed doublet: $*m-kjwad/$ *mjwāi* < $*m-kjwat$ + suffix.

In similar fashion, an original prefixed $*b-$ before the same labialized initial (*kjw-*) probably gave rise to the enigmatic *p/kjwāp pjwōp^{kx}* (< $*b-kjwāp$ through assim.) 'law', with phonetic (GSR-642) *k'jab/k'jwo^{ky}* 'go away'; cf. WB *kwāp* (< $*[-]kwāp$) 'to bind or overlay the edge or border or anything; to clamp, make fast by binding; to enforce orders; discipline' < PST $*[b-]kwāp$.

It is apparent that this transformation in the 'look' of Archaic, bringing it closely into line with WT and with TB languages generally, will lead to many changes, possibly some of a profound nature, in our ideas about the grammar of the language and, indeed, in the field of early Chinese studies generally. It is not clear at this time, however, whether such changes will require any basic modifications in the reconstruction of PST itself, any more than the recent advances in the reconstruction of PBL, carried out particularly by J. Matisoff and his students, have to date necessitated any modifications in the reconstruction of PTB. Chang (1973) criticizes the *STC* for recognizing prefixed $*r-$ as well as $*s-$ at the PTB level, but he appears to have overlooked the substantial evidence (with distinctive reflexes) for prefixed $*r-$ throughout the TB area (*STC*: 109–10), with representation also in Karen (fn. 356) and in Chinese (fn. 419). Regarding PTB prefixed $*a$, the *STC* rejection of Wolfenden's distinction between 'pronominal' and 'non-pronominal' basic forms of this prefix has been supported in a recent study by Lehman (1975bis). The WT representative of this prefix (*a-chung*) continues to create problems, e.g., B. Chang (1971) follows Wolfenden in interpreting WT prefixed *b-* as $*b- + a-$, thereby producing unnecessary complications in her analysis of the phonology of Tibetan causatives. Egerod (1973) citing the 1952 sketch by Maspero in *Les Langues du monde*, appears to reject the *STC* distinction between noun and verb roots at the PTB level. The point is not stressed in *STC* but it is apparent, Maspero notwithstanding, that at least two main classes of free forms must be recognized at that level: verbs (negatable) and nouns (non-negatable), along with a residual class of verb/nouns (e.g., PTB $*r-mij$ 'name'); the function of a given prefix such as $*s-$ may in fact differ so radically in verb as opposed to noun roots that distinct morphemes ($*s^{-v}$ and $*s^{-N}$) should be recognized. Egerod, in the same review, also raises the question (first suggested by Henderson 1957) of whether pronominalization might not after all be of 'native' origin. This matter is the subject of a recent paper by J. Bauman (1974), who rejects the view of Maspero and Egerod that an early influence from Indo-European might have been involved, in favor of the 'native' hypothesis. The languages affected include Gyarung, which is hardly adjacent to any obvious non-ST source of influence, and Bauman points out some apparently significant similarities in the morphemes themselves, so that the possibility of reconstructing pronominalization for at least one segment of TB must be given serious consideration.

Now that comparative ST linguistics has 'come of age', as one reviewer of *STC* has put it (Lehman 1975), it behooves us to glance back at the comparative process itself. There appears to be a widespread misunderstanding of what is needed to carry out worthwhile comparative work, at least as regards the ST field. Miller (1974) spends much of a long review article on *STC* bemoaning, in effect, the

lack of suitable instruments: "If the *Conspectus* proves anything at all, it proves that it is high time to abandon these out-moded, antiquated records of languages concerning which not enough is known to enable us to subject their data to the rigorous methodology of the comparative method" (p. 209). The same reviewer furnishes a highly imaginative account (p. 198) of the Berkeley workshop of the late 30's and early 40's in which these 'antiquated' materials were compiled, making it sound rather like a language machinshop. Having directed that workshop during the last two years of its existence, the writer was struck by the incongruity of the description, since the "sifting" of materials occurred largely within the skull of the director, the staff being employed primarily in more mundane activities, although he did have the good fortune to find one educable assistant. Although Miller's comments have been selected for citation, similar pronouncements have appeared elsewhere, indicating some general failure to appreciate the basic facts of the history to date of ST comparative linguistics. What the *STC* does prove, to paraphrase Miller, is that it was possible over 30 years ago to establish the basic framework of a widespread language family and to produce a manuscript that was still serviceable as a textbook (at Columbia) some 25 years later, while the *STC* itself has continued to play that role (Lehman 1975). Actually, an excellent reconstruction of PTB could have been turned out *as early as the turn of the century*, when good sources became available for such key languages as Tibetan (Jäschke), Burmese (Judson), Kachin (Hanson) and Lushai (Lorrain and Savidge), and an equally good PST reconstruction *as early as 1923*, with the publication of Karlgren's *Analytic Dictionary* (the later reconstruction of Archaic Ch. served only to confuse scholars, as shown above!). The deficiencies in Shafer's efforts extending from the 30's into the late 60's, as in the writer's effort basically of the early 40's (the MS of *STC*), are equally to be attributed primarily to *poor linguistic thinking* rather than to *poor sources*. It is perhaps comforting to think otherwise but the facts of the matter are quite plain. The *STC* itself might be regarded as a kind of "test case," since the manuscript was the product of the early 40's but was extensively annotated over 25 years later, after the appearance of a considerable amount of new source material as well as of many scholarly studies in the field of Chinese (including a new reconstruction schema by Pulleyblank), Tibetan, Burmese-Lolo and whatever, and even major reconstructions of Proto-Bodo-Garo (Burling), Proto-Burmese-Lolo (Burling, Matisoff) and Proto-Karen (Haudricourt, Jones, Burling). A review of the "new" notes (added material), however, reveals that almost without exception the more significant new findings or conclusions had little if anything to do with any of the above but were rather in the nature of "rethinking of problems," of new insights into old problems, of things that *should have been done originally*: the reconstruction of PTB labial stop + *w* clusters (fn. 78; contra Coblin [1972-73] the medial -*w*- in similar clusters is contrastive in Arch. [if not Anc.] Ch. and the feature must be set up for PST, where it is only marginally contrastive, as discussed in the final lines of this footnote); the recognition of a palatal series (fn. 122) and of PTB initial **čr*- (fn. 95) and other clusters (fn. 121) as well as of a "collective" suffixed **-n* (fn. 95); the new

interpretation of WT *a-chung* (fn. 339; Denwood [1974] quite misses the point!); the reconstruction of two new vowels: PTB **ə* and **â* (fn. 344); the voluminous new material in the footnotes of the Chinese section, entirely recasting much of that part of the book, particularly in the treatment of ST vocalism—all should have been done in the early 1940's but the significant clues were missed—and a final long footnote (494) setting up a two-tone system for PST, another "discovery" that should have been made in the early 1940's at the time that the correlation of Burmese and Karen tones was first uncovered! Only the additions to the Karen section were significantly dependent upon post-1940 publications, and much to the point here is the fact (*STC*: fn. 347) that although the new *material* was supplied by the excellent studies of R. B. Jones the new *ideas* by and large (apart from relatively minor matters such as the reconstruction of PK initial **hy*-; see fn. 371) were furnished by the reconstruction of PK brilliantly carried out much earlier (1945) by A. Haudricourt, working only with the older dictionary materials, all quite available at the time to this writer, who unfortunately was able to work out only one fragment of the schema (*STC*: 151: the unvoiced nasal initials). This all probably means that important contributions were overlooked, but it also means that 25 years of brooding over what is essentially the same corpus of material can result in major changes in one's findings, hopefully for the better. It is hoped that this account will not have the effect of discouraging the collection of new material and the compiling of bigger and better lexicons, for certainly we stand in need of these things, but rather that it will stimulate some "hard thinking" on the many seemingly insoluble problems that beset us in comparative ST linguistics.

Notes

- * The author is indebted to Prof. Paul Yang of Georgetown University for help with this paper, including the appended characters.
- 1 Matisoff (1973) has presented a valuable account of the first five years of this conference.
- 2 N. Bodman 1975; K. Chang 1973; W. S. Coblin 1972-73; F. K. Chou 1972; P. Denwood 1974; S. Egerod 1973; A. Haudricourt 1973; K. Lehman 1975; R. Miller 1974; K. Sedlčěk 1974; R. K. Sprigg 1973.
- 3 The following word-list has been employed (see Burling 1971): I thou we this that who? what? not all many one two big long small woman man person fish bird dog louse tree seed leaf root bark skin flesh blood bone grease [= fat/grease] egg horn tail feather hair head ear eye nose mouth tooth tongue claw [= nail] foot knee hand belly neck breasts heart liver drink eat bite see hear know sleep die kill swim fly walk come lie sit stand give say sun moon star water rain stone sand earth cloud smoke fire ash burn path mountain red green yellow white black night warm cold full new good round dry name.
- 4 See the note by Matisoff in *JCL* 1:3 (1973), which points out that "... tonal convergence and genetic relationship are totally independent things . . .," while emphasizing that the 'four known divisions' of TB described by Li do not fit any current ideas of TB subgrouping. The most recent position on the Tai languages taken by Li (1974) is that "the relationship [to ST] has never been definitely established."
- 5 Miller (1974) complains, "There is nothing at all here of the Tai languages" and "The most melancholy single aspect of the decision to eliminate any consideration of Thai from these pages . . .," followed by "This seems a great pity . . ." and "It seems almost

- perverse to have turned the back on the one group of languages [Tai] about which probably the most is known . . .," yet this reviewer also shows that he is familiar with the writer's view that the Tai languages, along with MY, belong in an entirely distinct language stock (Austro-Thai; see *STC*: fn.'s 8, 14, also Benedict 1975), hence it is not altogether clear whether Miller at present actually rejects the traditional view of a Chinese-Tai genetic relationship.
- 6 Cf. the parallel development in Stau (Tibet: eastern Kham), which has *sñi* 'day' < PST *[s-]nəy but *zñi* 'seven' < PST *snis; Gyarung lacks this voicing distinction: *sñi* 'day', *kesñit* (< *k-snis) 'seven'.
- 7 Abbreviations: YCR Chiengrai ('Highland') Yao; YHN Haininh Yao; MCF Cheng-feng Miao (Eastern: 'Kanao'); MWN Wei-ning Miao (Western); MPT Petchabun Miao (Western: 'White Miao'); MSY Su-yung Miao (Western: 'Magpie Miao').
- 8 The Arch.-LMY development is of special interest in view of the *səŋ- > dz'- shift shown by two body part words in Chinese: dz' i^a [no Arch.] 'self' < 'nose' < PST *s-na or *s-na-r (*STC*: fn. 471 and p. 16); dz' jēŋ/dz' jāŋ^b 'feelings' (Couvreur: 'sentiment de l'âme' and 'passions du cœur') < PST *s-niŋ 'heart' (WT *snyiŋ* 'heart, mind' but basically applied to 'feelings'); in this sound shift the most likely sequence is *sn- > *zn- > *zd'- > *dz'-, the Arch.-MY form fitting nicely here (see below for more on *s- prefix).
- 9 Cf. Ch. *[s-]nien/nienⁱ (Proto-Min has initial *hn-); the Shuo-wen interpretation of *ts'ien* as phonetic in this word points to a variant development: *snien > *ts'ien*/*ts'ien*^a as exactly paralleling *snjēt > *ts'jēt* 'seven' (and Arch.-LPT *tsjēt; see Table).
- 10 PMY maintains PAT *-ia-; cf. PMY *ntiaŋ 'tree' < PAT *(n)ti(y)añ 'stick/handle/post/tree' (Jav. *tiyaŋ*, Malay *tiaŋ* 'post', Fiji *ndia* 'stick, handle', PT *deñ ~ *theñ [*ts'ien*] 'stick, bar').
- 11 For the roots listed in *STC*, add under *s-gla 'moon': G *dza* (*STC*: fn. 109); add under *lum 'warm': L *lum* 'warm, hot'; add under *(r-)kaŋ 'foot, leg': K *lago* ~ *lagon*, id. (cf. the parallel root: PTB *kraŋ 'mosquito' > K *groy* [*STC*: 71]); add under *tu.ŋ ~ *du.ŋ 'sit': WT *dug-pa*, id. (for the nasal > stop shift, perhaps conditioned by vowel length, cf. WT *'brug* 'thunder; dragon' < PST (a-)brü.ŋ; see text, below). The following roots are not listed in *STC*: PTB *(s-)m[u, əw] 'see': K. *mu*; L *hmu*; PTB *di[ŋ] 'to erect, be erect, stand(ing)': Lepcha *dij* 'to be erect; to stand; to be at rest'; Miri *dij* 'to plant (anything tall); to set up or erect'; Kachin *dij* 'to be straight, rectilinear', *puŋdij* 'zenith, top' (*STC* cites Arch./Anc. *tien/tien*^a 'top of head'); WB *tañ* (< *[d]iŋ) 'to place in position, build'; Lushai *dij* 'to stand, be upright; to stop'; Garo *tsadeŋ* 'to stand'; cf. Arch./Anc. *d'ien/d'ien*^a (tone C) 'settle, establish; fix; finish, stop; finished'; *d'ien/d'ien*^a (tone A) 'settle, regulate'; *d'ien/d'ien*^a (tone A) 'to stop' (etym. same word; cf. Lushai semantics); PST *di.ŋ; PTB *lu.ŋ ~ *lu[.]k 'drink': G *riŋ*, Dimasa *luŋ* ~ *liŋ*; K *lu?* (cf. WB *loŋ* < *[u]ŋ 'pour into or upon'; WT *ldug(s)-pa*, pf. *blugs* (< *-lug) 'pour, cast'; also PTB *[u, əw] 'pour'; PTB *džəy 'seed': B (ā-)tsé, Maru *atsit* (< PBL *džəy); L *tsi*; PTB *(-)raŋ 'bone': K *nra* ~ *nraŋ* (< *m-raŋ); G *greŋ* (< *g-reŋ < *g-raŋ; see *STC*: 72).
- 12 Cf. Arch./Anc. *māŋ/məŋ*^{ts} (irreg. for *məŋ*) 'population, people' (= 'the many', as in T and K); also *xj[m]wan/xjwan*^a 'increase', from *s-maŋ 'make more' < PST *(s-)maŋ; and the app. distinct root: PTB *maŋ 'big (elder)' (Trung [Nungish] *dəmaŋ* 'big; [comp.] older [brother, uncle]; Arch./Anc. *māŋ/məŋ*^a 'eldest (of brothers, etc.)', *xj[m]wāŋ/xjwāŋ*^a 'elder brother, senior', from *s-maŋ; PST *(s-)maŋ).
- 13 PST *ŋa 'I' and *ŋā 'self' might also be regarded as doublets, of course, but there is little if any good evidence for this alternation, and in fact these two vowels are in opposition in the PST pair: *g-ya 'right (hand)' (*STC*: fn. 487) and *(g-)yā(-n) 'left (hand)' (*STC*: fn. 428). As indicated in *STC* (p. 160, based on Karlgren's work), there is evidence of pronominal inflection at an early period in Chinese, with both forms derived from 'self' in object position, but this interpretation has come under repeated attack (see the discussion in Coblin 1972-73); in any event, these were the pronouns
- to survive into the modern (Mandarin) Language. A form of the 'self/I' root with suffixed -n, of uncertain function (cf. fn. 30), is represented by Arch./Anc. *ŋan/ŋan*nd 'face countenance' (cf. WT), from *ŋā-n (regular vowel shift).
- 14 Preliminary analysis of several northern TB languages in terms of the Swadesh 100-word list scoring indicates that Rawang (Nungish) lies close to Burmese (pairing score is 38), pointing to a Burmese-Lolo-Nungish supergroup (cf. *STC*: 8); also that Tamang, Chepang and Miri all fall within the B/T/L supergroup as opposed to the K/G; Lepcha, however, has unusually low scores (only 12 for the Pwo and Mandarin pairings), supporting the view (*STC*: fn. 24) that this language has a non-ST substratum.
- 15 Bodman (1975bis) has suggested a six-vowel scheme (without */â/) for Archaic, while Li (1971) has set up a four-vowel system (*/aəiu/) for this language, but neither has presented a systematic comparison with TB vocalism.
- 16 PST *(s-)re-k 'pheasant' contra *STC* (84-85), which recognizes a medial *i ~ *ya alternation in this root (*s-rik ~ *s-ryak) as well as in 'eye' (*mik ~ *myak); the latter is cognate to Arch./Anc. *mjōk/mjūk*^{ss}, id., from an earlier *mjāk (Arch. lacks both *mjāk and *mjāŋ), from PST *(s-)myāk (see text, below, for the prefix), with the same reconstruction available for PTB, dispensing with the need for recognizing the *i ~ *ya medial alternation as a special PTB feature, at any rate.
- 17 The occasional Arch. final -n ~ -g or final -r ~ -g *xie-sheng* contacts are perhaps to be explained along similar lines, e.g., Anc. *mjwēn*^{ss} 'diligent, active; hasten quickly', with Arch./Anc. *mwəg/muāi*^w (< *mu-g; see *STC*: fn. 479) as phonetic (Karlgren [GSR-1251q-s] explains as a 'synonymous' word), perhaps reflecting PST *mur ~ *mu-r (cf. WT *myur-ba* 'quick, swift, speedy', cited in Yang 1975); also *miər/mie*^{sz} (tone A) 'fawn', *ŋieg/ŋiei* ~ *mjēg/myjē* ~ *mieg/mie*^{ra} (all tone A), id., possibly reflecting PST *mi-r; cf. also *ŋjəg/ŋjəb* 'physician; potion', apparently (contra Karlgren: GSR-958) with *ŋjər/ŋjē*^{bc} 'quiver' as phonetic.
- 18 Note that these exceptional WT forms (*STC*: 20) generally have initial p-, also that WT lacks the cluster *rp- and that -lp occurs only in comp. (*pags-pa* and *lpags* 'skin'), hence *pad-ma* 'leech', from PTB *r-pat, can be considered a regular development (!), as can probably also *pus-mo* 'knee', from *l-put-s (cf. Kachin *lāphut*, with *lā-* probably standing for PTB *lak 'foot/leg') and perhaps *paŋ* 'bosom, lap', from *l-paŋ (cf. Simon 1974).
- 19 Burling 1967; Matisoff 1972; Shafer 1966-67; Thurgood 1974.
- 20 Note also WT *sgog-pa* 'garlic', an apparent early (Pre-Archaic or Archaic) loan from Chinese: *sgog* < *sgjōg, from an earlier *s-kjōg (second. voicing).
- 21 Note the parallelism shown by both the secondary voicing and the vocalism in the two roots for 'eagle' and 'lift' (see *STC*: fn. 476 for the vocalism). It appears that the general trend toward secondary voicing of stops after prefixed *s- > *sə- extended not only to dentals and labials (see text, above) but also to velars in at least one of the principal dialects making up the composite known as 'Archaic Chinese'; cf. the roots for 'facing/above' and 'despise/insult' (above); also *g'jōg/g'jəu*^{so} 'maternal uncle', from *[sə-]k'jōg; cf. PTB *kəw, id. < PST *(s-)kəw; also *g'o'yu*^{op} 'door, opening', from *[sə-]k'o; cf. PTB *(m-)ka 'open(ing), mouth, door' < PST *(s-, m-)ka; also *sgyjok/žjak*^{ss} 'a ladle'; *sgyjok/ziak* ~ *sgok/iak* ~ *skyjok/tšjak*^{ss} (the third form remains unvoiced) 'ladle; to ladle out, pour out'; cf. PTB *s-kyok: WT *skyogs-pa* 'scoop, ladle', WB *yok* 'ladle' < PST *s-kyok (cited in part in Yang 1975). On occasion, however, Chinese retains the unvoiced velar stop which has been secondarily voiced elsewhere; cf. Arch./Anc. [*sky*]iōŋ/tšjuŋ^{ss} (tone A) 'locust'; cf. WB *kyuŋ* ~ *gyuŋ*, id. < PST *(s-)kyu(ŋ)^b (Chinese shows the anticipated tone B > A shift after s- < 'animal prefix' *s-).
- 22 Cf. also *mju/mju*^{ss/ra} 'despise, insult, disgrace', probably from an earlier *m-kju (isolated under GSR-138 but with apparent phonetic element *mwəg/muāi*^w from GSR-947, indicating a labial rather than (velar) initial); see text below for evidence pointing to occasional retention of prefixed *m- before *kl-* and *k(i)w-*.

- 23 PTB prefixed **a-* (zero consonant initial) thus contrasts with **m(a)-*, **b(a)-*, etc. The alternative view of regarding this PTB prefix as **ʔ* is ruled out simply by the fact that **ʔ* need not be reconstructed for the proto-language, e.g., it does not occur as a final, although this phoneme has been reconstructed for daughter-languages, notably for PBL (STC: fn. 76 by J. Matisoff).
- 24 The **s-* prefixed form (WT *sdor*) is also represented in Chinese; cf. Arch./Anc. *tsiər/ tsie^{ix}* 'pickled food', from **sdiər* (cf. text, above, for this shift) < **sdiər* (the palatalized doublet, corresponding to *zdiər/niēi*) < PST **s-dār*.
- 25 The third series noted in the text (GSR-878) has as phonetic [g] *liæg/liet^{ho}* 'a pair', from a doublet (**gri-k*) of this root (cf. Malay *pasaj* 'pair', also 'fit together') (cf. WT *zkrig-pa* 'twins', from the related root with **k-*); it has a doublet [g] *liæg/lj^{hp}* 'twins' (< **grik*) under GSR-979, the phonetic of which is [g] *liæg/lj^{na}*, also read [s-k] *liæg/xji* 'to crack, split', a doublet of *k* [l] *iäk/k'ipk^h* 'crack, crevice' (GSR-787, containing also *s-k* [l] *iäk/xjok^{hs}* 'fear' < PST **s-kräk*; see STC: fn. 430), the series (GSR-979) also including the puzzling **s* [g] *liæg/dz' i* 'spittle (of dragon)' (listed under GSR-1237q).
- 26 It is probable that many TB/Chinese cognate pairs remain 'disguised' as a result of the ambiguity of reconstruction (see text, above); cf. the following possible correspondences, both from brief *xie-sheng* series: (affricate initial) [sg] *liæg/zian^{sa}* (< **dzian*) 'elephant'; cf. WT *glaj* 'ox; elephant' < PST **(s-)glaj* (with 'animal prefix' **s-*); (stop reflex) [sk] *iög/t'jəu^b* 'wrist, elbow' (*Anal. Dict.* also 'forearm'); cf. PTB **ka[u, əw]*: WT *khru* 'cubit [measure from elbow to tip of middle finger]'; Digaro *lä-kaau* < **kru* 'elbow' (*lä-* < PTB **lak* 'arm/hand'); Garo *kru* 'a span or measure of length between the thumb and middle finger' < PST **(s-)krəw* (with 'body-part prefix' **s-*).
- 27 Further evidence for an earlier velar stop in this series (GSR-807) is supplied by the phonetic: [sg] *yliæg/dz'ja* 'shoot with bow; archer' ~ [sg] *yliäk/dz'jäk^{im}* 'hit with bow and arrow'; cf. WT *rgyag-pa* 'to throw, cast, fling', *mda rgyag-pa* 'to shoot arrows (*mda*)' < PST **(s-, r-)gyak* (Bodman [1975bis] suggests **ryaks* for the Arch. form).
- 28 For WT *md-* < **mbl-*, cf. *mda* 'arrow' < PTB **mblo*, contra STC (111 and fn. 313), which sets up the root simply as **bla* and assigns WT *mda* and Kachin (Khauri dial.) *ninda* (< **mda*) to a distinct root **m-da*; the Khauri form appears to be a loan from Tibetan (standard Kachin has *päla* < **bla* whereas Jili [extinct dial.] has *mälä* < **mbla*); note also Magari *mya* < **mbla*; WB *hmra* < **s-mbla*, Kha Li (Southern Loloish, *ka-mia* < **mbla*; the STC suggestion (fn. 469) that Arch./Anc. *djək/jək^h* 'to shoot with arrow and string attached' is cognate is hardly supported by the *xie-sheng* series involved (GSR-918), although the possibility can scarcely be excluded at this stage of study.
- 29 PMY has **jiŋ* 'field (wet, rice)', apparently an early (pre-Archaic) loan from Chinese (PMY regularly has initial **l-* for Ch. *l-*). WT also has *liŋs* 'a hunting or chase in which a number of people are engaged', tagged as an early loan from Chinese (antedating the final **-iŋ* > *-ien* shift) by the unpalatalized initial before **i* (contrast *ziŋ* 'field') and the suffixed *-s* (very characteristic of these early loanwords).
- 30 For suffixed **-n* with this body-part word, cf. *nan* 'face' < **nā-n* (fn. 13); also Hakka *lin* 'penis', cognate to PTB **(m-)li*, id., as well as to PK **lin* 'vagina' (a semantic interchange also found in AT), offering additional evidence for the existence of this suffix at the PST level.
- 31 The vast efflorescence of the **s-* prefix pattern, to include numerals and most kinship terms as well as other lexical categories, certainly appears to have been a Chinese innovation. A considerable share of these roots have been well 'disguised' by phonological shifts (see text), especially where initial dentals are concerned, e.g., PTB **ta* 'father/grandfather': WT *?a-ta*, WB *thà-thà* 'father' but Digaro *-ta*, Chepang *to* < **ta*, Miri *əto* < **a-ta* 'grandfather'; Arch./Anc. *tsə/tsuo^{sz}* 'grandfather, ancestor', from **sto* < **s-ta*; *ts'ien/ts'ien^h* 'thousand' (above), from *st'ien* < **st'ien*, an early loan (via **s-* *th[ʔ]ian*) from PAT **(k-)trian*: PT **[t]hrian* 'thousand (Ahom Khamti Shan), million (Dioi)'.

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a	自	p	亭	ae	爾	at	飛	bi	耳	bx	父	cm	藿
b	苦	q	停	af	鞞	au	扮	bj	紮	by	婆	cn	蠅
c	肝	r	眈	ag	鞞	av	數	bk	面	bz	火	co	晏
d	雙	s	氓	ah	膝	aw	候	bl	麻	ca	薄	cp	堰
e	桂	t	况	ai	臍	ax	敏	bm	肉	cb	靴	cq	蹇
f	繆	u	孟	aj	臍	ay	每	bn	蘇	cc	銅	cr	攪
g	睦	v	兄	ak	出	az	麝	bo	魚	cd	缸	cs	掀
h	情	w	角	al	葉	ba	麝	bp	陸	ce	瓮	ct	宴
i	年	x	貉	am	盅	bb	醫	bq	隋	cf	壘	cu	燕
j	千	y	人	an	同	bc	医	br	象	cg	菲	cv	安
k	銀	z	民	ao	霰	bd	狐	bs	喙	ch	區	cw	晏
l	鼻	aa	一	ap	蝶	be	臍	bt	水	ci	軀	cx	盱
m	狗	ab	烟	aq	翟	bf	螂	bu	坐	cj	嫗	cy	頰
n	頂	ac	我	ar	溺	bg	接	bv	丹	ck	鷹	cz	鞞
o	定	ad	顏	as	目	bh	恥	bw	蝠	cl	鴛	da	公

db	翁	dq	締	ef	吞	eu	鞅	fj	堯	fy	難	gn	醜
dc	妘	dr	希	eg	咽	ev	膺	fk	喬	fz	燃	go	額
dd	擁	ds	貪	eh	易	ew	盜	fl	踉	ga	燦	gp	各
de	崧	dt	今	ei	陽	ex	俞	fm	踰	gb	難	gq	叉
df	嵩	du	輕	ej	鄉	ey	偷	fn	嘆	gc	戰	gr	搔
dg	羊	dv	筮	ek	向	ez	寇	fo	難	gd	怒	gs	軋
dh	妻	dw	腎	el	煬	fa	扣	fp	單	ge	紆	gt	札
di	羌	dx	政	em	揚	fb	歐	fq	彈	gf	密	gu	牙
dj	羹	dy	十	en	興	fc	媮	fr	瘴	gg	祕	gv	鴉
dk	腳	dz	召	eo	舅	fd	咭	fs	瘡	gh	閔	gw	無
d1	湯	ea	苕	ep	戶	fe	詬	ft	儼	gi	盜	gx	撫
dm	笑	eb	茵	eq	勺	ff	詢	fu	單	gj	巫	gy	武
dn	矢	ec	甚	er	杓	fg	侮	fv	那	gk	誣	gz	鵠
do	夏	ed	天	es	灼	fh	毋	fw	鬻	gl	硯	ha	賦
dp	夏	ee	祆	et	蠟	fi	輸	fx	壘	gm	見	hb	屎

hc	首	hr	隙	ig	鼎	iv	朔	jk	厖	jz	銛	ko	輕
hd	殼	hs	競	ih	臆	iw	苜	jl	聿	ka	甜	kp	蛭
he	廠	ht	叢	ii	舌	ix	号	jm	律	kb	申	kq	扭
hf	虎	hu	索	ij	舐	iy	縑	jn	筆	kc	鐵	kr	繆
hg	處	hv	僉	ik	咭	iz	蠻	jo	盈	kd	體	ks	腋
hh	居	hw	瘰	il	麝	ja	孿	jp	繩	ke	豐	kt	晦
hi	盧	hx	樂	im	射	jb	瑟	jq	黽	kf	身	ku	灰
hj	森	hy	藥	in	玉	jc	必	jr	蠅	kg	离	kv	恢
hk	林	hz	鹽	io	珠	jd	龍	js	田	kh	神	kw	袂
hl	率	ia	象	ip	綠	je	龐	jt	兩	ki	電	kx	法
hm	睥	ib	肘	iq	頤	jf	寵	ju	卵	kj	僕	ky	去
hn	史	ic	哈	ir	鵠	jj	聾	jv	頌	kk	襍	kz	祖
ho	麗	id	賴	is	維	jh	弋	jw	令	kl	孛	la	卒
hp	孛	ie	苔	it	悞	ji	尢	jx	櫛	km	至		
hq	孛	if	桃	iu	想	jj	駝	jy	鹵	kn	姪		

ON MEGALOCOMPARISON

James A. Matisoff

Source: *Language* 66, 1, 1990, 106–20.**Introduction: the war of metaphors**

1. Joseph H. Greenberg's *Language in the Americas (LIA; 1987)* has been greeted with dismay by many specialists in Amerindian linguistics¹ (cf. Chafe 1987, Campbell 1988, Adelaar 1989), and defended by the author in a reply to Campbell in *Language* 65.1 (1989).

There is no denying that G's central thesis—that all the native language families of the Western hemisphere (except for Eskimo-Aleut and Na-Dene) are genetically related, descending from a common ancestor, 'Proto-Amerind', spoken about 11,000 years ago (335)—has a certain romantic sweep to it. Such a far-reaching claim would seem to require pretty convincing evidence to back it up. Yet G expresses his disdain for the conventional sort of historical comparison, so 'obsessionally' preoccupied with sound correspondences and asterisked reconstructions.² Instead he values the kind of evidence provided by the more 'powerful' method of 'mass comparison', whereby wordlists and grammatical paradigms from many languages are grokked simultaneously to see whether any root-words or affixes look alike. Languages which share a number of resemblant vocabulary items are then deemed to be genetically related, unless these forms are obvious loans (22–23).

So powerful is this method, G believes, that it yields valid results even with the worst data, and to any desired time-depth: 'The method of multilateral comparison is so powerful that it will give reliable results even with the poorest of materials. Incorrect material should have merely a randomizing effect' (29). Errors do not greatly concern G: 'Although I have exercised great care, it would be miraculous if, in handling such a vast amount of material, there were no errors of fact or interpretation' (1989:112). To this G's critic Adelaar (a Quechua specialist) rejoins that 'This is highly questionable if one looks at the quality of the data G presents where the number of erroneous forms probably exceeds that of the correct forms' (1989:253). The consensus among professional Amerindianists seems to be that G has NOT in fact 'exercised great care' in the selection or utilization of his materials, and that he has ignored the results of the best recent research on many topics.

The most damaging accusation against *LIA* is that its methodology and data are so inadequate that they are incapable of distinguishing between similarities that might be due to genetic relationship and those which are due to pure chance (see §2.4 below).

Yet in a way all this criticism of *LIA* misses the point. Some scholars are impervious to criticism because they are totally convinced that their underlying thesis is correct, regardless of any disconfirmatory factual 'details' that might be wrong.³ In G's case this conviction derives from a larger belief system that far transcends the narrow confines of the New World, but embraces our whole planet and our whole species. Although G provisionally recognizes about 15 'major linguistic families' in the world (Table 11, 337), it is clear that in his heart he believes he can show that all human languages descend ultimately from a single common ancestor (62), since 'there is no theoretical limit to the depth at which classification can be carried out when the number of languages examined is large' (28–29). *LIA* ends on this very note: 'The ultimate goal is a comprehensive classification of what is very likely a single language family. The implications of such a classification for the origin and history of our species would, of course, be very great' (337).

Proto-Amerind is only the tip of the iceberg. We are promised another book shortly (G, forthcoming) that will prove that Indo-European itself belongs to a much vaster language family called 'Eurasianic', which includes Japanese, Ural-Altaic, and Eskimo-Aleut (332). For many linguists, such views fall more into the category of religious beliefs than scientifically testable hypotheses, about on a par with claims that 'all languages have the same underlying deep structure' and 'the position of the stars at the moment of our birth determines our character'.

Since *de dogmatibus non disputandum est*, we must concede that *LIA* cannot really be judged by conventional criteria. Much of the controversy surrounding the book is better considered to be a dialectic between sets of opposing personal-ity types and intellectual bents: battles of images, metaphors, temperaments.

Certain traditional dichotomies ('theory-oriented' vs. 'data-oriented' or 'lumpers' vs. 'splitters') do not quite succeed in capturing the differences between the opposing camps. G has his theories as well as his data; and many of G's critics are themselves lumpishly inclined, and would like nothing better than to succeed in demonstrating a genetic relationship between two families previously thought to be unrelated. I have made a slightly more nuanced tripartite distinction among three sorts of linguistic comparison ('micro-', 'macro', and 'megalo-'), according to the putative closeness or remoteness of the genetic relationship being investigated, and have observed that 'different species of maniacs' are attracted to each variety (Matisoff 1976:258; 1979:38).⁴ G seems to scorn those who work at sub-megalo levels of classification as focusing 'on a limited group determined by accidents of expertise' (4).⁵ He has no taste for tiny details.

Still another relevant dichotomy is between armchair- or library-scholars on the one hand (let us call them 'fauteuillistes' for short) and fieldworkers on the other. G is definitely a library-type scholar, justifiably proud of his Sitzfleisch in having gone through 'well over 2000 sources' during the preparation of *LIA*. The

fieldworker is only too bitterly aware of the inadequacies and messiness of his own material, how the accidents of elicitation cause one form rather than another to be recorded in one's notes during a too-brief stay in some village. The armchair linguist sees only the list of words on the page, authoritative and invariant, artificially neat.

All this having been said, if I were to pick a single word to describe G's apparent motivation in doing megalocomparison, it would have to be COLUMBICUBICULOMANIA—a compulsion to stick things into pigeonholes,⁶ to leave nothing unclassified. G gives the impression that the highest intellectual activity is the act of classification itself, regardless of the nature of the evidence upon which the classification rests: 'Basically, the wrong question has been asked, namely, when are languages genetically related? . . . What should be asked is, how are languages to be classified genetically?' (3). He is fascinated with the astronomically high number of mathematically possible ways there are to classify a relatively small set of objects (6). Once a single overarching classification has imposed order on this chaos, the really interesting part of the work is apparently over. Let others worry about the trivial details of classification at lower taxonomic levels.

Methodological rigor in a messy world: should megalocomparison be easy or hard?

2.1. Mixed languages, diffusion, complexity, and messiness

G refers with scant respect to believers in mixed languages like C. Loukotka (38), and seems uncomfortable with notions like linguistic areas, or the diffusion of lexical and grammatical traits across genetic boundaries. For anybody who has worked in a hothouse diffusional environment like Southeast Asia, it seems self-evident that big chunks of even a language's basic vocabulary⁷ and grammar can quickly and easily be remodelled under the influence of any languages with which it comes in contact, whether or not such contact languages were genetically related to it in the first place.⁸ Borrowing, conflation/contamination/blending, folk etymology, semantic slippage, calquing, backloans—all kinds of messy phenomena complicate matters. These are not marginal, nor, I submit, anything to be ashamed of.⁹

It is not even necessary to travel to exotic climes to convince oneself of the rapidity with which the genetic pathways of words can become obscure. It can happen even with neologisms, before one's very eyes, in less than a generation, in one's native language. How many opinions are already current among the American Volk on the etymology of, say, *T-shirt*?¹⁰ If we are so unsure about T-shirts, how can we be so sure about etymological connections that purportedly go back 11,000 years?

2.2. Strictness vs. laxity and the consequences of error

G likes to caricature the traditional historical linguist as a timid soul who dares not venture beyond the lowest level of comparison, considering languages 'pairwise',

only two at a time, afraid to tackle huge piles of languages at once. In fact, however, sober-minded scholars have shrunk from megalocomparisons not because they are so difficult, but because they are so easy.¹¹ When the number of languages being considered is large, when their relationship (if any) is remote, and the criteria for sound correspondences are lax, it is not very hard to find 'phono-semantic lookalikes'—forms which more or less resemble each other both in sound and in meaning.

G's faith that multiple errors will somehow have a randomizing effect makes it easy to ignore criticism on any particular point. Other metaphors may be invoked, however—instead of 'cancelling each other out', errors may be COMPOUNDED. The controllers of Voyager II didn't dare trust that any little errors in its trajectory would 'cancel each other out'. A tiny error on the cosmic scale grows to parsecs before you know it. Other images for the dynamics of multiple errors include the Two Drunks Supporting Each Other, the House of Cards, and the information-processing slogan 'Garbage in, garbage out'. (We shall return to this issue in connection with 'teleoreconstruction' in §4.2.)

2.3. Subgrouping without reconstructions

Many still remember the brilliant plan proposed by Sen. Aiken (R-Vt.) to bring the Vietnam War to an end. 'Let us,' said the Senator, 'simply declare that we've won, and bring the troops back home.' In a way G's thesis, if accepted, would have a similar effect, by cutting off any further discussion about WHETHER any Amerindian language was related to any other. The only interesting issues remaining would be HOW a language fit into the family as a whole. SUBgrouping then becomes the only meaningful activity for Amerindianists.

But what has been gained? G admits cheerfully enough that 'the internal subgrouping of the 11 Amerind groups remains largely unknown' (64). Isn't having no idea of HOW the language families of the Western Hemisphere relate to each other pretty similar to not knowing WHETHER they are related to each other or not? And how will Proto-Amerind ever be subgrouped without reconstructions of the individual subgroups?

It has often been pointed out¹² that genetic nonrelationship can never be proven. G calls this profound observation 'uninteresting', and counters by saying that you CAN 'disprove erroneous claims of relative degrees of relationship, e.g., 'Nahuatl is closer to Swahili than to Pima', since 'Nahuatl and Pima . . . belong to a valid genetic group (. . . Uto-Aztecan) that does not include Swahili' (5). Yet one can easily imagine a more subtle Gedankenexperiment, where the nature of the genetic grouping, if any, is not obvious in advance. Suppose we take three languages (A,B,C), all quite different from each other (though similarities exist between any dyad of them, as well as among all three), spoken in widely separated geographic areas, and none of whose further genetic affiliations are known with certainty. How can we tell whether A is more like B than A is like C or than B is like C? G seems to imply that mere eyeballing is always enough to determine the

subgrouping of entire languages, just as it suffices to establish the relative phonological resemblance among given lexical items: 'Is a form A more like B than it is like C? Given, for example, *pan / fan / ezuk*, who would hesitate?' (5). But how can this bravado be sustained in the case of even slightly more difficult examples, such as *pan / fan / vin* or *bol / bin / bo*? Or *èr / erku / duo*?¹³ Doesn't one sometimes have to hesitate a bit?

G, perhaps making a virtue of necessity, belittles the importance of phonological reconstruction: '... anything approaching a complete and highly convincing reconstruction on the basis of recurrent correspondences is in general possible only with languages so closely related that it is unnecessary anyway' (33). What then is 'necessary' and what is sufficient in historical linguistics? For G, creating the overarching classification is the only intellectual act of any interest. The details can be left to the drones working amid the pigeon-droppings in the lower cubicles.

Quite a different mind-set is displayed in the *Dravidian Etymological Dictionary (DED)* of Burrow & Emeneau (1961). Although this great work contains almost 6000 cognate sets, it does not offer any reconstructions either—but this is simply because, after many decades of toil, the authors felt they had not yet resolved all the problems in the reconstruction of the vowels.¹⁴ In every other respect the *DED* presents a maximal contrast to *LIA*: the sets of forms presented are truly cognate, and any irregularities are at least identified and possible explanations are suggested. Errors are at a minimum. Of course the time depth of Proto-Dravidian is much shallower than G's Proto-Amerind, and the validity of the Dravidian classification could just as well have been established by looking at 100 sets instead of 6000, so from G's point of view the whole book was unnecessary in the first place—though it is sure to come in handy when G tries in some future book to subsume Dravidian under a larger family!

Given G's aversion to reconstruction, it is curious that he still operates with the notion of COGNATES: 'The broad approach advocated here does not require the reckless positing of risky and uncertain etymologies. All that is needed is to show decisively more cognates than those of any rival hypothesis' (37). But how are we to decide which etymologies are totally convincing and which are 'risky and uncertain', if we arrived at them by naked eyeballing in the first place? How is a cognate different from a chance lookalike? How do we judge among competing etymologies for the same word? Do lots of erroneous cognate identifications outweigh a few solid ones? If we put in ENOUGH garbage does good stuff eventually come out?

2.4. Distinguishing chance similarities from relationship

G seems to be tilting at a straw man when he attacks '... the simplistic, but widely held, assumption that after a not very long period the resemblances between two related languages become indistinguishable from chance. This would be true only if there were just two languages in the world' (1989:109). We are in fact supposed

to be talking about VERY long periods indeed! Nobody is claiming that all traces of genetic relationship can be obliterated in a short time.

Everybody has a favorite list of accidental lexical resemblances (e.g. Thai *faj*, *taaj*, *rim*/Eng. *fire*, *die*, *rim*). Manipulators of these curiosities may now add G's 'final piece of preliminary evidence' (57) for the reality of the Amerind family, the 'Amerind etymology "hand, give, take"' (Table 9, 58), containing beautiful proto-Sapiens forms like Mayna (Andean) *mani* 'arm', Akwa'ala (Hokan) *man* 'hand', etc. Many scholars have attempted reductiones ad absurdum of megalocomparison by taking any two languages at random and finding large numbers of 'cognates' between them, often to very amusing effect (e.g. Callaghan & Miller 1962). Campbell (1988:602–3) tries the same gambit with Finnish and Amerind, but G is distinctly not impressed: 'I would never compare Finnish in isolation. If Finno-Ugric and the larger Uralic group to which it belongs were not already recognized, I would have discovered them' (1989:111). Can it be that G is missing the point here? THIS CHANCE COMPARABILITY OPERATES EQUALLY WELL BETWEEN ANY TWO PROTO-LANGUAGES CHOSEN AT RANDOM. One could undertake systematic comparisons between, e.g., Proto-Sino-Tibetan and 'Proto-Amerind', and find a dozen or so really snazzy lookalikes. (I will refrain from listing the ones I have found, for fear of providing grist for anybody's mill.¹⁵)

G does seem to recognize the difference between accidental and genetic relationship: 'Of course there are occasional resemblances [between Amerind and Na-Dene and Eskimo-Aleut], attributable either to accident or to common membership in some still deeper grouping' (61). But he then goes on to give a wildly fantastical example (he calls it 'instructive') of an item which seems to him to be a good candidate for the Proto-Sapiens lexicon: an etymon meaning 'hand; finger; to point (with the finger); one', attested by Amerindian forms like Karok *ti:k* 'hand; finger', Yagua *tiki* 'one', Eskimo *tik-iq* 'index finger', as well as by Proto-Indo-European **deik*- 'point', Proto-Sino-Tibetan **tik* 'one', and Nilo-Saharan forms like Maba *tek*, Fur *dik* 'one'. 'It may be more widely distributed for aught I know... it is likely that some of these [resemblances] reflect a common inheritance from a very extensive family—which may even be proto-Sapiens' (62).

To soften up the reader for the lexical presentations to come, G first devotes some space to morphological comparisons (44–57), discussing 'a few widespread grammatical markers... often involving shared irregularities' (44), e.g. the pervasive Amerindian pattern of pronominal nasal morphemes, *-n-* for 1st person and *-m-* for 2nd person. He returns to this topic in his Reply to Campbell: 'This distribution cannot be explained either by borrowing or chance. The borrowing of first- and second-person pronouns is very rare' (113). Again one wonders how G can be so sure about rejecting alternative possibilities. As far as chance goes, one could point to the quite similar and equally pervasive pattern of nasal morphemes found in those Tibeto-Burman languages with pronominal agreement systems, i.e. *-ŋ-* for 1st person, *-n-* for 2nd person—reduced from the full forms of the personal pronouns, PTB **ŋa-y* ('I; me') and **naŋ* ('thou; thee'), respectively. (The correspondences Amer. *-n-/TB -ŋ-* and Amer. *-m-/TB -n-* even show a nice

parallelism—in both cases the Amerindian nasal is ‘one place further to the front’ in point of articulation than the ST one!) As for the ‘unborrowability’ of 1st or 2nd person pronouns, one need only point to modern Thai students’ slang, where the English-derived pronouns *ɔj* ‘I’ and *juu* ‘you’ have steadily been gaining ground, partly out of exotic chic and partly as a welcome way of avoiding the elaborate distinctions built into the native pronominal system (see Cooke 1968:11, 15). At a more ancient time-depth we could mention the polite 1st-person pronouns for male speakers in Burmese (*cun-to*; 1st syll. < Old Bs. *kywan*) and Cambodian (*khñom*), which both originally meant ‘slave’. Here the cultural notions of hierarchy that diffused throughout ‘Hinduized’ SE Asia are responsible for the parallel grammaticalizations of ‘slave’ to ‘1st person pronoun’—though the Burmese and Khmer words themselves are of course not cognate, and one is not borrowed from the other.

In fact, the more languages one looks at, the more accidental resemblances one will find in the phonological shapes of semantically similar functors and affixes—perhaps even more accidental similarities than in the case of root morphemes. It seems impressionistically that formatives with long-lived sounds like nasals and *-s-* are particularly abundant in the world’s languages—perhaps because these sounds are best equipped to withstand the attrition brought about by high textual frequency.¹⁶

In any event, functors or grammaticalized morphemes are no more immune to accidental phonological similarities than are root morphemes.

2.5. Distinguishing areal from genetic relationship

G’s methods lack the subtlety to distinguish similarities that are due to typological and areal factors from those that reflect genetic relationship. One can only imagine what he would do when confronted with a complex linguistic area like Southeast Asia, a region that is home to several quite distinct but highly ramified language families that have undergone mutual influence for millennia. One of the most striking areal features of ‘Sinospheric’ SE Asian languages is monosyllabicity and elaborate tone systems.¹⁷ Tai, Hmong-Mien (Miao-Yao), and Vietnamese all have Chinese-type tone systems and thoroughgoing monosyllabicity, and all share a good-sized lexical component (including some core vocabulary) which corresponds more or less regularly in consonants, vowels, and tones. If this were brought vividly to G’s attention he would probably accept it at once as conclusive evidence for the genetic relationship of all these languages (especially since he would have little to fear from contradictory morphological evidence, in view of the rudimentary morphology of Sinospheric languages). Yet there is overwhelming evidence that Vietnamese belongs to the Mon-Khmer (Austroasiatic) family (quite unrelated to Chinese), while Tai and Hmong-Mien, while perhaps ultimately related to each other, are more plausibly grouped with Austronesian than with Chinese.¹⁸ Austronesian and Austroasiatic have a number of apparently deep grammatical features in common, including a causative morpheme in *-p-* and infixation as an ancient morphological process, yet share practically no

core vocabulary. In any case, the chief interest of SE Asian diachronic linguistics lies in attempting to unravel the threads of diffusional vs. genetic vs. accidental factors in the rich areal fabric. Were we to cut the Greenbergian knot and assume from the outset that all these language families are ultimately related, we would be led into terrible dead ends, and much of the interest would go out of this fascinating field.

Some proposals for remote linguistic relationships in Asia: the case of Japanese

3. For G, ‘GENETIC RELATIONSHIP IS PLAINLY TRANSITIVE, so that if Baltic is related to Slavic, and also to Germanic . . . then Slavic must be related to Germanic . . .’ (26; emphasis mine). Sometimes, however, this principle seems to amount to accepting and combining all genetic claims that have ever been made by anybody: if Linguist A suggests that language families X and Y are related, and Linguist B suggests that families Y and Z are related, that means ipso facto that X and Z are related—regardless of the independent validity of either dyadic grouping.¹⁹ It is as if any two genetic hypotheses involving the same language automatically reinforce each other, permitting G to make ever broader groupings.

Yet as the proverb goes, a chain is no stronger than its weakest link. If either the XY or the YZ grouping is shaky to begin with, the XYZ chain can be no stronger. Consider, e.g., Japanese—arguably the world’s most culturally important language whose genetic affiliations are still controversial. At least 7 theories have had their adherents: (1) HELIOPARTHENOGENESIS. The Japanese people descend from the Sun Goddess and were dropped down onto the Japanese islands along with their language at the beginning of time. (2) JAPANESE-DRAVIDIAN. The respected Japanese linguist Ohno Susumu has written a book (1980) attempting to demonstrate genetic relationship between Japanese and Tamil.²⁰ (3) JAPANESE-TIBETO-BURMAN. The eminent Japanese linguist Nishida Tatsuo has argued rather for a genetic relationship between Japanese and another SOV language family, Tibeto-Burman (1978), even attempting morpheme by morpheme comparisons of TB post-verbal particle strings with Japanese inflectional suffixes. (4) JAPANESE-AINU-KOREAN-CHINESE. Johannes Rahder spent years compiling pages of putative Chinese, Korean, and Ainu cognates to Japanese words (see, e.g., 1956/1959), comparing forms from modern Chinese dialects with selected syllables of semantically similar Japanese words. (5) JAPANESE-KOREAN-ALTAIC. Building on the work of S. Martin, who compared Japanese and Korean (1966), R. A. Miller develops this genetic theory in a supremely confident book with the question-begging title *Japanese and the Other Altaic Languages* (1971). (The membership of Korean itself in the Altaic family is still highly controversial.) (6) JAPANESE-AUSTRONESIAN. The simple CVCV structure of Japanese, as well as the geographic unity of the Japan-Ryukyuan-Taiwan string of volcanic islands, has long suggested a relationship between Japanese and Austronesian (Labberton 1924, Solomon 1974, Kawamoto 1977/1978), and this idea has recently been elaborated in stupefying detail by Benedict (forthcoming), who now

considers Japanese to belong to his 'Austro-Tai' family, which also includes Tai and Hmong-Mien (see below). (7) G believes that Japanese is but one of 9 subgroups of EURASIATIC, a great family which also includes Eskimo-Aleut and Indo-European.

Leaving aside (1) for the moment, we may apply G's 'principle of transitivity' to the above theories, removing any apparent contradictions among them by assuming they are ALL valid—i.e. that Dravidian, Sino-Tibetan/Tibeto-Burman, Altaic, Ainu, Austro-Tai, and Indo-European are all related to Japanese and to one another. We can be sure that it is by such leaps of transitivity that G will progress toward his ultimate goal of linking up all human languages into the Sapiens family.

Greenberg and Benedict compared and contrasted

4. It is instructive to compare G to the foremost megalocomparativist now working on East and SE Asian languages, Paul K. Benedict (B), whom G cites with approval (62, 336). B, like G, views himself as something of an outsider who uses common sense to beat the specialists at their own game. Both are armchair linguists and voracious wordlist consumers.²¹ Both have anthropological backgrounds and were decisively influenced by A. L. Kroeber. And both are always absolutely convinced that they are right. Yet while G's chief intellectual pleasure seems to lie in the act of classifying or pigeonholing, B's central metaphor is rather the jigsaw puzzle. His favorite cry of etymological triumph is 'Fits perfectly!' (Never mind if a piece of the puzzle has to be rammed in by force now and then.)

The crucial difference between G and B is that B is in fact a brilliant practitioner of the traditional comparative method. When the scale of comparison is not too vast—i.e. the macrolevel as represented by Proto-TB or Proto-ST—B's instincts are sure, and he is usually right. The problems arise at the 'megalolevel', as represented by Austro-Tai-Japanese (Benedict 1975; forthcoming). Here B's desire to make all the puzzle pieces fit together neatly causes him to attempt the impossible: to give the impression of micro-rigor when dealing with (even poorly recorded) megalodata. Even at the megalolevel B pays homage to the traditional trappings of the comparative method. He claims he is establishing 'regular' correspondences, he provides asterisked reconstructions bristling with parentheses, slashes, and brackets. Sometimes these are so complex and arbitrary that one feels like calling them 'pseudo-micritizing devices'—notational attempts to make the speculative seem rigorous. To put it another way: G sweeps difficulties under the rug, while B offers an instant 'explanation' for any difficulty. B can only cry 'Touché!' to G's remark, 'For those who see reconstruction as proof, there are so many quite legitimate ways of explaining what are apparently irregular correspondences that there is no empirical way of disproving a reconstruction' (10).

4.1. Pseudo-micritizing devices

One way of ensuring apparent 'regularity of correspondence' is to reconstruct proto-forms that are so complex canonically (e.g. containing long consonant

clusters, or even several syllables) that no given combination of proto-entities is likely to recur very often—thus obviating counterexamples. I like to call this 'proto-form stuffing'.²²

In B's conception, the atonal polysyllables of Proto-Austro-Tai (PAT) were simplified in the Tai-Kadai and Hmong-Mien branches into tonal monosyllables, presumably under the overwhelming areal influence of Chinese. As one can imagine, with these complex polysyllables for proto-forms and these simple monosyllables for reflexes, the etymological possibilities are endless.²³

If we add to this a rich apparatus of bracketings to optionalize virtually every portion of the proto-form, we are then home free. Thus a huge panoply of reflexes can be accommodated under B's PAT etymology RED/DARK-COLORED/REDDEN/SHAME(D), reconstructed thus (1975:361): **iʔaŋ*; **(q)ʔb/iʔaŋ*; **(q)ʔm/iʔaŋ*; **iʔa(?)*; **m(a)/iʔa(?)*; **[i]ʔa(?)i*; **m(a)/iʔa(?)i*. There is, for instance, no problem in identifying as cognate Proto-Mien **ʔnəy* 'ashamed' and Proto-Tai **hmliəŋ* 'rust', the former via **q/mryəy* and the latter via **q/mriəŋ* < **q/m/(i)ʔaŋ*.²⁴ Japanese, with its short and phonologically simple morphemes, is also gratifyingly easy for B to fit into the Austro-Tai picture, as with HAIR/BAST/HEMP/BEARD/EYEBROW (B forthcoming: 233–5): PJse/AT **[qa-](n)tsa(m)bo[t,c]* 'bast; hair; feather > pre-Jse. **[q]a-sa[wo]* > Jse. *asa* 'hemp'; HAND/FIVE (235–7): PJse/AT **(ka-)lima* > pre-Jse. **yi[ma]* > Jse. *i* (as in *i-tu-tu*, 'with reduplicated numeral suffix').

The height of Benedictine megalocomparative ingenuity is reached in the concept of SPLIT COGNATES, i.e. cognates that have reflexes of at most one given proto-phoneme in common, since they descend from different syllables of a polysyllabic etymon. This is a powerful reconstructive tool indeed²⁴, used to good advantage in etymologies like PAT **[wa]kləwm[a]* 'dog' > Proto-Tai **hma*, but > Proto-Hmong-Mien *klu* (B 1975:272–3); or PJse/AT **(m)ba(ŋ)ʔiwak*, which yields the Japanese 'split doublets' *uo* 'fish' (< **uwo* < **iwo* < **ʔiwak*) and *wani* 'crocodile' (< **bani[wak]*) (219–20).

4.2. 'Teleoreconstruction' and conflicting megalogroupings

G claims that 'The validity of Amerind as a whole is more secure than that of any of its stocks' (59)²⁵, and maintains that phenomena which are inexplicable on a lower taxonomic level often become clear when the scale of analysis is enlarged: '[A stepwise comparative] procedure appears to be very virtuous, but in fact is an illusion. The reconstruction will itself be a poorer approximation to the truth if it is confined to a restricted group . . . In fact, many phenomena of narrower groups can only be understood historically by outside evidence from within the broader stock' (36). This pronouncement comes quite close to B's notion of TELEORECONSTRUCTION (B 1973)—the method of leaping back to the level of the proto-language, without being deterred by all the detailed problems which arise in the individual subgroups. B feels in fact that it is often easier to reconstruct at a higher rather than a lower taxonomic level—e.g. Proto-Tibeto-Burman (PTB) is 'easier' to reconstruct than its best-studied subgroup, Proto-Lolo-Burmese (PLB);²⁶ he

claims that the relationship of Japanese to the 'rest of' Austro-Tai (AT) is easier to demonstrate than are the interrelationships of its previously posited branches (Austronesian, Tai-Kadai, and Hmong-Mien).

There is certainly something to be said for a telic approach when one is operating at, say, the macrolevel, where the validity of the language family is obvious to all. But even here it is an illusion to think that the task of reconstruction gets easier when the genetic relationship becomes more remote. It is certainly harder to reconstruct PST than PTB, even though the relationship of Chinese to TB is not in doubt. It is much more difficult to go even one further step up the taxonomic tree from Proto-Tai to Proto-Tai-Kadai, let alone from there back to Austro-Tai or Austro-Tai-cum-Japanese. When a megaloc-construct is already highly shaky and speculative, the very ease with which it may be further elaborated should be suspect.

For me the ultimate problem with proposals of super-remote genetic relationship is the impossibility of choosing among conflicting ones. I have mentioned the various theories about the affiliations of Japanese (§3), where G and B do not see eye to eye. The two also differ on the further genetic affiliations of Sino-Tibetan, though they both agree it is distinct from Austro-Tai. While B for once ventures no further affiliations for Sino-Tibetan, G is inclined to accept Sapir's hypothesis of a relationship between ST and Na-Dene (G 332; Campbell 1988:593). The eminent Sinologist and historian E. G. Pulleyblank claims rather that ST's true connections are with Indo-European (1978). G endorses Schmidt's old idea (1906) of a genetic connection between Austronesian and Austroasiatic (Mon-Khmer plus Munda), and favors adapting the theory to encompass all of B's Austro-Tai as well as Austroasiatic. B once believed in Schmidt's theory himself (the 'Austriac' theory; see Diffloth 1985), but lately refuses to recognize anything more than an old contact relationship between Austronesian and Austroasiatic.

Conclusion

5. It is no doubt a noble idea to try to find a common genetic origin for all of the world's languages, just as a common biological origin can be demonstrated for all extant 'races' of *Homo sapiens*. G appeals to biological genetic evidence to back up his linguistic genetic claims: 'I would like to emphasize the fact that my linguistic classification shows an almost exact match with genetic classification by population biologists and with fossil teeth evidence' (1989:113). But dental consonant correspondences are much better indicators of linguistic relationship than are dental fossils. There is no linguistic correlate of DNA to furnish irrefutable proof of genetic relationship. People of any genetic makeup can speak any language. There seems little reason to believe that the New World was populated by a discrete series of exactly three waves of migration, each racially and linguistically uniform. Why not conceive of this population movement as a millennial percolation of people speaking a variety of originally unrelated languages, some

of which were subjected along the slow migration routes to prolonged mutual contact and even creolization?

Looking on the positive side, one has to admire G's intellectual vigor and daring. No one could ever accuse him of timidity or fuddyduddyism. Perhaps *LLA* will actually prove to be a boon to Amerindian linguistics because of the intensity of the counter-research it will engender. In discussing his methodology G sets up a dichotomy between the traditional comparative method of 'looking at many forms across only two or a few languages' and his own method of 'looking at few forms across many languages'. Surely what is needed is a combination of the virtues of both approaches: looking at as many well-recorded and well-analyzed forms from as many languages as possible. It is also a good idea to organize the data by semantic field as well as by phonological shape.²⁷

The computer will be crucial to handle the etymological information explosion of the future, but machines will never be able to do all the work for us. There will still doubtless be room for gut feelings, intuitions, temperamental quirks, and professional rivalries, even in the Computer Age. In making etymological 'judgment calls' there will never be a substitute for hands-on human experience in a given language or language family.

Editor's note

Because of the importance to historical linguistics of the issues raised by Joseph Greenberg, his supporters, and his critics, the editor decided to solicit a discussion of these issues by a scholar whose qualifications included extensive experience in comparative linguistic research and a presumed lack of prior bias either for or against Greenberg's views. The following essay is the result.

Notes

- 1 My own ignorance of the Amerindian data (which I have managed to retain despite my Berkeley formation) ensures a certain objectivity, which is perhaps why I have been asked to contribute this Discussion Note. At least I cannot be accused of an axe to grind based on an 'accident of expertise' (*LLA*, p. 4)!
- 2 Until very recently linguists in the People's Republic of China have held a similarly unflattering view of the reconstructive enterprise, likening it to 'painting ghosts' (*huà guǐ*)—i.e. trying to lend a specious reality to something imaginary.
- 3 In Oriental linguistics, one thinks of such great figures as Bernhard Karlgren and Paul K. Benedict.
- 4 Very roughly speaking, MICROCOMPARISON can be practiced on close-knit families like Romance, Loloish, or Tai, with a time-depth of not more than about 2000 years. MACROCOMPARISON is appropriate for farflung but demonstrably valid groupings like Indo-European or Sino-Tibetan, with time-depths of up to about 6000 years. MEGALOCOMPARISON takes on any more remote relationship, where sound-correspondences are not regular and putative cognates are few, so that chance rivals genetic relationship as the explanation for perceived similarities.

- 5 The micromaniac might retort that real expertise in a relatively limited area is the best training for more farflung endeavors, and that G would have done well to acquire such expertise before writing a book like *LIA*.
- 6 I plead guilty to this awful neologism (< Lat. *columba* 'dove; pigeon' and *cubiculum* 'small compartment'), though perhaps 'pre-columbicubiculomania' is more appropriate for the prehistoric New World. Personally I have come down on the side of those who prefer the continuum to the pigeonhole: 'Pigeonholing is merely a heuristic attempt to make a continuum appear discrete' (Matisoff 1976:258).
- 7 An extreme case of relexification is the Bai (= Minjia) language of NW Yunnan, spoken by well over a million highly Sinicized people. While Bai definitely belongs somewhere in the Sino-Tibetan family, its precise genetic classification is difficult, since some dialects have undergone replacement of as much as 75% of their lexicon by Chinese (see Zhao, forthcoming). Sorting out the inherited vs. the borrowed components of the Bai lexicon is an intricate business. Needless to say, languages do not have to be genetically related for one to relexify the other, if the contact is intense enough.
- 8 It is as obvious to the areal linguist as to the creolist that no aspect of phonology, grammar, or semantics is immune to borrowing or contamination. Asian languages furnish many spectacular examples, e.g. the monosyllabization and tonalization of the Austroasiatic language Vietnamese under Chinese influence; the acquisition of SVO order by the Karenic Branch of Tibeto-Burman (under Tai and Mon influence); the loss of tone in frontier Chinese dialects of Gansu under Altaic influence; the development of elaborate verbal morphology in many minority languages of India under Indo-Aryan influence; and parallel grammaticalizations of root-verbs to aspect-markers throughout the region (Matisoff 1988).
- 9 In a well-written but rather sarcastic passage (11–16), G lists ten 'options' comparativists use to salvage an etymology which shows an irregular sound correspondence, of which one is invoking 'dialect mixture' (16). By rubbing the noses of comparativists in irregular cases (as if there were something shameful or unnatural about them), G is casting aspersions on the comparative method itself, thereby justifying his disinterest in regular correspondences or asterisked reconstructions. Missing from G's discussion is the obvious point that only the idealized assumption of regularity makes it possible to identify 'irregularities' in the first place.
- 10 The position of the sleeves with respect to the torso resembles the letter T, and that is apparently the 'true' etymology. Yet the variant spelling *tee-shirt* suggests a sporting connection with golf tees (my own previous belief). Still other members of the Volk (like my wife) believe the T stands for *tennis*.
- 11 Campbell uses similes like 'shooting fish in a barrel' (603) or 'playing poker with all the cards wild' (605), and would probably not object to 'taking candy from a baby'.
- 12 For instance by the great French comparativist of SE Asia, André-Georges Haudricourt.
- 13 These are the Mandarin, Armenian, and Latin forms for 'two'.
- 14 Personal communication, M. B. Emeneau (September 1989).
- 15 List furnished upon request to adults 18 years old or over. The amateur linguist and pioneer Tibeto-Burmanist Robert Shafer (1952) seriously entertained the possibility of a relationship between ST and American Indian languages, and Edward Sapir carried on a lively correspondence on this subject with Berthold Laufer in 1920.
- 16 I. Goddard invokes a 'universal tendency for primary grammatical morphemes to consist of a single, unmarked (phonetically commonplace) segment' to explain the widespread appearance of *-n-* as a 1st person marker (1986:202).
- 17 I refer to the Chinese and Indian areas of linguistic/cultural influence in Southeast Asia as the 'Sinosphere' and the 'Indosphere'.
- 18 See Benedict 1975, Hashimoto 1976; for opinions to the contrary see Wulff 1934, Li 1976, Yan 1983, Dong et al. 1984.

- 19 See, for instance, *LIA* p. 74: 'As is so often the case, they were both right . . . If we combine the two chains of suggested relationships, we have, then, Panoan, Tacanan, and Moseten on the one hand and Mataco, Guaicuru, Charruan, Lule, and Vilela on the other.'
- 20 So obvious is this relationship to Ohno that he does not feel the need of using Proto-Dravidian reconstructions, but rather compares Japanese to Tamil directly. It must be admitted that the typological similarities between Japanese and Dravidian are indeed striking, and there are even a fair number of phonological lookalikes in grammatical morphemes.
- 21 B is said to be able to memorize a wordlist after a single scanning.
- 22 Weidert 1987 furnishes many good examples of this strategy within the confines of the monosyllable, e.g. in his PTB reconstruction **mrgsla* for 'moon', where the monstrous cluster *mrgsl-* is set up to account for a unique correspondence of initial consonants—despite the fact that this flies in the face of the proto-syllable canon, and in general shows a lack of 'proto-Sprachgefühl' (see Matisoff 1982). (The standard reconstruction of this etymon is **s-la* or **s-gla*.)
- This is not to deny that there may be cases of 'unique but regular' correspondences, as G insists (9). Thus one might well accept B's revision of the reconstruction of the initial cluster of PTB 'blood' from **s-hw-* to **s-hyw-*, since this does not strain the proto-syllable canon too much, and a parallel cluster **kyw-* is attested in the root for 'yam' (1972:51).
- 23 Cf. Campbell's discussion of 'short forms and unmatched segments' (1988:600).
- 24 To be fair, we can certainly imagine a protoform-with-respect-to-the-future like **taxi-cab* developing into *taxi* in Lg. A but into *cab* in Lg. B; or a protoname like **Elizabeth* becoming *Lisa* in Lg. A but *Betty* in Lg. B. But it will be all to the good if future linguists can uncover further cognates with shared phonemes (e.g. *tekep* or *Libby*).
- 25 G uses a false analogy to illustrate this point: 'For example, there is no doubt concerning just which languages belong to the vast Austronesian family, but subgrouping has proved difficult and has not led to any generally accepted result' (59). While it is true that Austronesianists are still not in total agreement on some details of Proto-AN reconstruction, the various subgroups of the family (e.g. Proto-Polynesian) are very well reconstructed indeed, and thousands of valid cognate sets have been established at various taxonomic levels, the vast majority of which illustrate recurrent, regular sound correspondences.
- 26 Personal confession, numerous occasions. We know enough about PLB to see how much remains to be explained.
- 27 This is the approach, for instance, of Kaufman's *Otomanguean Etymological Dictionary* and Diffloth's ongoing *Mon-Khmer Etymological Dictionary* project, as well as of my *Sino-Tibetan Etymological Dictionary and Thesaurus* project at Berkeley.

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COMMENT ON MATISOFF'S COMPARISON BETWEEN GREENBERG AND BENEDICT

Paul K. Benedict

Source: *Linguistics of the Tibeto-Burman Area* 14, 2, 1991, 169–70.

In his recent discussion note "On megalocomparison" (*Language* 66:1.106–20, 1990), James A. Matisoff has described me as a "megalocomparativist" and has compared (and contrasted) my methods with those pursued by Joseph H. Greenberg. He also reports that I favor a "jigsaw puzzle" approach as contrasted with Greenberg's obsession for "pigeonholing" (columbicubiculomania). I do indeed attempt to fit linguistic pieces together (see below) but I resolutely deny being a megalocomparativist. As I see it, Greenberg and I are simply playing different games and the contrast in our approaches reflects that basic difference.

I began in the A. L. Kroeber era at Berkeley as a "splitter" but before long adopted a "lumper" role. I had taken over as director of the Sino-Tibetan Philology project and had soon come face to face with an ugly fact: as Gertrude Stein might have put it, there was no there there! A veritable "black hole" existed at the very heart of the proposed language stock under investigation, with some widespread etyma for the numerals as well as for cultural items such as "charcoal", "horse", and "saddle" but nothing resembling a core vocabulary. The reigning Orientalists of that period placed almost exclusive emphasis on features such as monosyllabism, tones and isolating characteristics, with virtual neglect of lexical evidence, e.g. the great Henri Maspero classified Vietnamese as Tai-related (hence coming under Sino-Tibetan) despite the overwhelmingly Mon-Khmer nature of its lexicon. As a good anthropologist, however, I had been reared at Harvard on diffusionist doctrine and I had no trouble at all with the idea of pretty much anything in language, monosyllabism and tones included, diffusing here and there. In keeping with this line of thought, I soon lopped off from the Sino-Tibetan stock, as gently as possible, both Tai and Miao-Yao and carefully transferred Vietnamese to its ancestral Mon-Khmer. Kroeber, the administrator of the project and himself

a pretty good anthropologist, approved of the truncation but the China lobby on the Berkeley campus was mortally offended, very much as if I had removed the Great Wall from the country.

The project survived despite the outcries of betrayal and I went on to do some "lumping", first of Tai (and Kadai) with Austronesian and later of Miao-Yao and (recently) Japanese with this duo, all under "Austro-Tai". I have also remained a "splitter", however, quite unwilling to find any genetic relationship between Austronesian and Austroasiatic (Schmidt's old "Austrie"). I continue to make the significant sharing of core vocabulary a litmus test for genetic relationship and I keep looking for precise fits in this area, the more complex the better (because so much the less likely to be the product of chance). Matisoff has labeled this as "proto-form stuffing" but it must be noted that the complexities often lie within one of the constituent families itself, e.g. Proto-Austronesian "T" is represented by the doublet $*(\text{ʔu-}, \text{ʔi-})\text{aku} - *(\text{ʔi-})\text{a}(\eta)\text{k}\text{ə}\text{n}$, with $*\text{ʔu-}$ and $*\text{ʔi-}$ as pronominal markers and (η) as variable nasal increment (highly characteristic of the family and also of the stock as a whole), with cognates (often "split") in the mainland families as well as in Japanese: P-Kadai $*(\text{ʔi-})\text{aku}$, P-Miao-Yao $*\text{ʔyakou} < *\text{ʔi-aku} \sim \text{wanjkon} < *\text{ʔu-}\text{anj}\text{k}\text{ə}\text{n}$ (regular shifts) and Proto-Japanese-Ryukyuan $*\text{anu} - \text{wanu} - \text{wanju} < *\text{ʔu-}\text{anj}\text{k}\text{u}$ (regular shifts) (see Benedict 1990:214-16 for details). This pronominal set also serves to provide key evidence for the presence of the $*\text{ʔu-}$ and $*\text{ʔi-}$ markers at the earliest (Proto-Austro-Tai) level: it has its complexities, to be sure, but I can hardly see anyone attributing it to chance.

As pointed out by Matisoff (111), it is indeed curious that Greenberg abhors reconstruction yet "operates with the notion of COGNATES". I submit that Greenberg is badly misusing the word in this context and that it is pro-reconstruction megalocomparativists like me who operate with COGNATES whereas anti-reconstruction megalocomparativists like Greenberg operate rather with LOOKALIKES OR COMPARABILIA (Matisoff), perhaps now in need of an abbreviation (LOOKA's? COMP's?). I further submit that if one doesn't "buy" any given product of a megalocomparativist, e.g. is not convinced that a proto-language such as Austro-Tai ever existed, he should not promote its author to the status of a megalocomparativist but simply think of him as having failed in this engagement. I play one game and am intrigued by the other but I do keep wondering whether that other game has any rules or whether a computerized robot might not be rather better at it all. But long live both games!

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SINO-TIBETAN LINGUISTICS

Present state and future prospects

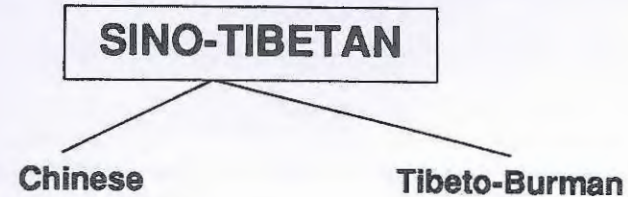
James A. Matisoff

Source: *Annual Review of Anthropology* 20, 1991, 469–504.

Introduction: what is Sino-Tibetan?

Since Sino-Tibetan (ST) is one of the greatest language families in the world—even Indo-European does not have more first-language speakers—it is sobering to realize that ST linguistics is only about 50 years old, and has been a flourishing field of inquiry for only the past 25 years. The more than 1.1 billion speakers of Sinitic (= the Chinese dialects) constitute the world's largest speech community, and scholars have been trying since the mid-19th century to situate Chinese in a wider genetic context. As the relationships between Chinese and Tibetan on the one hand, and Tibetan and Burmese on the other became obvious, vague notions of an “Indo-Chinese” family (34, 79) began to crystallize. The term Sino-Tibetan seems to have been used first by R. Shafer (177, 178), who conceived of it as a tripartite linguistic stock comprising Chinese, Tibeto-Burman (TB), and Tai (= “Daic”). Today most scholars in China take an even broader view of ST (called Hân-Zàng in Mandarin), including not only these three branches, but Hmong-Mien (= Miao-Yao) as well. The majority view outside of China is more conservative: ST includes only Chinese (= Sinitic) on the one hand and the Tibeto-Burman languages on the other (see Figure 1). Even taking ST in its narrower sense, we are dealing with a highly differentiated language family of formidable scope, complexity, and time-depth. TB comprises hundreds of languages besides Tibetan and Burmese, spread over a vast geographical area (China, India, the Himalayan region, peninsular SE Asia), most of which is still virtually inaccessible for linguistic fieldwork, at least by foreign scholars (e.g. northeast India, Burma, Yunnan, Sichuan, Tibet, Laos, Vietnam). Only in Thailand and Nepal has vigorous international fieldwork been carried on since the 1960s.

A. Narrow View



B. Extended View

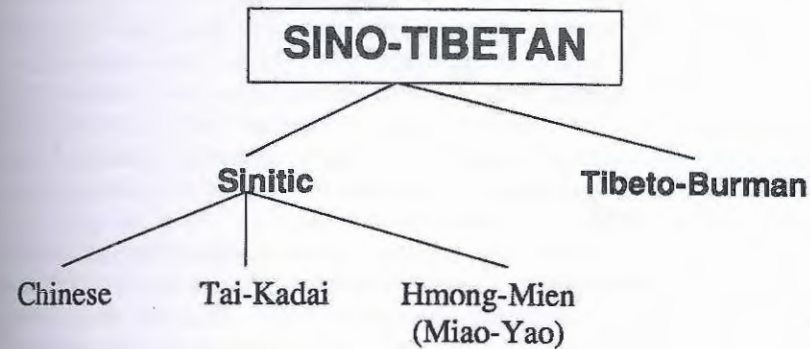


Figure 1 Two views of Sino-Tibetan

Homeland and time-depth of Sino-Tibetan

The Proto-Sino-Tibetan (PST) homeland seems to have been somewhere on the Himalayan plateau, where the great rivers of East and Southeast Asia (including the Yellow, Yangtze, Mekong, Brahmaputra, Salween, and Irrawaddy) have their source. The time of hypothetical ST unity, when the Proto-Han (= Proto-Chinese) and Proto-Tibeto-Burman (PTB) peoples formed a relatively undifferentiated linguistic community, must have been at least as remote as the Proto-Indo-European period, perhaps around 4000 BC.

The TB peoples slowly fanned outward along these river valleys, but only in the middle of the first millennium AD did they penetrate into peninsular Southeast Asia, where speakers of Austronesian (= Malayo-Polynesian) and Mon-Khmer (Austroasiatic) languages had already established themselves by prehistoric times. The Tai peoples began filtering down from the north at about the same time as the

Tibeto-Burmans (108). The most recent arrivals to the area south of China have been the Hmong-Mien (Miao-Yao), most of whom still live in China itself.

The components of Sino-Tibetan

The Chinese component

By any criterion (number of speakers, antiquity of documented written history, cultural significance, influence on other languages) Chinese ranks as one of the most important languages in the world. Yet the nonalphabetic nature of the Chinese writing system has posed unique problems for the historical linguist trying to reconstruct the phonology of earlier stages of the language, or establish a genetic connection between Chinese and other languages.

The great Swedish Sinologist Bernhard Karlgren, basing his work on the pioneering philological research of 18th and 19th century Chinese scholars, devoted some 35 years to the phonological reconstruction of the pronunciation of thousands of Chinese characters (84–87). Karlgren recognized two earlier stages of the language: 1. "Ancient Chinese" (now usually called Middle Chinese, "MC"), spoken during the second half of the 1st millennium AD, and 2. "Archaic Chinese" (now usually called Old Chinese, "OC"), spoken during the early Zhou (= Chou) dynasty at the beginning of the first millennium BC.

The reconstruction of MC is based mainly on the "rhyme-books" produced by contemporary Chinese literati, especially the *Qie Yun* (602 AD), wherein each character was given a phonetic value by glossing it with two others, the first of which had the same initial consonant as the target character, while the second had the same "rhyme" (i.e. vowel, final consonant if any, and tone) as the target character.

The tools available for the reconstruction of OC are much more indirect and tricky to use: the patterns of rhyming in the earliest Zhou texts, especially the *Book of Odes* (*Shi Jing*), and the graphological structure of the characters themselves, most of which are constructed of two elements, a *radical* that gives a clue to its meaning, and a *phonetic* that gives a clue to its pronunciation. (But no more than a clue: it cannot be assumed that all the characters in a given "phonetic series" had exactly the same initial and rhyme.)

Despite the brilliant successes of Karlgren's methods, they have certain severe inherent limitations. First of all, the phonological system implied by the *Qie Yun* is forbiddingly complex, lending credence to the view that it does not represent the speech of any single dialect of the time (not even that of the Tang capital, Chang-an), but is rather *pan-dialectal*, noting distinctions made in any dialect with which the compilers (who came from various regions, as stated explicitly in the Preface) happened to be familiar. Second, there is no reason to suppose that the MC phonological system of the *Qie Yun* was the exact lineal descendant of the OC system deduced from the *Shi Jing* rhymes and the graphic structure of the characters (in the sense that, for example, Modern High German "descends from" Middle High and Old High German). Third, certain modern groups of dialects, especially the

Min dialects of Fujian (= Fukien) and adjacent regions in Southeast China, have undergone distinctive phonological developments that are impossible to trace back to the presumed MC system of the rhyme-books (see 26, 162, 163).

Despite the ingenuity of Karlgren's successors in patching up this or that aspect of his reconstructions—or perhaps because of this very ingenuity—Chinese historical phonology has until recently been in danger of degenerating into a kind of scholasticism: endless reinterpretations of the same data. For no matter how rich the material on earlier stages of a single language may be, one can only go so far by the methods of "internal reconstruction." A tripod cannot stand on a single leg. For further progress in ST comparative/historical linguistics, it is necessary to look well beyond Chinese.

The Tibeto-Burman component

The key component of ST, the branch with the most numerous and highly differentiated individual languages, is TB. The existence of the TB family was posited as early as the 1850s, when it was noticed that many words in "Written Tibetan" (WT), attested since the 7th century AD, appeared cognate to forms in "Written Burmese" (WB), attested since the early 12th century AD. British scholars and colonial administrators in India and Burma began to study some of the dozens of little-known "tribal" languages of the region that seemed to be genetically related to the two great literary languages, Tibetan and Burmese. This early work was collected in the monumental *Linguistic Survey of India* (59), three volumes of which (Vol. III, Parts 1, 2, 3) are devoted to wordlists and brief texts from TB languages.

Subsequent sporadic attempts to find cognates between Tibetan and Chinese (e.g. 181) did not get far, in the absence of any serious scheme for the reconstruction of Proto-Tibeto-Burman (PTB). It remained for the eccentric American amateur comparativist Robert Shafer to embark on a systematic project to assemble all the material then available on TB languages, and to venture a division of the family into subgroups. Much of this earlier data had been collected by officials or missionaries who had spent years living among the people whose languages they studied, and a number of the grammars and dictionaries they produced are of lasting value (e.g. 47, 64, 103, 104, 105, 113, 168). Shafer was assisted in this Depression-era WPA project by a talented junior collaborator, Paul K. Benedict, along with a motley team of half-trained indigents who spent their time combing through dictionaries and wordlists. The results were enshrined in a multi-volumed unpublished manuscript (1939–1941) called *Sino-Tibetan Linguistics* (see 6).

Shafer went on to publish his great work, *Introduction to Sino-Tibetan* (178), where he included Tai in the ST family, and offered a complex and detailed subgrouping of TB into "divisions," "sections," "branches," and "units." Despite the illusory nature of this precision, given the inadequate quality of the data then available for the various subgroups of TB, Shafer's classificatory schema has been adopted unquestioningly by many nonspecialists.

Benedict, basing his work on the same database as Shafer, arrived at different conclusions. In an unpublished manuscript entitled *Sino-Tibetan: A Conspectus*

(ca. 1941), he first of all banished the Tai languages from ST, leaving only Chinese on the one hand, and TB on the other. As for the internal subgrouping of TB, though Benedict generally followed Shafer in setting up eight major TB "nuclei," he refrained from trying to relate these by family trees (*Stammbäume*) of the traditional type, preferring to stress that many TB languages had so far resisted precise classification, and that the subgroups that could safely be established seemed to interrelate in ways too complex for a simple tree diagram.

When a revised and heavily annotated version of the *Conspectus* (henceforth *STC*) was finally published in 1972 (4), with J. Matisoff as contributing editor, this agnostic view of the internal structure of TB was retained, with most of the family pictured as "radiating out" of the geographically central Kachin (= Jinghpaw = Jingpho) language of North Burma, and the Karen languages singled out as being furthest away from this central nucleus.

STC offers close to 500 TB etymologies, as well as over 300 suggested cognates between PTB and Old Chinese. In spite of its shortcomings, its publication ushered in the modern era of ST studies, and it is now recognized as the point of departure for future work in the field.

The present state of Sino-Tibetan studies

Conferences and journals

Progress in both synchronic and diachronic ST studies since the late 1960s has been steady, both in the United States and abroad, though our knowledge of several of the subbranches of the family remains spotty. Except for the handful of "major literary" languages (Chinese, Tibetan, Burmese), and the somewhat more numerous "minor literary" ones (Xixia [= Tangut], Newari, Meithei [= Manipuri], Naxi/Moso, Yi [= Lolo], Bai [= Minjia], Pyu), no ST languages have left written texts that go back further than the early 20th century. The new era of progress has been made possible only by putting into proper relief the dozens of humble unwritten TB languages—the "poor relations" of the family, as it were. The data available for the task have been dramatically increased by an ongoing explosion of fieldwork by American, European, Indian, Japanese, Thai, and Chinese scholars. (For fairly complete bibliographies of recent research on TB through the early 1980s, see 63, 81, 195.)

Since 1968, the chief focus of scholarly activity in the field has been the annual ST Conferences, usually held in October. These have grown from small seminars (#1 had only eight participants; see 127) to full-scale conferences lasting 3–5 days and often attracting hundreds of people. At first the subject matter was limited to ST or TB phonological reconstruction; now any topic relating to the linguistics of the ST area is welcomed (including studies of Tai, Hmong-Mien, and Mon-Khmer). Now known as the *International Conferences on Sino-Tibetan Languages and Linguistics*, they have been held outside the United States at least every third year since 1976.¹ An annotated and indexed Bibliography of all 1216 papers presented at the first 21 Conferences has been prepared (92).

I Yale (1968), II Columbia (1969), III Cornell (1970), IV Indiana (1971), V Michigan (1972), VI U. C. San Diego (1973), VII Georgia State (1974), VIII U. C. Berkeley (1975), IX Copenhagen (1976), X Georgetown (1977), XI Arizona (1978), XII Paris (1979), XIII Virginia (1980), XIV Florida (1981), XV Beijing (1982), XVI Washington (1983), XVII Oregon (1984), XVIII Ramkhamhaeng (Bangkok) (1985), XIX Ohio State (1986), XX U British Columbia (Vancouver) (1987), XXI Lund (Sweden) (1988), XXII Hawaii (1989), XXIII U. Texas Arlington (1990), XXIV Bangkok (1991) [planned], XXV U. C. Berkeley (1992) [planned].

More specialized seminars and workshops (e.g. on subgroups like Loloish or Kadai) are occasionally held in conjunction with the main ST conferences, and increasingly these are being "spun off" into independent series of meetings.

More than a dozen new journals and monograph series devoted wholly or largely to ST linguistics have sprung up all over the world since the 1960s, with most of them still going strong. Some of the most significant are these: (USA) *Unicorn (Chi-lin)*, a working-paper series produced by The Chinese Linguistics Project (Princeton; 10 issues, 1966–72); *Journal of Chinese Linguistics [JCL]* (University of California, Berkeley; from 1973); *Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics [OPWSTBL]* (Ann Arbor/Urbana; 6 volumes, 1969–1978); *Linguistics of the Tibeto-Burman Area [LTBA]* (University of California, Berkeley; from 1974). (France) *Asie du Sud-est et Monde Insulindien [ASEMI]* (Paris; from 1970); *Cahiers de Linguistique Asie Orientale [CLAO]* (Paris; from 1977). (Australia) *Papers in South East Asian Linguistics [PSEAL]* (Canberra, Australian National University; from 1967). (Japan) *Tonan Azia Kenkyu (Southeast Asian Studies) [TAK]* (Kyoto; from 1963); *Computational Analyses of Asian and African Languages [CAAL]* (Tokyo Foreign Languages University; from 1975). (China) *Minzu Yuwen (National Minority Philology and Linguistics) [MZYW]* (Beijing; from 1979); *Zhongguo Shaoshu Minzu Yuyan Jianzhi Congshu [Minority Language Outline Grammar Series]* (Beijing: grammatical sketches of the 55 "official minority languages" of China; from about 1979). (Thailand) *Indigenous Languages of Thailand Research Monographs* (Bangkok: Chulalongkorn University; from 1976). (Nepal) *Kailash: A Journal of Himalayan Studies* (Kathmandu; from 1973). (India) *Phonetic Reader Series/Grammar Series* (Mysore: Central Institute of Indian Languages; from 1969); *Compact Dictionaries of Languages of Nagaland* (Kohima: Nagaland Bhasha Parishad [Linguistic Circle of Nagaland]; from about 1972); *Resarun: Journal of the Research Department, Government of Arunachal Pradesh* (Shillong; from 1975); *Tibeto-Burman: Journal of the TB Linguistic Society* (Imphal, Manipur; from 1985).

Fieldwork and research situation, by country

The population figures in this section are mostly from *Ethnologue* (60). For more detailed discussion, including lists of minority languages, see 149.

China (including Tibet)

Total population: 1,100,000,000, of which 67 million (6.5%) are members of "minority nationalities," including Tai-Kadai (19,799,200), Tibeto-Burman (17,162,200), and Hmong-Mien (6,142,000).

Official Chinese government policy toward minority languages, paternalistic as it still is, is now quite enlightened by comparison to the contemptuous attitudes of the past. Fifty-five ethnic groups have been designated as "official nationalities" (of these 17 are TB), and several more are likely to achieve that status before long (perhaps including some of the 32 non-official TB languages so far noted by Chinese linguists). There have been lively discussions about the criteria that should be applied in order for a minority nationality and language to be granted official status (e.g. 46, 50). Mere number of speakers is not the sole criterion, and much emphasis is correctly laid on a psychological feeling of "ethnic identity." In theory, speakers of official nationality languages have the right to receive elementary education in their native tongue, and orthographies have been created for them all. On the other hand, a concerted effort is made to teach the Chinese language in every village of the country. The brightest young people of a tribal area are often sent to the nearest big city for instruction in Chinese, and are expected eventually to return to their villages to teach it.

Access to linguistic informants for foreigners remains sporadic and unpredictable, with junior scholars often faring better than more conspicuous senior professors. Many areas, especially in Yunnan and Tibet, are still totally closed to non-Chinese. Individual scholars in Beijing (especially at the Chinese Academy of Social Sciences and the Central Institute of Minority Nationalities) are usually extremely helpful, but in general government authorities are more flexible in the provinces than in Beijing.

India (including Bangladesh and Pakistan)

Total population: 750 million, of which 72% are Indo-Aryan, 25% Dravidian, and 3% (i.e. 22,500,000) other, including 5,492,858 Tibeto-Burmans.

India, by official government count, is home to 1,683 "mother tongues," of which 850 are in daily use. A much smaller though still impressive number is listed in reference 60 (pp. 460-87): 391 languages, of which 10 are extinct. Of these, no fewer than 107 belong to Tibeto-Burman, making India the undisputed heartland of the TB family. Since India's total TB population is only about 5.5 million, the average number of speakers per TB language is rather small, around 50,000.

The TB area of Northeast India has been off-limits to most foreigners for some time, largely because of unsettled political conditions. Population pressure from adjacent Indo-Aryan groups, especially the Bengalis, has intensified in recent years, leading to a series of bloody clashes as the "tribals" struggle to protect their territory against encroachment. Several TB groups of Nagaland, notably the

Bodos, are engaged in bitter battles for independence. So far, however, almost all of these ethnic groups seem to be viable, despite their minuscule populations.

Bangladesh (total population 105 million) is home to 531,000 Tibeto-Burmans, speaking 16 languages. Pakistan (total population 87.3 million) has 360,000 speakers of the Balti (= Sbalti) dialect of Tibetan.

Nepal/Bhutan/Sikkim

Total population: 16,600,000, of which 2,423,840 are TB speakers.

The dominant language family in Nepal is Indo-Aryan (IA). Besides the national language, Nepali, spoken by about 58% of the population, at least 14 other IA languages are spoken in the country. The most important non-IA family in Nepal is TB, with no fewer than 69 languages. Their average number of speakers is only about 36,000, and many have considerably fewer. Perhaps half of all TB languages in the country are in danger of extinction, due to the pressure of Nepali or other dominant languages. Fortunately Nepal remains one of the best places to do linguistic fieldwork in the Tibeto-Burman area, and there is hope of salvaging substantial samples of most of these endangered languages before they disappear. The Summer Institute of Linguistics has taken the lead in such research since the 1960s, directed first by K. Pike, then by A. Hale (see 62), but was recently expelled from the country for engaging in religious proselytization. Members of the SIL are still free to do fieldwork in Nepal as individuals, however. A German project directed by W. Winter has conducted an extensive linguistic survey of Nepal TB languages, the results of which still remain unpublished (see 209).

The small Himalayan kingdom of Bhutan (total population: 1.6 million) is peopled only by Tibeto-Burmans (1.2 million) and Indo-Aryans. Most of Bhutan's nine TB languages have respectable numbers of speakers: Dzongkha 400,000, Tsangla/Sharchopkha 300,000, Bumthapkha 250,000, Kürthöpka 100,000, Khengkha 100,000, Dzalakha 50,000, Lepcha 24,200 in Bhutan (also 23,700 in Sikkim), Chali 6,000, Tibetan 3,000 in Bhutan. (I am indebted to G. L. van Driem for these up-to-date figures, which are more accurate than those given in reference 60, pp. 434-35.)

Burma

Total population: 37,000,000, of which 28,877,000 (78%) are Tibeto-Burman and 2,776,900 (9.6%) are Tai (mostly Shans).

Burma is the world's premier TB country, the only one (besides Bhutan) where the national language belongs to the TB family. Burmese itself, with well over 20 million speakers, is far and away the leading TB language. This makes it all the more regrettable that Burma's government remains so uncompromisingly retrograde and repressive. Xenophobia has been official policy since 1964, when most foreigners were unceremoniously expelled from the country. Even today,

foreigners may normally sojourn in Burma for no more than two weeks at a time, making serious linguistic fieldwork impossible. Much of the country is no longer under the effective control of the central government, and at least six rebel movements remain powerful, four of them identified with particular minority groups: the Shans, the Karens, the Jingpho (Kachins), and the Chins. Many smaller ethnic groups are said to be suffering greatly as a result of this ongoing guerrilla warfare, especially in Shan State, where people like the Lahu are at the mercy of both warring factions.

It is thought that several dozen minority languages of Burma remain totally undocumented, most of them in the west, near the Indian and Bangladeshi borders. Even so, at least 75 TB languages of Burma are known, with an average of about 38,500 speakers. There is every reason to believe that most of them are still viable. In addition, 6 Tai-Kadai, 1 Hmong-Mien, and 14 Austroasiatic languages seem to be holding their own.

Thailand

Total population: 49,000,000, of which 45,815,000 (93.5%) are Tai speakers and 533,500 (1%) are TB groups speaking 16 languages.

The only nation in Southeast Asia never to have been colonized by a Western power, Thailand has a relatively benevolent government and a booming economy, and is perhaps the most pleasant locus for linguistic fieldwork in the whole area. Relations between the majority Tai-speaking population and the "hill-tribes" have generally been pretty good. The royal family has taken an active interest in the welfare of the nation's minority groups, whose value as tourist attractions has come to be appreciated. Yet recently resentment has been growing, partly because of the ecological damage done by the slash-and-burn agricultural techniques used in the hills. As population pressure on the land increases, Northern Tai peasants have begun to cultivate land at higher elevations; conversely, some hillfolk have been descending into the plains to experiment with wet-rice cultivation. So far these problems have not gotten out of hand, but the greatest tact and statesmanship will be required to avoid serious conflict in the future (see 155).

Laos and Vietnam

Out of Laos' small total population of 3.9 million, 2,769,000 (71%) speak Tai languages (including the national language, Lao); 1.1 million people (24%) are Mon-Khmer (MK)/Austroasiatic, speaking 57 languages, the largest number of MK languages in any country, but with a tiny average number of speakers (ca. 19,000); 175,000 (4%) are Hmong-Mien (many thousands of whom have been resettled in the United States); and only 42,500 (1%) are TB (speaking eight languages).

Laos is slowly recovering from the chaos of the Indo-China wars, and an improvement in relations with Western countries is in the offing. As in Vietnam,

there seems to be a revival of scholarly interest in minority languages on the part of Laotian scholars.

Vietnamese is the MK language with the most speakers, 55.4 million (out of a total population of 60.5 million in Vietnam). The country also includes 2.25 million Tai-Kadai, 679,000 Hmong-Mien, and 492,000 Austronesians (mostly Chamic), but only a handful of TB speakers (about 40,000, speaking 7 or 8 languages).

Tibeto-Burman languages and their subgrouping

Though the total number of TB speakers is only about 56 million, smaller than for Tai-Kadai or Mon-Khmer/Austroasiatic, the number of individual TB languages is the largest of any family in East/Southeast Asia. The relatively low overall total for TB results from the fact that its most populous language, Burmese, only has about 22 million speakers, while the number of Thai (45.5 million) and Vietnamese (55.4 million) speakers has increased rapidly in recent decades.

Language names

Of the more than 1,400 TB language names I have collected (139), many are only multiple designations for the same language or dialect. Any given language is likely to be known by several different names: its *autonym* (what the people call themselves), and perhaps several *exonyms* (what other groups call them). Some of the latter may be *loconyms* (e.g. the name of a conspicuous village where the language is spoken, or of a nearby river). Thus, the 20,000 speakers of a certain language of Nagaland call themselves and their language *Memi* (and used to call themselves *Imemai*), but they and their language are now known to outsiders either as *Mao*, or as *Sopvoma* (the name of their principal village). The 40,000 speakers of *Lotha Naga* are called *Chizima*, *Choimi*, and *Miklai* by the neighboring Angami, Sema, and Assamese, respectively. Conversely, quite different languages are often called by the same or very similar names: *Nung* is both a Central Tai language and a Tibeto-Burman language of the Nungish group; *Mru* is a TB language of the Kuki-Chin group, but *Maru*, also TB, belongs to the Burmish group; *Kham(s)* is both a dialect of Tibetan and a separate language of central Nepal.

Old names (*paleonyms*) now felt to be pejorative are rapidly being replaced by new ones (*neonyms*). We are now, for example, expected to say Yi, Mizo, Adi, Nishi, Karbi (instead of Lolo, Lushai, Abor, Dafla, and Mikir, respectively), even though these older terms have been enshrined in the Western literature on TB languages for a century. Nomenclatural proliferation continues apace, perhaps faster than ever before. It has recently been proposed to differentiate among approximately 25 Yi (Loloish) dialects of China by using the pronunciations of the vowels in their common autonym, e.g. Nasu, Nosu, Nusu, Neuseu, Nesu, Naso, etc (Chen Kang, personal communication, 1988).

A further complication is the fact that many language names are used in both a narrower and a broader sense, sometimes referring to one specific language

but often to a whole group of linguistically or culturally related languages. Often small or vulnerable groups will call themselves by the name of a somewhat larger or more prestigious neighbor, often hesitating to reveal their true ethnicity to outsiders. The tiny Anal people, an "Old Kukish" group of 6600 speakers in Burma and Bangladesh, "declared themselves to be Nagas in 1963" (117:379). There is even a trend in Nagaland to create larger linguistic/ethnic groups artificially by combining syllables of several individual names—e.g. *Chakhesang* (from Chokri, Khezha, and Sāngtam) and *Zeliang* (from Zemi and Liangmai).

With all this in mind, my best estimate is that the TB family contains at least 250 separate languages, which may be broken down into population categories as in Table 1. For about half of the languages in the final category, accurate population figures are not available, and some of them may be in danger of extinction.

Subgrouping of Tibeto-Burman

I have elsewhere provided an account of the problems involved in attempting to subgroup TB in the light of our present knowledge (132). As a working hypothesis, I have modified the unwieldy scheme presented in *STC* (4) in several respects. For the new TB family tree that I propose as a heuristic model (and that I adopt in reference 150), see Figure 2.

Kamarupan

Benedict's Kuki-Chin-Naga, Abor-Miri-Dafla, and Bodo-Garo subgroups, spoken in Northeast India and adjacent regions of Burma, are lumped together under the purely geographical rubric of *Kamarupan* (from *Kāmarūpa*, the Sanskrit term for Assam). These languages constitute the center of diversification of the whole TB family. Nagaland alone, with an area of only 6350 square miles, is home to some 90 Tibeto-Burman languages and dialects. With a few exceptions, e.g. Lushai

Table 1 Speakers of Tibeto-Burman languages

Number of speakers	Number of languages
more than 1,000,000	9
500,000–999,000	12
250,000–499,000	11
100,000–249,000	16
50,000–99,000	16
25,000–49,000	27
10,000–24,000	44
fewer than 10,000	123

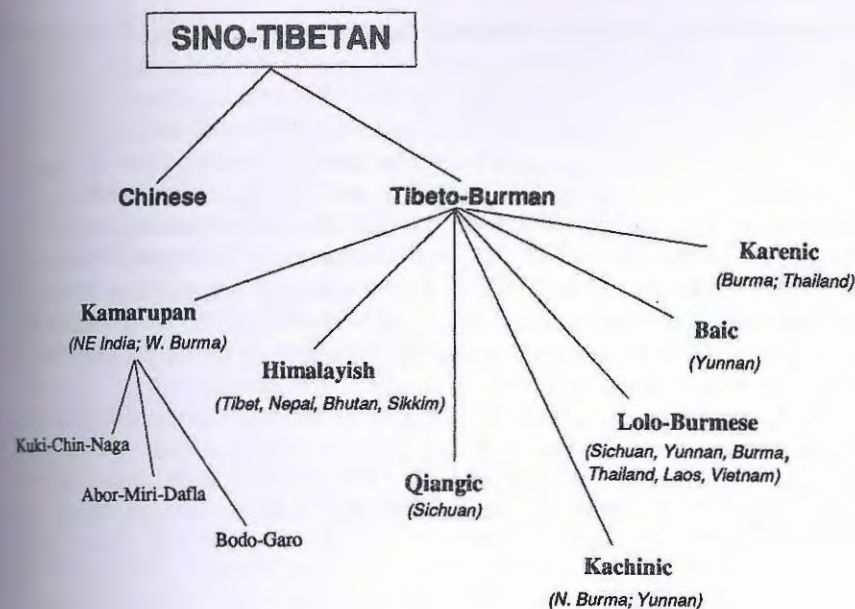


Figure 2 Subgroups of Tibeto-Burman

(104), Tangkhul Naga (12, 168), Garo (19), Tiddim Chin (77), and Bawm (176), these "Indospheric" TB languages have been poorly recorded until recently, and many are still hardly known at all.

Recent research is revealing how interesting, diversified, and important these languages are. An invaluable compendium of older data on the Naga languages is available (117), a source extensively utilized in the comparative study of the Northern Naga subgroup by W. French (48). A Weidert (205) has provided a sophisticated and data-packed study of the phonology of Kamarupan languages, marred only by its disorganized presentation and over-formalistic approach. New raw material on Kamarupan languages is becoming increasingly available in the publications of the Linguistic Circle of Nagaland (Kohima) and the Central Institute of Indian Languages (Mysore), and through the efforts of energetic scholar-administrators in Arunachal Pradesh (see 37–39, 180). Yet a great deal of work remains to be done in this area of TB, and it would be unrealistic to attempt a precise subgrouping of Kamarupan at the moment—i.e. a clarification of the higher-order relationships of the subgroups traditionally designated as Kuki-Chin-Naga, Bodo-Garo (= Barish), and Abor-Miri-Dafla (= Mirish). Several important languages seem to fall outside any of these groups—e.g. Mikir (61, 198), Meithei (193), and Mru (101). Of all these languages, the Mirish ones seem most lexically aberrant from the viewpoint of TB in general, even in its numerals (141).

Karenic

In my view the Karenic group of the Thai-Burmese borderlands should be considered just another subgroup of TB, and need not be singled out as having split off from the rest of the family at an especially early date. The argument for the special status of Karen is mostly syntactic. Alone of all TB languages (except for the heavily Sinicized Bai), Karen puts its objects after its verbs. Now that we realize that syntactic change can easily occur (either for language-internal reasons or as the result of close contact with other languages), this is a less persuasive criterion for genetic classification. Karen has been under heavy influence from Mon and Thai (both SVO languages). A tendency for the rightward "hopping over the verb" of certain nominal arguments (especially locative NPs) has also been pointed out for Northern Loloish languages under Chinese influence (207), yet there is no reason at all not to consider them to belong to "TB proper."

The Karen languages are only beginning to receive the attention they deserve. The early comparative work of R. B. Jones (83) requires fundamental revision in the light of Haudricourt's contributions (69, 74). The publication of research now in progress (e.g. 78, 185) will dramatically improve our knowledge of this key branch of TB.

Qiangic

The most exciting recent development in TB studies is the discovery of a new branch of the family, hitherto virtually unknown to Western scholars. These are the *Qiangic* languages of Sichuan. Extensive lexical and grammatical material has been collected on a dozen languages of the Qiangic group (106, 188, 190, 191). Besides Qiang, other languages in the group include Baima, Ergong, Ersu Tosu, Gyarong (= rGyarong; see 158), Guiqiong, Muya, Namuyi, Pumi, Shixing, Zhaba. Ersu/Tosu is perhaps an indirect descendant of the extinct Xixia (= Hsi-hsia = Tangut) language, spoken in a once-powerful empire in the Tibetan-Chinese-Uighur border regions, finally destroyed by the Mongols in the 13th century. A large literature in Xixia survives, in a logographic writing system invented in the 11th century, with thousands of intricate characters inspired by, but graphically independent of Chinese, the decipherment of which is now well advanced by Japanese and Russian scholars (159, 182). It was thought at first that Xixia was a Loloish language, but it now seems more likely that it belongs to the Qiangic group.

From the limited data so far made available, the Qiangic languages seem to be of unusual interest, both synchronically and diachronically. They are characterized by initial consonant clusters comparable in complexity to those of Written Tibetan. Many of these are clearly secondary, resulting from the reduction of disyllabic compounds (see the section below on syllabic structure). Some languages of the group are tonal, while others are not, providing an ideal terrain for the investigation of the mechanisms of tonogenesis.

Kachinic

Kachinic, like Karenic, is relatively undifferentiated, consisting basically of a single language and its dialects. Kachin (= Jingpho), spoken in northernmost Burma and adjacent parts of China and India, is well known, thanks to Hanson's dictionary (64), its (unpublished) revision by Maran (116), and recent work by Chinese scholars (36). The name "Kachin" is also used loosely for various Burmish groups of Northern Burma [Atsi (214), Lashi, Maru]. Since Kachinic shows phonological and lexical similarities with several other branches of TB [Kamarupan, Himalayish, Lolo-Burmese (129)], it has been considered to be genetically central in the TB family, just as it is geographically central (4:6;22). The *Nungish* languages (90, 100, 189) seem closest to Kachinic, though it is too early to tell whether they also have a special relationship to the Qiangic group.

Himalayish

Himalayish comprises such relatively well-known languages as Tibetan, Lepcha (Sikkim; see 14, 113), and Newari (spoken in the Kathmandu valley of Nepal; see 54, 114), as well as dozens of others, some on the verge of extinction. Progress has been particularly impressive in the study of the TB languages of Nepal, especially those of the Tamang-Gurung-Thakali-Manang group (55, 152, 154); Kham-Magar (203, 204); Chepang (23); Sunwar (53); and the "Rai" or "Kiranti" languages of Eastern Nepal, which are generally characterized by complex inflectional morphology (1, 156, 196, 197, 209). The westernmost languages in the TB family, e.g. Pattani (= Manchari), belong to the Himalayish group, and are beginning to be studied by Indian scholars (179).

Himalayish languages generally preserve prefixes and initial clusters well, along with final *-s*, *-r*, and *-l*. Written Tibetan is consonantally the most archaic attested TB language, preserving, for example, initial clusters that had disappeared from Chinese a millennium before.

Lolo-Burmese

Burmese, attested since the 12th century AD, is one of the best-known TB languages. [Good modern grammars are available (165, 206).] The languages of the Northern Loloish subgroup (called "Yi" in China) are firmly within the "Sinosphere" (see the section below on the Indosphere and Sinosphere), and many of them have been well recorded by Chinese scholars (e.g. 49, 51, 110, 111, 216). The Central and Southern Loloish languages are spoken as far south as Thailand and Laos, where Western and Japanese scholars have had access to them since the 1960s (see 80, 94, 160, 186). More detailed comparative-historical work has been done on Loloish than on any other branch of TB (16, 21, 66, 119, 122, 123, 129, 133, 134, 148, 161, 194).

Loloish has strictly monosyllabic morphemes, few initial clusters or final consonants, often complex tone-systems, and a penchant for compounding as its chief

morphological device. The Loloish language with the most speakers and greatest dialectal differentiation is Lolo (Yi) itself, with 5 million speakers in Sichuan, Yunnan, and Guangxi, and a syllabic writing system of considerable antiquity (112). The tribal TB language that has been studied in greatest detail is Lahu (Central Loloish) (17, 120, 121, 124, 125, 130, 142, 143, 147). The Naxi/Moso language is close to the Loloish nucleus, and is of special interest because of its complex, hieroglyphic-like writing system (see 15, 123, 148, 166, 174).

Minor groups and unclassified languages

Finally, there is a tantalizing residue of TB languages that resist easy classification, seem transitional between two well-established subgroups, or have been so invaded by foreign vocabulary that their original affiliation is no longer apparent. Foremost among these is *Bai* (formerly called "Minjia"), spoken by over a million highly Sincized people in the Dali region of Yunnan (see 43, 208, 213). The very large percentage of Chinese loanwords in *Bai* (for some dialects approaching 70%) has led to some rather wild speculations as to the genetic status of the language, though it is now clear that it is definitely TB. A large-scale *Bai*-Chinese dictionary, containing much archaic non-Sincized vocabulary, is now in preparation by Zhao Yansun.

Genetic, areal, and typological relationships

The overwhelming cultural importance of China and India has shaped the development of the East and Southeast Asian linguistic area, but diversity is the hallmark of the region. No part of the world has a more luxuriant array of indigenous languages and cultures, and the influence of Chinese and Indian civilization has only served to enrich these, not obliterate them. Recent archaeological discoveries (see, e.g. 56–58) have demonstrated that peninsular Southeast Asia was a center of high technological advancement as early as the Pleistocene, by no means the "cultural backwater" it was once thought to be. Remarkably early dates have been determined for pottery (estimates range from 13,000 to 6800 BC), rice cultivation (3500 BC), and metallurgy (bronze by 2700 BC, iron by 1300 BC).

Sociolinguistically, the most important dichotomy in the Sino-Tibetan/Southeast Asia area is between the "great" majority languages spoken in the plains and river valleys (Chinese, Burmese, Siamese, Lao, Khmer, Vietnamese) and the hundreds of minority languages spoken in the hills and jungles (20). Members of these scattered "montagnard" groups are typically multilingual, often speaking several minority languages in addition to the coterritorial majority language. The result has been linguistic homogenization and convergence on a grand scale.

Due to long cultural contact, the Sino-Tibetan/Southeast Asian peoples have come to share a certain worldview, similar conceptual frameworks about people and nature, a sort of consensus as to what is worth talking and thinking about. Borrowing of cultural items and their associated vocabulary has proceeded in all

directions from such an early period that the original source of many words cannot now be traced (e.g. the calendrical cycle of animals used for dating events and naming people, words like *crossbow*, *weave*, *iron*, *needle*, etc). The areal lexicon may make semantic discriminations where Western languages do not (e.g. separate words for cooked vs uncooked rice, elder vs younger siblings, multiple verbs for drying, carrying, or cutting). As might be expected, languages spoken in the hills make careful distinctions in demonstratives and verbs according to whether the point of interest is situated above or below the speaker. This "areal semantic framework" is apparent even in the realm of conventional greetings: Languages throughout the region use formulas like *Have you eaten yet?* or *Where are you going?*, instead of 'hello' or 'good day.' This "intertranslatability" is also manifest in compound formation, where parallel lexicalizations or "areal calques" are common—e.g. *eye + foot = anklebone* (Malay *mata kaki*, Lahu *khi-mêz-šī*), *fly + shit = freckle/mole*, *pig + crazy/illness = epilepsy* (132:70); as well as in collocations of verb and object (regardless of whether the language is VO or OV)—e.g. *eat + rice* or *rice + eat*, *walk + road*, or *road + walk* (where English would simply have 'eat' or 'walk,' respectively).

Indosphere and Sinosphere

It is convenient to refer to the Chinese and Indian spheres of cultural influence as the "Sinosphere" and the "Indosphere" (146). Some languages and cultures are firmly in one or the other (e.g. the Munda and Khasi branches of Austroasiatic and the Kamarupan branch of TB are Indospheric; while the Hmong-Mien family, the Kam-Sui branch of Kadai, the Loloish branch of TB, and the Viet-Muong branch of Mon-Khmer are Sinospheric). Others (e.g. Thai and Tibetan) have been influenced by both Chinese and Indian culture at different historical periods. Still other linguistic communities are so remote geographically that they have escaped significant influence from either cultural tradition (e.g. the Aslian branch of Mon-Khmer in Malaya, or the Nicobarese branch in the Nicobar Islands of the Indian Ocean).

Elements of Indian culture, especially ideas of kingship, religions (Hinduism/Brahminism, Buddhism), and devanāgarī writing systems, began to penetrate both insular and peninsular Southeast Asia about 2000 years ago. Indic writing systems were adopted first by Austronesians (Javanese and Cham) and Austroasiatics (Khmer and Mon), then by Tai (Siamese and Lao) and Tibeto-Burmans (Pyu, Burmese, and Karen). The learned components of the vocabularies of Khmer, Mon, Burmese, and Thai/Lao consist of words of Pali/Sanskrit origin. Indian influence also spread north to the Himalayan region. Tibetan has used devanāgarī writing since AD 600, but has preferred to calque new religious and technical vocabulary from native morphemes rather than borrowing Indic ones.

What is now China south of the Yangtze (called "Cisyangtzeana" in 150) did not have a considerable Han Chinese population until the beginning of the current era (163, 172). In early times the scattered Chinese communities of the region

must have been on a numerical and cultural par with the coterritorial non-Chinese populations, with borrowing of material culture and vocabulary proceeding in all directions (164, 175). As late as the end of the first millennium AD, non-Chinese states flourished on the periphery of the Middle Kingdom [Nanchao and Bai in Yunnan, Xixia in the Gansu/Qinghai/Tibet border regions, Lolo (Yi) chieftaincies in Sichuan]. The Mongol Yuan dynasty finally consolidated Chinese power south of the Yangtze in the 13th century. Tibet also fell under Mongol influence then, but did not come under complete Chinese control until the 18th century.

Whatever their genetic affiliations, the languages of the ST area have undergone massive convergence in all areas of their structure—phonological, grammatical, and semantic. (An excellent general study of such phenomena is reference 192.) Hundreds of words have crossed over genetic boundaries in the course of millennia of intense language contact, so that it is often exceedingly difficult to distinguish ancient loans from genuine cognates.

The genetic position of the Tai-Kadai and Hmong-Mien families

Typologically, the Tai-Kadai languages have a strong Chinese flavor, both in their phonologies and their grammars. They are monosyllabic and tonal, and their sentence structure is similar to that of Chinese, with SVO word-order and grammaticalized verbs serving as prepositions. In this respect, Tai is in fact more similar to Chinese than is Tibeto-Burman, which overwhelmingly has SOV order. A considerable number of obviously related lexical items are common to Tai and Chinese, and these generally correspond regularly in their tonal categories. It is no wonder that Chinese linguists are universally persuaded of the genetic relationship between Chinese and Tai-Kadai, a view also espoused by a succession of Western scholars (see e.g. 118, 177, 212).

An alternative view was proposed by Benedict as early as 1942 (3), who insisted that the lexical correspondences between Chinese and Tai did not include much core vocabulary and were due to prehistoric contact. Instead he suggested that Tai-Kadai was genetically related to the polysyllabic and nontonal Austronesian (= Malayo-Polynesian) family, in a supergroup that he later dubbed "Austro-T(h)ai" (7). Just before publication of his 1975 book, he threw Hmong-Mien into "Austro-Thai" (AT) for good measure; and in the latest version of his theory he also includes Japanese (10)! Before one gets carried away by the sheer sweep of Benedict's conception, however, it must be said that his etymologies are by no means of uniform quality (see 131, 146).

The "AT hypothesis" did not at first win many adherents, and it is still highly controversial. Yet it has the great merit of downgrading tonality as a criterion for genetic relationship. As mechanisms of tonogenesis have become better understood, it has been widely accepted that tones may arise independently in genetically unrelated languages, and that tone systems are readily diffusible from one language family to another—i.e. words may be borrowed with their tones attached. (This is certainly the case with Vietnamese, which belongs genetically

to the nontonal Mon-Khmer family, but which has developed a full-blown tone system after millennia of Chinese influence (see Figure 3). The basic tonogenetic mechanisms were first explained by Haudricourt (72), but the term "tonogenesis" itself first appeared some 15 years later (122, 126; see also 153, 204).

The Tai family comprises many other languages besides Thai (= Siamese), the national language of Thailand. [It has become traditional to refer to the whole family to which Siamese belongs as "Tai" (without an *h*), reserving the spelling "Thai" for Siamese itself.] The Tai peoples (Siamese, Lao, Shan, etc) are relatively recent arrivals to peninsular Southeast Asia, having gradually percolated southward from their homeland in what is now China south of the Yangtze. The family's three subgroups, Northern, Central, and Southwest Tai, are all close to one another, implying that the period of Proto-Tai unity lay in the relatively recent past, perhaps around the first half of the first millennium AD.

F. K. Li (98) has provided the most extensive and systematic compendium of Proto-Tai (PTai) in a handbook containing reconstructions of more than 1300 Proto-Tai etyma. Because of the relatively shallow time-depth (perhaps 2000 years) that can be assumed for Proto-Tai (as opposed, for example, to PTB), its reconstruction is more solid and detailed than that of any other major language family of Southeast Asia (see 70:197). However, once one leaves the safe domain of Tai proper in search of wider affiliations, the task of the comparativist becomes difficult indeed. The closest relatives of Tai are the languages of the Kam-Sui (or "Dong-Shui") group of Southern China (see 97). Mainland Chinese linguists are now actively pursuing research into hitherto unknown languages of this group—e.g. Mulao (201) and Maonan (99). Yet the comparison of PTai and Proto-Kam-Sui presents many unsolved problems, which reach monumental proportions when we try to bring into the picture the motley languages lumped together under the rubric "Kadai." These latter languages, spoken in isolated backwoods pockets in Southeast China (*Lakkia* and *Gelao*), the island of Hainan [*Be* (= *Ong-be*) and *Li* (= *Hlai*)], and Northern Vietnam (*Lati* and *Laqua*), are obviously related somehow to Tai proper, yet the correspondences are highly irregular, bespeaking a long period of independent evolution as well as massive influence and contamination from Chinese. Until very recently the material available on these languages was pitifully inadequate for the intricate comparative work required to relate them to Tai proper. Now, however, there has been an avalanche of reliable new data recorded for the Kadai languages spoken on Chinese territory. (For *Gelao*, see 75; for *Be*, see 68; for *Lakkia*, see 73, 184; and for *Hlai*, see 144, 167.) The Kadai languages of Vietnam are still virtually a total mystery and are likely to remain so for some time. All in all one could well claim that there is no more complex and tricky problem in all of Southeast Asian historical linguistics than the reconstruction of Proto-Tai-Kadai.

The wider affiliations of Hmong-Mien (HM) are even more obscure than those of Tai-Kadai, but now that so much new material on HM dialects is coming out of China (e.g. 115, 171, 199, 200), we can be sure that our perspective on this language family will soon be radically refined. The Hmong and the Mien peoples

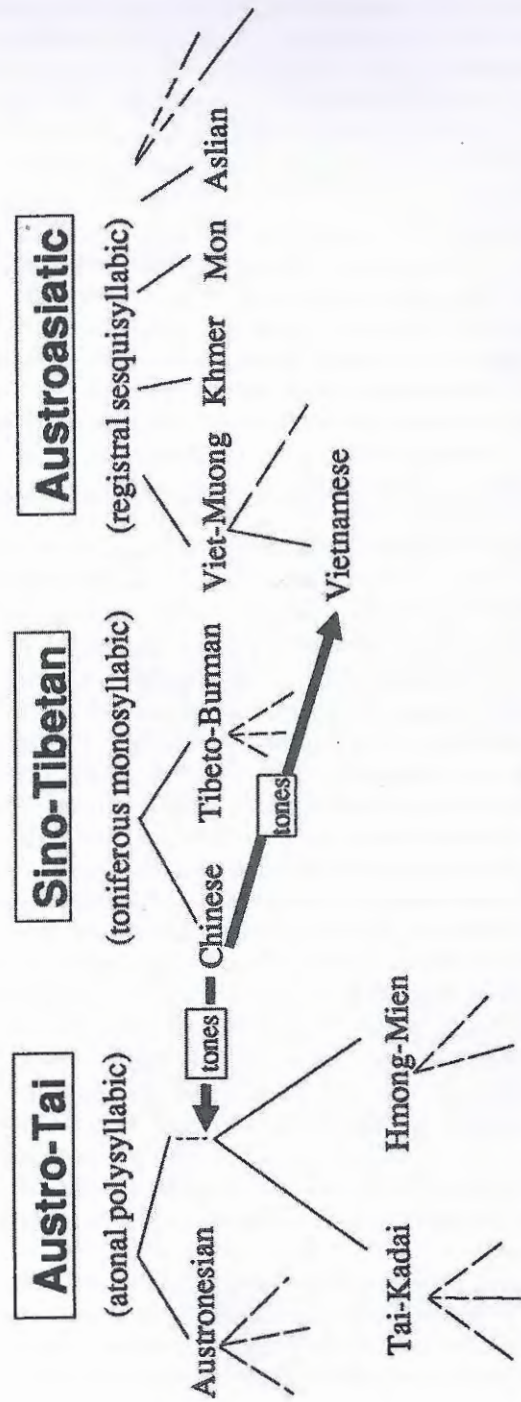


Figure 3 Chinese tonal influence on Tai-Kadai, Hmong-Mien, and Vietnamese

(better known by their Chinese names, Miao and Yao) have existed side by side with the other ethnic minority groups of Southern China for thousands of years, managing to preserve their cultural and linguistic identity in spite of the eventually overwhelming numerical preponderance of Han Chinese south of the Yangtze. The family consists of only two major groups, Hmongic and Mienic, though each is highly diversified into a large number of "dialects," some of which are so different from each other that they could well be considered separate languages (187).

Like Tai-Kadai, the Hmong-Mien (HM) languages are typologically very Chinese-like, monosyllabic, and highly tonal (24, 25). Languages with as many as 12 tones have been reported. The consonantal and vocalic systems of HM languages are also of uncommon richness. It is frequent to have 7 or 8 positions of articulation for obstruents. Complex or "marked" consonants (postvelars, prenasalized stops and affricates, voiceless sonorants, etc) abound, and the vowel systems of these languages are also complex. Wang Fushi (199) hypothesizes no fewer than 121 initial consonants and consonant clusters for Proto-Hmong, as well as 32 proto-finals. In general, the Hmong languages preserve initials better than Mien, while Mien preserves finals better than Hmong (44). The task of the Hmong-Mien comparativist is thus not impossible, though serious historical work on the family is still in its early stages (71, 171, 183). Good dictionaries of HM languages are available (e.g. 11, 76, 102, 109, 170, 215).

The Chinese influence on Mien is even stronger than it is on Hmong. More than 50% of the lexicon in some Mien dialects are Chinese loanwords. In other aspects of culture as well the Mien are highly Sinicized. Many Mien have been literate in Chinese, and Mien religion has been shown to derive from Chinese Taoism (93).

The Vietnam War caused a worldwide diaspora of the Hmong-Mien peoples. Many Miao and Yao cooperated with the American side during the war and were given preferential emigration opportunities from the refugee camps. Due to the tremendous influx of refugees to this country from Laos and Thailand (there are now about 80,000 Hmong and Mien in California alone), the United States is well on the way to becoming an important center of Hmong-Mien studies. Linguists resident in the United States are now doing increasingly sophisticated work on the phonology and grammar of the Hmong-Mien languages (e.g. 31, 32, 35, 82, 173), and it will not be long before American comparativists jump into the field with both feet. There has recently been founded an International Association for Yao Studies, based in Hong Kong, which has just sponsored its Third International Colloquium in Toulouse. A whole special issue of the journal *LTBA*, containing 14 articles, has been devoted to Hmong-Mien (Vol. 10(2), 1987).

Sino-Tibetan and areal phonology

The PTB syllable canon was quite complex, and may be reconstructed as follows:

* $(P)(P) C_1 (G) V (z) (C_2) (s)$,

where P = prefix, C_i = initial consonant, G = glide (-r- -l- -w- -y-), : = vowel length, C_f = final consonant, and s = suffixal -s. Many modern TB languages (especially Sinospheric ones) have vastly simpler syllables—e.g. Lahu, with the canon

T
(C) V

where T = tone. Figuring out how these complex proto-syllables map into their simpler descendants is one of the most fascinating aspects of ST historical phonology. E.g. PTB *b-r-gyat 'eight' → WT brygad, Lahu hí; PTB *k-r-wat 'leech' → WB krwat, Magari læwat, Lahu vèz).

In general we may distinguish between the polysyllabic languages of the Austronesian family, the "sesquisyllabic" languages of Mon-Khmer, and the monosyllabic ST, Tai-Kadai, and Hmong-Mien families. (The term *sesquisyllabic* introduced in reference 126, meaning "syllable-and-a-half," refers to words like Khmer /phənom/ 'mountain,' where the main part of the syllable is preceded by a "minor syllable" with shwa vocalism.) The development of tonal systems reaches its full flowering in languages of the monosyllabic type.

Historical linguistics in this area is forced to accord as much importance to tonal correspondences as to consonants and vowels. Not only do the tone systems of related languages correspond regularly, but tone systems and tonal categories may even be borrowed from language to language in a regular way, even in cases where the borrowing language was originally atonal. Tone systems are developed more elaborately in East and Southeast Asia than anywhere in the world. (Nothing in Mesoamerica or Africa approaches them in complexity.) The whole spectrum of tone-language types is exemplified in the ST area, ranging from the "omnisyllabic" systems of Chinese, Loloish, or Tai, where virtually every syllable is under a distinctive tone; to the "word-tone" systems of certain Himalayish TB languages, where tone contrasts are spread over two or more syllables (e.g. 152, 157); to the rudimentary pitch-accent systems of some Bodo-Garo or Abor-Miri-Dafla languages, where there is only a two-way contrast of low functional load between higher and lower pitch. No theory of tone and no taxonomy of tonal systems can afford to ignore the Sino-Tibetan linguistic area.

A major unresolved question is whether tonal contrasts should be imputed to the PTB/PST stage. Attempts to derive all modern TB tone-systems from a single proto-tone system have not been convincing (5), and it seems best to adopt a "polygenetic" rather than a "monogenetic" position: Tonal contrasts seem to have come and gone repeatedly and independently in the various branches of this "tone-prone" family. The most anciently attested TB language, Written Tibetan (WT), was toneless. Several modern languages have some tonal and some atonal dialects (Modern Tibetan, Qiang).

Sino-Tibetan and areal morphology

Variability and word-families: historical morphophonemics

As in any other language family, the proto-forms of ST cannot be conceived of as having been invariant in phonological shape or semantic content. Rather, ST etyma form clusters of morphophonemically related sub-roots, which have traditionally been referred to as *word families* (see, e.g., 29:173–4; 85; 202), though only recently has an attempt been made to give this concept a more precise theoretical basis (132). The "allofams" of a word family may differ from each other by their prefixes, by the voicing or voicelessness of their initial consonant, by their nuclear vowel, by their final consonant, and/or by their tone. These patterns of variation are not random but fall into certain well-defined classes of phenomena. Great care needs to be exercised in attributing particular forms in modern languages to the particular proto-allofam from which they descend.

Compounding and phonological bulk

Classical Chinese, with its relatively rich consonantism, was strictly monosyllabic, with the syntactic word and the phonological syllable virtually coextensive. In phonologically eroded modern dialects like Mandarin, however, most words are now dissyllabic, though almost all of them can still be analyzed into monosyllabic constituent morphemes. Y. R. Chao (27–29) once concocted three little stories in Classical Chinese style consisting entirely of Mandarin homophonous monosyllabic words (*shì, jì, and yì*, respectively, under various tones). For the Old Chinese listener, these stories would have been understandable orally, since most of the syllables were still pronounced differently. Thus the three words of the title of the story *Ten Stone Lions* (Mand. **Shí Shí Shí**) were pronounced something like ***Dyep Dyak Syar** in OC. For the stories to be understandable to a modern Mandarin listener, they would have to be recast using dissyllabic compounds or collocations to differentiate the now individually homophonous syllables (e.g. **Shí-ge** 'ten,' **Shí-tou** 'stone,' **Shí-zi** 'lion'). (An analogy is provided by those dialects of Southern American English that have merged /-in/ and /-en/ to [in], so that *pin* and *pen* must now be disambiguated by the compound forms *stick-pin* and *ink-pin*, respectively.)

In Loloish, also, the consonantal simplification of monosyllables has led to homophony on a grand scale. There are, for example, at least five Lahu morphemes pronounced **ha** that descend from once consonantally distinct PTB etyma. Besides sharing the same initial and vowel, these syllables are also *tonally* homophonous, all being under the mid-tone, unmarked in the transcription. (Many other **ha**-morphemes occur under the other 6 tones; see Table 2).

It is fascinating to observe how the various ST languages focus on different semantic features of the root noun in compound formation (what we might call the "blind-men-and-the-elephant" principle). Thus, the monosyllabic PTB root

*na 'ear' appears compounded with morphemes meaning 'flat; leaf', or 'horn' or 'hole,' according to the individual daughter language's predilections:

*na + *p(r)ak 'leaf' > Limbu (Himalayish) **ne-bhak** 'ear'

*na + *ruŋ 'horn' > Bokar (Mirish) **nya-ruŋ** 'ear'

*na + *kwar 'hole' > Rongmei (Naga) **nu-kúan** 'ear'

For the network of semantic associations involved, see Figure 4.

Syllable structure and the compounding/affixation cycle

Although the ST languages are not famous for complex morphology, there are pervasive processes of affixation evident. These affixes may be fully syllabic—e.g. *a- 'kinship prefix,' *-pa/-ba 'verb nominalizing suffix'; or they may be single consonants as far back as it is possible to reconstruct them—e.g. the dental trio of suffixes *-t, *-n, *-s, with a variety of derivational functions such as nominalization and collectivization (see 4:98–102; 210; 211). Sometimes they have a relatively clear meaning—e.g. the diachronically controversial pronominal agreement suffixes (41, 156, 196, 197; see below), and the paradigmatically opposable pair *-s- 'causativizer; transitivizer; outer-directed action', and *-m- 'stativizer; inner-directed action' (WT **mnam** 'have a smell,' **snam** 'sniff something'; see 130). Frequently, however, the meanings of affixes are elusive or obscure—e.g. *-pa/-ma 'bulk-providers in nouns,' or the PTB prefixes *d- *b- *g- *r- *l- (4:109–17).

Most interesting are the cases where modern affixes can be shown to be reduced or "cliticized" variants of once fully syllabic and meaningful root morphemes. Diphthongal vowels may represent fusions of a vowel-initial particle with the previous root-morpheme (143, 145). Final consonants are sometimes fusional

Table 2 Lahu homophonous monosyllables

	PTB	PLB	Lahu monosyllables	Lahu disyllables
'hundred' ^a	*b-r-qya	*2ra ¹	ha	tê ha
'moon'	*s-gla	*s-la ³	ha	ha-pa
'tongue'	*s-lyā	*s-l(y)a ¹	ha	ha-tê
'spirit'	*s-hla	*sla ³	ha	ð-ha
'winnow'	*g-ya(xp)	*2-ya ¹	ha	ha-ve

^a Note that **ha** 'hundred' is not usable by itself, but must always be preceded by a numeral (e.g. **tê ha** 'one hundred'); the **-pa** in 'moon' is a meaningless suffix, ubiquitous in TB (cf WT **zla-ba** 'moon'). The **-tê** in 'tongue' looks like it once had an independent meaning, but recurs nowhere else in the language; the **ð-** prefix in 'spirit' (< PTB *2aŋ-) occurs as a bulk-provider before hundreds of Lahu roots; the particle **ve** in **ha ve** 'to winnow' is a nominalizer that occurs in the citation form of verbs (much like English *to*), serving to distinguish verbs from any homophonous nouns.

remnants of the second syllable in a compound or other collocation. Thus, Mandarin **-men** 'pluralizer' has lost its rhyme and fused its initial with the vowel of the preceding pronoun in rapid colloquial (**wǒ-men** 'we' > **wǒm**, **tā-men** 'they' > **tām**). The Northern dialects of Qiang (TB of Sichuan) may drop the vowel of the second elements of compounds, leading to secondary monosyllables with final consonants: 'seed' S. Qiang **zuə-pə**, N. Qiang **zəp**; 'day after tomorrow' S. Qiang **zuə-za**, N. Qiang **tshaz** (see 9, 188). The aberrant-looking Angami Naga form **pfhə** 'bitter,' has been analyzed (136) as deriving from the fusion of an original dissyllable *ka-ba (where **-ba** was a nominalizing citation particle): *ka-ba > *ka-wa > *kwa > **pfhə**.

Conversely, it may be the first syllable of a compound or collocation that undergoes reduction, so its vowel becomes shwa and the dissyllable becomes a sesquisyllable (see above). In these cases the full meaning of the original first syllable may be lost, and "prefixization" occurs. Thus, the WB sesquisyllabic forms **pərwak** 'ant' and **səmak** 'son-in-law' derive from the Proto-Lolo-Burmese compounds *buw-krwak (PLB *buw 'bug') and *zamak (*za 'son, child'), though modern Burmese speakers could not be aware of this. Similarly, the minor syllable of Siamese **sədh** 'navel' is derivable from **sāj** 'line; band' via the umbilical cord, while the unstressed **mə-** in many names of fruits and vegetables (e.g. **məmúaj** 'mango,' **məphráaw** 'coconut,' **məkhya** 'eggplant') is a reduction of PTai *hmaak 'fruit' (98:92, 75).

It is then easy for a sesquisyllable to lose its first "minor" element, yielding secondary monosyllables that can then reacquire phonological bulk by being recompounded with fresh fully syllabic morphemes—and the cycle begins again.



Figure 4 Semantic associations of *ear* in compound formation

ST and areal grammar

ST grammar is very different in flavor from that of Indo-European languages. On the other hand ST shares many characteristics with the grammars of other language families of East and Southeast Asia.

ST languages are "topic prominent" (96), in that NPs are freely topicalizable (movable to initial position in the clause), and (especially in the verb-final TB languages) the NPs of a clause occur in relatively free order. The VP is the dominant constituent in the clause, and sentences frequently lack "subjects." The notions of subject and object are in fact alien to ST grammar, as are such grammatical categories as active vs passive voice (91). Many TB languages (e.g. Tibetan, Newari, Akha) are ergative (often split ergative, like Limbu and Sherpa), with agents marked like instrumentals (45, 54, 196).

ST languages have a penchant for nominalizing whole sentences without embedding them into any larger unit, typically via a particle that is also used in the citation-form of verbs, and that has a relative and/or genitive function in other constructions. The connection between nominalization and relativization is often made explicit by using the same particle for both functions—e.g. Mandarin *de*, Lahu *ve* (42, 124, 125).

Aspect (not tense) is the major verbal category, so that notions like *completed action*, *change of state*, *irrealis*, *inchoative*, and *durative* are encoded more readily than *past*, *present*, and *future*. The single most satisfactory criterion for establishing that a ST word is a verb is its negatability. By this definition most words that translate as English adjectives are actually only a subclass of verbs (e.g. Lahu *qay* 'go,' *chu* 'be fat' > *mâ qay* 'not go,' *mâchu* 'not be fat').

In order to express abstract grammatical relationships, the isolating languages of the ST area have typically resorted to the specialization of full nouns and verbs. Verbs meaning GIVE, DWELL, PUT, FINISH become bleached semantically until they can serve as markers of verbal categories like CAUSATIVE, PROGRESSIVE, DURATIVE, COMPLETIVE. A noun meaning ROAD becomes a locative particle, while another meaning TOP PART turns into an accusative marker. Often a root-morpheme that has undergone grammatical specialization acquires a distinctive phonological shape, usually via destressing, sometimes assuming a special tone (e.g. Lahu *là* 'come' (verb; low-falling tone), acquires mid-tone (*la*) as it becomes a particle indicating 'motion toward', and high-falling tone (*lâ*) as a particle signalling 'non-3rd person beneficiary' (40, 147).

Verb concatenation is especially striking in the Loloish branch of TB. Lahu may juxtapose up to five verbs in a row in a single VP, one verb serving as semantic head while the others are grammaticalized or made more abstract to modify it, e.g. *ya qəz yù tɕz pɪ* 'have to take it out for him again' ("obtain-return-TAKE-emerge-give") (52, 65, 120, 128). In Chinese and Sinospheric SVO languages like Thai, Hmong, Mien, and Vietnamese, verbs are grammaticalized into NP-markers that function like IE prepositions. Thus, "He cut the sugarcane with a knife" is literally "He use knife cut sugarcane" (31, 95, 147).

Some languages (e.g. Akha, Newari) have intricate systems of evidential particles that characterize the nature of the speaker's information—e.g. first-hand, hearsay, visual, auditory (45, 67). It is typical to have large repertoires of sentence-final particles whose function is to express emotional attitudes. These are more integrated intonationally into sentences than, for example, English interjections like *wow!*, and often occur in strings of two, three, or more. In some measure these fully syllabic morphemes serve the same function as intonation does in nontonal languages (125:380–90).

The lack of gender or number markers on ST, HM, and Tai nouns is somewhat compensated for by numeral classifiers, which serve to individuate nouns and may be said to "agree" with particular classes of nouns—e.g. flat, round, or elongated objects (67a, 169). Another characteristic way of lending phonologic/semantic substance to monosyllabic morphemes is via the morphological process of *elaboration*, which creates redundant (sometimes poetic) four-syllable expressions, of which the 1st and 3rd, or 2nd and 4th, syllables are often identical—e.g. Lahu *thī-ngā-thī-khā* 'silver and gold altars,' Burmese *cit-hrañ-lak-hrañ* 'patiently' ("mind-long-hand-long") or Tibetan *blo-gsal-lag-bde* 'intelligent; skilful' ("mind-bright-hand-apt") (125:81–88, 297–301; 140).

The historical syntax of the ST languages is coming increasingly into focus as an object of study. Because of its abundance of ancient written records, Chinese has so far received the lion's share of this attention, though the other ST languages will ultimately have just as much to teach us about the processes of grammatical change. A pioneering work in TB historical morphology is Wolfenden's early monograph (211). Good examples of more recent work in TB comparative/historical grammar are also available (e.g. 2, 40, 41, 203). Research into historical grammar depends fundamentally on progress in historical phonology and the enrichment of our conception of the protolexicon—the treasury of roots available for grammaticalization.

Several large problems remain in this area: (a) How did Chinese get to be SVO, when all other TB languages (except Karenic and Bai) are SOV (91, 207)? (b) How ancient are the pronominal agreement systems to be found in many TB languages (e.g. the Rai group of Eastern Nepal, Jingpho, Tangut), wherein the person (including 1st and 2nd person inclusive/exclusive) and number (including dual) of subject and/or object may be marked on the verb, producing agreement systems that are sometimes relatively simple (88, 89, 203) but that sometimes rival, for example, Algonkian in complexity (156, 196, 197)? Thus, Jingpho *ngai sa na ñ-ngai* 'I will go' / *nang sa na ñ-dai* 'you will go' / *ši sa na rà-zai* 'he will go' (*sa* 'go,' *na* 'future particle'). It remains to be seen whether such systems should be posited for Proto-TB, or whether they have arisen independently in the various branches of the family.

Comparative/historical phonology and semantics

The publication of *STC* (4), epoch-making as it was, marked only the beginning of the search for cognates and reconstructible etyma in the Sino-Tibetan family.

The *Conspectus*, as its name implies, was intended merely as an overview of its subject, and makes no pretensions to exhaustiveness. Even so, the number of proto-forms reconstructed is considerable. The TB part of the book contains 494 numbered cognate sets (and several dozen more unnumbered ones scattered in footnotes), as well as over 300 suggested comparisons between PTB etyma and Old Chinese forms. For an index of its TB/Old Chinese comparisons see Chou's 1972 paper (30). Other, more tentative repositories of Chinese/TB cognate identifications are also available (13, 33, 107).

Since 1972, scores of new TB etymologies have been proposed (e.g. 8, 129, 132, 133, 135, 137, 138, 145). The etymologies offered by Shafer (177) largely duplicate those of Benedict (4), but several other authors have contributed solid reconstructions at the proto-subgroup level (e.g. 48, 154). All this, however, constitutes no more than a good beginning. Whole branches and subfamilies of TB remain largely unexplored (e.g. the Abor-Miri-Dafla, Bodo-Garo, and Qiangic groups), and even the relatively well-known branches (Himalayish and Lolo-Burmese) have so far yielded up only a fraction of their etymological secrets.

It is only when one compares the stock of reliably reconstructed TB and ST roots with what has been accomplished for other language families that one realizes the full magnitude of the etymological job that remains to be done. The repertoire of reconstructed Proto-Indo-European etyma runs to several thousand items, though Indo-Europeanists have had a bit of a head start! Closer to home, it is estimated that over 4000 etyma will eventually be reconstructed for Proto-Mon-Khmer, even without counting the Munda branch of Austroasiatic (Gérard Difloth, personal communication).

Of course progress is not merely a question of sheer weight of numbers of reconstructed forms. Even more important is the task of unraveling the myriads of interconnections—both morphophonemic and semantic—among the reconstructed items. It has already happened many times that proposed PTB or PST roots that had been considered etymologically distinct have turned out to be ultimately related. Conversely, many plausible candidates for cognacy have been shown to be unrelated. Elsewhere (132) I sketched out the theoretical framework and methodology for carrying out ST historical semantic research, and this approach has been continued for other semantic areas in subsequent articles (135, 137, 138, 140, 141). Since 1987, the *Sino-Tibetan Etymological Dictionary and Thesaurus* project (STEDT) at Berkeley, jointly funded by NEH and NSF, has been compiling a massive database of lexical material on the ST languages in an attempt to reconstruct whole semantic fields of the proto-lexicon. The goal is to produce an *Etymological Thesaurus* (151), not merely an etymological dictionary of the conventional type. The first volume, on body part terminology, is now well advanced. As our understanding of the semantic structure of the ST proto-lexicon is enriched, it should be possible to reconstruct ancient cultural patterns and thought processes (cf 18 for a similar approach to the Indo-European proto-lexicon). At the same time, the “sound-laws” for the phonological evolution of the ST languages are undergoing constant refinement.

In sum, the goal of Sino-Tibetanists should be to put ST studies on a par with Indo-European, in terms of its potential contributions to a wide range of general linguistic issues. In many ways the problems faced by diachronic and areal linguists are similar everywhere. Yet each area of the world has its own typological/cultural/historical flavor, and ST has many unique features that will be of interest to the general linguistic public. It is high time to “mainstream” ST linguistics.

Note

- 1 In the following list, conferences held outside the United States are in boldface.

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THE SAL LANGUAGES¹*Robbins Burling*Source: *Linguistics of the Tibeto-Burman Area* 7, 2, 1983, 1-32.**Background**

The sub-classification of the Tibeto-Burman languages has been a subject fraught with considerable mystery. Among all the central and eastern Tibeto-Burman languages, there appear to be only four clear sub-groupings: 1. The Bodo languages of Assam, 2. Manipuri-Mizo-Kuki-Chin, 3. Lolo-Burmese, and 4. Karen.² Other subgroup names have been used from time to time, such as "Naga," "Naga-Bodo," "North Assam," and even "Kachin" but these seem to label little more than geographically contiguous groups for which no genuine linguistic reality has been demonstrated. Jinghpaw, Nung, Mikir, and all of the vast numbers of languages found in the arc to the north and east of the Brahmaputra river, from the north of Assam around to the Naga Hills, fall into an uncertain limbo—surely Tibeto-Burman, but not clearly or closely affiliated with any other particular Tibeto-Burman languages.

We have, of course, heard a good many suggestions, from time to time, about the linguistic sub-grouping of these languages, including an old suggestion that the Bodo languages of Assam show a special relationship both with Jinghpaw and with certain languages of the northeastern Naga Hills region. So far as I am aware, this was first suggested by Robert Shafer (1953:162) but Paul Benedict also pointed to the similarities among these languages in the *Sino-Tibetan Conspicuous* (1972:6-7, hereafter referred as "STC"), and a number of others have followed suit. A number of years ago I was sufficiently impressed with the similarities between Jinghpaw and Garo (the representative of the Bodo group with which I have worked most closely), to undertake a fairly elaborate comparison between certain aspects of the two languages. I tried to show that, in spite of what appeared to me to be massive mutual borrowing between Jinghpaw and such "Kachin" languages as Maru and Atsi, evidence can still be found for an underlying special relationship between Garo and Jinghpaw (Burling, 1971). In particular, I argued that even though the phonological *system* and the kinship *system* of

Jinghpaw and Maru could be regarded as almost identical, their lexicons show striking differences. In some ways, indeed, Jinghpaw appears to be lexically more like Garo than it is like Maru.

In my earlier paper I used no data from any of the "Naga" languages, and comparisons with these languages have always been difficult because of the paucity of evidence from the Naga Hills and adjacent regions. Information has been limited to rather fragmentary vocabulary lists, such as those in Grierson (1903), and while these have offered tantalizing hints, their evidence could never be definitive. In recent years, however, a number of dictionaries of Naga languages have become available, and while these are still far from the sophisticated linguistic treatments that we would like to have, they do provide enough new data to make a reassessment of the relationship among these languages worth while. There is also one bulky attempt at a comparative treatment of the "Naga" languages, G.E. Marrison's SOAS dissertation (Marrison, 1967), which can be used to supply some otherwise missing pieces. In this paper, I survey some of the available data on the Bodo, northeastern Naga, and Jinghpaw languages, and I try to reach a judgement on the likelihood of a special relationship among them.

The final judgement about sub-grouping should rest upon a close understanding of all types of shared innovations of the sub-group and upon a detailed understanding of the phonological correspondences among the languages. In our present state of knowledge about Tibeto-Burman languages, however, we must usually be content with an examination of simpler lexical similarities. We are reduced to the following fairly obvious and simple presumptions: if a group of languages 1) share lexical items that other languages fail to share, 2) show no sign that these shared terms are due either to mutual borrowing or to the residue of a still earlier stage of the language, and 3) have similarities that go beyond those expectable by simple chance, then it is plausible to conclude that these languages shared a period of common innovation and thus form a sub-group within the larger family.

The languages that I consider in this paper, for instance, have words such as *sal*, *san*, *jan*, all meaning 'sun,' and the phonological correspondences that relate the sounds of these words are paralleled in other sets of words. Similarities of this sort can hardly be dismissed as mere chance. Whether they might be due to borrowing or to a common historical residue that happens to have been lost from other languages is more difficult to decide, but if enough lexical items pattern in the same way as the words for 'sun' it becomes increasingly difficult to attribute the similarity to anything except common innovation at an earlier common stage of the language. It is upon the basis of a few lexical similarities of this sort, similar words that are found in Bodo, eastern Naga and Jinghpaw, but not, apparently, in other Tibeto-Burman languages, that earlier suggestions about their special relationship rested. Since the distinctive word for 'sun' has been cited particularly widely as offering evidence for the special relationships among these languages, and since the word can be plausibly reconstructed as *sal*, I will refer to the group

as the *sal* languages. This paper is a survey of the lexical similarities among the languages of this group.

Sources and affiliation

There can be little doubt that the Bodo languages form a relatively unified sub-group of Tibeto-Burman, considerably more closely related to one another than to other Tibeto-Burman languages. These Bodo languages include Boro, spoken in the lower Assam valley and recently described both by Bhat (1968) and by Bhattacharya (1977). The language that, in an earlier paper (1959), I called "Kachari" is, apparently, essentially the same as Boro, and I will supplement my own data with examples drawn from Bhat (indicated with "IMSB" in the tables) and from Bhattacharya ("PCB"). I will assume that these all come from the same language, but I have not tried to reconcile the somewhat divergent transcriptions used in the various sources. I also cite a few words from the closely related Dimasa language that I have taken from Marrison (1967). Dimasa is a dialect reasonably closely related to Boro, but it is difficult to be confident of just how similar or different they are.

Garo, spoken in the Garo Hills in the bend of the Brahmaputra river, resembles Bodo in many ways, but the two languages are by no means mutually intelligible. Boro and Garo are the best described of the Bodo languages. On Garo, I rely upon Mason, 1954, Negminza, 1972, Holbrook, n.d., as well as upon my own knowledge of the language.³ The transcription that I use for Garo is explained in Burling (1981). It is close, but not identical, to the transcriptions used in Garo dictionaries.

I also use materials that I collected from Atong and Wanang, two languages that are fairly closely related to each other within the "Koch" group that is, in turn, coordinate with Boro-Garo. I included these data from Atong and Wanang in my comparative study of Bodo phonology (1959).

I also cite a few examples from Chutia (taken from Brown, 1895) another Bodo language spoken further to the east in the Assam valley. Examples from Chutia are listed in the tables, in the "Wanang" column, but identified as coming from Chutia. The approximate location of these languages can be seen on the map (last page). The Bodo group also includes Rabha, spoken to the north of the Garo Hills, Lalung, spoken in the middle Assam valley, and the language of Tripura which lies just north of the Chittagong Hill tracts, but I include no data from any of these languages.

The relevant eastern "Naga" languages are less well known than the Bodo languages and they have been referred to under a bewildering variety of names. Present terminology seems to have settled on six language names. Ranging from southwest to northeast these are: Chang, Phom, Konyak, Wancho, Nocte, and Tangsa (see map). Earlier names, used in Grierson or in other early sources, and copied in more recent comparative literature, include (with equivalent modern terms in parentheses): Mojung (Chang); Tamlü, Chingmengnu, and Assiringia (Pom); Tableng and Angwanku (Konyak); Banpara and Mutonia (Wancho); Namsangia and Mohongia (Nocte); Moshang and Shange (Tangsa). The best known

(or at least most often cited) of these languages has been Konyak, and the term "Konyak Languages" has sometimes been used as a general term for this group.

It seems fairly clear that these six languages show more similarities to one another than to the other "Naga" languages or to the languages of bordering regions, though even this modest claim should not be taken as fully proven. In spite of having been used as a general name for the group, for instance, Konyak appears to diverge in a number of respects from its neighbors (see conclusions, below). I know of no evidence at all, however, that would suggest that these languages are more closely related to other "Naga" languages than to Tibeto-Burman generally. The term "Naga" appears to be a purely geographical term that lacks linguistic significance. This "eastern Naga" group, in fact, straddles the modern border between Nagaland and Arunachal Pradesh (formerly North East Frontier Agency, or "NEFA"), with Chang, Phoe, and Konyak lying primarily in Nagaland, and Wancho, Nocte, and Tangsa primarily in Arunachal Pradesh. For want of a better term, however, I will continue to refer to these languages as the "eastern Naga" group.

I offer data in this paper from three of these eastern Naga languages, each described in a recent publication: Konyak, (Kumar, 1973), Nocte (Das Gupta, 1971), and Tangsa (Ngemu, 1977). Each of these small books offers a brief grammatical description and a tri-lingual word list or dictionary (with Hindi glosses, as well as English). Unfortunately, the transcriptions in these dictionaries are not everything that a linguist might ask. A number of apparent inconsistencies crop up, and it is not always clear just how letters are being used. Under the circumstances it seems best to retain the original orthographies of the sources, with all their inconsistencies, rather than make the attempt to regularize them, and this is what I have done in the tables. One must be cautious, however, about inferring too much from the precise spelling. Marrison's long tables (Marrison, 1967) include data from these eastern Naga languages along with many other "Naga" languages, and I supplement the data of the three dictionaries with items taken from Marrison's table. As in other columns, items taken from Marrison are labeled with "M". When not marked with "M", the items in these three "Naga" columns come from the dictionaries already cited.

Of all of the languages that I consider in this paper, Jinghpaw has been the most widely cited in the comparative literature. This is due, in part, to the activities of linguist-native speaker, La Raw Maran, but much of the evidence actually cited in the literature is drawn from much older sources, particularly Hanson (1917). These sources, like so much of the older Tibeto-Burman literature, suffer from a failure to indicate either glottal stops or tones, and comparative studies such as STC that rely upon these older sources cannot fill in the gaps. STC and similar works do, however, adjust Hanson's transcriptions in some other ways (*hp* becomes *ph*, *ng* becomes *ŋ*, *ã* becomes *ə*, etc.). The majority of the examples that I cite from Jinghpaw I recorded myself, and these examples are shown with glottal stops and tone marks (⏟ high, ⏟ mid, ⏟ low),⁴ but in other respects I try to follow the transcription conventions used in STC, for these will probably seem most familiar to linguists. Where I have taken examples from Hanson, I show this with an "(H)".

These examples lack tone marks. The final column in the tables shows the TB reconstructions that are given in the Sino-Tibetan Conspectus (Benedict, 1972).

Phonological correspondences

It is not possible, in the present state of knowledge, to offer a detailed or definitive account of the phonological correspondences among these languages, but certain broad patterns can be sketched and these should make the significance of the lexical examples somewhat easier to judge. In the next section, as I consider particular examples, I will offer a few more detailed observations on some special problems. Here, I will point out only the broadest patterns. As in Tibeto-Burman languages generally, it is most convenient to give separate consideration to syllable initial consonants, vowels, and syllable final consonants. It would be pleasant to know more about the tones of these languages so that we could offer tonal comparisons as well, but this is not yet possible.

Initials

Initial *m-* and *n-* are well attested in all of the languages. Initial *ŋ-* exists in Jinghpaw and, presumably, in eastern Naga, but in the Bodo languages initial *ŋ* has either been replaced by *n-* (e.g. 'fish') or attached to a preceding vowel to become a syllable final instead of a syllable initial ('I', 'five').

There are several examples of voiceless aspirated stops, usually written *p-* and *t-* in the Bodo languages, but *ph-* and *kh-* in the eastern Naga languages and in Jinghpaw. These correspond to *ø-* and *h-* in Wanang. Initial *t-* (*th-*) is less well represented. There is, however, a confusing group of words in which some languages have *t-* while others have *c-*, *s-*, etc. (see Table 2b.) I will consider these later.

Correspondences for voiced and nonaspirated voiceless stops are less clear than for aspirated stops, and *g-* is particularly poorly attested. There appear to be a number of cases where *b-* and *d-* in the Bodo languages (except Wanang where these have become *p-* and *t-*) correspond to words transcribed in the Naga dictionaries with *p-* and *t-* ('today' 'snake', 'wind', 'bat' 'flower', 'fruit', 'three', 'ash', 'next', 'straight', 'live'). There are, however, a number of difficult and contradictory cases where voicing seems rather random ('Grandfather', 'tree', 'fence', 'five') and the Jinghpaw correspondences here are obscure, in spite of the fact that many apicals and bilabials do, at least, appear as apicals and bilabials in Jinghpaw as well.

Two words ('earth' and 'mother's brother') have initial *h-* throughout the eastern Naga languages and Bodo, except in Garo, where the initial is lost. This *h-* may correspond to initial *g-* in Jinghpaw. The word for 'dog' also suggests that initial *h-* in eastern Naga may correspond to an initial velar in Jinghpaw, but the evidence is by no means decisive.

Initial *c-* (a voiceless affricate) in Garo, Atong, and Wanang quite regularly appears as *z-* in Boro ('dig', 'eight', 'far', 'hundred', 'long', 'mortar', 'stand', 'thick') but the eastern Naga and Jinghpaw correspondences are unclear due to

few and contradictory examples. Both *ts-* and *th-* appear in Jinghpaw. 'Pierce', 'salt', 'sun', 'thorn', and 'urinate' have *s-* in most languages, but most often have *j-* in Jinghpaw and *h-* in Konyak.

Numerous examples are found that have initial *r-* in all languages except Konyak, where *w-* (sometimes *v-*) appears instead (e.g. 'dry', 'horn', 'sky'). Others have *l-* in all languages except Garo and Atong which have *r-*, and Bodo which sometimes has initial *r-* but where the initial is sometimes lost entirely e.g. 'drink', 'road', 'stone'). Another group ('bamboo', 'father', 'fire', 'monkey', 'pig') has initial *w-* throughout except in Boro where the initial is lost. The Konyak and Nocte dictionaries sometimes show *v-* rather than *w-* in these words but it seems doubtful to me that this represents a real difference, and I suspect that the choice between *v-* and *w-* in these dictionaries is more or less random.

Vowels.

The clearest vowel correspondences are for *i*, *a*, and *u*, and many unambiguous examples will be found in the tables where most or all languages share these vowels. All the languages appear to have vowels in the *e* and *o* positions as well, and a few correspondences relate them, but in a number of cases these mid vowels seem to be related to various sorts of diphthongs in some of the languages. The precise relationship among these will have to await better data and fuller study.

Final consonants.

These languages appear generally to have final *-p*, *-t*, *-k*, *-m*, *-n*, *-ŋ*, and *-ʔ*, and usually *-l* and/or *-r*. For the most part the correspondences among these are straightforward. However, where other languages have *-k*, Jinghpaw regularly has a glottal stop (not indicated by Hanson or in STC), and where the Bodo languages have glottals, Jinghpaw frequently has nothing at all. These finals are regular enough so that when a putative cognate set turns up with inconsistent finals (such as an *-n* in one language that seems to correspond to an *-ŋ* in another language), one should be skeptical of the cognate relationship. Several of the Bodo languages allow final nasals and final *-l* or *-r* to be glottalized. Jinghpaw does not, and it is impossible to know whether such sounds occur in the eastern Naga languages because glottal stops are not shown in the available transcriptions.

There is one other difficult but important set of correspondences among the final consonants. In a considerable group of words, Nocte and Jinghpaw have *-n* and Tangsa has *-l*. Some Konyak examples have *-n*, but the Konyak examples are too fragmentary to give confidence. In these words, Boro, Garo, Atong, and Wanang sometimes have, respectively, *-r*, *-l*, *-r*, *-r*, and sometimes *-n*, *-l*, *-n*, *-n*. The correspondences between the Bodo languages and Naga or Jinghpaw are, unfortunately, few, but other examples of both types of correspondences occur within the Bodo languages (cited in Burling, 1959) and both correspondences seem thoroughly sound.

This account of correspondences amounts only to the most superficial sketch, but it may help the reader to judge the cognate status of the examples given in the next section. A few more detailed comments about apparent correspondences will be given as examples arise.

Lexical examples

In this section I discuss, with reference to the tables, the lexical sets that offer evidence for the relationship among these languages. The tables display examples of several sorts. Tables 1a, 1b, and 1c list examples which suggest Sal languages innovations away from general Tibeto-Burman. They constitute evidence, therefore, for a period of common innovation within a common ancestor of the modern Sal languages. Inevitably, the examples vary greatly in their reliability and this serves as the basis for assigning particular examples to particular tables. Table 1a lists those examples that seem most convincing, table 1b lists less convincing but still plausible examples, and table 1c offers a number of more problematic or questionable examples.

Tables 2a, 2b, and 2c list the representatives from the Sal languages that appear more widely in Tibeto-Burman languages. Since these words appear outside the Sal languages, as well as within it, they demonstrate little about any special relationship within this group, although in a few cases the Sal forms do appear to be more like one another than like the forms that the words assume in other TB languages. The main purpose of listing these general TB words here is to give evidence for the sound correspondences within the Sal group, for these correspondences can help us to judge the cognate status of the words that are unique to the Sal languages. As in the case of Tables 1a, 1b, and 1c, those numbered 2a, 2b, and 2c, differ in the how convincing the examples are.

In addition to these general lists, I give two tables of terms belonging to particular semantic sets. Table 3 gives numbers, and Table 4 gives kinship terms. Discussion of a number of particular examples that occur in the tables follows.

1a. Most convincing.

Table 1a lists the cognate sets that strike me as offering the strongest evidence for common lexical innovation within this group of languages. These words appear to be excellent cognates within Sal group, but examples of plausible cognates are rare or non-existent elsewhere. Some of these sets may turn out to have cognates in other languages and such examples will then turn out *not* to provide evidence for the special relationship of the Sal languages, but collectively the evidence strikes me as impressive. Most of the examples in this set require some comment:

'Ash'. STC gives **pla* 'ashes' (137) and **tap* (18) usually meaning 'fire-place' but most, though not all, examples come from Sal languages. The

- combination of the two syllables seems to be unique to the Sal group, and even examples of the individual syllables are not plentiful elsewhere.
- 'Burn'. STC 330 is **kaŋ* and words offered as related to it have such meanings as 'hot' or 'roast.' Words such as *kam* with the meaning 'burn,' appear to be unique to the Sal languages.
- 'Cook'. The Konyak term may be unrelated, but the remaining terms seem to be excellent candidates for cognate status.
- 'Cooking pot'. The final Jinghpaw glottal is expectable from final *-k* elsewhere. The initial correspondence looks convincing, and few, if any, plausible cognates of this word crop up in languages outside of the Sal group.
- 'Crow'. STC, pg. 99 cites a number of Sal languages in support of its reconstruction, **ka*, but outside of the Sal group offers only Tibetan *kha-tha* and Rawang *tha-kha*. Rawang *kha*, however, is elsewhere glossed as 'domestic fowl,' (Barnard, 1934, pg. 68) which makes it unlikely to be the part of *tha-kha* with the meaning 'crow.' This leaves Tibetan as the only non-Sal language example in which *kha* can be plausibly taken to mean 'crow'. In all Sal languages, moreover, bird names are commonly constructed from a syllable with the general meaning 'bird' followed by a second syllable denoting the particular species, and this pattern does not appear in the other examples offered by STC. (I am quite mystified by the fact that several bird species have more convincing cognates in TB languages than do the mammals that one would suppose must play a good deal more salient role in the lives of the people.)
- 'Drink'. The lack of *-ŋ* makes the Jinghpaw term a very doubtful cognate. The Konyak *y* is unexplained and may well eliminate that word too. Still, the Tangsa term seems unarguably related to the general Bodo term.
- 'Far'. STC offers a TB reconstruction for this term, but the only example outside of the Sal group which it offers as a putative cognate is Lushai *fa:l* which strikes me as doubtful.
- 'Father'. Terms for 'father' beginning with *w* are rare enough in the world's languages to invite notice. Within Tibeto-Burman, these seem to be unique. A more extensive list of kinship terms is given in Table 4.
- 'Fire'. Except for the word for 'sun' this has probably been the second most widely cited example of a unique Sal language innovation. Plausible cognates turn up in a few other languages with the meaning 'burn' but only in the Sal languages is it the ordinary word for 'fire.'
- 'Insect/worm'. This word, along with leg/foot (just below), 'hand/arm' (table 2a), and 'moon' (table 1b) form a special set, with a very peculiar pattern of initial correspondences: Garo *j-*, Atong, Wanang *c-*, Konyak *y-*, Nocte *d*, and Tangsa *j-*. A single word with this correspondence would hardly be taken seriously, but the four together cannot be easily dismissed. Of the various Sal languages, only the Jinghpaw examples for these four words seem doubtful. One's initial reaction might be that the Jinghpaw

- correspondence for this initial would be *l-*, as it appears to be in some more distantly related TB languages, but it seems more likely to be *t-*. (See 'leg' below, 'hand/arm' table 2a, 'moon' table 1b.) Possible cognates of 'moon,' and likely cognates of 'hand/arm,' are found in a few TB languages outside of the Sal group, sometimes with initial *l-*, but the four words occur with particular regularity within the Sal group. The word for insect/worm appears to be distinctively Sal although the Jinghpaw word is questionable.
- 'Leg/Foot'. This is another member of the insect-arm-foot-moon group. Throughout the Bodo and eastern Naga languages, the word for 'foot' differs from that for 'hand' (table 2a) only in terminating with a glottal stop rather than with *-k*. An inspection of Grierson's word lists shows these two words cropping up with a bewildering range of initials, but in any single language their initials are usually alike. A few languages outside the Sal group also show possible hand/foot pairs of this sort, although the word for 'hand' seems more widespread, than the word for 'foot,' which seems more narrowly limited to the Sal languages. Outside of the Sal group the pairs are rarely as regular or as similar to each other as they are within the Sal group. If the corresponding Jinghpaw initial is *t-*, the Jinghpaw word for leg/foot cannot be counted as a cognate.
- 'Live/Green'. The glosses for this word are a bit variable and may merit some skepticism. 'Alive' and 'green' (in the sense of 'unripe') seem plausibly similar glosses, but while the Nocte word is glossed as 'live,' the examples suggest the meaning 'dwell' and this may eliminate the Nocte example from this set. The gloss for the Tangsa word *lungtong* is 'live' while the gloss for *tong-nga* is 'live' (v). I know of no similar words in non-Sal TB languages.
- 'Long'. The only non-Sal language cognate offered by STC for this word is Burmese *lu*, glossed as 'disproportionately tall.' Throughout the Sal languages it is glossed simply as 'long.'
- 'Mother'. Terms for 'mother' with initial *n-*, invite notice, just as do terms for father with initial *w-*. Certainly most TB languages have 'mother' terms that begin with the familiar *m-*.
- 'Salt'. The scattering of examples offered by STC from outside of the Sal languages seem less similar than the Sal language examples are to each other.
- 'Sky'. The syllable *raŋ* crops up in most of these languages as the first syllable of compounds that refer to celestial phenomena such as 'sun' and 'rain'. When *raŋ* occurs by itself, it seems always to have the meaning 'sky.'
- 'Sun'. As pointed out above, the words for 'sun' in these languages—*san*, *sal* or *jan*, sometimes preceded by the syllable for 'sky'—have been widely cited as offering the clearest evidence for the special status of the group. The correspondences that relate the various words for 'sun,' are reassuringly regular, except that the *hi* of the Konyak term is not an ideal cognate

for the words in the other languages and is probably unrelated. STC offers a reconstruction for this set of words but, with the exception of a doubtful term from Bahing, *tsyar*, that is glossed as 'shine', all the STC examples come from the Sal languages. Totally different words for 'sun' are found in other Tibeto-Burman languages and, with the possible exception of Kon-yak, this word seems to set this group of languages decisively off from others.

1b. Suggestive sets.

The sets listed in Table 1b are suggestive of relationships among the Sal languages, but they are less convincing than those listed in Table 1a, either because they are found in fewer language of the group, because they have possible cognates in other Tibeto-Burman languages, or because their sound correspondences seem less regular. Still, taken collectively, they do seem to add some support to the feeling of special similarity among the languages of this group.

'Basket'. This set appears to be sound throughout Bodo, and it is reasonable in eastern Naga. The final glottal of Jinghpaw is the regular correspondent of final *-k* elsewhere, but the more usual initial correspondence in Jinghpaw would have been *kh-*, so the *k* makes the Jinghpaw word just a bit suspect. STC offers a number of possible cognates for this term in other languages, so even though these tend, in various ways, to be a bit divergent, the word may not be unique to the Sal languages.

'Bone'. The STC reconstruction for 'bone' does not give Sal language examples, and it looks like a different word. The initial *q-* or *k-* found in the Bodo languages can plausibly be regarded as a prefix.

'Deer'. Mikir has a possible cognate, *thidzok*, and a few other languages have conceivable cognates, though they look less like the Sal language examples than the latter look like each other.

'Falcon-kite'. Burmese has words for 'vulture,' 'eagle,' etc. that look like cognates, but such words seem to be much more widely distributed in the Sal languages than elsewhere in TB.

'Moon.' This is a member of the insect-arm-leg-moon group with its odd pattern of initial correspondences. A number of TB languages have words for 'moon' with initial *l-* that are likely to be related to the Sal term, but the words seem particularly close among the Sal group.

'Navel.' The only putative cognate outside of the Sal languages offered by STC is Tibetan *lte-ba*, which seems to stretch the imagination a bit.

'Pus.' STC gives only the Jinghpaw word and Burmese *ishwe* 'decayed, crumbling, rotten' as examples. Even if the Burmese word really is a cognate, its meaning is notably different from the meaning of the Sal language examples.

'Stand.' STC gives a long list of TB languages with words meaning 'stand' that end in *-p*, but affricate initials are largely confined to the Sal languages.

The Sal languages also show more consistency in the vowel, although they are not the only languages with *a*.

'Tree.' Tables 1b and 1c each contain a word that is most often glossed as 'tree,' although plausible cognates are glossed as 'trunk' or 'firewood' in some languages. The Jinghpaw example is a conceivable, though less than ideal, cognate to either set and I list it with both.

1c. Tantalizing possibilities.

I do not consider the sets listed in Table 1c to be more than suggestively tantalizing. Some have plausible cognates in other TB languages and some have been given reconstructions in STC. Some of these sets are represented by only two or three examples, however, and in others the correspondences seem less than fully convincing. I would certainly not want to risk exaggerated claims for those listed here. Collectively they do suggest the kinds of data to which we are driven when we try to sort out the relationships among these languages. Only a few of these examples require special comment.

'Bark.' It is just barely possible that the Garo word meaning 'dog' is related to the Nocte word meaning a dog's 'bark.'

'Cut.' STC cites a few plausible cognates in other TB languages.

'Dung.' Here, again, a few possible cognates appear here and there in non-Sal languages, but they are not so frequent or regular that this word deserves to be entered into Table 2a or 2c.

'Mat.' The words for 'mat' seem more tempting as cognates than many of the sets listed in this table, but the initials are so strange as to make one cautious.

'Red.' The non-Sal examples offered by STC have meanings such as 'gold' which separate them from the Sal words which are glossed simply as 'red.' However, the correspondences among the Sal words are by no means certain.

'Sleep.' STC offers a number of words from various languages that may be related to the Sal words shown in the table, but some mean 'hide' or 'cover' instead of 'sleep,' most have no initial consonant, and most have the vowel *i*, all of which makes the Sal words seem distinctive.

2a. Most widespread cognates.

The sets listed in Tables 2a, 2b, and 2c have more reasonable looking cognates in TB languages outside of the Sal group than do those listed in Tables 1a, 1b, and 1c. This means that they do not demonstrate any special relationship among the Sal languages except in the degree to which the Sal examples may be more like each other in form or meaning than they are like the examples from other languages. The words listed in Table 2a are the Sal language representatives of some of the most widespread cognates of Tibeto-Burman. Even though these can tell us

little about any special relationship among the Sal languages, they do demonstrate the patterns of phonological correspondence that we should expect within the Sal group. Most of these sets should be self explanatory and they require little discussion. I will leave it for the reader to judge the degree to which these words seem to show specially close resemblances to one another within the Sal group.

2b. "Water" group.

The sets listed in Table 2b pose numerous problems. These words crop up variously with initial apical stops, affricates, and fricatives, and although my instincts are to want them to be cognates the patterns are so complex that we have to be skeptical about some of the sets. Because of the confusion of possible correspondences within this set of words, I have been more tolerant of diversity in this table than elsewhere, and I have included a good many words of doubtful cognates status (e.g. the words for water in the eastern Naga languages).

A few of these sets appear to be related to one another, but it is not entirely clear just what these relationships are. The words for 'egg,' in some of the Sal languages, for instance, appear to mean 'bird-water' as it does in some other TB languages. The cognate set for 'egg,' however, actually seems to be more complete than that for 'water,' since the eastern Naga words for 'water' do not appear to be related to the others. In Garo, the word for 'blood' also appears to be analyzable as having the meaning 'body-water,' though in most other languages the words for 'blood' and 'water' are different. 'Die' and 'kill' also appear to have some sort of relationship to one another.

The examples of the Bodo languages seem to exhibit an unusual number of diphthongs, and it seems probable that diphthongs had a tendency, in these languages, to turn preceding stops into affricates (Burling, 1959) but we still have a long way to go before sorting out all the relationships among these initials. All of these sets have plausible cognates in other TB languages than the Sal group alone, and STC offers reconstructions for most of them. The initials of these words demonstrate considerable confusion in languages outside the Sal group as well as within it, and about all I can do is wave readers in the direction of the table and invite them to contemplate the complexities.

2c. Less widespread cognate sets.

Table 1c lists a number of cognate sets that have representatives outside the Sal languages but that are represented in a rather scattered fashion within this group. These are considerably less widespread than the sets listed in Table 1a.

3. Numbers.

Finally, I offer two tables, each with a group of semantically related terms, one for numbers and one for kinship terms. There can be no doubt that most numbers fall into cognate sets, but numbers change in erratic ways in the TB languages and this

makes them difficult to use as a basis for judgements about sub-grouping. Adjacent numbers, for instance, seem to influence each other. 'One,' 'two,' and 'three' have picked up the prefix *-go* in Atong, but in Garo the related prefix is found only in 'two' and 'three.' Nocte has a different prefix in the same three words. It is tempting to note that the words for 'four' and 'five' in many of these languages have acquired a prefix that begins with *b*, or to note that the words for 'one' often begin with an *s* or with a plausibly related sound, and to conclude that the numbers give evidence for a special relationship among these languages, but it is very difficult to pin these similarities down. All, or virtually all, of these terms are surely cognates and most surely have cognates in other TB languages, but it is difficult to find objective criteria that can help us to decide whether these words are more similar to each other than to the words in other languages. How similar is "more similar" anyway? I will leave it to the readers to make their own judgement about the degree of similarity among the numbers.

4. Kinship terms.

Kinship terms raise other difficult problems. The kinship systems of the people who speak these languages are quite varied. The Garo and Atong are matrilineal, most of the others patrilineal. The Bodo languages other than Garo and Atong probably show considerable influence from the kinship system of the Indic speaking Assamese with whom the speakers are in close contact. The Jinghpaw have a very special kind of kinship system that, so far as we know, differentiates them sharply from any of the other groups considered here. Under such circumstances, one would hardly expect kinship terms to retain the same meaning from one language to another, even if the terms themselves, survive. Still, terms with related though not identical meanings may well be cognates. Many of these languages have cross-cousin marriage, for instance, and this makes it reasonable for the father-in-law to be called by the same term as the mother's brother. Thus it is worth looking at 'uncle' terms to see whether they might be possible cognates for 'father-in-law' terms in other languages.

When one takes an appropriately tolerant attitude toward the glosses for the kinship terms, there turn out to be a very considerable number of plausible cognates. In fact, the great majority of Jinghpaw kinship terms have plausible cognates in one or another of the Sal languages. By contrast, Jinghpaw and Maru share only one lonely kinship term, and this in spite of the fact that the Maru and Jinghpaw people have considerable intermarriage, and in spite of the fact that their kinship terminological systems are virtually identical (Burling 1971). Cognates to the kinship terms shown in Table 8 are, to be sure, sometimes found in languages outside of the Sal group, but the density of apparent cognates seems notably high among this group.

Conclusions

I have no doubt that a fair number of the cognates sets that I offer, even those that now seem most solid, will finally turn out to have cognates outside the Sal group,

but the collective weight of the examples I have collected seems to me to demand an explanation. I doubt if this many apparent cognates could be marshalled to demonstrate similarities for most sets of TB languages. This looks like a group of languages with some sort of historical relationship, rather than like a random collection. Chance alone does not seem to me to be a sufficient explanation for the number of similar words that unite these languages.

Nor do the similarities seem to be explainable on the basis of mutual borrowing. The languages are spread over a considerable area and, in the course of their history, they have been subjected to quite varied influences. Many Bodo languages show massive borrowing from the Indic languages, while Jinghpaw has unquestionably been strongly influenced by Burmese and by the so-called "Kachin" languages that are closely related to Burmese. The similarities among the Sal languages seem deeper, less easily attributed to borrowing, for they show up in spite of the more recent overlays of borrowing to which some languages have been subjected.

One question that inevitably arises in the course of looking at a group of languages such as these concerns their internal relationships. There can, I think, be no doubt that the Bodo languages are more closely related to each other than they are to the other languages. Nor, I think, can doubt be much greater about the special relationship among the eastern Naga languages. Numerous cognates can be found that are unique to one or the other of these groups. I have not included them in the tables, however, because they show nothing about the wider relations among the Sal languages.

Relative relationship among these two groups and Jinghpaw is more difficult to judge. As I was working on this paper, I had the feeling that Jinghpaw was often more distant from the Bodo and eastern Naga languages than the latter were from each other, but I also wondered if this might have been due to the fact that several languages are available within the other two branches, so that where one language lacks a term there is still a chance that another might supply it. If Jinghpaw lacks a term, there is no close relative to fill the gap, so it is easy to get the impression that it is harder to find cognates among Jinghpaw.

In the end it turns out that Jinghpaw offers just as many potential cognates as the other languages. For what the figures are worth, the tables contain the following number of entries for each of the eight languages (excluding the numbers, Table 3, which are virtually complete for all languages except Wanang): Bodo-113, Garo-135, Atong-66, Wanang-64, Konyak-85, Nocte-112, Tangsa-118, and Jinghpaw-138.

Of course these figures are, in large part, a function of the availability of data, but Jinghpaw appears to be at least as well represented as the other languages. I may, however, have been a bit more tolerant of questionable Jinghpaw examples, precisely because it was alone in its sub-group. The high figure for Garo is certainly an artifact my own familiarity with the language and the availability of dictionaries. Data from Atong and Wanang are limited to my very limited notes, while the Boro figure is higher because I could supplement my notes with a number of examples drawn from the Boro dictionaries.

The most curious figures are for the eastern Naga languages where Nocte and Tangsa have well over 100 entries, while Konyak has only 85. One might suppose

that these figures simply reflect the quality of the data of each of these languages, but, in fact, the Konyak dictionary is considerably fuller than the dictionaries of Nocte and Tangsa. The Konyak dictionary has between 3,000 and 4,000 entries, while the other two have only about 1,000 entries each. If the three languages are equally closely related to Bodo and Jinghpaw, one would expect the fuller Konyak data to yield more apparent cognates, but the reverse turns out to be the case.

These crude figures confirm impressions I formed while working with these eastern Naga dictionaries. I began with Konyak and I was surprised at how different it seemed from the Bodo languages with which I had worked previously. When I turned to Nocte and to Tangsa, however, I was surprised, in turn, to find so much that seemed familiar. I noted many special similarities between Konyak, on the one hand, and Nocte Tangsa on the other, so I would not want to abandon the presumption that Konyak, Nocte, and Tangsa form, along with the other eastern Naga languages, a well defined sub-group, but it may seem odd that cognates seem so much easier to find in the other languages than than in Konyak. I also find it paradoxical that Konyak is the language that has been most often cited as representative of the sub-group. The languages have even been referred to quite often as the "Konyak" group. The similarities of the eastern Naga languages with the Bodo languages might have been more obvious had comparisons been made with Nocte or Tangsa instead.

One possible explanation for the greater ease of finding cognates in Nocte and Tangsa than in Konyak is that the former two languages lie further to the northeast and, therefore closer to the Singpho country that lies just beyond—Singpho being the Assamese variant of "Jinghpaw." Here is one place where mutual borrowing among the different languages of the Sal group would have been quite possible and it could have led to an artificial boost in the number of apparent cognates in Nocte and Tangsa. An inspection of the tables does not, however, give me the impression of any particularly close or obvious layer of borrowing that gives special similarities among these languages. In the end, I have found little reason to conclude that any two of the three sub-groups of the Sal languages are more closely related to each other than to the third.

Of course we have to recognize that there are real dangers in the methods I have used in this paper. I have worked extensively with Garo and to a more limited extent with several other Bodo languages and Jinghpaw. One always finds similarities among the languages one knows best, even if they as remote as English and Chinese. Thus I have spent more time looking for similarities between Garo and Jinghpaw than between, let us say, Jinghpaw and Tibetan. Someone else with more knowledge of Tibetan and less knowledge of Garo might find similarities that point in a different direction. In the end, I can only challenge others to offer competing evidence that points to other relationships.

In the mean time, the number of similarities among these languages and, in particular, the number of common innovations that they seem to show strike me as sufficiently impressive to suggest that they have a relationship that goes comfortably beyond the minimum that we expect of all Tibeto-Burman languages. The

set of languages for which I propose the name "Sal" seems to me to be plausibly regarded as one major sub-group of the Tibeto-Burman languages.

Notes to the tables

When not otherwise noted, entries in the tables are taken from the following sources: Boro, Atong, Wanang, and Jinghpaw from my own work. Garo examples are from my knowledge of the language supplemented by Holbrook (n.d.), Mason (1954), and Negminza (1972). Konyak examples come from Kumar (1973). Nocte examples from Gupta (1973), and Tangsa examples from Ngemu (1977). I supplement these main sources from a number of others. Supplementary examples in the Boro column are taken from Bhat (1968) and labeled "DNSB", or from Bhattacharya and labeled "PCB". Examples in the Boro column from the Dimasa dialect are taken from Marrison. The examples from the Chutia language that are tucked into the Wanang column derive from Brown (1895). Items labeled "H" in the Jinghpaw column are taken from Hanson's dictionary of Jinghpaw (1917). I supplement my primary sources on Jinghpaw and the eastern Naga languages with a few items from Marrison (1967) that are labeled "M". Reconstructions in the STC column, of course, are from Benedict (1967).

Table 1a Most likely *Sal* language innovations

	EASTERN NAGA						Jinghpaw	* Sino-Tibetan Corresponds	
	BODO	Garo	Atong	Wanang	Konyak	Nocte			Tangsa
ash	Boro ha-to-pla	tap-pra	tap-pa-ra		tüpla (M)	tap-la	taptha (M)	däp	* tap (18)
burn	kam	kam-	kam-	ham-	yang	akham	kham	'hot'	* pla (137)
cook	soŋ 'boil' (DNSB)	sozŋ-				song-dang hum	song		* ka•ŋ (330)
cooking pot	dəz	dik	dək	duka (Chutia)	tük (M)	'kitchen' (hum = 'place')		dir	
crow	² daw-'kha (PCB)	dəz-ka				wa-kha	koti (cik) wokha	ùkhá	* ka (pg. 99)
drink	iəŋ	riŋ-	rəŋ-	ləŋ-	ying wan	ran	ling	lür	
dry	gə-rəzn	razn-	razn-	ran-	shakeng	khang	khangkang		
face/forehead	* mukan 'face' (DNSB)	mik - kan 'face' (mik = 'eye')			'fore-head' (M)	'forehead'	'forehead'		
far	gə-zəzn	cezl-	cazn-	pi-cən-	jay		ajal (M)	tsən	* dzya•l (229)
father	yaosi		a-wa	a-wa-par	yashao 'toe' (M)	wa	wa	wà	
finger	ozr (Dimasa)	jak-si		war	vun	dak-su	jaksi	wzən	* bar, par (220)
fire	ozr	wəzl-	wəzr			van	wal		

(continued)

Table 1a (continued)

	EASTERN NAGA							* Sino-Tibetan Conspectus
	Boro	Garó	Atong	Wanang	Konyak	Nocte	Tangsa	
insect/worm	yung (Dimasa)	joz-oij	cozaj	coj	yenna		jong	* jĩnjāy
leg/foot	az-tiraj	jaz-taj	car	ca-tim	ya	da atong	ja luntong	ləgó
live/green	taj-nəz						alo tong-nga	gə̀lù
long	gə-laur	roz-	raur-	pi-ləu-	low nyu	alo nylong man	nu mol	nù thummum (H)
mother		ri-mol	mai-roj		wong	wong, vong		
pestle		me-roj						
rice,								
uncooked								
salt	sem			shing (Chutia)	hũm	sum	sim	jũm
shoulder	(Dimasa) pakná koj	pakre, pak = 'armpit'			phakdeang			* g-ryum (245)
sky	saraj 'be clear', okrāj 'sky', (DNSB)	raj-wa 'rain', raj-san 'sun'	raj-œi 'rain'		wang	rang 'sky', rang-pat 'rain'	rang 'sky', rangche 'rain'	mərān, 'rain'
sun	san	sal	raj-san	san	wanghi	sa:n	rangsəl	jān
wing	garaj	graj	ga-raj	ka-raj	yang	arang (M)	worang	* tsyar (187)

Table 1b Suggestive Sal language cognate sets

	EASTERN NAGA							* Sino-Tibetan Conspectus	
	Boro	Garó	Atong	Wanang	Konyak	Nocte	Tangsa		
basket	kar-da	kok	kok	hok	khog	chi-khok 'small basket'	khak	kár	* kuk (393)
bone	be-gezj	grej	ge-rej	ke-rej	wan (M)	ra:	rang	nārā	* rus (6)
cold	'go' zəj (PCB)	kar-sin-					rangsəng	kəshũj	
cover (vb.)	pin (DNSB)	pin-dap-mat-cok			tok (M)	cok	cok (khohi)	phun (H) cəkyĩ	* d-yuk (386)
deer,									
sambhur									
dive/smk	trəb (DNSB)	rip-						phun-lip (STC)	* lip (375)
falcon/kite		dor-rej		durong (Chutia)	lungl ieng			lənji	* laj (333)
house	noz	nok	nok	nok	nok	da	japi	shātā	* s-la, g-la (144)
moon		ja-jonj			limyu			shā-dāy	* tswly (183)
navel		ok-ste				po-te	tacu	mətsũy	
pus		min-su				khət-ali	uli	nli(H)	
seed		bit-cri		ca-li	turi	su (M)	tasun	jũ	
stab/pierce	sur	sur-	cap-	su-tik-cap-		acap	chap (M)	tsap	* g-ryap (246)
stand									

(continued)

Table 1c (continued)

	EASTERN NAGA						* Sino-Tibetan Conspicuous		
	Boro	Garó	Atong	Wanang	Konyak	Nocte		Tangsa	Jinghpaw
shake	samaw (DNSB)							shəmu (H)	
sleep	ur-dəl	ok	cau-	cu-cəu- ok	shipu	ajup	jip wok	yəp	* ip (114) * pu·k. buk (358)
suddenly		raz ɲ-san						lənɲiá?	
swim	bá (DNSB)	baz- juk-juk- su-bu	hup-nu- baz-	hup-nə- pa-ta-la-	yiang-yat pee	ajuk	jung-jap	phun-yət phá kəjuk (H) jit (H)	* pyaw (176) * ba (25)
urine	sidi (Dimasa)					sa	sit		* ts(y)j(77)
vulture	jengkhang (Dimasa)	so-gin caŋ-ki-con					akun khang	nshaŋ (M)	
waist						pong	rangpong shol		
wind (air)		sez-el bol	ban	pan	shwo			məpɲ	
wolf								phún	
wood/tree	bon 'firwood' (DNSB)								

Table 2a Most widespread Tibeto-Burman cognates

	EASTERN NAGA						* Sino-Tibetan Conspicuous		
	Boro	Garó	Atong	Wanang	Konyak	Nocte		Tangsa	Jinghpaw
bamboo	oɹ-a	waz-	waz			wa(h)	wah	káwá	* r-wa (44)
bitter	ká (DNSB)	kar-	bi-nak	pe-nek	khaŋ únyak wei	akha (M) anyia(k) ri	akhaŋ anyak (M) ri-sa, ri-xat	khá	* ka (8) * nak (pg. 88)
black	raydəŋ (DNSB)	re	gəiɹ	kui	kui	hu	hi	ri (H)	* rey (478)
cane		doɹ-kru ju-maj na-cil	na-kar	na-kor	mang	mang (M) na	wotokhu nah	gúi u khruđu (H) yɹəpmāŋ nā	* kwiy (159) * kruw (118) * maj (82) * g-na, r-na (453)
dog								gá	* r-ka (97)
dove	nar	aɹ- mik-	haɹ	ha mek-	ka (M) mük	ha mit(mik)	hah mik	myiɹ	* mik, myak (402)
dream	nar	nar-tok	nar	na	nyah	nga	ngah	ɲá	* nya (189)
ear	biɹ-bar nair-zeŋ	bi-bal eɹ-ciŋ kim-il	bar ceŋ	par	jupiang tieng -men	apo cing	pilpung cing	nampən (H)	* baɹ (1)
earth/ground	nar	nar	nar	nar	nyah	nga	ngah	ɲá	
eye	nar	nar	nar	nar	nyah	nga	ngah	ɲá	
fish	nar	nar	nar	nar	nyah	nga	ngah	ɲá	
flower/blossom	nar	nar	nar	nar	nyah	nga	ngah	ɲá	
ginger	nar	nar	nar	nar	nyah	nga	ngah	ɲá	
hair/feather	nar	nar	nar	nar	nyah	nga	ngah	ɲá	
hand/arm	ap-kair	jak	cak	cak-tonj	yak yih	ɲak ali:	jak alih	mün	* (s-)mul, (r-)mul (2)
heavy	risiba (Dimasa M)							láiɹ	* lak (86)
hole	'knor (PCB)	kol	go-roŋ	ko-roŋ	üwong (M)	kan	rong	li	* s-liy (95)
horn	goŋ	goŋ	go-roŋ	ko-roŋ	üwong (M)	arong	alorn	nkhun (H)	kwar (350)
hot/warm	alu (DNSB)	aj-	aj	aj	aj	nga	nga	lum (H)	* lum (381)
I	aj	aj-	aj	aj	aj	nga	nga	ɲay	* ɲa (406)

(continued)

Table 2a (continued)

	BODO					EASTERN NAGA			Jinghpaw	* Sino-Tibetan Conspicuous
	Boro	Garo	Atong	Wanang	Konyak	Nocte	Tangsa			
knee		(jaɹ-ɣ)sku				da-ku	langku		* m-ku•k (pg. 120)	
laugh	mi-ni		mi-mi-	mi-ni-				mənī	* m-nwī(y) (191)	
name	muŋ	bi-muŋ	bi-muŋ	muŋ	min (M)	ming (M)	ming	myiŋ	* r-miŋ (83)	
nest	buthup (Dimasa M)	bi-tip					wotip	tsip		
palm/sole	apá (DNSB)	-pa	wak	wak	-pha	-pha	-pha	ləphàn	* pa (418)	
pig	oɹ-ma	wak				wak	wak	wəɹ	* pak•pwak (43)	
ripe	gumun (Dimasa)	min-					min-na	myīn	* s-min (432)	
road	la-ma	ra-ma	ram	lam	lam	lam	lam	lām	* lam (87)	
smoke		-ku	-ku-si	-cu		(van-)khu	khuh	khūt	* kuw (256)	
snake	zi-bəu	cip-bu	də-bəu	tu-pu	pu	pu:	puh	pu (H)	* buw (27)	
stone	oɹn-tai	roɹŋ-tc	roɹŋ-tai	loŋ-tai	long	long, lo:ŋ	long	nəiŋ	* r-luŋ (88)	
straight	ge-taŋ	tonŋ-tonŋ			ting			dŋ		
suck	sop		di-mai	bu-sup-	jep, hūp	acup	sip	cup	* dzo•p (69)	
tail	su, busu (Dimasa)	kir-me	di-mai	ci-mai	huh	me(h)	me	niŋ-məy	* r-may (282)	
thorn	neŋ	bur-su				shu	suh	ju	* tsow (276)	
thou	sa-lai	nəɹŋ	nəɹŋ	naŋ	nang	nang	nang	nāŋ	* naŋ (407)	
tongue	ha-tai	sre	te-ra-pak	te-lai	yee	theli	phali	shinlet	* m-lay, s-lay (281)	
tooth		wa-gam	wa	əa	pha	pa	pa	wā	* s-wa (437)	

Table 2b "Water" group

	BODO					EASTERN NAGA			Jinghpaw	* Sino-Tibetan Conspicuous
	Boro	Garo	Atong	Wanang	Konyak	Nocte	Tangsa			
blood	təiɹ	əɹn-ci	təiɹ	ci		he	tahi	səy	* s-hwiɹ (222)	
die	təi	si-	təi-	ci-			tia	sī	* siɹ (232)	
dig	zaur	coɹ-	caur-		sho (M)	thu (M)	thut	céɹ, thù	* tu (256)	
cat	zər	caɹ-	saɹ-	sa-	ha (M)	cha	saɹ	shá	* dza (66)	
egg	daur-dai	doɹ-ci	daur-dəi	tau-ci		vu-ti	woci	ùdi		
fruit	pi-taiɹ	bi-te	taiɹ	t'əi			bangti (cf. 'tree')	si	* sey (57)	
kill		soɹ-ot-		ga-tat-		tham	tikduk	sət	* g-sat (58)	
mortar		caɹ-am				tian		thùm	* tsun (75)	
oil	taw (DNSB)	to		thu (Chutie)		tong	ten	sáw	* sar-w (272)	
sit		n-aonŋ-		mo-soŋ-		tong	tong	dūŋ	* tu•ŋ, dūŋ (361)	
sweet	dáy (DNSB)	ciɹ-			atu			düy	* twi(y) (166)	
water	dəi	ci	dəi	ci-ka	yiang	jo	jung	khàɹ	* ti(y) (55)	

Table 2c Less widespread but possible cognate sets

	EASTERN NAGA					* Sino-Tibetan Conspicuous			
	BODO	Garo	Atong	Wanang	Koryak		Nocte	Tangsa	Jinghpaw
axe	ruwa(DNSB)	ru-a		loa (Chutia)	wa	wa:-ka:		ɲəwā, niŋwā	* r-wa (441)
bat		dəz-bak			oupak(M)	phakarang (M)		u	* ba:k (325)
bird						vu	wo		* wa (99)
brack	pay:(DNSB)	pez-			pai (M)	lei	li	wəlöy	* pe (254)
buffalo					mahu	man	man	dumsu (H)	* lwəy(208)
cattle/cow	məkəw(DNSB)	mat-cu				ka, ka-ra	kah	ɲiŋ-khá	* (m-)ka, (s-)ka (470)
chin					yu (M)		ju	khɾəp	* krap (116)
cry	gáb(DNSB)	grap-			mai			yu (H)	* yu(w) (p. 101)
descend					at	kho	kho	māy	* may (300)
good	koro(DNSB)	sko				wəvət, sawot	sawat	wət	* r-pat (45)
head	luwād (DNSB)	ru-at							
leech	tez-ma	tik	kə-rət	hə-rək		rit	tharik	tsɪ	* s-rik(439)
louse						ve	wi	wōy	* woy (314)
monkey								dɪr	* tuk (392)
neck	gə-dəz-na	git-dok	dok-e-rej	tuk-ur	nyakao(M)	vakhu (M)		ükhú	* gu/ku (p. 164)
owl	daokhu (Dimasa)				yuh	ju-pu	phat	yú	* b-yuw (93)
rat					phai	kat: tak	khat-wat	nphat (H)	
vornit	gaba (Dimasa)	dok						dəz	* tak (17)
weave									

Table 3 Numbers

	EASTERN NAGA					* Sino-Tibetan Conspicuous			
	BODO	Garo	Atong ²	Wanang	Koryak		Nocte	Tangsa	Jinghpaw
one	² se	sa	goesa	ja	ja	wan-the	ashe	ləŋqay	* g-nis (4)
two	¹ nōy	gin-i	goeni	ni	ni	wan-nyí	ani	ləkhōŋ	* g-sum(409)
three	² tham	git-tam	goetam	lum	lum	wan-ram	atom	məstəm	* b-liy(410)
four	¹ brōy	bri	biri	pele	pele	bali, bali	bali	məŋ	* l-ŋə, b-ŋə (78)
five	¹ ba	boŋ-a	banga	nga	nga	banga	banga	məŋpā	* d-ruk(411)
six	² do, ³ ro	dok	korok	wok	wok	irok	tharok	krɪ	* s-nis (5)
seven	¹ smi, ² si 'ni	sin-i	sene	nyet	nyet	ingit	sanat	səmit	* b-r-gyat (163)
eight	² zad, ² dan	cet	chatgik	tet	tet, sat	set, sat	ashat	məts'hát	* d-kuw (13)
nine	² si 'kho	sku	chiku	du	khu	khu	akhu	cəkhù	* is(y)i(y) (408)
ten	¹ zi, ¹ zu	ci-kun	chaigik	pen	chi	chi	asi	shí	* (m-)kul (397)
twenty	khon (Dimasa)	kol	kol			ca-the	tokom	khūn	* r-gya(164)
hundred	² zow 'se	rit-ca	raija			(the='one')	shasha	lətsā	

¹Boro from PCB

²Atong from Grierson (1903)

Table 4 Kinship terms

	EASTERN NAGA					* Sino-Tibetan Conspectus			
	Boro	Garó	Atong	Wanang	Koryak		Nocte	Tangsa	Jinghpaw
grandmother	bây(DNSB)	am-bi			opi, be	vi	wi	wōy	
grandfather		a-cu				te(i)	te	ji	
mother	pir-pa	pa-gip-a waj 'FaYBr'	a-wa	a-wa-par	nyu	nyiong	mu	nü	
father					pa	wa	wa	wà	* pa (24)
MoYoSi	adáy(DNSB)	mar-de	nai		nyei	nipa		nu doi (H)	
MoBrWi/ Mo-in-law		mani 'MoBrWi ni-o-taj 'Mo-in-law	nair					nī	
MoBr/ Fa-in-law	haw: (DNSB)	oz-bit-e 'Fa-in-law' mama-o-acu 'MoMoBr'	haur	hau	kūo	hopa, hapa 'Fa-in-law'	ho, 'MoBr' hoca 'Fa-in-law'	gū 'FaSiHu'	* khu (225)
EiSi								nā	
EiBr					yoinya		nakho		
YoSib					nyayung				
Cross-cousin	bonaŋ 'sib-in-law' (DNSB)	no	nau	a-nau	pheipu	pho-pho	phokho no	phù nāw	* na•w (271)
child		bi-sa	sa-	sa-sa	nao	cha	sa (M)	nij (female)	
niece/nephew		nam-cik 'cross-niece'						shà nām 'cross niece, nephew	* tsa. za (59)
nephew					ho, hu	chu	ashuo (M)	khri shù	* sù(•w) (P 1.5.5)
grandchild		gri su							

Notes

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- Karen has always looked manifestly Tibeto-Burman to me, and I see no reason to omit it from the list of sub-groups of the larger family.
- I did ethnographic and linguistic field work in the Garo Hills from 1954 to 1956 with the help of a generous fellowship from the Ford Foundation.
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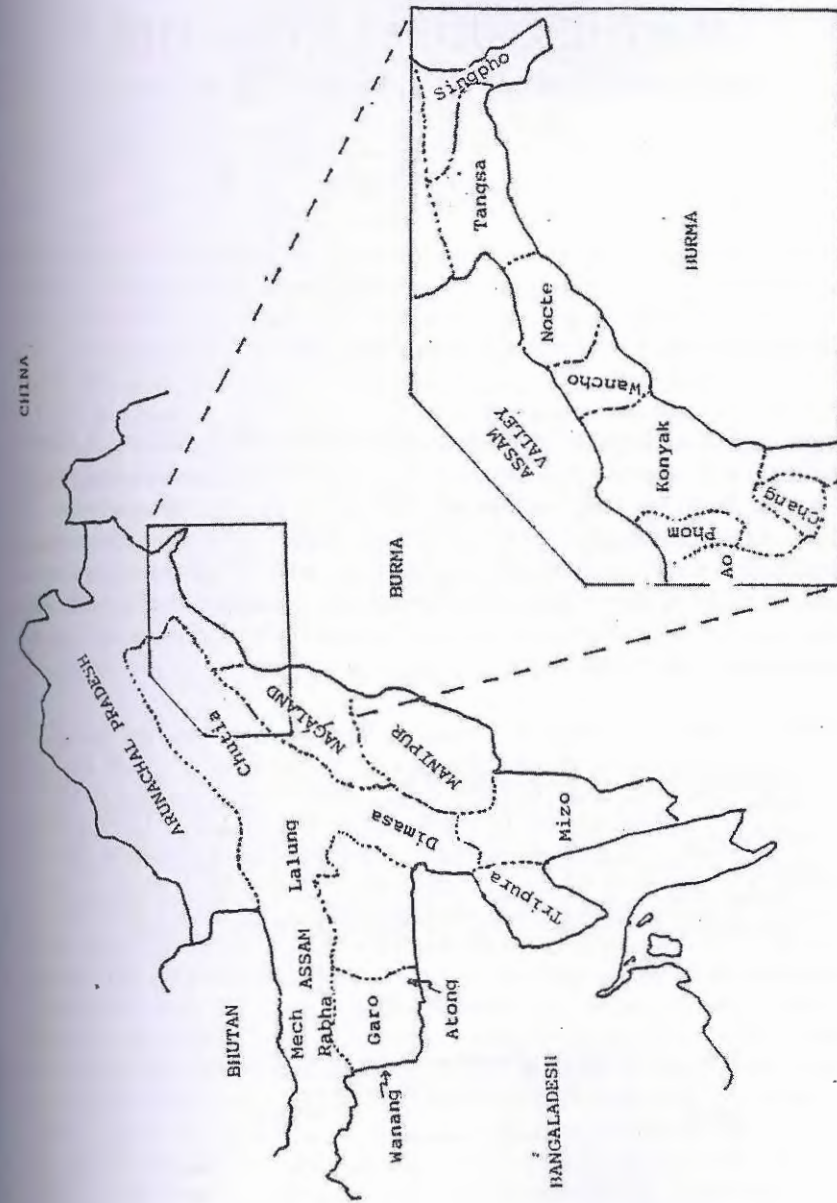
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ON THE EVIDENCE FOR THE RELATIONSHIP KIRANTI-RUNG¹

Karen H. Ebert

Source: *Linguistics of the Tibeto-Burman Area* 13, 1, 1990, 57-78.

In an article published in 1984 Thurgood presented some arguments in favor of a 'Rung' subgroup of Tibeto-Burman. In which he includes Gyarong, Kham, Chepang, Jinghpaw, Tangut, Qiang and Nungish. Thurgood also seems to suggest a closer relationship between Kiranti and Rung on the basis of agreement patterns. The paradigms compared are from Gyarong and Thulung, a Western Rai language. I shall here present material from the verbal paradigms of Southern Rai, which turn out to be much closer to Gyarong than Thulung or, as far as I can see, any language of the Rung group.

The Southern Rai languages Chamling, Bantawa, and Puma are spoken in Eastern Nepal in the area between the rivers Sun Kosi, Dudh Kosi, Rawa Khola, and Arun. Bantawa is also used as a lingua franca by Rai people of different descent in Ilam province. The languages are closely related, Puma sharing 80% cognates with both Chamling and Bantawa. The Rai data are, if not indicated otherwise, from my own fieldwork on Chamling and from materials of the Linguistic Survey of Nepal.

1. Gyarong

Table 1 Gyarong verbal paradigm (Jin et al. 1958, Nagano 1984)

Direct		Inverse	
1>2s	ta- -n	2>1s	kə-u- -ng
1>2d	ta- -Nch	2>1d	kə-u- -Nch
1>2p	ta- -ny	2>1p	kəu- -y
2s>3	tə- -u/-n	3>2s	tə-u- -n
2d>3	tə- -Nch	3>2d	tə-u- -Nch

Table 1 (continued)

Direct		Inverse	
2p>3	tə- -ny	3>2p	tə-u- -ny
1s>3	-ng	3>1s	wu- -ng
1d>3	-ch	3>1d	wu- -ch
1p>3	-y	3>1p	wu- -y
3s>3	-u	3dp>3	wu-

1.1. Agreement

The Gyarong verbal system is characterized by agreement with speech act participants (SAP) independent of semantic role. If both actants are SAP the verb agrees with patient. The pronominal suffixes reflect the common Tibeto-Burman (TB) pronouns *nga 'I', *na(ŋ) 'thou', as well as plural *i. The other actant is marked neither for person nor for number; 3rd person is never marked for number.

There is a prefix (tə-艾 ta-艾 kə-) in all 2nd person configurations. DeLancey (1980:53) splits ta- into tə-+ a and attributes to a the function of uniquely specifying the 1>2 configuration. Although this configuration is often set apart from the other forms in TB, no such prefix is known from other languages. Therefore it seems more likely that ta-, realized as tək- before velar stops, derives from tə-kə- (Nagano 1984:72), kə- being a 1st person prefix (cf. 5.2.). kə- -ng in 2>1 stands for 1st person, just as ta/tə- -Nin 1>2, 2>3, and 3>2 stands for 2nd.

1.2. Direction marking

Inverse

All inverse configurations, with an agent lower on the scale of natural viewpoint or empathy than patient², have the prefix (w) u-. Although DeLancey (1980:53) convincingly assigned the status of inverse marker to Gyarong wu-, Nagano (1984:71) claims that it stands for 3rd person. An inverse marker can of course easily be taken for a 3rd agent marker, and a direct marker for 3rd patient. Reinterpretations along this line have taken place in several TB languages (e.g. Limbu) - but not, I think, in Gyarong. The crucial forms are those that mark 1st/2nd and 3rd/3rd configurations. Gyarong 2>1 with the prefixes kə-u- obviously contradicts Nagano's analysis. Elsewhere Nagano (1984:75, 181) seeks a way out in making wu- a marker for non-first. This can hardly be regarded as a satisfactory solution; we would then, according to Nagano's agreement scheme PAT-AG-(verb)-PAT, expect e.g. *wu-tə-in 2>3.

Also, it is hard to see how 3s>3 -u and 3ns>3 wu- would fit into Nagano's scheme. The distribution of -u and wu- clearly indicates that 3ns>3 counts as inverse; i.e. 3rd non-singular participants rank lower on the scale of natural viewpoint than 3rd singular. The actant hierarchy is for Gyarong and, as we shall see, at least for some Kiranti languages:

1 > 2 >> 3s > 3ns

The main break is between speech act participants and non-participants. Speaker and hearer have nearly equal status. 2>1 counts as inverse in Gyarong and Kiranti, but 1>2 forms a separate category, which may be called 'local' in analogy to the Algonquian convention.

Direct

There is synchronically no clear indication of a direct marker in Gyarong, but on the basis of comparative evidence -u in 2s>3 and 3s>3 can be identified as a trace of it. We can postulate the following pattern underlying direction marking in Gyarong:

-u direct
(w)u- inverse

2. Chamling

Compared to Gyarong the Chamling paradigm looks more complex, but the underlying principle is the same.

Table 2 Chamling (West) verbal paradigm³ (past)

Direct		Inverse		Intransitive		
1>2s	-na	2>1s	ta-	-unga		
1s>2d	-na-ci	2>1de	ta-	-ac-ka		
1s>2p	-na-i	2>1pe	ta-	-i(m)-ka		
1ns>2ns	-na-ni					
or:		or:				
1de>2	-(n)-ac-ka	2d>1	ta-	-aci		
1pe>2	-(n)-um-ka					
1s>3s	-unga	3>1s	pa-	-unga	1s	-unga
1di>3s	-aci	3>1di	pa-	-aci	1di	-aci
1de>3s	-ac-ka	3>1de	pa-	-ac-ka	1de	-ac-ka
1pi>3s	-um	3>1pi	pa-	-i	1pi	-i
1pe>3s	-um-ka	3>1pe	pa-	-i(m)-ka	1pe	-i(m)-ka
1s>3ns	-ung-c-unga					
1nsi>3ns	-um-c-um					
1nse>3ns	-um-c-um-ka					
2s>3s	ta- u	3>2s	ta-	-a	2s	ta- -a
2d>3s	ta- aci	3>2d	ta-	-aci	2d	ta- -aci
2p>3s	ta- um	3>2p	ta-	-i	2p	ta- -i
2s>3ns	ta- u-c-yu					
2ns>3ns	ta- um-c-um					
					3s	-a
3s>3s	-u	3d>3	pa-	-aci	3d	-aci
3s>3ns	-u-c-yu	3p>3	pa-	-a	3p	mi- -a

Before looking at agreement a note is in order regarding tense marking. The Chamling past marker -a appears only if there is no other suffix, e.g.

ta-id-a he gave you
pa-id-a they gave him

The person suffixes -unga, -na and -ka are used only in the past: in the non-past -a is replaced by the non-past marker -e. These suffixes (also present in the independent pronouns ka-nga "I", kha-na "you", kai-ka "we (pe)") should not be analysed as (u)ng + a etc.; i.e. past tense is unmarked in those forms. The vowel a before the dual marker -ci was originally a past marker (as it still is in Bantawa), but it has become part of the suffix.

	CHAMLING	cf. BANTAWA	
PAST	ta-ims-aci	tü-ims-a-ci	you (d) fell asleep
	2-fall asleep-d	2-fall asleep-PAST-d	
NONPAST	ta-ims-ac-e	tü-im-ci	you (d) will fall asleep
	2-fall asleep-d-NONP	2-fall asleep-d	

2.1. Agreement

We find the same pronominal suffixes in Gyarong and Chamling (for -um see below):

	GYARONG	CHAMLING
1s	-ng	-nga
1p	-y	-i(m)
2s	-n	-na
2p	-ny	-ni/-i

In both languages there is agreement with SAP in configurations involving 3rd person. Moreover both languages use a *t*-prefix for 2nd person. There is, however, a marked difference in the distribution of the 2nd person affixes. In Chamling (and in most other Kiranti languages) -na is restricted to 1>2. In all other configurations *ta*- functions as 2nd person marker, whereas Gyarong has the double marking *tə*- *n*. Both Gyarong and Chamling uniquely specify the configuration 1>2, Chamling by -na, Gyarong by *ta*- (<*tə*-*kə*-). In Gyarong 2>1 agrees with 1st person *kə*- *ng*), while the corresponding Chamling form agrees with both participants (*ta*- *unga*, but cf. below under b).

Chamling has the following additional markers³ in comparison to Gyarong:

- a) The exclusive marker -ka; Gyarong has an exclusive pronoun, but the feature is not marked on the verb.

- b) Gyarong marks only the number of the SAP the verb agrees with: Chamling tends to mark non-singular for both participants. Competing constructions exist in 1st/2nd configurations, since only one dual or plural marker is possible in a form. From Table 2 we can derive

2d>1pe	<i>ta-id-i-ka</i> 2-give-p-e	or	<i>ta-id-aci</i> 2-give-d	you gave us
2d>1de	<i>ta-id-àc-ka</i> 2-give-d-e	or	<i>ta-id-aci</i>	you gave us

where the first forms agree with patient in number, the second with agent. Alternative forms also exist for the 1ns>2ns configurations, which we would expect to agree with 2nd person, as in the first of the following forms. The last form shows pure subject agreement.

1 pe>2p	<i>i-na-ni</i> give-1>2-2p	or	<i>i-n-um-ka</i> give-1>2-1pAG-e	we gave you
		or	<i>id-um-ka</i> give-1pAG-e	

- c) The dual marker *-ci* is not restricted to 1st and 2nd person, but also indicates dual and plural of 3rd person patients. 1st and 2nd person agreement suffixes are repeated after the 3rd non-singular patient marker:

1s>3ns	<i>tyok-ung-c-unga</i> see-1s-3nsPAT-1s	I saw them
--------	--	------------

There is thus a tendency in Chamling to mark number of both participants, and towards agent agreement in competing configurations.

2.2. Direction marking

Direct

It is problematic to assign a synchronic function to Chamling *-u*. On the basis of comparative evidence, especially from the neighboring Bantawa, it is clear that *-u* has developed from a *direct marker*. This function is still recognizable in some configurations, e.g.

3s>3s	<i>rhaik-u</i>	he scolded him	cf. GYARONG	<i>nasngo-u</i>
vs.				
3p>3s	<i>pa-rhaik-a</i>	they scolded him		<i>vu-nasngo</i>
2s>3s	<i>ta-rhaik-u</i>	you scolded him		<i>tə-nasngo-u/n</i>
vs.				
3s>2s	<i>ta-rhaik-a</i>	he scolded you		<i>tə-u-nasngo-n</i>

The generalization of the suffixes *-unga* for 1st person singular and *-aci* for dual agent irrespective of semantic role shows that the direction marking is not carried through systematically. Only one informant of the Eastern dialect insisted on *-u-ci* in 2d>3 (but not in 1d>3). The vowels *u* and *a* have become fixed parts of the suffixes, and can even replace stem final vowels, as in

<i>ta-ma</i>	come	<i>t-unga</i>	I came
<i>mu-ma</i>	make	<i>m-aci</i>	they (d) made it

The generalization of these suffixes seems to be the result of fairly recent developments, as the comparison with Bantawa shows (cf. 3.2.). Note that the interpretation of *-u* as a 3rd patient marker would leave us with the problem of *-unga* and *-aci*; moreover it would be incompatible with the 3p>3 form without *-u*.

1st and 2nd plural have *-um* in direct, *-i* or *-im* in inverse. It is evident that *-um* combines a direct and a plural marker: *-um* < *-u* + **-iN*.⁴

Inverse

The prefix *pa-* occurs in 3>1 and 3ns>3. i.e. in the inverse configurations without *t*-prefix. The crucial forms for the analysis as inverse marker are

3p>3	<i>pa-</i>
3s>3s	<i>-u</i>

They demonstrate that *pa-* cannot be a 3rd agent marker, just as *-u* cannot be a 3rd patient marker. Two informants occasionally used a direct form for 3p>3 with the 3p agent prefix *mi-* and the suffix *-u*.

3p>3p	<i>mi-tyok-u-c-yu</i>	they saw them
	3pAG-see-DIR-3nsPAT-DIR	

The fact that the corresponding inverse form *pa-tyok-a* (in which the plurality of agent and patient cannot be marked)⁵ does not have *-u* confirms our analysis of *pa-* as inverse marker. The two forms, coexisting in at least some Chamling dialects, but also in Puma and Bantawa, indicate that the switch between direct and inverse in the 3>3 configurations is not stable.

The absence of *pa-* in forms with the *t*-prefix is explained by a prefix restriction in Chamling (cf. fn.5). Like inverse *pa-*, the negative prefix *pa-* is not realized in forms with the *t*-prefix, e.g.:

3s>3s	<i>tyok-u</i>	he saw him	NEG: <i>pa-tyok-aina</i>
2s>3s	<i>ta-tyok-u</i>	you saw him	<i>ta-tyok-aina</i>

2.3. The *kha*-paradigm

Chamling has an alternative paradigm for actions directed towards 1st person. In the Eastern dialect the following forms have replaced the corresponding forms of the West Chamling paradigm presented in Table 2.

3s>1	<i>kha-</i>	<i>-a</i>
3d	<i>kha-</i>	<i>-aci</i>
3p	<i>kha-mi-</i>	<i>-a</i>
2s>1	<i>kha-ta-</i>	<i>-a</i>
2d	<i>kha-ta-</i>	<i>-aci</i>
2p	<i>kha-ta-</i>	<i>-i</i>

The prefix *kha-* is used with a 1st person patient irrespective of number. A form like *kha-ta-tyok-a* "you saw me/us" replaces five different forms of the Western dialect.

What function are we to assign to this prefix? The *kha*-paradigm differs markedly from the rest of the inverse forms. Whereas inverse markers do not disturb the split agreement pattern, the *kha*-forms have subject agreement; the forms following *kha-* are identical with intransitive verb forms. *kha-* can thus not be an inverse marker. It functions as an indicator of 1st person patient. This implies two remarkable deviations from the canonical TB agreement pattern: (1) the introduction of a role specific marker; (2) the neglect of number of a speech act participant. A parallel development occurred in Limbu (cf. 4.1.).

3. Puma and Bantawa

In Table 3, I present the Puma and Bantawa paradigms together with Chamling. Some dual and exclusive forms which are not needed for the comparison have been left out.

The Puma data are from two verb morphology questionnaires of the Linguistic Survey of Nepal. The data were not recorded by linguists and are not always reliable; dubious and obviously wrong forms have therefore not been included in the table. The Bantawa verbal paradigm was presented by Novel Kishore Rai, a linguist and native speaker of Bantawa from Ilam. A slightly different Bantawa paradigm was recorded by Gvozdanović (1985:121) in Ilam with an informant who migrated fifty years earlier from Bhojpur. Instead of N. K. Rai's *üm-* this informant uses *mü-*. Further divergences are indicated in square brackets in Table 3.

3.1. Agreement

The *t-*prefix occurs in Puma and Bantawa in the same configurations (henceforth 'T-configurations') as in Chamling. 2nd person *-na* is restricted to 1>2. The dual marker *-ci* is again also used as a 3rd non-singular patient suffix. Like Gyarong, but unlike Chamling, Bantawa distinguishes 1p (*-in*, *-um*) and 2p (*-nin*, *-num*).

Table 3 Southern Rai verbal paradigms (past)

	Puma	Bantawa	Chamling		
<i>DIRECT</i>					
1s>2s	-na	-na	-na		
>2p	-na-ning	-na-nin	-na-i		
1pe>2s	?	üm- -a [ø- -ni-cia]	-na/-n-um-ka		
>2p		üm- -a-nin ["]	-na -ni/ "		
1s>3s	-ung	-ung	-unga		
>3ns	-ung-c-ong	-ung-c-üng	-ung-c-unga		
1pl>3s	?	-um	-um		
>3ns	-um-c-om	-um-c-üm	-um-c-um		
2s>3s	to- -i	tü- -u	ta- -u		
>3ns	to- -i-ci	tü- -u-ci	ta- -u-c-yu		
2p>3s	to- -um	tü- -a-num	ta- -um		
>3ns	to- -um-c-um	tü- -a-num-c-üm	ta- -um-c-um		
3s>3s	-i	-u	-u		
>3ns	-i-ci	üm- -u-ci	-u-c-yu		
3p>3p	(mo- -i-ci)	üm- -u-ci	(mi- -u-c-yu)		
<i>INVERSE</i>					
3p>3s	po- -a	ü- -a	pa- -a		
3d>3s	po- -aci	(ü-) -a-cu [ü- -a-cu]	pa- -aci		
3s>2s	to- -a	tü- -a	ta- -a		
3p>2s	ni-to- -a	üm- -a	"		
1s>2p	"	tü- -a-nin	ta- -i		
1p>2p	ni-to- -ning	üm- -a-nin	"		
				<i>WEST-CH.</i>	<i>EAST-CH.</i>
3s>1s	po- -ung	(ü-) -a-ng	pa- -unga		kha- -a
3p>1s	ni-po- -ung	üm- -a-ng	"		
3s>1pi	kha- -a	(ü-) -in	pa- -i		kha- -a
3p>1pi	kha-ma- -a	üm- -in	"		kha- mi-
2s>1s	to- -nga	tü- -a-ng	ta- -unga		kha- ta-
2p>1s	kha-to- -in	tü- -a-ng-nüng	ta- -unga		kha- ta-
2s>1pe	kha-to- -a	tü- -in-ka [tü- -ni-cia]	ta- -i (m)-ka		kha- ta-
2p>1pe	kha-to- -in	" ["]	"		kha- ta-

Bantawa *üm-/mü-* is a 3p agent marker (cf. Chamling *mi-*). This marker takes different shapes in Puma:

<i>mo-</i>	initial
<i>ma-</i>	after <i>kha-</i>
<i>ni-</i>	preceding <i>po-</i> , <i>to-</i>

N. K. Rai uses *üm-* also in 1p>2 configurations, resulting in identity of forms with 3p>2. e.g.,

1pe/3p>2s	<i>üm-Dhatt-a</i> -hit-PAST	we/they hit you
1pe/3p>2p	<i>üm-Dhatt-a-nin</i> -hit-PAST-2p	we/they hit you (p)

Here *üm-* seems to be a generalized plural agent marker, although the possibility cannot be excluded that 1pe>2 counts as inverse in Bantawa, with a rather natural hierarchy 1(+2) > 2 > 1+3 > 3. A further peculiarity of those forms is that *üm-* has led to the suppression of the 2nd person *t-* prefix in 3>2 and of the *n-* suffix that marks 1>2 in Kiranti.

Like Chamling, Bantawa has competing forms for non-singular 2>1 configurations. In the form N. K. Rai gives in his paradigm the suffix agrees with the patient:

2>1pe	<i>tü-Dhatt-in-ka</i> 2-hit-1p-e	you (s/p) hit us
-------	-------------------------------------	------------------

But in an example sentence N. K. Rai uses a different form:

<i>khana-nin-za</i>	<i>üngka-n-ka</i>	<i>tü-Dhat-ni-ci</i>
you-p-ERG	1-p-EX	2-hit-2-ns

The interpretation of the suffixes is Rai's; the Bhojpur data suggest that a different analysis is possible:

1pe>2s	<i>Dhat-ni-cia</i>
2s>1pe	<i>tu-Dhat-ni-cia</i>

As *-ni* indicates 1p, *-cia* must stand for exclusive: *-in-ka*, *-ni-cia* and *-ni-ci* would then be variants coding the same features. Those Bantawa examples illustrate the general instability of the Kiranti verbal paradigms, especially in the 1st/2nd non-singular configurations, and the reuse of affixes for different purposes.

3.2. Direction marking

Direct

In all direct configurations Puma has *-u* or *-i* in the paradigm for *dhed-* 'beat', *-i* being a variant of *-u* after alveolar consonants. With a stem final velar or bilabial we would, as far as I can gather from some sample sentences of the Survey questionnaires, have *-u* throughout.⁶

Puma shows a tendency towards generalization of *-ung* for 1st (cf. 3>1s forms). Bantawa distinguishes direct and inverse more systematically, using *-u* in all direct and in no inverse configuration except 3d>3.

	BANTAWA	cf. CHAMLING	
1s>3s	<i>Dhatt-u-ng</i> hit-DIR-1s	<i>caidh-unga</i>	I hit him
3s>1s	<i>ü-Dhatt-a-ng</i> INV-hit-PAST-1s	<i>pa-caidh-unga</i>	he hit me
2d>3s	<i>tü-Dhatt-a-c-u</i> 2-hit-PAST-d-DIR	<i>ta-caidh-aci</i>	you (d) hit him
3s>2d	<i>tü-Dhatt-a-ci</i> 2-hit-PAST-d	<i>ta-caidh-aci</i>	he hit you (d)

Inverse

The cases where Gyarong has simple *Wu-* and Chamling *pa-* are split up in Bantawa into forms with *ü-* and forms with an additional plural marker **mi* (cf. fn.4):

in the Ilam dialect:	<i>üm-</i> (< <i>ü</i> + <i>*mi</i>)
in the Bhojpur dialect:	<i>mü-</i> (< <i>*mi</i> + <i>ü</i>)

The following distribution suggests an interpretation of *ü-* as inverse marker:

3s>1s	<i>ü-Dhatt-a-ng</i>	you hit me
3ns>3s	<i>ü-Dhatt-a</i>	they hit him
3s>3s	<i>Dhatt-u</i>	he hit him

ü is a high central unrounded vowel, which reflects common Kiranti *u* or *i*. Thus 2nd *tü-* cannot have developed from *ta-*, but is most likely a combination of **ta* + *u*. I suppose that *tü-* was originally used in inverse configurations and then generalized to all T-configurations, just as *mü-/am-* was generalized to all 3p agent forms.

The inverse marking function of the prefix *a-*, for N. K. Rai optional in most configurations, is blurred further by the affixation *a-* *-u* in 3d>3 in both dialects. In a comparative context, however, the origin of *a-* in a direction system seems beyond doubt.

Puma has the *pa-* and *kha-* prefixes combined into one single paradigm. *kha-* is regularly used in configurations with a 1st non-singular patient, but only once with 1st singular. Like Chamling *pa-*, the prefix *po-* is incompatible with the 2nd person *t-* prefix, but it does combine with the 3p agent marker.

3s>2s	<i>to-dhed-a</i> 2-hit-PAST	you hit me	cf. CHAMLING	<i>ta-caidh-a</i>
3ns>1s	<i>ni-po-dhed-ung</i>	they hit me		<i>pa-caidh-unga</i>
	3nsAG-INV-hit-1s			

4. Other Kiranti languages

4.1. Limbu

If we compare Table 4 with Table 3 it is obvious that the Limbu verbal paradigm has much more in common with Southern Rai than Khaling Rai has.

Limbu *ke-* corresponds in distribution to the *t-* prefix in Southern Rai, the *n-* suffix again being restricted to the 1>2 configurations. Limbu has a further prefix *a-*, which stands for 1p inclusive. Neither prefix is sensitive to direction.

Table 4 Further verbal paradigms

	LIMBU/Panthare (past)	KHALING (Rai) (nonpast)	RAWANG (Nungish)
1>2			
1s>2s	-ne	-nä	-ng
>2p	-ne-ning	-nu	-ning
1pe>2s	-ne-gya	i-	-i
>2p	-ne-ci-gya	i- -ni	-i
DIRECT			
1s>3s	-ung	-u	-ngu
>3ns	-ung-si-ng	-nu	
1pi>3s	a- -um	-ki	-i
>3ns	a- -um-si-m	"	
2s>3s	ke- -u	i- -ü	e- -u
>3ns	ke- -u-si	i- -nu	
2p>3s	ke- -um	i- -ni	e- -ning
>3ns	ke- -um-si-m	"	
3s>3s	-u	-ü-	-u
>3ns	-u-si	-nu	
3ns>3s	me- -u	"	
>3ns	me- -u-si	"	
INVERSE			
3s>2s	ke- -a	i-	e-
3ns>2s	ke-mi- -a	"	
3s>2p	ke- -i	i- -ni	e- -ning
3ns>2p	ke-mi- -i	"	
3s>1s	-ang	i- -ngaa	e- -ng
3p>1s	me- -ang	i- -ngaa-nu	
3s>1pi	a- -a	i- -ki	e- -i
3p>1pi	a-mi- -a	"	

Table 4 (continued)

	LIMBU/Panthare (past)	KHALING (Rai) (nonpast)	RAWANG (Nungish)
INVERSE			
3s>1pe	yapmi- -a	i- -kaa	
3p>1pe	yapmi-me- -a	"	
2s>1s	ke- -ang	i- -ngaa	e- -nga
2p>1s	yapmi-ke- -a	i- -ngaa-nu	e- -sha
2s>1pe	"	i- -kaa	"
2p>1pe	"	"	"

The non-singular markers are familiar from Rai: *-si* (= Southern Rai *-ci*) indicates any dual or a 3ns patient, *me-/mi-* a 3ns agent. The verb can have more than one prefix, e.g.

3p>2s	<i>ke-m-su-?</i> 2-3pAG-touch-NONP	they touch you
2p>1s/nse	<i>yapmi-ke-ssu-ssi-?</i> 1(e)PAT-2-touch-2p(?) -NONP	you (p) touch me/us (Weidert & Subba: 218; glosses mine).

There is no direction marking in Limbu. All 2>3 and 3>3 (including 3ns>3) configurations have *-u*; i.e. *-u* functions as a 3rd patient marker. There is no trace of an inverse marker.

The Panthare Limbu prefix *yapmi-* is restricted to inverse configurations with 1st person exclusive or singular patients.⁷ It can substitute for the old personal affixes, but the replacement is not regularly carried through. In the paradigms, Weidert & Subba irregularly list alternative forms, e.g.

2d>1d/pe	<i>yapmi-ke-hip/yapmi-ke-hips-ya-?</i>	you (d) beat us (1985:181)
----------	--	-------------------------------

In Phedappe Limbu, according to van Driem, the prefix *a-* is optionally replaced by *napmi-* in 2>1 configurations (v.Driem: 78), but in the following text example it is used instead of the 1s suffix:

anga	yang-in	na·pmi	pi·r-ε?
me	money-ABS	1	give-IMP
	give me my money!		(v.Driem: 302)

In Phedappe, the origin of the marker is transparent: *napmi* is an impersonal pronoun analogous to French *on*.

The replacement of 1st person markers in inverse configurations constitutes an interesting parallel to the Chamling and Puma *kha-* paradigms. The process seems to start with plural patients: in Limbu an impersonal form replaces 1st person exclusive affixes in inverse configurations: Puma *kha-* replaces both inclusive and exclusive affixes. While in Limbu and Puma a 1st singular suffix is affected only occasionally, the substitution has been carried through in East Chamling to all 1st patient configurations.

4.2. Khaling-Dumi

There are two prefixing languages in the Northwest of the Kiranti area: Khaling and Dumi, which have a vocalic prefix (Khaling *i-*, Dumi *a-*)⁸ in all inverse forms and in 2>3 (with a further generalization to 1p>2 in Khaling: cf. Bantawa *im-*!). The Khaling forms (given by Toba. pers. communication) are listed in Table 4.

Exactly identical patterns are found in the Nungish languages Rawang (Table 4, data from DeLancey 1980) and Trung. Rawang has *e-*, Trung *nə-* in all T-configurations and in inverse. Synchronically this strange distribution of the prefix does not make sense; it can only be understood as a collapse of a 2nd prefix with the inverse marker.

There are also some traces of a direct marker *-u* in both Khaling-Dumi and Rawang-Trung. The overall pattern of affixes is more similar between those two groups, supposed to belong to different subgroups of Tibeto-Burman, than between Khaling-Dumi and Southern Rai.

5. Eastern Kiranti in comparison

The similarities in the Gyarong and Eastern Kiranti (Southern Rai and Limbu) verbal systems is too obvious to be overlooked or to be ascribed to coincidence. In both groups we have:

- suffixed pronominal agreement markers *-nga* and *-na*,
- agreement with SAP (with a tendency towards subject agreement in Kiranti),
- a dual marker *-ch/-ci*,
- a 1p/2p marker *-i* (+nasal),
- a *t-* or *k-* prefix for 2nd,
- traces of a suffixed direct marker *-u*,
- traces of a prefixed inverse marker *u-* or *pa-* (not in Limbu),
- inverse marking of 3ns>3 (not in Limbu).

Features a)-d) are well known from other Tibeto-Burman languages; features e)-h) are not.

5.1. Direction markers

Relics of direction marking can be traced in all Eastern Kiranti languages as well as in Gyarong. The distribution, irrespective of the synchronic function, comes out as in Table 5.

In Southern Rai there is some instability in the marking of 3ns>3, as also shown in Table 1. Some Chamling speakers use a direct form in *-u* besides the common inverse *pa-* form in 3p>3. Bantawa has both *ü-* and *-u* in 3d>3. Despite those minor variations, the hierarchical ordering of 3s over 3ns is clearly recognizable in Southern Rai. An inverse interpretation of 3ns>3 configurations has not been attested for any other Tibeto-Burman language so far⁹. Both the form of the inverse marker and its distribution are, to our present knowledge, unique to the Kiranti-Rung complex and constitute the strongest argument for a close relationship.

The only Kiranti language for which a direction system has been claimed is Hayu. DeLancey ascribes a directive function to Hayu *-ko* and *-su* and relates *a* to Nocte inverse *h*. I find the latter case rather unconvincing, especially as *-su* is restricted to configurations with a 1st singular patient. Hayu *-ko* is synchronically used as a 3rd patient marker (Michailovsky 1988:113), but like Kiranti *-u* it seems to be an old direction marker.

Direction systems that bear similarity to those of Kiranti and Gyarong are found in Kham and Chepang, both supposed to be included in Rung: e.g.

MHAI KHAM	DIRECT	INVERSE
	1s>3s <i>-ng</i>	3s>1s <i>o- -ngu /-u-ngu</i>
	2s>3s <i>nə- -n</i>	3s>2s <i>o- -nu /-u-nu</i>

(cf. DeLancey 1980:100). The inverse configurations have either a prefix *o-* and a suffix *-u*, or *-u-PERS-u*, exemplifying the phenomenon of morphemes shifting position found over and over again in TB. Chepang uses *-u* and *-taa* in a way reminiscent of direct and inverse (DeLancey 1980:57f).

Table 5 Traces of direction markers

	Gyarong	Chamling-Puma	Bantawa	Limbu
1>2	-	-	-	-
1>3	-	-u	-u	-u
2>3	(-u)	-u	-u	-u
3s>3	-u	-u	-u	-u
3ns>3		(-u)	-u	-u
3ns>3	wu-	pa-	ü-	
3>1	wu-	pa-	ü-	-
2>1	u-	-	(*ü-)	-
3>2	u-	-	(*ü-)	-

A direction system has also been claimed for Nocte (DeLancey 1980:82 1981:641f). Nocte *h* is part of the system of local deixis. cf.:

NOCTE	<i>Wankhu ka-ta</i>	W. went
	<i>Wankhu ka-tha</i>	W. has come
	<i>nga-ma ate-nang chien-ta-k</i>	I asked him
	<i>ate-ma nga-nang chien-tha-ng</i>	he asked me
		(Das Gupta 1971:73,20)

Both its form and its integration into the local deictic system places Nocte *h* far away from the Kiranti-Gyarong direction system.

5.2. The *t-* and *k-*prefixes, Chamling *kha-*

The following morphemes are widespread in Tibeto-Burman both in pronouns and in agreement:

velars for 1st:	<i>ka, nga</i>
alveolars for 2nd:	<i>ta, na</i>

In Kiranti-Rung the stops primarily occur in prefixed position, the nasals suffixed, but the positions may be switched around.¹⁰ The identity of Gyarong and East Kiranti prefixes could therefore be due to accident. Together with the direction marking system, however, the prefixes gain in significance for the establishment of a close relationship between Kiranti and Rung.

If we take Gyarong *kə-* to be a 1st person marker, for which there is some internal evidence (1s>1p *ka-* < **kə-kə-*, 1>2 *ta-* < **tə-kə-*)¹¹, how are we to explain that the prefix stands for 2nd in Limbu? Limbu must have reinterpreted **k-* as a 2nd marker in a 1st/2nd configuration and generalized it to the other T-configurations. This seems plausible if **k-* originally occurred in 2>1 (Gyarong *kə-ng* 1- -1, Limbu *kə-ang* 2- -1).

The prefix *kha-* occurs in Chamling and Puma in configurations with 1st person patients. A relation with **ka-* (present in Chamling *ka-nga* "I", *ka-i* "we (pl)") is doubtful. Apart from the aspirated initial, 1st person singular and plural are otherwise never collapsed in Kiranti, whereas *kha-* is used to indicate a 1st person irrespective of number.

Table 6 Distribution of the *t-* and *k-*prefixes

	<i>Gyarong</i>	<i>S.Rai</i>	<i>Limbu</i>
1>2	<i>ta-(tə-k-)</i>		
2>3	<i>tə-</i>	<i>tə-</i>	<i>kɛ-</i>
3>2	<i>tə-</i>	<i>tə-</i>	<i>kɛ-</i>
2>1	<i>tə-</i>	<i>tə-</i>	<i>kɛ-</i>

Another possibility that should be taken into consideration is that *kha-* developed parallel to the directive systems in some Kuki-Chin languages. The directive prefix *hong-/on-* in the Northern Kuki languages Sizang, Tiddim, and Paite reflects an earlier verb "come" (DeLancey 1980:170ff). The prefix indicates movement towards speaker or hearer, as in

SIZANG	<i>hong-pe-tu</i>	hi	he will give it to me
		hither-give-FUT IND	
cf. E-CHAMLING	<i>kha-id-e</i>		"
PAITE	<i>ka chanai on-pia-in</i>		give me my share!
		my share hither-give-limper	
cf. E-CHAMLING	<i>a-ro^o kha-id-anna</i>		give me my food!

Although **kha* is a widespread TB motion verb root, it is not traceable in Chamling-Puma or any of the neighboring languages. The origin of *kha-* in the Chamling-Puma 1st patient configurations therefore remains obscure.

6. Some historical speculations

The shared features between Southern Rai and Limbu make it most likely that they had some period of common history after splitting away from the other Rai peoples. This hypothesis will of course have to be confirmed with material from other domains. However, as verbal paradigms tend to be conservative, and as it is hard to imagine that people would borrow a complex paradigm of the Kiranti type, I think the postulation of an Eastern Kiranti subgroup, comprising Limbu and Southern Rai, is quite sound.

The grouping together of 'Rai' languages seems to have had a geographical or political rather than a linguistic basis. Khaling and Dumi share more than 80% cognates, but less than 35% with any other Rai language (Hansson, ms.). It could be that their history is different from that of the other Rai groups and that some of the features they share with Rai are the result of areal diffusion.

This leads us to the question of higher groupings. We have found striking similarities in the verbal paradigms of Gyarong and Eastern Kiranti on the one hand and Nungish and Khaling-Dumi on the other hand. This grouping cuts across the classification of Gyarong and Nungish into Rung and of Khaling-Dumi with Kiranti.

An independent invention of the complex verbal paradigms of Gyarong and Eastern Kiranti is most unlikely. The question is whether we are dealing with retention or innovation. As Gyarong and Eastern Kiranti have not been shown to be closely related in other respects one would probably opt for retention. But there is no evidence for direction marking of the Kiranti-Rung type anywhere outside those groups, the Northern Kuki directive system being of a different order. The direction system, together with the distribution of the *t-/k-*prefixes makes it seem

likely that the ancestors of the Kiranti and the Gyarong once were at least neighbors participating in the u-/u direction marking and the prefixing wave.

The case of Khaling-Dumi and Nungish is weaker and needs further investigation.

I will not carry my speculations further and propose a new genealogical subtree.¹² It is surely premature to claim a new subclassification only on the basis of verbal paradigms, although they must, due to their conservatism, play a crucial role in any classification. More detailed descriptions of more languages and more detailed comparisons are necessary. Discovery of further prefixing Kuki-Chin languages of the Lakher type (cf. DeLancey 1989) may change the picture completely.

Notes

- 1 This article is a revised version of a paper read at the 21st ICSTLL in Lund, Sweden, in 1988. For comments on an earlier version I would like to thank Scott DeLancey. Thanks are also due to the Deutsche Forschungsgemeinschaft for financial aid that made my fieldwork in Nepal possible and to Werner Winter for giving me access to the data of the Linguistic Survey of Nepal.
- 2 For discussion of the category 'inverse' see e.g. Comrie (1980), DeLancey (1981:641ff). The relevance of 'viewpoint' for the TB verb is demonstrated in DeLancey (1980, 1981).
- 3 The Chamling paradigm has been constructed from 12 elicited paradigms (no 2 of them alike) on the basis of consistency and occurrence in 100 pages of transcribed texts. Informants' errors were frequent in elicitation, but not in natural speech. The regular variations are included in the table.
- 4 The plural marker appears in different shapes in Kiranti, e.g.

-m	1p and 2p in Southern Rai and Limbu
-im	1p in Chamling
mi-	3p in Chamling and Limbu
üm-/mü-	3p in Bantawa
-mi	3p and 1p in Thulung, 3p in Nachering, Chourase, Mewahang
-in	1p in Bantawa
-ni	2p in Chamling, Kulung, Thulung
-nin	2p in Bantawa
-niN	2p in Puma
-ni	3p in Dumi, Koi
ni-	3p in Puma
-i	2p in Chamling and Limbu; 1p in Chamling, Dumi, Thulung

mi seems to prevail for 3p agent, *im/in* for 1p/2p.
- 5 (West) Chamling can have only one prefix: *pa-* outranks *mi-*, *ta-* outranks *pa-*, 3nsPAT is marked only in direct. In inverse configurations the suffix *-aci* always indicates dual agent: e.g.

pa-tyok-aci they (d) saw him/them (but not: they (p) saw them)

6 The realization of the suffix vowel in direct configurations in Puma and Chamling is:

	WEST CHAMLING	EAST CHAMLING	PUMA
after/before velar/bilabial	-u	-u	-u
otherwise	-yu	-yi	-i
e.g. WEST CHAMLING EAST CHAMLING			
<i>lhap-u</i>	same	he caught him	
<i>lhap-u-c-yu</i>	<i>lhap-u-c-yi</i>	he caught them	
<i>caidh-u-m</i>	same	he beat us	
<i>caidh-yu</i>	<i>caidh-yi</i>	he beat him	

- 7 The presentation in Weidert & Subba is rather chaotic. The forms given in Table 4 are from their table on pp. 60–61. In the actual paradigms *ya pmi-* is used irregularly for 1d/pe patient, seldom for 1s patient in combination with a non-singular agent, never in 2/3s > 1s. Sometimes variants are given, e.g. *le:syaz, yapmilε-r(197)* "it burns us (de)", but only *yapmi-* in the same paradigm for the corresponding past form and for 3s > 1pe.
- 8 Some small intermediate groups between the Limbu and Bantawa area (e.g. Dungmall, Athpariya, Chulung, Chintang) have 2nd *a-*.
- 9 A 3s > 3ns hierarchy exists in Chukchi and Koryak; cf. Comrie 1980.
- 10 E.g. Kham: 1s *nga-*, 2s *ne-*; Chepang: 2nd *-tez*, 2nd pronoun *naang-tez*; Bantawa: 1st pronoun *ing-ka*; Chamling: *ka-nga*; Kuki-Chin: 1st *ka-*, 2nd *na-*; some conservative Kuki-Chin languages moreover have *-ng* and *-te*.
- 11 Gyarong has *kə-* also with 3rd person in the intransitive paradigm in some totally unpredictable configurations (Nagano 1984:64f). Nagano does not comment on his irregular intransitive paradigms.
- 12 Also I do not believe that migrating people always split up neatly in a way that would allow linguists to draw genealogical trees. The comparative work of the Linguistic Survey of Nepal has shown that it is not possible to draw a Stammbaum for the Rai languages on the basis of lexical innovation and sound shifts. Waves of innovation have spread from different centers of diffusion. There is no reason to believe that TB peoples should have split up in a neater way in past times.

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THE LINGUISTIC POSITION OF TANI (MIRISH) IN TIBETO-BURMAN

A lexical assessment*

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Introduction

The obscure Tani (Mirish, Mishingish) languages of southern Tibet and Arunachal Pradesh have only recently begun to receive the attention they deserve (Chhangte 1990, 1992; Sun 1993, 1994). The aim of this paper, which is part of an ongoing project to study the phonological and lexical diachrony of these languages, is to contribute toward clarifying the linguistic position of Tani languages in the Tibeto-Burman family from the vantage-point of reconstructed Proto-Tani (hereafter PT).¹

Section 1 surveys and contrasts existing views on the affiliations of Tani in Tibeto-Burman. Section 2 inspects in detail a number of Tibeto-Burman languages which have been nominated in the literature as possible close relatives of Tani. After screening out a few unlikely contestants, a pilot lexical study is conducted in section 3 to weigh the degrees of lexical affinity between Tani and the remaining candidates as compared with three control languages, Written Tibetan, Written Burmese, and Garo. The implications of the output of this study on the phylogenetic position of Tani are then discussed. In the concluding section, we consider the nature of the relationship between Tani and Digarish (consisting of two known languages: Taraon and Idu), the language group which turns out to be most akin to Tani in basic vocabulary.

1. Existing views on the place of Tani in Tibeto-Burman

The genetic affiliations of Tani with Tibeto-Burman have seldom been called into question,² and should now be considered *proven beyond reasonable doubt* in view of the accountability of much of the PT phonological developments in terms of PTB (Sun 1993, chapter IV).³ However, there is no consensus yet as to how Tani interrelates with other Tibeto-Burman languages. In fact, as shown in

the following survey of the subgrouping literature, opinions diverge sharply from each other with regard to both lower-level and higher-level affiliations of Tani in Tibeto-Burman.

1.1. Konow: 'North Assam'

In the colossal Linguistic Survey of India, Tani languages, along with other little-known Tibeto-Burman languages of Arunachal Pradesh, were brought together in the so-called 'North Assam' group. This was clearly meant to be an expedient, geographical grouping, as shown in the following quote from Sten Konow, the linguist originating this term (Konow 1909:568, 569, emphasis ours):

The North Assam group is *not a well-defined philological group* with salient grammatical features distinguishing it from other Tibeto-Burman forms of speech . . . In many important points, however, Mishmi⁴ differs from Abor-Miri, and *the points of correspondence just referred to are not of an importance sufficient to prove a close connexion between the two forms of speech.*

As for higher-level connections, Konow made only a vague suggestion (Konow op. cit.:572):

The North Assam forms of speech can be described as links which connect the Tibetan and Himalaya dialects with the languages of the Bodo, Naga, Kuki-Chin and Kachin groups.

1.2. Shafer: Mishingish (Bodic/Burmic)

The distinctness of the 'North Assam' languages is further underscored in Shafer 1955:102, where no less than four separate groups are recognized: Mishingish (= Tani), Digarish (= Taraon-Idu), Midzuish (= Kaman-Meyöl), and Hrusish (= Hruso = Aka). Shafer did not attempt a further classification but suggested that all of them are 'possibly sections of Bodic, possibly of Burmic, *certainly not of Baric*' (Shafer op. cit.:102).

1.3. Benedict: Mirish (major Tibeto-Burman nucleus)

While positing Abor-Miri-Dafla (i.e. Mirish in the narrow sense = Tani) as one of the major nuclei of the Tibeto-Burman family, Benedict (1972:5) suggests that to this division perhaps also belong not only the three Arunachal neighbors of Tani: Taraon, Kaman, and Hruso, but also the geographically more distant Dhimal group of Sikkim and Nepal. This claim, in effect, upgrades for the first time Konow's 'North Assam' from an *areal* to a *genetic* grouping. He further speculates that this group (Mirish in the extended sense) could ultimately be

linked with Kachin (Jingpo), Baric (Bodo-Garo and Konyak), Nungish, and Lolo-Burmese under the supergroup 'Burmic' (op. cit.:11). This view was soon given up. In Benedict 1976:178; fn. 14, he proposes instead that, as far as core vocabulary is concerned, Tibetan, Chepang, Tamang (i.e. Bodic), Burmese-Lolo-Nungish, Lushai (Kuki-Chin-Naga), and Miri (Tani) form one supergroup as against Kachin, Garo, Konyak languages, and Chairel (or Chakpa, a Luish language according to Bradley 1993:7).⁵

Benedict's revised view on the linguistic position of Abor-Miri-Dafla (AMD = Tani) can thus be interpreted as follows: At a lower-level, AMD is most closely related to Hruso, Taraon, Kaman, and Dhimal: these languages are allied further with Lolo-Burmese, Bodic, and Kuki-Chin-Naga, as against Kachin and Baric. It is important to note that while Benedict ventures explicit claims about possible lower-level close relatives of Tani, he agrees with Shafer that *Tani is not akin to Baric.*

1.4. Other ideas

Egerod 1974 also contains a classification of Tibeto-Burman, founded largely on Shafer and Benedict's frameworks. According to Egerod, Mirish (= Tani) is one of the major branches of Tibetic (= Shafer's Bodic); further, all of the other sections (Dhimalish, Digarish, Midzuish, Hrusish, Newarish, and Dzorgaish) left unclassified between Bodic and Burmic by Shafer are directly assigned to 'Other Tibetic'. Although further genetic subrelations among these Tibeto-Burman groups are not explored by Egerod, it is clear that, like Shafer and Benedict, he does not consider Mirish to be closely affiliated with Baric.

Matisoff 1991, DeLancey 1991 and Bradley 1993 are among the most recent statements on the genetic relationships among the Tibeto-Burman subgroups.⁶ Incorporating information on the newly described Tibeto-Burman languages as well as some recent low-level subgrouping proposals, they all depart in significant ways from their predecessors. In DeLancey 1991, an expanded notion of Baric is suggested, subsuming not only Bodo-Garo and Konyak-Naga (= French's Northern Naga), but also Kuki-Naga, Kachinic (Jingpo), and Mirish. What is more, in this classification 'Mirish' includes the three Mishmi languages in addition to Tani proper, but not Dhimal (assigned to Bodic) or Hruso (not mentioned in his framework). This extended conception of Baric may be inspired by the geographically-based *Kamarupan* (i.e. Assamese Tibeto-Burman) group first proposed in Matisoff 1985b: fn. 8, where, however, the term is explicitly stated to be 'a neutral overall designation for the TB languages of NE India and adjacent areas'. Matisoff 1991:480-1 proposes a simplified heuristic subclassification model of Tibeto-Burman with seven major Tibeto-Burman subgroups including Kamarupan (again with the disclaimer that this is a 'purely geographic rubric'), under which we find Kuki-Chin-Naga, Mikir, Meithei, Mru, Bodo-Garo, as well as Abor-Miri-Dafla. Unlike DeLancey's Baric, however, Kamarupan does not include Jingpo, which is assigned to form a subgroup (Kachinic) by itself. Bradley 1993 contains a wealth of valuable new demographic and

sociolinguistic information, especially concerning the Tibeto-Burman languages of India and Burma, but is unconventional in many ways. Adopting purely geographic labels, Bradley classifies Tibeto-Burman into four major groups: Western (Bodic), Northeastern India (= Burling's Sal group plus Kuki-Chin-Naga and Luish), Southeastern (Burmese-Lolo and Karenic), and Northeastern, a tentative medley group containing not only languages which Benedict 1972 puts under Mirish (i.e. Tani, Hrusish, Dhimalish, and the Mishmi languages), but also Nungish, Qiangic,⁷ and some widely divergent minor languages such as Sulung and Bugun.

It is evident that there is hardly any agreement among Tibeto-Burmanists today concerning the precise linguistic affiliations of Tani in Tibeto-Burman. While this indeterminacy reflects the immature state of higher-level Tibeto-Burman subclassification in general (Thurgood 1985, Sun 1988, Dai 1989, DeLancey 1991, Matisoff 1991),⁸ the uncertainty surrounding the linguistic position of Tani and related languages in particular can be directly attributed to the shortage of comparative data essential for recovering the linguistic histories of these languages, which in turn makes definitive subclassification well-nigh impossible.

Yet, what is relatively uncontroversial is that languages of the Tani group (i.e. Shafer's Mishingish, Benedict's Mirish in the narrower sense) do form a compact unit, more closely related to each other than to any other Tibeto-Burman language. We think it is important for the clarification of this issue to assert with certainty that *no other Tibeto-Burman language known to us deserves a place on the same taxonomic level as the two major Tani subgroups (Eastern and Western Tani)*. Hence, earlier proposals which subsume languages like Midu (Thurgood 1986:93),⁹ Aka (Nishida 1979:77), or Sulung and Bangru (Sun 1983:267)¹⁰ directly under Tani proper are untenable. This is not to deny, of course, that Tani may not be grouped further with other Tibeto-Burman languages in a coordinate relation under some higher Tibeto-Burman division, the topic of the next section.

2. Possible close relatives of Tani

What, then, are the *collateral relatives* of Tani proper in the Tibeto-Burman family? A number of languages have been mentioned in the literature as showing particular affinity with Tani, including Lepcha (Bodman 1988); rGyarong (Nagano 1984); Dhimal (Benedict 1972, Bradley 1993); Hruso (Benedict 1972; DeLancey 1991:431; Bradley 1993). These proposals will be considered below in light of our improved understanding of the Tani evidence.

2.1. Lepcha

The phylogenetic position of Lepcha, a Tibeto-Burman language of Sikkim, has also been highly controversial. Earlier analyses have aligned Lepcha with Naga (specifically, the 'Northern Naga' branch of Shafer 1955:106),¹¹ Tibetan-Kanauri

and Kiranti (Benedict 1972:7-8), and Mikir (Bauman 1976). In a valuable recent revisit to the issue, Bodman (1988) compares Lepcha with a number of Tibeto-Burman languages which are lexically most similar to Lepcha, including an unidentified variety of Adi extremely similar (if not identical) to Padam. The substantial evidence of the lexical affinity between Lepcha and Adi comprises a list of 130 cognate pairs, based on which some important Lepcha-Adi consonantal correspondences are worked out.

On close inspection, however, many such sets appear to be *common retentions* from the original Tibeto-Burman lexical stock, and do not demonstrate by themselves any special lexical relationship between Lepcha and Adi. They include the following: *blood, blow, bow (weapon), carry on back, crab, cry (weep), dig, dream, drink, eat, eye, fire, fish, five, flat, four, give, horn, male of animals, leech, otter, ripe, road, seed, shade, smell v., snake, son-in-law, star, stone, three, tongue, two, and wood*.

Furthermore, the cognacy of the following items seems doubtful:

- 'sew' Lepcha *hrap*, Adi *om-kap*: The true Tani root for 'sew' is the first element *om-* (< PT **hom*); the second element *-kap*,¹² on which the comparison is based, is a verbal particle signifying 'closure'. Thus, the precise meaning of Adi *om-kap* is 'sew up'. This makes Adi *-kap* semantically less compatible with the Lepcha form.
- 'spirit' Lepcha *a-pil*, Adi *a-bur a-jo* (listed as *a-bum a-jo* in Lorrain 1907:361; a typo?). The Adi form *a-bur a-jo* can indeed mean 'spirit', but the phonology does not match (Like Lepcha, Padam preserves *-l*, but the form in question ends in *-r*).
- 'crumb' Lepcha *p'yol*, Adi *pim-pil*: The Lepcha form, which does not mean 'crumb' at all, is an adverbial which occurs in reduplicated form *p'yol p'yol* (e.g. *p'yol p'yol glo nón* 'to fall into pieces'). The Adi word is a compound composed of the 'grain' root PT **pim* plus an element *pil* (< PT **p juil*) which refers to small rounded objects in general and appears also in such compound words as 'grain', 'coin', 'uvula', 'clitoris', and 'kidney'.
- 'dig up' Lepcha *ból*; *byol*, *byul*; Adi *du-bur*. The Adi compound, which has a more specific meaning of 'dig up (earth) and make it powdery', contains the morpheme *du-*, the real root for 'dig' (< PT **du*); the *-bur* element, semantically incompatible with the Lepcha forms, is a (resultative) verbal particle meaning 'so as to be powdery'.
- 'beetle' Lepcha *büt*. Adi *je-put*. The Lepcha word is glossed 'insect that eats and causes destruction' in Mainwaring-Grünwedel 1979:258, and seems to be derived from the verb *büt* meaning 'pulverize, decay (of tooth)'. The Adi form, on the other hand, refers to 'scarab, dung beetle' and is transparently composed of *je* 'excrement/ dung' plus *put* 'burrow/bore v.'.
- 'steep' Lepcha *dóp*, Adi *tap-*. The Adi form seems to be a resultative verbal particle which means rather 'down, become horizontal (of something upright, e.g. a tree)'.

- 'stick, adhere' Lepcha *krap*, Adi *gap*. The Adi morpheme, which appears in the compound *geŋ-gap* 'adhere/stick to', actually means 'grasp/hold' and is here used as a resultative verbal particle after *geŋ-*, the true root for 'adhere, stick, heal'.
- 'close (v.i.)' Lepcha *zap*; Adi *a-dap*. The central meaning of the Lepcha root *zap* is 'place compactly'; *zap* seems to take on the meaning 'close together' only in an adverbial phrase *să-zü-să-zap*.

The following pairs seem to involve convincing cognates; however, further comments can be added to them:

- 'divide, distribute' Lepcha *ór*, Adi *or*. The two words involve different (nevertheless related) meanings in the respective languages. The Lepcha form means 'separate (people or things) that which are close together', whereas the Adi form (< PT **hor*) means rather 'distribute'.
- Lepcha *rüm* 'god', Adi *u-rom* 'ghost': Lepcha *rüm* seems to refer more generally to 'benevolent spirits' and is thus semantically closer to the Adi word, which is from PT **rom* 'ghost (ancestral)' (contrast PT **ju* 'evil spirits').
- 'pubic hair' Lepcha *măt*, Adi *a-mut*. Actually, the semantics of the given roots in both languages goes beyond 'pubic hair'. The Adi form goes back to PT **mut*, a general 'hair' root (for both body hair and hair of head). The Lepcha root *măt* also appears in the compound *bon-măt* 'beard (mouth-hair)'. Also to be noted is the shared -*t* final, rarely found in Tibeto-Burman words for 'hair'. The cognacy of these forms to PTB **mul* is dubious, as there is otherwise little evidence for the **-l* > -*t* shift in either language. In fact, PTB **mul* is directly attested in the Lepcha doublet *a-myal* 'body hair, feathers, armor', as well as in the Mising L forms *nam-mur*; *soŋ-mur* < **nap-mul*; **çok-mul* 'beard' (PT **çok* 'chin/jaw').
- 'taboo, omen' Lepcha *nyo*, Adi *ño*. The Padam Adi form is a verb which means 'be tabooed or quarantined for religious reasons'; the Lepcha form is glossed as 'be ominous, have a bad effect'. The really remarkable fact, not mentioned by Bodman, is that both of these forms show the same variant form with -*t* (suffix?): Lepcha *nyot*; Padam-Mising L *ñot*!

What is surprising about Bodman's comparative list is that many cases of plausible lexical comparability between Lepcha and Padam Adi (Eastern Tani) coincide with the east-west lexical split among Tani languages, and the forms more common in Western Tani do not resemble the Lepcha forms at all. Consider the following examples:

- 'breeze' Lepcha *fár*, Adi *a-sar*. This is an Eastern Tani word; cf. Western Tani: **rji* (< PTB **g-ləy*).
- 'swell' Lepcha *bróm*; Adi *pom* (< PTB *(s)-*bwam*). This form appears to occur in Padam only; other Tani < PT **bruŋ* (< PTB **blin-plin* 'full').

- 'fear' Lepcha *ro(-m)*, Adi *le-ro*. Milang *Ta-re-ma*; Padam-Mising L *le-ro*; an *le-lo* (an = 'heart'); other Tani < PT **pV-so* - *bV-so*.
- 'sky, heaven' Lepcha *tă-lyañ*, Adi *ta-leŋ* ~ *ta-jeŋ*. This is mainly an Eastern Tani form (see section 3.2.2).
- 'return, (give) back' Lepcha *lót*, Adi - *lat*. This form, another verbal particle, is used only in Eastern Tani; contrast Western Tani -*kur*.
- 'girdle' Lepcha *a-rek*, Adi *mag-rek*. This form is found in Padam only. We can also contribute a few more items to the list of Lepcha-Tani comparabilia:
- Lepcha *pán* 'be forgetful, absent-minded', PT **mit-pan* 'forget' (PT **mit-* = 'extinguished').¹³
- Lepcha *pán* 'break off v.i.' vs. Lepcha *fán* (< **ph-?*) 'break off v.t.'; Padam-Mising L *ben~bet* 'break off v.i.'; Padam-Mising L *pen-pet* 'break off v.t.'. This is one of the rare instances where Tani preserves the familiar Tibeto-Burman transitivity-based voicing alternation (cf. Xiandao Achang *bio* '(of thread) be broken v.i.' vs. *phio* 'break (thread), v.t.'; Taraon *bruun*⁵³ '(of ropes) be broken' vs. *phruun*⁵³ 'break (ropes)' (Sun et al. 1980:205).¹⁴
- 'nest' Lepcha *a-šap*; PT **sup*.
- 'revolve in mind; reason' Lepcha *myón*; PT **muŋ* 'think'.
- 'take' Lepcha *lón*; PT **laŋ*.
- 'bowels' Lepcha *tă-kli*; PT **kri*. Matisoff 1978a:214–5 suggests that these forms may originate from PTB **kləy* 'excrement'. The root also occurs in compound words for 'belly' and 'navel' in Tani, but not in Lepcha.
- Lepcha *mlo* 'world, universe'; PT **mroŋ* 'world/land/earth'.

We have shown that although Bodman's original list of Lepcha-Adi comparisons needs revision, the rather remarkable lexical tie between these languages cannot be overlooked. In addition to a few new items added to the list (further search will doubtlessly uncover more), we have also made the discovery that despite the geographical location of the present Lepcha-speakers to the west of the Tani language area, it is in Eastern Tani (particularly Padam Adi), that the more striking similarities are found. Does this mean that Lepcha and Tani are close kin on the Tibeto-Burman genealogical tree? We will defer judgement until this issue is further explored below.

2.2. rGyarong

We now turn to rGyarong, another language supposedly showing special affinity to Tani according to Nagano 1984. One of the most noteworthy claims in this work is that rGyarong in its deepest lexical stratum is more intimately related to AMD (i.e. Abor-Miri-Dafla) than to either Tibetaŋ (the traditional view) or Qiangic (a view espoused by leading Qiangic specialists of China; see for instance Sun 1982 and Huang 1991).¹⁵ In order to demonstrate this new linguistic alignment, Nagano presents a comparative list of about a hundred core vocabulary items (mostly verbs) with which to establish sound correspondences between the GC

(i.e. lCog-rtse) dialect of rGyarong and AMD. The AMD data is taken from Yano B unless otherwise stated (actually, forms are often cited from the distinct Tagen B variety instead), interspersed with Abor-Miri forms (hereafter AM) taken from Lorrain 1907. To one's puzzlement, Ao Naga and Mikir forms are included under the AMD heading, though these languages had never been considered to belong to the AMD group. What is also peculiar is Nagano's decision to use modern lCog-rtse forms instead of reconstructed Proto-rGyarong roots in his rGyarong-AMD comparison.¹⁶ Rather than presenting a thorough review of the rGyarong-Tani lexical connections suggested by Nagano, the following sample set of comparisons supposedly representing rGyarong-Tani *dental-stop* correspondences (Nagano 1984:142), will be examined; the highlighted segments in the GC and AMD forms therein being the proposed equations:

- 'dig': GC tuw, Yano B du-to. The Yano B form goes back to PT *du which like the rGyarong form, is a reflex of the prevalent PTB etymon *du-tu (STC #258). This is a common TB root attested in various TB branches and cannot be regarded as evidence of a special lexical link between rGyarong and Tani.
- 'hit': GC tom, AM dem. This rGyarong form is derived from PTB *dup-dip, *tup-tip 'beat' (STC #399). The nasal-final form tom 'I shall hit' is clearly secondary (< top + ŋ). cf. the infinitive form ka-top from the same lCog-rtse dialect cited in Anonymous 1991 (hereafter ZMYYC): 1081 and Qu 1984: 79. Padam-Mising L dem has a more specific meaning 'beat (with a stick, etc.)' and is clearly a separate root. The true cognate with rGyarong -top 'hit' is rather PT *tup 'strike', both being reflexes of PTB *tup.
- 'big': GC kte; Yano kte. No such Yano B form exists. The real Yano B root should be just -tè, a bound morpheme occurring with classifiers. Again both forms may reflect a common PTB root *tay (STC #298).
- 'see': GC mto; Yano kâ-to. This is a misinterpretation. Instead of the real root kâ (< PT *kaŋ) 'look/see' which is mistaken for a 'prefix' (op. cit.:90), the Yano morpheme selected for comparison, -to, is an imperative marker which appears on all citation-form verbs in Bor's Yano-Tagen wordlist.
- 'straight': GC sto; AM adong. This Padam L form actually means 'long' (cf. PTB *duŋ, STC p.19) rather than 'line', contra op. cit.:143.
- 'cold': GC sytak (i.e. [stak]); Yano po-teng-pa. This Yano B form actually means 'dry (of clothes)' (cf. Bengni S puu-tuŋ). We fail to see any possible connection, formal or semantic, between these GC and Yano words.
- 'go': GC thal; AM to. The AM form is unknown. As far as we know, no Tani language has this form with the given meaning.
- 'put': GC tha; AM tâk. The rGyarong form exemplifies a well-attested Tibeto-Burman root PTB *ta (STC #19), with an open rhyme. The AM form, occurring in a compound tak-po 'put (cover) on', is semantically compatible but the fact that tak- is a checked syllable makes the connection dubious.
- 'ask (enquire)': GC tho; Yano B tao-to. Tani languages, like some other Sino-Tibetan languages, use the same verb root for both 'listen/hear' and 'ask

- (i.e. cause to listen)'.¹⁷ We believe that the variant forms Padam-Mising L tau, Yano B and Tagen B tao for the meaning 'ask' may reflect the same PT root *tas. The association of the Tani and rGyarong forms, though superficially plausible, is weakened by the fact that rGyarong (lCog-rtse dialect) uses a completely separate root for the meaning 'hear/listen' ka-rəŋ-na (ZMYYC).
 • 'give': GC dit; Yano ji. The palatal initial in the Yano B form is secondary. The real PT root should be *bi (< PTB *bəy, STC #427), which is cognate rather with the regular GC word for 'to give' wə (< Proto-rGyarong *bi?, cf. Dashiugou rGyarong bi-).¹⁸
 • 'arrive': GC Ndu; AM tok. The AM form tok actually means 'descend'. The real Padam-Mising word for 'arrive' should be puŋ (< PT *puŋ, attested mainly in Eastern Tani languages, cf. also Bokar OY puŋ).
 • 'meet': GC rdo; Yano che-tok. The 'Yano' form is actually a word from Mikir, which is not even a Tani language. The real Yano B word for 'meet' is gueter-ra (i.e. go + ? + verbal particle of reciprocity, cf. Bokar gu-tum-ra:).

In short, eight ('hit', 'see', 'straight', 'cold', 'go', 'give', 'arrive', 'meet'), or two thirds, of the twelve proposed cognate sets above are probably misidentified, while the sets for 'dig', 'give', and 'big', although legitimate for setting up rGyarong-Tani consonantal correspondences, are of limited value for proving the proposed lexical affiliation since common TB roots are involved. Therefore, although Nagano starts with the sensible idea of probing deep lexical relations by focusing on a selected area of core vocabulary, namely basic verbs,¹⁹ the forms randomly picked from modern Tani languages, unfortunately, failed to provide him with a reliable basis for comparison.

Nagano's alignment of rGyarong with Tani may strike those who have examined the structures of both language groups as quite surprising, for the two groups diverge from each other in almost every linguistic subcomponent. Phonologically, rGyarong has a much richer system of segmental contrasts. In contradistinction to the situation in Tani, aspiration is phonemic in rGyarong stops/affricates. Moreover, while Tani has only one (palatal) series of affricates, rGyarong distinguishes as many as four (dental, retroflexed, alveopalatal, and palatal). Although consonant clusters are not unknown in Tani (especially Western Tani), they cannot begin to compare in number and variety with the impressive array of consonant clusters found in rGyarong. The differences in morphosyntax are even more fundamental. Although both languages utilize considerable affixation, rGyarong is predominantly *prefixing* while the Tani languages are mainly *suffixing*. In terms of function, rGyarong boasts highly complex derivational as well as inflectional morphology, in contrast to Tani where morphological processes are much less abundant. Furthermore, rGyarong is an ergative language²⁰ with many head-marking features (Nichols 1986), including a system of verb agreement which indexes not only person and number, but also direction (or person hierarchy, i.e. direct vs. inverse) of the discourse participants. All Tani languages, on the other hand, display the so-called 'anti-ergative' pattern (LaPolla 1992), where agents

are generally not case-marked while a single 'object' case marks a number of semantic roles, including patients, recipients, beneficiaries, and even temporals.²³ The two languages also employ distinct verb-phrase structures. In Tani, various complements and modifiers of the verb, along with such other categories as tense, aspect, polarity, and modality, are generally expressed by a large set of postposed 'verbal particles'. This characteristic is so important in Tani that it may not be too wide of the mark to say that the study of the Tani verb phrase is largely the analysis of such verb particles. No comparable phenomenon obtains in rGyarong, where many of these categories are conveyed by verbal prefixes instead. This, in short, leaves the lexicon as the only likely linguistic sub-system in which possible close genetic ties between rGyarong and Tani can be sought.

In order to assess the assertion that rGyarong is closely affiliated with Tani in its deepest lexical core, I have examined a total of 383 basic adjectives (stative verbs) and verbs listed in ZMYYC, yielding the following comparable pairs between rGyarong (i.e. Proto-rGyarong as proposed in Nagano 1984)²² and Proto-Tani in these two basic semantic areas (states and actions):

Table 1 Comparison of selected basic verbs in Tani and rGyarong

Gloss	Proto-Tani	rGyarong
'big'	*tə-*ta	*k-Te
'come'	*puŋ ('arrive')	*bo
'cover'	*kap	*p-Kap
'die'	*si	*syi
'dig'	*du	*duw
'dream'	*maŋ	*r-mo
'eat'	*do	*za
'exist' ²³	*duŋ	ndo
'heavy'	*ji	*li
'itch' ²⁴	*fak	*ya
'lean (against)'	*grəŋ	kə-nə-ŋgrə
'melt, thaw'	*jit	kə-ndzi
'ripe, cooked' ²⁵	*min	*ə-min
'run'	*duk-juŋ	kə-rjəŋ ²⁶
'smell'	*nam	*nam ²⁷
'stand'	*rop ²⁸	*ro ²⁹
'sweet'	*ti:	*ci
'thin (of people)'	(Bokar OY gi)	kə-nə-khi
'vomit'	*b(r)as	kə-mə-mphət
'wait'	*jaŋ	ka-na-jo
'weep'	*krap	ka-ma-kru

That is, out of the 383 sets compared, only twenty-one pairs (or about 5%) show enough resemblance to be considered *probable* cognates. Furthermore, rather than revealing uniquely shared rGyarong-Tani lexical relations, the majority of such pairs (e.g. 'die', 'dig', 'eat', 'heavy', 'smell', 'ripe', 'stand', 'vomit', 'weep') involve roots widely attested in the Tibeto-Burman family.

To assess further the lexical relations between rGyarong and Tani *vis-à-vis* other Tibeto-Burman members, I conducted another sample comparison including Tibetan and Burmese, two other languages showing considerable affinity to rGyarong. The items utilized for this pilot study are narrowed down to the seventeen verbs from the Swadesh 100 core vocabulary list.³⁰

Table 2 Comparison of selected Tani verb roots with rGyarong, Tibetan, and Burmese

GLOSS	Proto-Tani	rGyarong	Written Tibetan	Written Burmese
'drink'	*tuŋ	*mot	'thung	sok
'eat'	*do	*za	za	sâ
'bite'	*g(j)am	kha mtʃik khə-lət	so brgyab	kuik
'see'	*kaŋ-paŋ	mtə	mthong	mrang
'hear' ³¹	*tas-paŋ	*r~na	thos; rna-ba 'ear'	krâ; na
'know' ³²	*ken	*syə	shes; mkhyen [hon.]	si'
'sleep' ³³	*jup	*r-ma	nyal; gnyid	ip
'die'	*si	*syi	si; 'chi	se
'kill'	*man	*sat	gsod	phyak; sat
'swim'	*bjaŋ	*pjaw	rkyal; 'phyo	po
'fly v.'	*bjar	*N-pjam	'phur	pyaŋ
'walk'	*in	ptʃə	'gro	hlyok; hrok
'come' ³⁴	*(h)an	*bo	yong~'ong; 'byon	la; waŋ
'sit'	*duŋ	ni ³⁵	'dug; snye(s) 'recline, lean against' (?)	thuiŋ
'stand'	*dak; *rop	*ro	lang; 'greng	rap
'give'	*bi	dit; wə	sprad; sbyin	pê
'say'	*lu; *ban	ka-rjo	bshad; smra	prô

Table 2 yields the following pairwise cognate numbers: Tani-rGyarong 4/17, Tani-Tibetan 8/17, Tani-Burmese 7/17; rGyarong-Tibetan 8/17–10/17,³⁶ and rGyarong-Burmese 8/17.³⁷ It is important to note that rGyarong has twice as many cognates with Tibetan and Burmese than with Tani, and that the rGyarong-Tani pair shows the *lowest* cognate count among all five pairs. To the extent that cognate counts derived from such a limited sample can be suggestive of the *relative* strength of lexical ties among the languages compared, rGyarong appears to be much more closely related in basic vocabulary to Tibetan and Burmese³⁸ than to Tani. This fact, coupled with the striking structural differences between the two Tibeto-Burman groups, makes their intimate genetic connection highly improbable.

2.3. Dhimalish

Dhimal (in Darjeeling and the Jalpaiguri area of Sikkim and eastern Terai, Nepal), and the closely related Ṭoṭo (south of the borderline between Bhutan and West Bengal) are two small languages comprising the obscure Dhimalish section of

Shafer 1955:102. The only documentation on these languages available to us are Hodgson 1847 for Dhimal and Sanyal 1955 for ȚoȚo. The association of this group to Tani is vaguely suggested by Benedict in STC, and we quote: "Abor-Miri and Dafla make up the nucleus of the 'North-Assam' group of Konow and the Linguistic Survey of India. Aka (or Hruso) has the most points of contact with this nucleus, and *Dhimal (in Sikkim) the fewest*" (p. 6). From this statement alone it is not certain whether Benedict refers to a contact or genetic relationship. However, on the previous page (p. 7), he does consider Dhimal to be a likely addition to the Abor-Miri-Dafla (Mirish) nucleus.

A revisit to the Dhimalish sources, however, has failed to reveal too many significant points of agreement between Tani and Dhimalish. The following test comparisons, utilizing again the seventeen basic verbs from the Swadesh 100-word list, should be suggestive of the genetic distance between the two groups:²⁹

Table 3 Comparison of selected basic verbs in Tani and Dhimalish

GLOSS	Proto-Tani	Dhimal	ȚoȚo
'drink'	*tuŋ	ám	āng
'eat'	*do	chá	cā
'bite'	*g(j)am	---	cā-pir
'see'	*kaŋ-paŋ	dó; khang	kāng; ting
'hear'	*tas-paŋ	hén	hing
'know'	*ken	gé	gē
'sleep'	*jup	jim	jing-ju; jin
'die'	*si	sí	shi-pu
'kill'	*man	shé	pāi
'swim'	*bjaŋ	nó-i	---
'fly v.' ³⁰	*bjar	bhír	bi -u
'walk'	*in	hi-gil	tē
'come'	*(f)iaŋ	lé	lē
'sit'	*duŋ	yong	i-ung
'stand'	*dak; *rop	jáp	lō-o; lo -
'give'	*bi	pí	pí
'say'	*lu; *ban	dóp	jāng

The Dhimal and ȚoȚo words for 'eat', 'die', 'give' and 'look' are undoubtedly cognate with the PT roots. The cognacy of the ȚoȚo form for 'stand', and the Dhimalish words for 'fly v.' and 'sit' (italicized in the table) to the corresponding PT roots are uncertain. Everything considered, we get at most 7 cognates out of 16 pairs compared, which is equivalent to the cognate figure between Tani and Burmese obtained by using the same test sample. The set for 'look/see' (PT *kaŋ, Dhimal khang, ȚoȚo kāng) may appear to be a striking parallel between the two groups; yet, this root occurs also in many *Kiranti* languages, e.g. Bahing koŋ 'look, watch': Chamling, Bantawa khaŋ 'look, see'. Newari khaŋ- 'see'. On the other hand, Dhimalish seems to exhibit many more lexical links with Kuki-Chin, and especially with Tibetan, as pointed out in Shafer 1950:207.

At any rate, the similarities between Tani and Dhimalish are far from numerous,³¹ otherwise they would not have escaped the attention of both Konow and Shafer. It seems, therefore, futile to search for deep connections between Tani and Dhimalish, although more extensive inquiry (and with much better Dhimalish data) needs to be done to properly assess the 'points of contact' between the two groups which prompted Benedict to place them in the same subgroup.

2.4. Hrusish

The obscure Hrusish branch is named after its best-known representative, the Hruso (paleo-exonym Aka) language of West Kameng, Arunachal Pradesh. The remarkable linguistic divergence of Hruso from neighboring Tibeto-Burman languages was already noted by Konow (1909b). Shafer 1947 compares various early wordlists of 'Aka' and concludes that actually two very distinct 'dialects' of Hruso can be established: Dialect A and Dialect B. To Dialect B, or *Hruso proper*, belong most early records of 'Aka'. Shafer's Dialect A of Aka is actually a distinct language, represented only by Campbell's (1874) variety of 'Aka'. We have recently made the discovery that Shafer's 'Dialect A of Hruso' is none other than the language of the *Dhammai* (exonym: *Miji*) tribe distributed to the north of the Hruso country. For this important language, which is more conservative than Hruso proper, we are now able to consult Simon 1979, a far more ample source than any available to Shafer. There is at least one more Hrusish language in Arunachal Pradesh, namely the language of the *Bangru* tribe of North-western Upper Subansiri district.³² Publications on the Bangru language are completely non-existent. Our limited fieldwork data on Bangru³³ reveals such striking resemblances between Bangru and Dhammai that they may even turn out to be dialects of the same language.

The lexical similarities between the Hrusish languages and Tani (especially Western Tani) are indeed notable and deserve to be carefully investigated.

2.5. Languages of the 'Mishmi' tribes

Comparable to Hrusish languages of the west, the languages spoken by the Mishmi tribes are the most important linguistic neighbors of Tani in the east. Unlike Tani or Hrusish, however, these languages by no means form a coherent unit. Instead, they fall into two distinct groups, Taraon-Idu (Shafer's *Digarish*) and Kaman (Shafer's *Midzuish*). Sun et al. 1980: 299-315, to date the only comparative study of the Mishmi languages based on accurate first-hand data, turns up remarkable differences. Of the 2477 native lexical items compared, 2089 or 84.4% are non-cognate, including quite a few core Tibeto-Burman items such as 'man (homo)', 'snake', 'sit', 'hand', 'hair', 'weep', 'know', 'buy', 'tooth', 'hear', 'rain', and 'house'. The morpho-syntactic disparity between the two groups is also considerable. For example, Kaman has pronominal verb agreement while Taraon and Idu do not: moreover, Kaman sometimes uses prefixes (e.g. taŋ³⁵ 'nominalizer',

mai⁵⁵/mu³¹ 'negator', ai⁵³ 'prohibitive marker') while Taraon and Idu, like Tani, always use suffixes (e.g. Taraon - ja³¹ 'nominalizer', - jim⁵⁵ 'negator', - ja⁵³ 'prohibitive marker'). These languages, therefore, do not appear to be as intimately related to each other, contrary to what Thurgood 1985 suggests. Thus, before we even begin to compare them further with Tani (or with any other language), we must bear in mind that the alleged unity of the Mishmi languages is still an unproven hypothesis.

As stated above, most Tibeto-Burman classifications place the Mishmi languages close to the Tani nucleus. Indeed, even a cursory glance at the data shows considerable parallels between Tani and these languages (in particular Taraon and Idu), calling for more detailed exploration.

In summary, after inspecting a few alleged close relatives of Tani, we have decided to screen out rGyarong and Dhimal as improbable candidates. In the following section, the remaining languages will be further assessed by means of a more detailed lexical test.

3. Tani's next of kin: a further search

3.1. Methodological perspectives

Much doubt has been cast on the validity of lexicostatistics in historical linguistic research; Matisoff 1978a:1.14 outlines the hazards of a particular application of this method, namely the use of cognate counts in setting up subgroups among related languages.⁴⁴ However, the following statement seems quite reasonable (Thomas and Headley 1970:411, emphasis ours):

Lexicostatistics is not a precision tool. Careful phonological reconstruction is necessary if one desires detailed information about language relationships. *Lexicostatistics is useful, however, for giving a quick general picture of language groupings.*

In fact, the authors of the preceding quote claimed that the results of their lexicostatistic analysis of Mon-Khmer internal relations can be 'presented with the confidence that the general outlines will still be standing after detailed phonological reconstruction has been done' (Thomas and Headley op. cit.). The ensuing two decades have seen considerable advances in comparative Mon-Khmer and phonological reconstruction of many Mon-Khmer subgroups (Monic, Waic, Aslian, etc.); indeed, the Thomas-Headley subgrouping framework turns out to have stood the test of time, judging by a recent authoritative statement on Mon-Khmer subclassification (Diffloth and Zide 1991).⁴⁵ Consider also the small-scale lexicostatistic study presented in Benedict 1976, where Tibetan, Burmese, Kachin, Garo, Lushai, and Pwo Karen were compared with Mandarin Chinese in terms of the Swadesh 100-word list, with the primary purpose of testing the solidarity

of the Tibeto-Burman grouping vis-à-vis Chinese and Karen. It is on the basis of this analysis that Benedict proposes the 'basic cleavage line' in Tibeto-Burman between the Baric-Jingpo supergroup and practically all other TB groups. This hypothesis has been corroborated by a follow-up comparative study of Northern Naga (i.e. Benedict's Konyak group), leading the author to conclude with confidence that the validity of the Bodo-Garo-Northern Naga-Jingpo supergroup 'should no longer be in doubt' (French 1983:727). A key factor behind these two useful (in the sense of producing new and viable ideas, inspiring further research, and contributing eventually to growing consensus) applications of lexicostatistics is that the investigators are all specialists in the respective language families, which means that the risk of cognate misidentification was minimized, and sensible adjustments in the Swadesh wordlist could be made to fit the particular target language families. Therefore, lexicostatistical methods, if applied with due caution and without extravagant claims,⁴⁶ may still serve as *subsidiary* tools for detecting probable subgrouping patterns.

Although the non-existence of genetic relations between languages is unverifiable in principle, it is possible to ascertain whether any two given members in a group of related languages share a *particularly close* relationship. However, this cannot be done simply by listing random similarities, because alternative explanations (borrowing, areal features, shared substratum, common retention, etc.) are not ruled out. Even if regular sound correspondences in the basic vocabulary are demonstrated, the special relation between the two languages remains unproven, for such equations can, by definition, be established between any two genetically related languages anyway.⁴⁷ What we need to do, obviously, is to single out *uniquely shared linguistic features* which set these languages apart from all others, enough to 'tip the scale against any contrary hypothesis which sets the relationship merely at the level of the underlying proto-language' (Bauman 1976:26). However, sorting out the linguistic relations between Tani and its possible next of kin in Tibeto-Burman poses a currently insurmountable problem; the study of the Tibeto-Burman languages of Arunachal Pradesh and the immediate environs, among which the close relatives of Tani are most likely to be found, is still in its infancy, and we simply do not have the amount of linguistic information required for such detailed comparative analysis. What we can do at the present stage is no more than offer a *process of elimination*, which narrows down potentially promising avenues for further research.

3.2. A lexicostatistic test

A lexicostatistic study has been conducted (see the comparative table in the Appendix below) with the aim of assessing degrees of lexical affinities between Tani and four possible close relatives surviving the preliminary screening of the previous section: Taraon, Kaman,⁴⁸ Lepcha,⁴⁹ and Dhammai.⁵⁰ Written Tibetan, Written Burmese, and Garo, which have never been suspected of being

intimately related to Tani, are added as control languages. The modest objective of this pilot study is to eliminate dubious candidates according to a simple and, we trust, reasonable principle: if a language is a true next of kin of Tani, then there should at the very least be a *significantly higher* percentage of shared core vocabulary between this language and Tani than that between Tani and languages from separate major divisions of Tibeto-Burman, in this case Written Tibetan (Bodish), Written Burmese (Lolo-Burmese), and Garo (Bodo-Garo). The test wordlist used in this study is based on the CALMSEA 200-word list⁵ proposed in Matisoff 1978a: 284–96. For some CALMSEA glosses, however, no PT reconstructions are presently obtainable; either because extreme internal variation precludes positing uniform PT roots (e.g. ‘descend’, ‘bamboo’, ‘sweat’), or Indic loanwords are suspected (e.g. ‘needle’, ‘silver’), or simply because the gloss is not realized by distinct roots in most Tani languages (e.g. ‘twenty’). In such cases (thirty-seven in total), CALMSEA glosses are replaced with the following items, mostly body part terms and common verbs: ‘angry’, ‘borrow’, ‘call/cry’, ‘come’, ‘dead body’, ‘count’, ‘do’, ‘door’, ‘dry/wither’, ‘duck’, ‘exit’, ‘face’, ‘fireplace’, ‘float’, ‘flow’, ‘fly (insect)’, ‘gall’, ‘grandfather’, ‘grandmother’, ‘hungry’, ‘kidney’, ‘knee’, ‘language’, ‘melt’, ‘nest’, ‘placenta’, ‘rot’, ‘seed’, ‘shoulder’, ‘soul’, ‘suck’, ‘swallow (v.)’, ‘take’, ‘think’, ‘tired’, ‘tiger’, and ‘wet’. The resultant compromise list, we hope, contains few glosses that are arguably not part of the lexical core of the target languages. Our cognacy judgement⁵² with respect to WT, WB, and Lepcha should be relatively uncontroversial, for much is known about the historical phonology of these languages, and expert guidance is readily available from STC and various other works on Sino-Tibetan reconstruction. The same can be said of Garo, the best known of all Baric languages, not only because it was one of the principal languages on which the PTB reconstructions in STC were based, but also thanks to a series of treatises on Baric contributed by Robbins Burling (especially 1959, 1983, and 1992).⁵³ Cognate detection involving the other target languages is much more difficult. In the case of Taraon and Kaman, although we are lucky to have access to mutually complementary Indian and Chinese sources (the accuracy of the latter is quite impeccable), the phonological developments of these languages, especially the less conservative Taraon language, are not yet well-known.⁵⁴ Dhammai is even more troublesome in terms of data reliability and cognate identification. Furthermore, thirty-three test items are missing from the word list in Simon 1979 (the only available substantial source on this important language), although it is not clear to what extent the incomplete data may cause the *averaged* cognate percentage to be skewed.

3.3. Results and discussion

Each of the languages compared contains a number of forms of indeterminate cognacy with the corresponding PT roots. Such is the case, for instance, between

PT *kuw ‘dove/pigeon’ and WT ’ang-gu ‘pigeon’.⁵⁵ A more conservative estimate may discount these doubtful cases, a bolder count would include them all, while the cognate figure closest to reality may lie somewhere in between. These two different figures, then, represent the *range* of possible cognation between the given language and PT. Since, for example, WT shows two doubtful cognates (the other being PT *be, WT spre ‘monkey’) and fifty-six sound ones, the cognate ratio between PT and WT ranges from 56/200 (or 28%, conservative estimate) to 58/200 (or 29%, less conservative estimate). The much larger percentage of such uncertainty for Taraon is a function of the phonological deviancy of the language. The output of this study can be summarized in the following table:

Table 4 Cognate figures between Tani and seven Tibeto-Burman languages

	WT	Garo	WB	Taraon	Kaman	Dhammai	Lepcha
available forms	200	194	200	200	200	167	200
cognate count	56–58	46–50	54–57	59–76	43–50	43–49	47–49
percentages	28–29	24–26	27–28.5	29.5–38	21.5–25	26–29	23.5–24.5
average percentage	28.5	25	28	33.75	23.3	27.5	24

The output obtained from this pilot study has a number of noteworthy implications for the phylogenetic position of Tani.

First, this lexicostatistic test has indeed accomplished its unpretentious mission of *separating off problematic candidates* from among the possible close relatives of Tani. The cognate figures of PT with both Lepcha and Kaman are *lower* than those between PT and the three control languages. In particular, the PT-Kaman cognate percentage is the lowest of all figures obtained. If core vocabulary is reliable at all as an index of relative genetic distance, then these facts should constitute strong disproof of any intimate relation between either of these languages and Tani. As for the lexical similarities between Lepcha and Tani observed by Bodman 1988, alternative explanations must be sought, such as shared substratum,⁵⁶ or early contact (in southern Tibet?) of the two language groups before their migration to the present locations. In short, our findings support Bodman’s conclusion that although Adi may be among the TB languages which are more similar in lexicon to Lepcha,⁵⁷ the relationship between them is not very close (Bodman op. cit.:4).

Compared with Lepcha and Kaman, Dhammai shares a higher cognate percentage with PT, yet, this figure is still lower than that between PT and WT. Although we are not well-informed enough about the linguistic structures of the Hrusish languages to say anything definite about the relation between

Hrusish and Tani, we do suspect that the similarities between them⁵⁸ may be the consequence of prolonged contact rather than exclusively shared linguistic history, and that the true roots of Hrusish may lie somewhere else in Tibeto-Burman.

Cognate percentages between PT and the three control languages run between 24 and 29. The close clustering of these figures indicates that Tani indeed forms a distinct division in Tibeto-Burman, coordinate with other major nuclei in the family. The lower Tani-Garo figure suggests that Tani is more akin to WB (Lolo-Burmese) and WT (Bodic) than to Garo (Baric), corroborating Benedict's inclusion of Miri on the non-Baric side of the 'basic cleavage line' in Tibeto-Burman. This also shows that subgrouping Tani under Baric (e.g. DeLancey 1991a) may not be advisable. Furthermore, Tani shares almost as many cognates with WB as with WT, a finding which is all the more remarkable since Lolo-Burmese and Tani (or for that matter any Arunachal Tibeto-Burman groups except perhaps Singpo) have never been known to be in close areal contact. This calls into question Egerod's decision to classify Tani directly under Tibetic (Egerod 1974).

The language that stands out with the highest cognate figure with Tani is Taraon (29.5%–37.5%, average 33.75%). This figure, interestingly, is higher even than that of the Taraon-Kaman pair (30%–33%, average 31.5%).⁵⁹ The large gap between the more conservative (29.5%) vs. the bolder cognate estimate (37.5%), nevertheless, reflects our current inability to distinguish between true cognates, allofams, and chance look-alikes. However, as stated, we have made an attempt to uncover the elusive sound laws of this language, and our cognacy judgments, we contend, are at worst educated guesses rather than wild speculations.

4. More thoughts on the Tani-Digarish relationship

A major outcome of this study is that Digarish (Taraon and Idu) may be the Tibeto-Burman group most similar in lexicon to Tani. However, before jumping to the conclusion that Digarish and Tani are collateral relatives in Tibeto-Burman, we should be reminded that the fundamental research necessary to prove such an intimate connection has not been done, and alternative accounts of such lexical parallels cannot yet be ruled out. Since to adequately pursue this line of research would involve at least another dissertation-length study, we will have to content ourselves with suggesting a few interesting Tani-Taraon parallels in other linguistic subcomponents.

With regard to shared *peculiar* phonological innovations, the development of PTB *dz- to PT *d- is paralleled by Taraon th-; e.g. PTB *dza, PT *do, Taraon tha⁵³ 'eat'. Elsewhere in Tibeto-Burman, PTB *dz- usually either survives as

affricates (e.g. Mawo Qiang dzə; WB câ 'eat') or spirantized (e.g. WT za; Jingpo ja⁵⁵ 'eat').⁶⁰ Another possible example of common phonological aberrancy is the irregular *palatalized* initial in the following roots: PT *rjam, Taraon liuŋ⁵³-gie³¹ < PTB *la(:)m 'fathom'; PT *rjum 'dusk/evening', Taraon liuŋ⁵³ 'night', < PTB *rum ~ *rim 'dusk' (STC #401); PT *fa-; Taraon xa³¹nia⁵³pum⁵⁵ < PTB *s-na 'nose' (STC #101).

The remarkable lexical affinities between Taraon and Tani are not restricted to content words. Some *grammatical* morphemes may also be cognate:

- 'comparative auxiliary' PT *jan; Taraon joŋ⁵³ 61
- 'imperative suffix' PT *to; Taraon tio⁵³
- 'prohibitive suffix' PT *jo; Taraon ja⁵³ 62
- 'experiential aspect marker' PT *ku; Taraon koŋ³⁵

The morphosyntactic structures of the two groups have not been carefully explored, but some *prima facie* resemblances exist here as well. In both groups, pronominal verb agreement is lacking. Further, the predominant verbal morphology in both cases is suffixal. Digarish languages, like languages of the Tani group, also seem to exemplify the 'anti-ergative' case-marking type, where patient and recipient nominals receive *identical* marking while agents are seldom case-marked.

On the other hand, the differences between the two groups seem to overshadow their similarities. Apart from their overall lexical differences, many of the characteristic Tani lexical items and phonological developments (such as PTB *-a > PT *-o, and the shift of all PTB diphthongs into PT monophthongs) find no counterparts in Digarish. The overwhelming majority of grammatical morphemes in Tani and Digarish are also unrelated. From the few available syntactic descriptions, the two groups also show important disparities in morphosyntax. For instance, Digarish languages use separate existential verbs depending on the *animacy* of the subject, a distinction unattested in any known Tani languages. As stated, although some Tani languages do contrast different existential verbs, the relevant distinctions are usually *polarity* (e.g. Bengni S do: 'exist/have'; ka:-ma: 'not exist/have') or even *posture* (Apatani A da 'exist (referent standing)'; du 'exist (referent sitting)'; do 'exist (referent lying)') of the predicated nominal (Abraham 1985:70–3). Moreover, relative clauses in Taraon are formed simply by gapping, without first nominalizing the embedded clause as is usually the case in the Tani languages.⁶³

In summary, even though Digarish and Tani bear some striking resemblances, their equally impressive differences make it doubtful that this relationship could be an intimate one, even if future studies could establish an exclusively shared genetic relationship between them.

Appendix⁶⁴ Comparison of 200-word core-vocabulary in eight Tibeto-Burman languages

Gloss	PT	WT	Garó	WB	Taraon	Kaman	Dhammai	Lepcha
alive	*tur	gson-pa	taŋ-	hraŋ	a ³¹ suŋ ⁵⁵	ku ³¹ jaŋ ⁵⁵	stun	zu
angry ⁶⁵	*haŋ-flak	'khiro; 'tshig; sdang	ka-o-naŋ	cit-chüi; mjak	khum ⁵⁵ mioŋ ⁵⁵	su ⁵⁵ dtu ⁵⁵	nen	a-mlem nok non; li; sak lyak
ant	*ruk ~ *rup	grog-ma	---	pu-rwak	ku ³¹ ju ⁵⁵	lat ⁵⁵ teu ³¹ kri ⁵⁵	---	tük-fyil
arrow	*puk	mida'	#bra	hmrä	<i>pu⁵⁵</i>	a ³¹ wa ⁵⁵	nu	tsón
ascend	*čay	'dzeg	ga-kat	tak	tu ³¹ dzi ⁵⁵ noŋ ⁵⁵	lu ⁵⁵ xai ⁵⁵	khum?	<i>hrón</i>
awake (v.i.)	*fiut ²	gnyid sad	#mik-rak	nüi	dzu ⁵⁵ a ⁵⁵	kčap ⁵⁵	phru-u	ši
banana	*ko-pek	skyes-sdong	te-rik	hjak	pha ³¹ dzi ⁵⁵	xa ³¹ biu ⁵⁵	ru-čay; ru-laŋ	-blo
bear (n.) ⁶⁶	*tum	dom	map-il	wak wam	ta ³¹ m ⁵⁵	kum ⁵⁵	šu-čay	sä-na
belly	*kri	grod khog	ok	puik	ku ³¹ ju ⁵⁵	däk ⁵⁵	rug	(tä-) bāk
bird	*taŋ	bya	do?	hjak	piä ⁵⁵	wa ⁵⁵	bu-zu(?)	to
bite	*gam~ *gjam	so brgyab	cik	kuik	tič ⁵⁵	sāk ⁵⁵	tha?; šu- wrai?	tsuk; ran
bitter ⁶⁷	*ka:-	kha	ka	kha'	khlai ⁵⁵	kha ⁵⁵	mu-khu?	kri
blood	*vi:	khrag	a?n-ci	swó	xa ³¹ juai ⁵⁵	a ³¹ ju ⁵⁵	žai	vi (nyo)
blow	*nut	'bud	spo-	hmuf	muŋ ⁵⁵	thut ⁵⁵	---	mät~ müt
bone	*loŋ	rus-pa; gdung	greŋ	a' rüi	ju ³¹ boŋ ⁵⁵	a' rak ⁵⁵	(mu-) ljaŋ	a-hrát
borrow ⁶⁸	*nar	g yar; skyi; bryan	ra?-cak	hjä; khyč	xa ³¹ ŋa ⁵⁵	a ³¹ ŋat ⁵⁵ ; lu ⁵⁵	---	*nyo-lyä
bow (n.)	*ri:	gzhu	*cri	lč	a ³¹ lai ⁵⁵	gaŋ ⁵⁵	gu-ri?	sä-li
brain	*pYk-ni	kiad-pa	ta-niŋ	ü-hnok	pu ³¹ ŋum ⁵⁵	mum ⁵⁵	---	a-t'yak yóŋ; a-yāŋ
branch	*fiak	yal-ga; gel-pa	*cek-si	a' -khak	xa ³¹ ra ⁵⁵	ŋkhai ⁵⁵	ou-du-tsan	a-kón; a-nün
breath	*sak, ŋa	ngam	raŋ-sit	(ə-) sak	ču ⁵⁵	nšhon ⁵⁵	du-thu	sóm
burn (v.i.)	*gu	'bar	kam	tok	xau ⁵⁵	gri ⁵⁵ ; xu ³¹ nai ⁵⁵	phraŋ; rau?	mi dyak
buy	*ro	nyo	bre	way	<i>brai⁵⁵</i>	eip ⁵⁵	phum?	par
call/cry	*grok	grags-grogs	o-kam; crik	hac; khaw	xa ³¹ tiuŋ ⁵⁵ a ³¹ ; #grä:	buu ⁵⁵	then	lik
child/ son	*fo	bu	bi?-sa	sä	a ⁵⁵ (ju ⁵⁵ a ⁵⁵)	sa ⁵⁵ wai ⁵⁵	zu	a-küp
cloud	*muk~ *mek	sprin-pa	a-ram	tim	a ³¹ m ⁵⁵	ka ⁵⁵ mäi ⁵⁵	mei-miw	-byon
come	*vaŋ	'ong	re?-ba?	la	ʒa ³¹ naŋ ⁵⁵	xu ⁵⁵	dai	di; lat; t'i
count	*kru	brong	#chan	raŋ'	ta ³¹ tsai ⁵⁵	xa ³¹ tsut ⁵⁵	---	frón
day ⁶⁹	*lo	nyi-ma	sal	rak	ku ³¹ n ⁵⁵	ŋin ⁵⁵	wu	nyí
dead body	*si-may	ro	mang gi-si	o-lón	thuŋ ⁵⁵	dzal ⁵⁵	---	(a-) fūn
die	*si	'chi	si	se	č ⁵⁵	si ⁵⁵	č ⁵⁵	mak
dig	*du'; *ko ²	rko ² ; 'bru	co? ¹	tü'	ua ⁵⁵	gua ⁵⁵ ; ɣon ⁵⁵	thau? ¹	du'; byol
do	*ŋw'; mo ²	byed; spyod	dak	lup; mu ²	ba ⁵⁵	pa ³¹ m ⁵⁵	ru'	mat; zuk; fat
dog ⁷⁰	*ti:	khyi	a-čhak	khwé	kuau ⁵⁵	ku ³¹	ša-zi?	kä-ju (pä-li)
door	*ŋap	sgo	do-ga	Tam-khá	ka ³¹ luŋ ⁵⁵	mphu ⁵⁵	ban-phi?	(tün-) vyeŋ
dove	*ku	'ang-gu	do-kru	khui	piä ⁵⁵ krau ⁵⁵	tei ⁵⁵ khiu ⁵⁵	bjun-lo	fä-wu-fö
dream	*jup-maŋ	rmi-lam; rmang	ju-maŋ	ip-mak	ja ⁵⁵ mo ⁵⁵	ka ³¹ muŋ ⁵⁵	---	món
drink	*tuŋ	'hung	riŋ	thok	tim ⁵⁵	tauŋ ⁵⁵	thuŋ	t'än~ t'ón; báp
dry/wither	*san	skam-po	ra?n	khrok	<i>evy⁵⁵</i>	sal ⁵⁵	mu-khjaŋ	a-šiu; a-són; a-jeŋ
duck	*iap	ngur-ba	do-gep	bhai	ma ³¹ tei ⁵⁵ pia ⁵⁵	kra ³¹ pit ⁵⁵	ŋu-so	*dam-byó
ear ⁷¹	*ha-ruŋ	rna	na-cir	nä-rwak	ku ⁵⁵ naŋ ⁵⁵	in ⁵⁵	žo?	a-nyor
eat	*do	za	ca?	čä	tha ⁵⁵	tea ⁵⁵ ; ea ⁵⁵	tsu?	zo; wam-mat; t'a
egg	*pu	sgo-nga	bit-ci; do?-ci	u'	ma ³¹ na ⁵⁵	kra ³¹ si ⁵⁵	du-rin?	a-ti
eight	*pri-ŋi	brgyad	ceŋ	hrac	lium ⁵⁵	i ⁵⁵ liou ⁵⁵	su-gi?	kä-kü
excrement	*e:	skyag-pa	ki	khyč	kiai ⁵⁵	tu ³¹ khui ⁵⁵	---	'ayit; it; e

(continued)

Appendix (continued)

Gloss	PT	WT	Garo	WB	Taron	Kaman	Dhammai	Lepcha
exit	*len	thon; 'byung	---	thwak	lep ³⁵ bɔ ³¹	xə ⁵⁵ tha ³⁵	---	záń
extinguished ⁷²	*mit	shi	#ki-mit	sc	xə ³¹ muun ⁵⁵	mán ⁵⁵ , #muut	---	mí mak
eye	*mik	mg	mik-ron	myak-sc	bu ³¹ lum ⁵⁵	min ⁵⁵ ; #mik	mi?	a-mik
face	*milk-mo:	gdong; ngo;	mik-kanj	myak-hna	ɲaj ⁵⁵	a ³¹ gul ⁵⁵	gu-mja?	a-mlem
		bzhin						
fall (from a height)	*ho	lthung	gak-on	kya'	blai ⁵⁵ dau ⁵⁵ ;	mit ⁵⁵ tɪ ⁵⁵ sau ⁵⁵ ;	duw-juun	hiat; gfo; klo
far	*do	rgyang-	ce?l	wé	#ga-ja:	#bral	muw-rum?	[rũ]
		ring-po				klam ⁵⁵		
fat/stout	*juw	rgyags- pa;	mil	wá	diaw ⁵⁵	kuw ³¹ dian ⁵⁵	za?-muw-do	[ʃu]; a- t'or ~
		tsho- ba						a- t'yor; [ɲur]
fat (n.)	*fu	snun-pa	mit-dim	chi	ta ³¹ so ⁵⁵	ta ³¹ sɪ ⁵⁵	thai-bau	a-šut < [ʃu]
fear	*bY-so:	'jigs; zhed;	ken-	krok; khrok	.rai ⁵⁵	ta ³¹ si ⁵⁵ tuw ⁵⁵	(muw-) rin	[ro]
	*-pY-30:	dnang						
finger ⁷³	*ke(tj)	mdzub-mo	jak-si	lak-hñti	a ³¹ buw ⁵⁵	duw ⁵⁵	gi-tso?	ká-jóm
fire	*mə	me	wa?l	mi	na ³¹ muun ⁵⁵	máɪ ⁵⁵	mai?	mí
fireplace	*ram	(me-) thab	cu-dap	mi-láp-phui	sai ⁵⁵ groŋ ⁵⁵	sai ⁵⁵ groŋ ⁵⁵	lo?	[kom]; [dap; dop]
	~*rom				groŋ ⁵⁵			
fish	*ɲo	nya	na?-tok	ɲá	ta ³¹ ɲaj ⁵⁵	a ³¹ ɲa ⁵⁵	thui; t̄eni	no
five	*ɲo	lŋa	boŋ-a	ɲá	ma ³¹ ɲa ³⁵	kuw ³¹ len ⁵⁵	bu-ɲu	tá-ɲo
flee	*kat'	'bros	#ke-ne kat	thwak- pré; hroŋ	lwi ⁵⁵	lum ⁵⁵	---	tor; tet
float	*bjatj	lding	#git-cho;	po	.rau ⁵⁵ a ³¹	ja ³¹	---	plyuń
			bal-bo					
flow	*burt	'bab; rgyug	#jo-kang;	ci	#blum	#tai	---	dáń; nóń; yũ
			so-ol-ang					
flower	*puw - puw	me-tog	bi-bal	ə-pwaw'	ta ³¹ puw ⁵⁵	phaŋ ⁵⁵	ou-bov	rip; [bor]
fly (n.)	*jiŋ	sbrang-bu	tam-pi	yan; phrut	ta ³¹ lai ³⁵	giul ⁵⁵	buw-luŋ?	səm-bryon
fly (v.)	*bjar	'phur	bil	Pyanñ	jim ³⁵	phiuŋ ⁵⁵	guw-nui	lám
foot	*lə	rkang-pa	ja?	khre	groŋ ⁵⁵	plə ⁵⁵	lai	(a-) t'oi;
								(a-) dyan
forget	*mit-pan	rjed	gu-al	me'	wə ⁵⁵ ma ³¹ sa ⁵⁵	a ³¹ mləŋ ⁵⁵	thlaŋ	hryu; plón; myón;
								pán
four	*pri	bzhi	bri	lé	ka ³¹ prai ⁵⁵	kuw ³¹ brum ⁵⁵	b(w)-li	fá-li
fowl	*rok	bya-de	#do-o-rang	krak	tiu ⁵⁵	ka ³¹ kra ⁵⁵	du-zu	hik (-kúp)
frog	*tuok	sbal-ba	#beng-bek	phá	pa ³¹ .rai ³⁵	kaŋ ⁵⁵ khuk ⁵⁵	---	tá-lik
fruit	*ze; *pu	shing- tog;	bi-te	ə-si	ta ³¹ ɛi ⁵⁵	sit ⁵⁵	ou-then	[pót]
		'bras-bu						
full	*brwŋ	gang	gap	praŋ'	bluŋ ⁵⁵	phlāŋ ⁵⁵	---	a-blyǎń
gall	*pw	mkhris-pa	ka?-kit	sán-khre	thw ³¹ , mwn ⁵⁵	mán ⁵⁵	---	*k' t-bo
give	*bi	ster; skur;	o?n	pé	ɲj ³⁵	pl ⁵⁵	bi(?)	bvi (n); bi; bo
		sbyin						
grandfather	*to	mes-po	a-cu	ə-phui; ə-bhüi	a ³¹ tia ⁵⁵	kuŋ ⁵⁵	a-luw	t' t-kuń
grandmother	*jo	phyi-mo;	am-bi	phwá; ə-bhwá	a ³¹ ja ⁵⁵	má ³¹ ɲu ³⁵	a-žui	nyi-kun; nyo-kun
		ma-mo						
guts ⁷⁴	*kri	rgyu-ma	bi-bik	u	kuw ³¹ lai ⁵⁵	xa ³¹ lāj ⁵⁵	luŋ	tá-kli
hair (on body) ⁷⁵	*muw	spu	kin-i; kim-ir	ə-mwé	ɲ ⁵⁵	buul ³⁵	phiw	myal
hand/arm; ⁷⁶	*lak	lag-pa	jak	lak	a ³¹ tió ⁵⁵	rau ⁵⁵	gi	ká; ká
have/exist ⁷⁷	*duw	yod; dug	doŋ	hri	i ⁵⁵ ; aŋ ⁵⁵	tau ⁵⁵ ; kam ³⁵	du	nyi
head	*dumi; *tuk	mgo	sko	khōŋ	kuw ⁵⁵	kuu ⁵⁵	u	a-t' yak; tok
heart (organ)	*puk	snying	Ka?-toŋ	lma -lóm	xa ³¹ po ⁵⁵ tiai ⁵⁵	lum ⁵⁵	luŋ	a-łit
heavy	*fiit	lijid-po	#jrim	lé	wau ⁵⁵ a ⁵⁵	ka ³¹ lāj ⁵⁵	muw-łi?	li; bryón-ná;
								glám-lá

(continued)

Appendix (continued)

Gloss	PT	WT	Garo	WB	Taraon	Kaman	Dhammai	Lepcha
horn	*rəŋ *kwi	rwa ria	groŋ #gu-re	khyui mrəŋ	rau ⁵⁵ ma ³¹ roŋ ⁵⁵	kiəŋ ⁵⁵ pa ³¹ xoŋ ⁵⁵	šu-žunŋ šu-gro	(a-) rōh on; *ta
horse	*luŋ	brɣya	rit-ca	ra	ma ³¹ luŋ ⁵⁵	wa ³¹ je ⁵³ mu ⁵³	bu-loŋ ten-či	k'a fā-no kriŋ
hundred	*kY-noŋ	ltogs; bkren	#ok-kri a-ni	cha; mwat; pat	na ³¹ tioŋ ⁵³	di ³¹ iŋ ⁵³	ten-či	kriŋ
hungry	*ŋo	uga	aŋ	ŋa	xəp ⁵⁵	ki ⁵³	ŋəŋ	ká-do; go
l	*ki	na(d)	sa; jom	na	ŋəŋ ⁵⁵	nat ⁵⁵	no	đak
ill	*pum	'bu	joʔŋ	pó	ta ³¹ pum ⁵⁵	klauŋ ⁵⁵	bi-lunʔ	[bik]
insect	*rjok	leags	sil	sarŋ	sai ⁵³	tur ³¹ gji ⁵³	sen	pün-jen; län-sá
iron								a-lüt
itch ⁷⁸	*lak	'bun; za	#mi-to; ka-kiŋ	yá	ma ³¹ eo ⁵³	phuŋ ⁵³	gu-dzu	jak
kidney	*krat-pjuŋ	mخال-ma	#gi-la; ko-rong-te	kjok-kap	ei ⁵⁵	nitchi ⁵³	mu-gu-baur	*k' a-dok
kill	*man	gsod	soʔt	phyak; sat	se ⁵⁵	sat ⁵⁵	wai	sót
knee	*lə-bunŋ	pus-mo	jaʔ-sku	dú	pha ³¹ buŋ ⁵⁵	pa ³¹ pau ⁵⁵	lai gu-phiw	túk-pát
knife	*rjok	gri	a-te	thá	ta ³¹ ra ⁵⁵	sof ⁵⁵ ; kra ⁵⁵	vai-	ban
know ⁷⁹	*ken	shes; mkhyen [hon.]	u-i	si'	ka ³¹ sa ⁵³	ŋit ⁵⁵	ŋi; zu-u	t'yak; yá
language	*gom	skad	ku-sik	bha-sa	khi ⁵⁵ tur ³¹ ku ⁵⁵	khi ⁵⁵ lai ⁵⁵	lau	a-rih
laugh ⁸⁰	*ŋil	dgod	ka-dŋiŋ	rái	ma ³¹ ra ⁵⁵	kiŋ ⁵⁵	tho	t'yán; sak prok; zól
leaf	*nə	lo-ma	bi-jak	a' -rwak	naŋ ⁵⁵	lap ⁵⁵	ou-leʔ	lóp; a-nyóm
leech (land)	*pat ¹	pad-pa	ru-at	hmyo'	ka ³¹ pe ⁵³	tur ³¹ wat ⁵³	du-veʔ	-fót; šüm-pat
left-side	*lak-ke	g-yon	jak-a-si	lak-wái	tur ³¹ kim ⁵⁵	ku ³¹ wai ⁵³	su-vjoʔ	vim
lick	*rjak	ldag	#cha-srak	yak	lio ⁵³	lo ⁵³	---	*lok
liquor	*ponj	chang	cu	se	ju ⁵³	si ⁵³	čaj	či
listen/hear ⁸¹	*tas; *tas-	nyan; thos	kin-a-	ná-thoŋ; krá	tha ³¹ ruŋ ⁵⁵ ; tha ³¹ tuŋ ⁵⁵	ta ⁵⁵ giat ⁵⁵ ; tat ⁵⁵	ruí	t'yo
liver	*zin	mchin-pa	bi-ka	a' -sāñ	ru ⁵⁵ xa ³¹ tiai ⁵³	blai ³¹ blai ³³	mu-thum	a-byet
look/see ⁸²	*kaŋ; *kaŋ- paŋ	lta; mthong;	ni-; nik-	krañ'; mraŋ	ru ⁵⁵ xa ³¹ tiai ⁵³ ru ⁵⁵ xa ³¹ tiai ⁵³	thoŋ ⁵⁵ ; ruŋ ⁵⁵	wəŋ	ňak; ši; hyón
louse (head)	*fuk	rig	tik	sán	tsau ⁵³	sáŋ ⁵³	fiʔ	*šak
man (homo)	*mi	shig	man-de	lu	me ⁵⁵	tsoŋ ⁵⁵	fiʔ	má-ró
marrow ⁸³	*loŋ-kin	rkang; ngo- bo-nyid	#gheu	khraŋ-chi	ru ⁵³ su ⁵³	xitŋ ⁵⁵	---	yán; sün-dák
meat	*dum	sha	beʔn	(ə)-sá	ta ³¹ bu ⁵³	ein ⁵³	šu-čuŋ	a-mán
melt	*jit ~ *jet	bzhu	#jron-gat	pyo	ji ⁵³	rau ⁵⁵ ; kra ⁵⁵	---	*jü; *šü
monkey ⁸⁴	*be:	spra;	---	myok	ta ³¹ min ⁵³	a ³¹ muŋ ⁵³	šu-bo	sá-hŋ
moon	*po-lo	spre ('u)	ja-jon	la'	xa ⁵⁵ lo ⁵⁵	lai ⁵³	lu	lă-vo
mortar	*par	zla-ba	caʔ-am	Chum	loŋ ⁵⁵	gloŋ ⁵⁵	du-lo	[tsam]
mountain	*di	sgog-ling	aʔ-bri	toŋ	thu ³¹ ja ⁵⁵	a ³¹ dzau ⁵⁵	phuŋ-	hlo; rók
mouth ⁸⁵	*nap-paŋ; gam	kha	ku-sik	pá-cap; mé-cc'	thu ³¹ rwm ⁵³ buŋ ⁵⁵	ŋiehuu ⁵³	go	a-boŋ
nail	*zin	sen-mo	#jak-skil	lak-sāñ	a ³¹ tuŋ ⁵⁵	rau ⁵³ dziŋ ⁵⁵	gi-thum	pün-či
name	*mun	ming	bi-muŋ	na-mañ	a ³¹ muŋ ⁵⁵	a ³¹ máŋ ⁵⁵	minʔ	a-bryan
neck ⁸⁶	*luŋ	ske; ngul;	git-dok	lañ-páŋ	pa ³¹ ŋj ⁵⁵	xuŋ ⁵⁵	---	[tok]; [lin]
nest	*sup	tshang	bi-tip	suik	a ³¹ ju ⁵⁵ #pia-sag	mphaú ⁵⁵ ; #ó-wa sap	---	-šap

(continued)

Appendix (continued)

Gloss	PT	WT	Caro	WB	Taraon	Kaman	Dhammai	Lepcha
night	*jo	nam; ntshan-mo	wal	na'; nan'	kur ³¹ ja ⁵⁵	ɲal ⁵³	jaŋ-gou	[nap]
nine	*kjo-naj	dɛu	sik-u	kūi	ka ³¹ nuŋ ⁵⁵	nan ⁵⁵ mu ⁵³	sut-thuun	ká-kyót
nose	*ña-pum; ña-buŋ	sna	giŋ-tiŋ	hna-khóŋ	xa ³¹ nia ⁵⁵	min ⁵⁵ nioŋ ⁵⁵	fi	[nóm]
old (of things)	*ku~*kju	mying-pa	git-cam	hóŋ	me ⁵³	tauŋ ⁵⁵	muu-swo	[no]; sük-kyor
one	*kon	geig	sa	tac	khun ⁵⁵	ku ³¹ mu ⁵³	uŋ	kat
otter	*ram	sram	mat- fram	phyam	xa ³¹ ruŋ ⁵⁵	ram ⁵⁵	---	sä-ryóm
palm	*lak-pro	lag-mthil; thai-mo	jak-pa	wá	#a-tjo-ka:	#rok ta-pa	gi dtu-luŋ	[lyók]
penis	*mrak	mje	---	li	#mlō	#jaŋ	---	t'ik
pig	*ɲok	phag-pa	wak	wak	bu ³¹ liai ⁵⁵	li ⁵⁵	žo	món
placenta ⁸⁷	*mam	sha-ma	---	a-khyáŋ	a ⁵⁵ po ⁵⁵	sa ⁵⁵ sap ⁵⁵	---	kap-p-ün; 'ayen- çót (-tyól)
poison ⁸⁸	*druk; *mro	dug	*bi-si	a-chip	thai ⁵³	tau ⁵³	nuu-phaj	[bo]; a-nyin
put	*pa	'jog	don-	thá	xa ³¹ go ⁵⁵	kuai ⁵⁵	rou	ɲa; t'o
rain (n.)	*pV-donj; *mV-donj	char	mik-ka	mü rwa	ka ³¹ ra ⁵⁵	a ³¹ wan ⁵⁵	phirjo	so
rat	*ko-buŋ	byi-ba; tsi-tsi	*me-se	krwak	ka ³¹ tei ⁵⁵	si ⁵⁵ nu ⁵³	---	kä-lök
red	*luŋ	dmar-po	git-cak	ni	ei ⁵³	kap ³¹ sal ⁵⁵	mu-tsu	a-hyr
rice ⁸⁹	*pim	'bras-chan	mi	tha'-máj	ta ³¹ peŋ ⁵⁵	eaŋ ⁵³	an tsa-vo	nüm-or-mo
right-side	*lak-bruk	gyas	jak-ra	ya	tu ³¹ tea ⁵⁵	ku ³¹ jau ⁵³	ši-dzin	gyóm
ripe	*min	smin-pa	min-	chim; hman'	#ha-muŋ	#shu-mm	min	[kru]; a-mán
river	*si; *buŋ	chu	ci-bi-ma	mrac	tu ³¹ luu ⁵⁵	tu ³¹ lo ⁵⁵	vu-do	uñ kyon
road	*lam	lam	ra-ma	lám	a ³¹ lim ⁵⁵	bloŋ ⁵⁵ ; lam ⁵⁵	lem-baj; hlen	lóm
root	*puur; *m(ɔ)ɲa	risa-ba; risad	ja?-dir	a-mrac	xa ³¹ rai ⁵⁵	ka ³¹	-khrin	a-fja; a-bán; [sán]
rot	*jaŋ	rut	so-	pup	tshuŋ ⁵⁵ xo ³¹	iam ⁵³	---	byót
round	*lum	rii-ba;	ta?m-bi?	wüŋ; lúm	geŋ ⁵⁵ weŋ ⁵⁵	ga ⁵⁵ wan ⁵⁵ na ⁵⁵	muu-dtu-riu	a-blam; a-püm
(globular)		Zlum-po	ka-ri	chá	da ⁵⁵	tu ³¹ min ⁵⁵	lu	vóm
salp ⁹⁰	*fok	tshwa	ku-ak	yak;	pla ⁵⁵	glua ⁵⁵	gaw-fj?	hut
scratch		'phrug; phur	bit-eri	phrok-phyok	wa ⁵⁵	xa ³¹ luu ⁵⁵	thei-žo	li
seed	*li	sa-bon; son	pal	myüi-cc'	ta ³¹ plai ⁵⁵	xa ³¹ luu ⁵⁵	tsuŋ-ru	ül
sell	*pruk	'-tshong	sin-i	rōŋ	kha ³¹ ji ⁵⁵	xa ³¹	nja?	ká-kyák
seven	*kY-nuut	bdu	#sik; ko	khu-nac	weŋ ⁵³	nun ⁵³	bu-ča	hrap
sew	*nom	'ishem	mat	khyup	#ru	taŋ ⁵⁵ kuap ⁵⁵	---	lät-let
sharp-edged	*rat	rno	go	thak	aa ⁵⁵	top ⁵⁵ kap ⁵⁵	buw	óp
shoot ⁹¹	*ap	'phen	pak-re	pac	o ⁵³ ja ³¹	a ³¹ pho ⁵⁵	pa-stuŋ	tük-puñ
shoulder	*gor-	dpung-pa;	#kat-ca	pu'-khúr	khui ⁵⁵ liuŋ ⁵⁵	#i-juk-rai	dai	uk; a-mlem glo
shy	*han-niŋ	phrag-pa		hrak	pa ⁵⁵			
		skyrng;			#ha-la-g-a:			
		khrel;						
		'dzem						
sit	*duŋ	sdod; dug	a-son	thuŋ	di ⁵⁵	läp ⁵⁵	juŋ?	nan
six	*krə(ŋ)	drug	dok	khrok	ta ³¹ xio ⁵³	ku ³¹ tam ⁵³	re?	tá-rák
skin	*pin	(l) pags-pa;	bi-gir	a-re	ko ⁵⁵	uŋ ⁵⁵	phri?	a-kap; a-t'ur; a-pi
sleep ⁹¹	*jup	ko-ba	tu-si	ip	n ⁵³	ŋui ⁵⁵	ji	mik krap
		nyal; gnyid-						
		log						
smell (v.)	*nam	snom	---	nám; hru	nuuŋ ⁵⁵	ntshij ⁵⁵	ñen	n(y)óm
smoke (n.)	*muu-ku	du(d)-ba	wa?l-ku	mi-khüi	ma ³¹ khuu ⁵³	ta ³¹ khui ⁵³	thuŋ	mi-kan
snake	*bu	sbrul	cip-bu	mrwe	ta ³¹ bu ⁵⁵	.ruŋj ⁵⁵	nuu-buw	bü

(continued)

Appendix (continued)

Gloss	PT	WT	Garó	WB	Taraon	Kaman	Dhammai	Lepcha
soft	*mjak	mnyen; jam; snyi	#nom; ri-nok	pyo'	ñim ⁵⁵ m ⁵⁵	ka ⁵⁵ mij ⁵⁵	mu-bur-lja?	nüm
son-in-law	*mak-bo	mag-pa	#ca-wa-ri	sá-mak	ku ³¹ mu ⁵³	tša ⁵³	---	myók
soul/spirit	*ja-lo	nyam(s)	#jap-gi sil-ci; gi-sik	lip-pra	ta ³¹ gra ³⁵	ka ³¹ mau ³⁵	---	a-pil; [jüm]; hyit
sour	*kruŋ	skyr	me-seŋ	khyañ	xuu ⁵⁵	säl ⁵⁵	mu-čun	a-čör; rök-nón
spittle ⁶³	*kjul	mchil-ma	ku-ci	tam-twé	khu ³¹ lai ³⁵	džäl ³⁵	že?	dyuk
stand	*dak; *rop	'gřeng	ca-deŋ	rap	deŋ ³⁵	loŋ ⁵³	gjuŋ	dñ
star	*kar	skar-ma	a-ski	kray	kha ³¹ dtum ⁵⁵	ku ³¹ grun ³⁵	do-tsuŋ	sá-hór
steal	*pjog	rku	ca-u	khu	a ³¹ kau ⁵³	ka ¹⁵ xuu ⁵³	tsu-khu?	tük-mo mat
stone	*luŋ	rdo	ro?ŋ-te	khyok < klok	phlaŋ ⁴⁵	läuŋ ³⁵	gu-luŋ	lán
suck	*bruj	'jibs	op	cut; cut'	du ⁵⁵	jip ⁵⁵ ; #ihet	bu-nu	yup; háp
sun	*ñi	nyi-ma	sal	ne	ruŋ ⁵³	min ⁵⁵	jo; zu?	sá-tsük
swallow (v.)	*met	(khyur) mid	#mi-nok	myui	blai ⁵³	biap ⁵³	bu-lui	yop; hyul;
sweet ⁶⁴	*ti	mgar-dngar	ci	khyui	cau ⁵⁵	tim ⁵⁵	mu-jaŋ	am-mat
swidden	*ruk	zhing-ka	a-ba	lay	kha ³¹ liau ⁵⁵	a ³¹ kuŋ ⁵⁵	vaw	a-klyam
tall	*mjo-*me	mga-ma	ki?-me	a'-mri	lu ³¹ mun ⁵⁵	a ³¹ mäi ⁵⁵	---	nyót
take	*laŋ	'khyer;	ra?;-rim	yu	ei ³⁵	ta ³¹ lai ⁵⁵	lu?	[š]i
ten	*rjuŋ; *čam	bu	ci-kiŋ	a-chai	xä ³¹ luŋ ⁵⁵	kiap ⁵⁵ mu ⁵³	lin	kä-ti
thick (book)	*bruj	mthug	rit-ca?	thu	bi ³¹ teoŋ ⁵⁵	bi ³¹ teoŋ ⁵⁵	---	tän
thin (book)	*BY-čor	srab	ba?	pá	ba ⁵⁵ a ⁵⁵	ku ³¹ pa ³⁵	mu-dru-thaŋ	sap
think	*muŋ	sem(s); bsam	can-ci	thaŋ; cáñ	ta ³¹ we ⁵⁵	ntshum ⁵⁵	mjen; šu	(sak) cín
thou	*no	khyed;	na?ŋ	naŋ	noŋ ³⁵	no ⁵³	ñi	hö; a-do
		nyid [hon]						
three	*hum	gsum	gi-tam	süh	ka ³¹ suŋ ⁵⁵	ku ³¹ sām ⁵³	gu-thuŋ	sum
tiger	*mro	stag	mat-ca	kyá	bo ⁵⁵ da ⁵⁵ ;	bo ⁵⁵ da ⁵⁵	tuŋ-graŋ	sá-t'án
tired	*pe	dub; thang	ne?ŋ-	mó	giai ⁵³ ; #he-ra:	cai ⁵⁵ ; *min-jin	khaŋ-ru	pyäl
tongue	*rjo	le	sre	hlyá	thu ³¹ liu ⁵³ na ³⁵	blai ⁵³	že?-yi	a-li
tooth	*fi:	so	wa-gam	swá	lan ³⁵	s ⁷⁵	thu	a-fo; fo-ki
two	*ñi	gnyis	gin-i	hnac	ka ³¹ n ⁵⁵	ku ³¹ jin ⁵³	gni	nyät; nyi
urine	*sum; *si	gcin; (dri-)	su-bu	chi	ku ³¹ teuŋ ⁵⁵	tu ³¹ cit ⁵⁵	brui?	jit
village	*nam-pom;	chu	soŋ	rwa	ma ³¹ tuŋ ⁵⁵	mu ³¹ täŋ ⁵³	gu-bjaŋ	li brom; li broñ;
vomit	*bat~*bra?	yul-gru;	#ci-sal;	añ	ma ⁵³	pha ⁵⁵	mu	li kyoñ
wash body;	*ñur	gřong	wa-kal	khyui'	ma ³¹ num ⁵⁵	ta ³¹ auu ¹³⁵ lai ⁵³	---	mót; hlun
bathe		skyug	a-u		tsai ⁵³	---	---	mü-tüt; mü-čón
water	*si	'khrud; chu		re				
weave	*čum	rgal	ci	rak	ma ³¹ tet ⁵³	a ³¹ ti ⁵⁵	vu	uñ
wEEP ⁶⁵	*krap	chu	dok	ŋui	ta ³¹ tiu ⁵⁵ tio ⁵³	tho ⁵⁵ fan ⁵⁵ tho ⁵⁵	čun	t'ok
wet	*ju-jaŋ	ngu; shum;	grap	cui; cwat	kh-ro ⁵³	ŋai ⁵⁵	---	hryóp; prám mat
white	*pum~*puŋ	khrap	so-si				mu-gro?	šäl
wind	*rji	rlon-pa	gip-bok	phru			mu-grjaŋ	[du]
wing ⁶⁶	*lap	dkar-po	bal-wa	le	lio ⁵³	ku ³¹ mphlan ⁵⁵	jo	sün-müt; so-müt
wood	*suŋ	rdzi; rlung;	graj	a'-toŋ	xa ³¹ muŋ ⁵⁵	bauŋ ³⁵	gu-či	pä-ku; pün-ku
year ⁶⁷	*ñij	lhag-pa	bol	sac	ta ³¹ loŋ ⁵⁵	ŋkhol ³⁵	u	
		gshog-pa;	#bil-si	hnac	ma ³¹ suŋ ⁵³	säŋ ⁵⁵ khliŋ ⁵⁵	du-ren	šañ; kuñ
		'dab-ma			ku ³¹ nuŋ ⁵⁵	lau ⁵⁵		nam (tum)

Notes

- * Earlier versions of this paper, condensed and revised from Chapter V of my UC Berkeley dissertation (Sun 1993), were presented at the 26th International Conference on Sino-Tibetan Languages and Linguistics, Osaka, September 13–17, 1993, and at an institutional colloquium of the Institute of History and Philology, Academia Sinica on November 22 of the same year. Thanks are due to many scholars for providing helpful discussions and constructive comments, especially Randy J. LaPolla, Yoshio Nishi, James A. Matisoff, Paul K. Benedict, Sun Hongkai, Søren Egerod, Paul Renkul Li, Boyd Michailovsky, and Dibbon Wu.
- 1 A preliminary phonological reconstruction of Proto-Tani is proposed in Chapter II of Sun 1993, from which the reconstructed PT roots cited herein are taken. The Proto-Tibeto-Burman (hereafter *PTB*) reconstructions are based mainly on Benedict 1972 (hereafter *STC*).
 - 2 The great lexical differences between Tani and other Tibeto-Burman languages (only 12.5% agreement of basic vocabulary with Tibetan and Burmese according to his calculation) has led Marrison to doubt not only the genetic affiliations of Tani with Tibeto-Burman, but also “the reality of the Tibeto-Burman language family as generally accepted . . . The Tibeto-Burman family is an unsatisfactory construct, and this whole field of investigation should be reopened” (Marrison 1988:216). My own lexical study, however, has turned up much higher cognate figures between Tani and both Tibetan and Burmese (see 5.3. below). Even if Marrison was right about the cognacy rates, his radical view on the status of Tibeto-Burman, we believe, would be hard to accept for most Sino-Tibetanists.
 - 3 For instance, the regular sound correspondence between *PTB* *-əy and *PT* *-i is backed up by as many as eleven cognate sets, all belonging to basic vocabulary (Sun 1993: 4.3.1.2.).
 - 4 As shown by ensuing research, the Mishmi languages do not form a coherent linguistic unit either. Rather, there is a fundamental cleavage between Digaro-Chulikata-Midu (Taraon-Idu) and Miju (Kaman). Thurgood 1985:81 claims that the Mishmi languages belong with Nungish under a supergroup ‘Kaman-Nung’ with ‘fully substantiated lower-level genetic relationships’. We believe that this claim, which remains totally unproven, underestimates the great differences between the two Mishmi groups (for a more conservative view, cf. Sun et al. 1980:299–315).
 - 5 Incidentally, Benedict’s revised view on the special relationship between Jingpo, Bodo-Garo, and Northern Naga seems to be receiving growing endorsement (Burling 1971, 1983; French 1983). The most drastic move in this direction is taken by Weidert 1987: fn.22. where Jingpo is put directly under one of the three branches of Barish: Western Barish (= Bodo-Garo, or Burling’s Garo branch); Eastern Barish-I or Arunachal Barish (= Tangsa, Nocte, Wancho); and East Barish-II (= Konyak, Phom, Chang, Khiamngan, and *Jingpo*). An alternative view groups Jingpo rather with Lolo-Burmese, forming a ‘*Jiburish*’ subgroup on the strength of hundreds of cognates between Jingpo and Lolo-Burmese and some parallel phonological developments (Matisoff 1974). In Matisoff 1991:481, however, Jingpo (Kachinic) and Lolo-Burmese are treated as separate major Tibeto-Burman subgroups.
 - 6 Dal 1989 and Sun 1988 are not considered here because they deal only with the Tibeto-Burman languages of China.
 - 7 Surprisingly, Bradley’s Qiangic also includes such languages as Tujia, Baima, and even Bai. Chinese scholars now tend to regard Baima as a divergent dialect of Tibetan (Zhang Jichuan and Huang Bufan, p.c.)
 - 8 One important reason for the lack of agreement in Tibeto-Burman subgrouping may be the different criteria (often implicit) used in the various subgrouping proposals. Thus,

- Thurgood puts Nung in his ‘Rung’ supergroup apparently on morpho-syntactic evidence only (Thurgood 1985). What is not explained is the considerable amount of shared basic vocabulary between Nung and Lolo-Burmese (*STC*:8; Benedict 1976: fn 14).
- 9 Thurgood claims that ‘Even from the limited LS] sample of data, it is clear that the Chulikata Mishmi [= Midu] . . . must be subgrouped with these Adi languages rather than with the Miju language’ (Thurgood 1986:93). Actually, Midu should be equated with Idu (autonyms: Idu, Midu, Dudu), which Thurgood in the same paper correctly assigns to the Taraon group.
 - 10 Sun Hongkai’s tentative inclusion of Sulung and Bangru under the Nishi-Bangni subgroup of Tani (Sun 1983:267) was done apparently at a time when linguistic data on these languages was not yet available to him. His more recent view is that Sulung and Bokar (other Tani languages are not mentioned) are distinct languages belonging to the ‘Jingpo’ supergroup, which also contains Jingpo, Nungish, and the Mishmi languages (Sun 1988:69).
 - 11 This is not same as the ‘Northern Naga’ (or Konyak) languages of French 1983. Rather, it refers to the group of Naga proper which Weidert terms Naga-II, comprising Ao, Lhota, Sangtam, Yimchunger, and Northern Rengma (Weidert 1981: fn. 3).
 - 12 From *PT* *kap ‘cover’. Cf. rGyarong pkap: Jingpo mā³¹kap³¹: Dulong ta⁵⁵kōp⁵⁵: *Kaman nkhap*⁵³: *WT* ‘kheb-’ gebs ‘cover’.
 - 13 Cf. Damu OY mit-pan to-mit ‘forget’. Prof. Matisoff suggests that the *mit- element may reflect *PTB* *m-yit ‘mind’. This is possible, but the normal *PT* ‘mind/think’ root is *muŋ.
 - 14 Causativity in modern Tani is normally expressed by means of affixation (usually involving the morpheme ‘do/make’ mo:) rather than by stem-modification.
 - 15 Wolfenden 1936:168 also suggested that rGyarong may be a moderately close surviving relative of Xixia (Tangut), which is now generally considered to be another Qiangic language (Sun 1988:67, Matisoff 1991: 482).
 - 16 This is perplexing given the general principle that if two languages bear a true genetic relation, then the further back one traces their histories, the more similar they should be.
 - 17 Cf. the Chinese parallelism: wèn 聞 ‘hear’ vs. wèn 問 ask’.
 - 18 Medial -w- in lCog-rtse rGyarong often comes from earlier (phonetically prenasalized) voiced stops (cf. lCog-rtse ta-wo: Dashuigou rGyarong ta-mbo ‘deaf n.’; cf. Jingpo na³¹phaŋ⁵⁵; Mawo Qiang bu; Queyu rni⁵⁵pa¹³; Muya na³³mba²⁴; Nusu boŋ⁵⁵; WB nâ-pâŋ; Garo beŋ-a; Tangsa ʔbaŋ; < *PTB* *baŋ; lCog-rtse tə-wro: Dashuigou rGyarong tə-ŋgro ‘sinew; tendon’; cf. Mawo Qiang Qə; Xide Nosu gu⁵⁵tse³³; WB a’-krô; Nusu gru⁵⁵: Dulong dur³¹gu⁵³: *WT* rgyus. Dashuigou 大水溝 (previously known as Benzhen 本真). like the better-known lCog-rtse and Suomo varieties, belongs to the Eastern dialect of rGyarong. The Dashuigou data cited herein were collected by the author in two recent field trips to western Sichuan.
 - 19 Cf. Matisoff 1976 in which body-part terminology is chosen as the target semantic area in an exploration of shared contact vocabulary between Sino-Tibetan and Austro-Tai.
 - 20 Patients carry no case-marking in rGyarong. In this regard rGyarong differs from languages of the ‘Qiangic’ group (to which rGyarong has been assigned by some Chinese scholars).
 - 21 For more discussion, see J. T.-S. Sun 1994:4.2.
 - 22 Unfortunately, only a limited number of Proto-rGyarong roots are proposed in Nagano 1984:133–9. Where Proto-rGyarong reconstructions are unavailable, modern (lCog-rtse) forms (unasterisked), are cited from ZMYYC.
 - 23 The *PT* root also means ‘sit/stay/dwell’. rGyarong uses a completely different form ka-fi for sit/dwell’.

- 24 Nagano posits an open-syllable proto-form *ya; however, a ICog-rtse form -jak, with a checked syllable, appears in ZMYYC.
- 25 This PT root means only 'ripe'.
- 26 Cf. WT rgyug.
- 27 Nagano 1984 provides the ICog-rtse form nam-nam. Compare the different form ka-na nsa nsat in ZMYYC.
- 28 The 'stand' meaning of PT *rop is preserved in Bokar OY. Reflexes of this root occur elsewhere mainly as an adverbial verbal particle meaning 'upwards'.
- 29 It is not clear why Nagano chose to reconstruct this root as an open syllable despite the ICog-rtse form ka-rjap (ZMYYC).
- 30 The main roots are italicized: cognates with PT roots are boldfaced.
- 31 The rGyarong root is cognate with WT rna-ba 'ear' and WB nã 'ear', na 'listen.'
- 32 The predominant rGyarong words for this gloss are cognate with WT shes and WB si' < PTB šey (STC #182); cf. ICog-rste ka - fã (ZMYYC). Tsanla ka-nga-syis, Khamto ka-syr. Suomo ka-nã-msyi. Chos-kia ko-syu (Nagano op. cit.:109). Nagano also gives the alternative PG root *gye-s which he links with PTB *m-kyen (and which is thus supposedly cognate with PT *ken), but it is not clear what data support this reconstruction.
- 33 Nagano associates this rGyarong root with WT rmi < PTB *r-mwøy 'sleep'. The equation rGyarong -a <> PTB *-øy, however, seems restricted to this single example.
- 34 WB waj means 'enter'. WT 'byung 'emerge, come, go' is listed in the cognate set for PG *bo in Nagano op. cit.: 84; however, if this rGyarong root came from PTB *byon (STC #179) as Nagano suggests, then the true WT cognate should rather be 'byon 'go, arrive, appear'.
- 35 This rGyarong root is linked with WT snye(s) 'lean against, lie down'; again, the equation between rGyarong -i and WT -e(s) is limited to this pair.
- 36 The following glosses are considered to involve rGyarong-WT cognates: 'eat', 'see', 'hear/ear', 'know', 'dle', 'kill', 'swim', 'come'. The cognacy of the pairs PG *r-ma, WT r-mi 'sleep', and PG *nyi 'sit', WT snye(s) 'lie down' is possible but uncertain. Thus, the number of rGyarong-WT cognates in this sample ranges from eight to ten.
- 37 The following items are judged to involve rGyarong-WB cognates: 'eat', 'fly v.', 'hear', 'know', 'die', 'kill', 'stand', and 'swim'.
- 38 The strong rGyarong-Lolo-Burmese lexical ties, suspected by Benedict (p.c.), is an area awaiting further investigation.
- 39 Data transcription follows the original sources. Probable cognates with the PT roots are boldfaced; suspicious look-alikes are boldfaced and italicized.
- 40 PT *bjar reflects PTB *byer. The Dhimalish forms may come rather from PTB *pur-pir, now considered a separate root (STC fn. 249).
- 41 This is also the impression of Dr. Sueyoshi Toba (p.c. 1993), who has been working on this Tibeto-Burman group in Nepal.
- 42 The Bangru (autonym Levai/lə³¹væ⁵⁵/) tribe consists of about a thousand souls whose villages are distributed in the Lagong area along the Tibetan-Indian border (Anonymous 1989:248). Note the similarity between the name *Levai* and the Miji autonym *Dhammai* (/ðum-mai/). It is possible that the Levai represents a northeastern sub-branch of the Mijis of Eastern Kameng. The name Bangru (/buŋ-ru/) is a Bengni exonym: cf. also the Sulung exonym of Levai: Buzwa (/bu³³zwa⁵³/).
- 43 I recorded about a thousand Bangru words from my Sulung consultant, who has a speaking knowledge of this language, during field work in Tibet in the summer of 1992.
- 44 The two most serious problems pointed out by Professor Matisoff being (a) How can one ensure that one's cognate identification is reliable, when detailed knowledge about the sound laws in the languages compared may be lacking? (b) How can an all-or-none

- (i.e. cognate vs. non-cognate) scoring method reflect the gradient nature of phonological-semantic relationships in the lexical data?
- 45 Both scholars are among the world's leading Austro-Asiaticists. They have demoted Thomas and Headley's 'Malacca' (i.e. Aslian) and Nicobarese from coordinate families of Mon-Khmer to branches within Mon-Khmer, added a few minor new discoveries like Mang and Palyu (Laf), and proposed some possible higher-level divisions (Northern, Eastern, Southern, Vietic), but the basic Mon-Khmer branches remain identical to Thomas and Headley's original proposal: Viet-Muong, Khasi, Palaungic, Monic, Khmuic, Katuic, Bahnaric, Khmer, and Pearic.
- 46 Such as the controversial application of lexicostatistics to dating proto-languages (*glottochronology*).
- 47 Thus, the sound correspondences between such language pairs as rGyarong-AMD (Nagano 1984), Lepcha-Adi, and Lepcha-Nung (Bodman 1988) alone do not constitute sufficient proof that these languages are more closely related.
- 48 The Taraon and Kaman data are cited mostly from Sun et al. 1980 and from ZMYYC. Forms missing from these sources are supplemented from Chakravarty et al. 1963 for Taraon and Boro 1979 for Kaman.
- 49 Lepcha forms are taken from Mainwaring-Grünwedel 1979. Root forms (enclosed in square brackets as in the original source) are cited where available; e.g. the root (kri), rather than the suffixed adjectival form a-krim, is given for the gloss 'bitter'. Loanwords (chiefly from Tibetan) are marked with an asterisk in the dictionary: such forms are avoided herein except in the rare cases where the asterisked forms turn out to be the only ones listed for the given meaning.
- 50 Dhammai forms are based on Simon 1979. The sound system of Dhammai is transcribed as follows (phonetic symbols used in the original are enclosed within parentheses):
1. Vowels: a, e, w, (i), i, o, u
 2. Consonants:
- | | | | | | |
|----|----|-------|---------|--------|---|
| p | t | ts | č (c) | k | ? |
| ph | th | tsh | čh (ch) | kh | |
| b | d | dz | ǰ (j) | g | |
| f | θ | s | š (sh) | h | |
| v | ð | z | ž (zh) | | |
| m | n | | ñ | ŋ (ng) | |
| | l | | | | |
| | ɭ | | | | |
| | r | | | | |
| w | | j (y) | | | |
- Remarks: (1) Dhammai may have contrastive vowel length and phonemic tone; neither gets marked in the main body of this source. (2) The glottal stop is a phonemic syllable coda, represented in the source by -h. (3) Dhammai has a peculiar lateral consonant symbolized by Simon as ll, which he describes as being 'articulated with the tongue rolled'. This is probably the retroflexed lateral ɭ.
- 51 Abbreviated from Culturally Appropriate Lexicostatistical Model for South-East Asia, this list represents Prof. Matisoff's revision of the Swadesh basic vocabulary list to make it culturally more appropriate for Southeast Asian languages.
- 52 Cognate identification in Tibeto-Burman is an extremely risky undertaking. Our general attitude is to be more willing to *err on the conservative side*, for our knowledge of the various languages involved (except perhaps Tibetan) is not sufficient to allow

- bold speculation. In this study, forms are treated as cognate only if they are considered to descend from one and the same *proto-allofam* (i.e. variants of the same proto-word-family, Matisoff 1978a:17). Thus, WB klok~kyok and PT *luŋ 'stone' are not directly cognate even though they may come from related proto-allofams. By the same token, Taraon pia⁵⁵kiu³⁵ and Kaman tɛi⁵⁵khui⁵⁵ (< PTB *(m-)krəw 'dove', STC #118) are not cognate with PT *ku 'dove/pigeon' (< PTB *(m-)kəw 'pigeon' STC #495; note that PT normally kept the PTB *kr- cluster), for they are derived from related but distinct PTB etyma. Of course, such subtle distinctions are not always possible with languages the sound laws of which are not yet well-known.
- 53 The Garo data are taken mainly from Burling 1983. Supplementary forms, marked by #-, are added from Momin: no date. Transcription of Garo is based on the 'combining' (i.e. non-final) form, which is etymologically more basic (Burling 1983:69-70). Garo-Tani cognate determination is greatly facilitated by the etymological tables in Burling 1983, where the PTB etyma of many Garo roots are provided.
- 54 Initial efforts have been made to inspect the sound laws of Taraon, but a full-scale comparative study of Taraon and its close kin Idu has not been attempted.
- 55 WT 'ang-gu' is more common in Central Tibetan. In Khams Tibetan, mug-gu is used instead. The normal Classical Tibetan word is phug-ron. While PT *ku is clearly a reflex of PTB *(m-)kəw 'pigeon' (STC #495), WT 'ang-gu' shows an unexpected voiced initial g- (although WT -u regularly reflects PTB *-əw).
- 56 Consider for example PT *luuk, Lepcha lyák. cf. PTB *lay 'exchange' (STC #283). The PT and Lepcha forms may be related rather to Mon-Khmer, cf. Proto-Wa-Lawa *zloh (Diffloth 1980), Kammu (Yuan dialect) læk 'exchange' (Lindell 1974:200). The PT and Lepcha words for 'excrement' may also be of Mon-Khmer origin (Forrest 1962). The considerable Mon-Khmer contact vocabulary in Tani languages will be explored in a separate paper.
- 57 Unfortunately, the Kuki-Chin-Naga and Kiranti-Tibetan-Kanauri links are not considered in Bodman 1988. Lepcha certainly seems to have as many good lexical comparisons with Mikir and Ao Naga as with Tani, on Bauman 1976's evidence.
- 58 There are two major subgroups within Tani: Western and Eastern (Sun 1993: chapter III). As may be expected, more parallels exist between Hrusish and *Western* Tani. For example, the Western Tani root *nam 'house' (as against Eastern Tani *kjum) is obviously related to Hrusish, cf. Dhammai nen, Bangru ne:⁵⁵, Hruso ñe 'house'.
- 59 The Taraon and Kaman forms for the following items are judged to be cognate: 'bear n.', 'bird', 'blood', 'brain' (?), 'borrow', 'burn' (?), 'child/son', 'cloud', 'day', 'die', 'dog', 'dove' (?), 'dream', 'eat', 'eight', 'extinguished', 'fat/stout', 'fat n.', 'excrement', 'fire', 'fireplace', 'fish', 'float' (?), 'flower' (?), 'four', 'full', 'gall', 'guts', 'head', 'horse', 'kidney', 'kill', 'knife', 'leech', 'lick', 'listen/hear', 'melt', 'moon', 'mortar', 'name', 'neck', 'otter', 'penis' (?), 'pig', 'poison', 'ripe', 'river', 'road', 'round', 'seed', 'sharp-edged', 'smoke n.', 'stone', 'tail', 'thick', 'thin', 'thou', 'three', 'tiger', 'tongue', 'village', 'vomit', 'water', 'weave', 'wet', 'wing', and 'wood'.
- 60 The development to stops is not uniquely shared by Tani and Digarish, however. Matisoff 1978b:11 reports, for instance, that PTB *ts- and *dz- went respectively to th- and t- in Mpi, a southern Loloish language of Thailand. Cf. also the Queyu (Qiangic) word for 'eat' kə³⁵tə⁵³ (ZMYYC).
- 61 For usage, consider the illustrative sentences below:

Bokar OY (Ouyang 1985: 71)

š: lamto a:to-joŋ-da
this road far-more-declarative
'This road is farther.'

Taraon (Sun et al. 1980:219)

tee⁵⁵ xan³⁵-don³¹go³¹ lau⁵⁵dzon⁵⁵ pia⁵⁵-joŋ³⁵
s/he I-than learn good-more
'S/he learns better than I do.'

- 62 There is an interesting look-alike in Tai: Proto-Tai *zjaa^{A1} prohibitive; negative imperative' (F.K. Li 1977:181). [Ed.]
- 63 Observe the example below, taken from Sastry 1984:189 (tone marks omitted):
- hã [hiŋaŋ bo-ya jyinãŋ]REL Ø-dõ kitab haŋ-de
I forest go-impf cousin Ø-obj book give-impf
'I give the book to (my) cousin who goes to the forest.'
- 64 Probable cognates are bolded; uncertain cognates are both boldfaced and italicized, to be taken account of separately in the cognacy calculation.
- 65 Many of the 'angry' forms here are compounds with a first element meaning 'mind'; e.g. PT *haŋ-, WB cit-, and Lepeha sak- (which looks deceptively like the main PT 'angry' root *fak).
- 66 For Taraon ta³¹ŋm⁵⁵ cf. the more transparent form ta:hom in Chakravarty 1963.
- 67 The Dhammai form mu-khuz exemplifies a regular sound change PTB *-a > Dhammai -u, cf. also bu-ju 'five': tnuz 'eat', lu 'month/moon', zu 'son'; thu 'tooth'.
- 68 Sino-Tibetan languages generally do not lexicalize directionality of the loaning transaction, thus 'borrow' and 'lend' are usually expressed by identical roots. Instead, many Tibeto-Burman languages make a different distinction based on the nature of the loaned object; thus 'borrow/lend something that must itself be returned' and 'borrow/lend something that can be returned in kind' involve distinct roots, e.g. Tibetan g.yar vs. sky; Burmese hñã vs. khyê; Kaman a³¹ŋat⁵⁵ vs. lu⁵³ in the table. This contrast has not been detected in any Tani language.
- 69 For the ZMYYC Kaman form ŋin⁵³, cf. Boro 1979 ŋit; Weidert 1987:478 ŋit 'day'.
- 70 Note the secondary -k coda in the Taraon form kuau⁵³ (for -u < -k, cf. Chakravarty 1963 kua; Sastry 1984 kwág).
- 71 The Taraon word for ear' is literally ku⁵³ 'head' + naŋ³⁵ 'leaf'.
- 72 The Lepeha form is literally mi 'fire' + mak 'die'. Lepcha mak 'die' is unlikely to be cognate with PT *mit 'extinguished'.
- 73 The kã- 'hand' element in the Lepeha form seems unlikely to be cognate with PT *ke(ŋ) 'finger'.
- 74 The Dhammai form is also glossed 'heart'.
- 75 For the phonologically reduced Taraon form m⁵⁵, cf. Chakravarty et al. 1963 um 'hair (on body)'.
- 76 For (ZMYYC) Kaman jau⁵³, cf. also Boro 1979 rok; Weidert 1987:479 rãuk 'arm'. The r- initial of these Kaman forms is perplexing, especially since Kaman apparently maintains the PTB contrast between *l- (e.g. lãuŋ 'stone' < PTB r - luŋ; lap⁵³ 'leaf' < PTB *lap) and *r- (e.g. jam³⁵ 'otter' < PTB *s-ram: uul³⁵ 'snake' < PTB *b-ru:l).
- 77 In both Taraon and Kaman, several existential verbs are distinguished: Taraon i⁵⁵ and Kaman teau⁵³ occur with animate subjects. Taraon aŋ⁵⁵ and Kaman kam³⁵ with inanimate ones, a third Kaman existential verb tun⁵⁵ applies only to abstract qualities (Sun et al. 1980). A different type of semantic differentiation of existential verbs is reported in Apatani A, based apparently on posture of the predicated subjects, but comparative data from other Tani languages is not sufficient for deciding whether this distinction should be pushed back to the PT level. The different Tibetan existential verbs reflect rather the pragmatic distinction of degrees of knowledge integration: yod for fully assimilated knowledge and 'dug for new, unassimilated knowledge (DeLancey 1989).

- 78 Taraon ma³¹so⁵³ is undoubtedly cognate with PT *fak, both reflecting PTB *m-sak 'itch' (STC # 465). For the equation PT *-ak <-> Taraon -o, cf. also PT *rjak, Taraon lio³³ 'lick'; PT *jak, Taraon jo⁵³ 'fox-tail millet'.
- 79 In the sense of have knowledge of.
- 80 This PT root is quite unique in Tibeto-Burman. The only extra-Tani cognate known to us so far is Tshangla nar 'laugh'.
- 81 In languages that distinguish 'listen' from 'hear', forms for both meanings are given (in that order), separated by a semicolon. In Tani, the same root occurs for both meanings; the punctual, nonvolitional sense 'see' is expressed by adding to the root a resultative verbal particle-poŋ. This is true of such other pairs as 'listen' vs. 'hear'; 'search' vs. 'find'. The Garo form means 'hear'.
- 82 In languages that distinguish 'look' and 'see', both forms are given (in that order) separated by a semicolon.
- 83 This is not considered cognate with PT *-kin, because the regular reflex of the PTB medial vowel *-i- seems to be -ã- (i.e. short -a-) in Kaman (but *-i- or *-u- in PT); e.g. sãŋ³⁵ 'tree' < PTB *siŋ; a³¹mãŋ 'name' < PTB *r-miŋ; mǎn⁵³ < mǎt < PTB *mit 'extinguished'; ntshǎn 'claw' < PTB *m-(t)sin.
- 84 The -ŋ in the ZMYYC Kaman form a³¹muŋ³⁵ seems secondary; cf. Weidert 1987:358 ?mùk; Boro 1978 a-muk. both keeping the original -k coda; the latter Kaman forms are cognate with PLB *myok¹ (Matisoff 1972 #133) < PTB *mruk STC:112.
- 85 The Dhammai form go could not be cognate with PT *gam because the expected Dhammai equation to PT (and PTB) *-am is -en; e.g. Dhammai lem-baŋ (< len-) PT *lam 'road'; Dhammai nen, Western Tani *nam 'house'; Dhammai ñen, PT *nam 'smell v.'; cf. also Dhammai sen < PTB *šam 'iron' (STC #228).
- 86 For the Taraon form pa³¹hŋ⁵⁵, cf. Chakravarty et al. 1963 pa:haŋ.
- 87 The Taraon and Kaman words are composed respectively of 'child' + 'protect' and 'child' + 'nest'. As for the Lepcha forms, kap-pūn is literally 'covering, that which covers'; while 'ayen-tyól is 'child' + 'accompany'.
- 88 Cf. the Chakravarty et al. 1963 tha:ik for Taraon and Boro 1979 tək for Kaman, both retaining the -k coda.
- 89 More precisely 'cooked rice'. For the Kaman form eat⁵³, cf. Weidert 1987:479 má-syát 'boiled rice' (root = syá 'eat' plus nominalizing dental suffix -t).
- 90 The Taraon form pla³⁵ seems to come from earlier *plaŋ (cf. Midu prǎ 'salt') and therefore phonetically quite distant from PT *lo.
- 91 The Taraon form o⁵³- is judged to be cognate with PT *-ap. For the equation PT -ap <-> Taraon -o, cf. also PT *krap, Taraon khro 'weep'.
- 92 The resemblance between Dhammai ji to PT *jup is misleading, for the Dhammai form could originate from a nasal-final rhyme, cf. Bangru dze³³, Hruso jum 'sleep'. The Lepcha compound is literally mik 'eye' + krap 'hang down'.
- 93 The Garo word means 'saliva'; from ku 'mouth' + ci 'water'.
- 94 The Taraon form eau⁵⁵ seems to come from a checked syllable, cf. Chakravarty et al. 1963 shyeb 'sweet'.
- 95 WT khrap occurs only in the phrase khrap-khrap 'weeper, cry-baby'. The normal 'weep' meaning has been taken over by the ngu root.
- 96 WT 'dab-ma (< N + lap) is a direct cognate of PT *lap. The dental stop initial is transparently caused by the homorganic nasal prefix N- (represented orthographically by the achung). For more evidence of the effects of achung, cf. 'dom (< N + lom) 'fathom' < PTB *la(:)m (STC p.71); 'do (< N + lo)~ zlo 'say, repeat'; this view is also strongly supported by the identical delateralizing effect of the m- nasal prefix, cf. WT mda (< m + *la); PTB *mla ~ bla 'arrow' (STC fn. 313). For a different interpretation of the provenance of this WT form (owing perhaps to a different view on the phonetic nature of WT achung). cf. Matisoff 1985a:443-4 as well as STC: 122-3; fn. 338, 339.
- 97 In WT, the root -ning 'year' occurs only in compounds, such as na-ning 'last year'.

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Part 2

SINO-TIBETAN HISTORICAL
RECONSTRUCTION

THE NUMBER "A HUNDRED" IN SINO-TIBETAN

J. Przyluski and G. H. Luce

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In their *Notes d'Etymologie Taï*, published in 1926 in the *Journal of the Siam Society*, vol. xx, pt. i, MM. J. Burnay and G. Cædès have compared the various Taï words meaning "a hundred". Ahom *pāk*, Shan *pāk*, Khamti *pāk*¹, White Taï *pāk*¹, Thô *pāk*¹, Nùng *pāk*¹, Dioi *pā*¹—all go back to a form **pāk*, which is very close to the sixth century Chinese (*pvk*).¹ MM. Burnay and Cædès draw this just conclusion (I translate): "As for the basic form on which Ahom *pāk*, etc., rest, it seems impossible—in view of its wide extension in Taï, and, in addition, the exact correspondence of the tones—not to assign it to the original Taï language or, at least, to the period of Taï union; it seems also impossible to separate it from Old Chinese *pak*. It remains to determine if we have here a borrowing by original Taï from Chinese, or a form common alike to Taï and to Chinese: this question remains untouched."

The next step, it seems, should be to compare, with Chinese and Taï, some forms at least of Tibeto-Burman.

Side by side with classical Tibetan *brgya*, we have Balti *rgyā*, Purik *rgiā*, Ladakhi *rgya*. The other Tibetan dialects have *gya*.²

In Burmese, on the other hand, we have twelfth century *ryā*,³ modern *rā* (pronounced *yā*).⁴

We see that the final guttural, which is conserved both in Chinese and in Taï, has disappeared in Old Burmese and in the Tibetan dialects. As for the initial labial, which appears as a surd *p* in Chinese and in Taï, it reappears in classical Tibetan as a sonant, but is absent in Old Burmese and in the Tibetan dialects. The medial group, so complex in the classical Tibetan *-rgya*, becomes *ryā* in Old Burmese, and is reduced to a single vowel in Chinese and in Taï.

Various Southern Chin dialects still keep a trace of the initial labial: in Yawdwin it is a surd as in Chinese *-pra*; Chinbok has *p'ya*. We can compare also Gyarung *pavyé* and Mikir *p'áró*.⁵

In the Northern Chin dialects the medial group appears to be contracted into *zā*, *jā*, *jhā*, or reduced merely to *ya*. In the Kuki dialects the same medial group gives Pürüm *riyāh*; Hirōi, Langāng *arja*; Rāngkhōl and Langrong *rajā*. Compare also Pānkhū *rajā* (Central Chin sub-group).⁶

Finally, in two Aka forms cited by Hodson⁷: *phogwa* and *purrua*, a vocalic element is inserted between the initial labial and the medial group. These forms are particularly instructive because, classical Tibetan *brgya* being practically unpronounceable, we must probably assume the existence of an old vowel after the initial. Compare Gyarung *paryé* and Mikir *p'aró*.

In the light of all these indications it seems possible to reconstruct for original Sino-Tibetan some such form as **paryak*.⁸ The final and the initial are well conserved in Chinese and in Tai, while the Tibeto-Burman languages preserve better, in general, the medial element.

We are thus led to suppose, at the base of some modern words, a complex of at least two syllables. Neither Tai nor Chinese permit us to guess it. It is thus apparent that the mere comparison of Chinese and Tai does not carry us very far back.

Notes

- 1 Karlgren, *Analytic Dictionary of the Chinese Language*, s.v. *pai*, Nos. 685, 686.
- 2 Grierson, *Linguistic Survey of India*, vol. iii, pt. i.
- 3 *Epigraphia Birmanica*, vol. i, pt. i, p. 23 (Myazedi Inser., Pillar A, 1.2).
- 4 We can hardly question the common origin of the Tibeto-Burman and Tai-Chinese forms, in view of the closely similar series for the number "eight", which is in classical Tibetan *brgyad*; in eleventh-twelfth century Burmese *het*, *yhat*, *hyat*, or *rhac*; in sixth century Chinese *p'at*, in Siamese from the thirteenth century *pét*.
- 5 Houghton, *Essay on the Language of the Southern Chins*, p. 86, s.v. *p'ya*.
- 6 Duroiselle, *Ep. Birm.*, vol. i, pt. i, p. 27.
- 7 *JRAS.* 1913, "Note on the Numeral Systems of the Tibeto-Burman dialects," p. 331 ff. Cf. *Linguistic Survey of India*, vol. iii, pt. i, p. 622.
- 8 Or **paruyak*; for in view of such forms as Mikir *p'aró*, Aka *phogwa*, *purrua*, E. Daña *lüg*, Chulikata Mishmi *malū*, it still seems doubtful if Siamese *ròy*, Laotian and Black Tai *hòy*, do not themselves go back to the same common origin as *pak*.

CONCERNING THE VARIATION OF FINAL CONSONANTS IN THE WORD FAMILIES OF TIBETAN, KACHIN, AND CHINESE

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The purpose of the present somewhat desultory notes may be said to be twofold: firstly, to emphasize the necessity of comparing the word stock of one Indo-Chinese language with that of another by word families only,¹ secondly, to make a preliminary investigation into certain variations of a particular type within such families, as there are here certain anomalies of which very careful note will have to be taken in any comparative work along these lines.

The importance of the word family rather than the single word in comparisons from language to language has, indeed, previously been brought forward by others,² but until quite recently its real significance has been only just glimpsed, no definite examples in illustration having been adduced.

To emphasize this particular matter at the outset we may here consider the following case.

In Tibetan we have the word family *abyed-pa*, P. and Imp. *pye*, *pyed*, *pyes*, F. *dbye* to open (vb. tr.), to separate, to keep apart, to divide, to distinguish, to classify, to pick out, to choose, to select, *pyed* half, *dbyad* an instrument to open the mouth by force, *dbyen-pa* difference, dissension, discord, schism, *abyer-ba*, P. and Imp. *byer* to disperse (as in flight), to scatter (vb. intr.), to flee in different directions, *dbye-r* (= *dbye-ru* in *dbyer-med* lit. devoid of difference) difference, distinction, *abye-ba*, P. and Imp. *bye* to open (vb. intr.), to divide, to separate, *dbye-ba* parting, partition, division, distinction, section, part, class, species, kind, while in Kachin we have *šā-byet* to separate into bundles, to make up into lots, *kā-čyan*, *lā-čyan* to divide, to deal out, to allot, to apportion, *gin-čyan* to divide, to exchange, *čyen* half, *a-čyen* band, shred, strip, *lā-jen* to divide equally, to apportion, to distribute, *mā-jen* (a cutting:) a clearing, *je* to tear apart, to rend asunder,

to separate, to cut off, (*mǎ-ŷen ʃe* to make (lit. to cut) a clearing (*mǎ-ŷen*)), *pye* to allot, to assign, to parcel out.

There is a temptation here to equate Tibetan *pyed* half, with Kachin *čyen* half, and, indeed, if we were working with single words this is probably just what we should do. Following this, we should probably look for other examples of this supposed *-d: -n* equivalence in finals. But this would be completely wrong, and the results, on such an assumption, entirely without value, for what has happened here is that Tibetan has taken one member of the family to specialize into the meaning of "half" while Kachin has selected an entirely different member for a similar purpose. Tibetan *pyed* evidently belongs on the Kachin side most closely with *šǎ-byet*, while Kachin *čyen* must be regarded as having its nearest Tibetan relative in *dbyen-pa*.³ But in dealing with single words we should probably never have arrived at this conclusion. Meaning must not be overemphasized at the expense of form. We can only get the correct perspective from the family as a whole, not from the individual members of the family.

From this instance alone, then—and there are hundreds of others of exactly similar type—we have clearly set before us the fact that before we can safely do anything in the way of equating single words with one another we must first be able to see as a whole the families to which the words in the proposed equation belong. Only after we have been enabled thus to understand, at least in part, how their members have been moving around within their own families, specializing their senses and changing their forms, can we ever really first propose with any safety anything in the way of equations between single members. In the sequel we shall adduce a certain number of representative families, but before entering upon this phase it may be well first to consider certain well-known facts setting limits to their assembly.

In the first place, as first clearly stated, I believe, by Simon,⁴ Tibetan word families remain very true to their own single type of final, viz. guttural, dental, or labial, as the case may be, and it is impossible—except in certain peculiar cases, each of which requires its own special treatment—to establish anything in the nature of families with mixed finals.⁵ This is a particularly valuable guide in instances where words without finals have obvious relatives with them, such, for instance, as *akra-ba* and *mkrañ-ba* or *akrañ-ba* hard, *bka* and *skad* speech, *sna* nose and *sna-m-pa* or *sno-m-pa*⁶ to smell, for when once an open syllable form can be shown to have a definite relative in some particular class of final, say the guttural, there can be no turning back, and we must look with extreme suspicion, to say the least, upon any form which would lead us over also into a second, and unrelated, class of final. When, for instance, *agyu-ba*, P. *agyu* to move quickly, *akyu-ba*, P. *akyu* to run, *dkyu-ba* to run a race, lead us by means of *rgyug-pa*, P. *brgyugs*, F. *brgyug*, to run, to hasten, and *akkyug-pa*, P. *kyug* to run, to dart along rapidly (as fish), into the guttural final type, we cannot possibly include *akkyam-pa* to run about, to wander, and its relatives in final *-m*, even if the vowel alternation *u ~ a ~ o* were possible, which, in Tibetan, it almost certainly is not. This, in fact, is one principle which we must with considerable certainty rigidly enforce.

It must naturally be understood here that we are not speaking of anything but the older and more stable Tibeto-Burman languages, for, in some late dialects and in spoken Burmese, the finals have been converted into others of unrelated classes in an enormous number of cases. To see, then, into this problem with a greater feeling of certainty we shall be obliged, when extending our field beyond Tibetan itself, to select some other language or languages differing from it in sufficient degree to give us an idea of the direction in which development has proceeded, but yet which does not depart from the original stability of its finals by classes. For present purposes we will here take Kachin which stands sufficiently close to Tibetan to give us a great many families in common, while at the same time standing in relation to it in the matter of final consonants very much as does Archaic Chinese in the families put together by Karlgren. Of this we shall discuss the possible significance later, taking here the following selection of word families⁷ common to Tibetan and Kachin.

Guttural finals

- (1)⁸ T. *agug(s)-pa*, P. *bgug*, F. *dgug*, Imp. *kug* to bend, to make crooked, *kug*, *kug-kug* crooked, a hook, *kug*, *kugs* corner, concave angle, nook, creek, bay, gulf, cove, *kug-ma* pouch, small bag, *gug-ge-ba* bent.
K. *guk* to be bent, to be curved, *dǎ-guk* curve-horned, *nuk* to bow, to incline the head, *fin-kun* bent, to be bent, *gu* to be bent, to be curved, *a-gu* bent, humped, *lǎ-gu* to hang down, to droop, *nu* to bow, to incline the head, *kǎ-nu* to be bent, to be bowed down, to hang the head.
- (2)⁹ T. *agog-pa*, P. *bkog*, Imp. *kog* to peel, to tear off, to remove by force, to pull off, *kog-pa* (vb. neut.) to peel, to splinter off, to scale off, to fall off in chunks, *kog-pa*, *skog-pa*, *skogs-pa* peel, rind, bark, shell, *gog-pa* to crumble off, to scale off (as plaster), *gog-po* dilapidated, ruinous, *ko-ba* hide, skin, leather.
K. *gǎ* to peel, to skin, to flay.
- (3)¹⁰ T. *kyog*, *kyog-po* crooked, bent, winding, *kyag-kyog* curved, crooked, *kyog-po*, *akkyog-po* crooked, curved, bent, *skyog-pa* to turn (as the neck), *skyogs* scoop, ladle, drinking cup, bowl, goblet, *gyog-pa* curved, crooked.
K. *kyǎk* (crooked surface:) to be sunken, to be concave, to be depressed, *lǎ-kyǎk* hole, depression, concavity, *gyǎk* to be concave, to be cup-shaped, *lǎ-gyǎk* shallow hole, depression, to be full of concave holes (as a road), *lǎ-gyǎ* to be contracted, to be crooked (as a paralysed limb).
- (4) T. *brag* brightness, lustre, beautiful appearance or colour, *bkra-ba* glory, beautiful, fine, well, of good appearance.
K. *krak* to be good, *grak* to be beautiful, fine, or good, beautiful, fine, well.
- (5)¹¹ T. *nag* speech, talk, word, *mnag-pa*, P. *mnags* to commission, to charge, to delegate, *snag(s)-pa*, P. *bsnags*, F. *bsnag*, Imp. *snog* to praise, to commend, to extol, to recommend, *snags* incantation, *sno-ba*, P. *bsnos*, F. *bsno*, Imp. *snos* to bless, to pronounce a benediction upon, to dedicate, *bsno-ba* a blessing, a benediction, *na-ro* loud voice, cry.
K. *na* to say, to speak, to tell, to relate.

- (6)¹² T. *gčog-pa*, P. *bčag*, Imp. *čog(s)* to break, to smash, to crack, to split, *ačag-pa*, P. *čag(s)* to be broken, to be smashed, to be cut off, *čogs-pa* to be broken, *ačag-pa*, *ačeg-pa*, P. *bšags*, F. *bšag*, Imp. *šog* to cut, to split, to cleave, *ačog* (cutting off:) wall, partition, *čag-čag*, *čag-pa* ("breaking" the lips:) smacking the lips (in eating), *ačog-pa*, P. *(b)žogs*, F. *gžog*, Imp. *žog* to cut, to chop, to hew, to chip, *lčag* rod, switch, whip, stick, strike, cut, blow, hit, *ačsog-pa*, P. *btsags*, F. *btsog*, Imp. *tsog* to hew, to chop, to cut, to pierce, to cudgel; (also *mtsog-pa*) to find fault with, to blame, to censure, to tease, *mtsog-ma* (cleft:) fontanel, *gšog-pa*, *bšog-pa*, *gšag-pa*, *gšeg-pa*, *ačegs-pa*, P. *gšags*, *bšags*, F. *gšag*, *bšag*, Imp. *gšog* to cleave, to split, to break open, to break through, to rend, to tear, *bžag-pa* to tear, to wear (of clothes), to burst, to crack, to split (vb. intr.), *šag-ma* (broken up:) gravel, pebbles, small stones.

K. *tāk* to be broken, to be snapped in two, *kā-tāk* to break (vb. tr.), to smash, *tek* to snap, to break, *kā-tek* ("break" the fingers:) to snap the fingers, *a-tek*, *lā-tek*, id.

- (7)¹³ T. *ačzugs-pa*, *zug-pa*, P. *btsugs*, *zugs*, F. *gzugs*, Imp. *zug(s)* to insert young plants into the ground, to plant, to erect (as a pillar by setting it into the ground), to prick, to stick into, to thrust into, to pierce, to penetrate, to bore, to sting, *ačsugs-pa*, P. *tsugs* to go into, to enter, to bore into, to take root in, *mdzug-gu* (also *mdzub-mo*) (inset:) finger, toe, claw, *ačjug-pa*, P. *bčug*, F. *gžug*, Imp. *čug* to put into, to insert, to inject, *ačjug-pa*, to be combined with, to have added to, to go in, to walk in, to enter.

K. *čyāk* to pierce, to be pierced, to be run through (as with a spear), *a-čyā* to prod, to goad, to thrust, to prick.

- (8)¹⁴ T. *gtsan-ba* to be clean, to be pure, cleanness, purity, clean, pure, *gtsan* clean, pure, *ačsan-ba*, P. *sans* to make clean, to remove impurities, to take away, to remove, *tsans* purified, clean, pure, *san-ba*, P. *(b)sans*, F. *(b)san* to clear away, to remove dirt, to cleanse, *sen-po*, *bsen-po* clean, white.

K. *sen* to be clean, to be pure, to clean, to clear away, clear space, a clearing, *tseñ* to remove, to clear away, *tsāñ* to remove, to clear away, to put away, to drive away, to banish.

- (9)¹⁵ T. *gtug-pa*, P. *gtugs* to reach, to touch, to come up to, to overtake, to meet with, to join, *btug-pa* id., *tug-pa* to reach, to arrive at, to come to, to meet, to light upon; > col.: to touch, to hit, to strike against, *tug* until, to, *rdug-pa*, P. *brdugs*, F. *brdug* to strike against, to stumble over, *rdun-ba*, P. *brduns*, F. *brdun*, Imp. *(b)rdun(s)* to beat, to strike, to cudgel, to hammer, to pound, to thrash, *bdun-ba* id.

K. *tuk* to hit against, to come in contact with, to come close up to, to reach, to attain, to arrive at or in, until, as far as, up to, *kā-tuk* to hit against, to collide with, *tu* to pound, to hammer, to pulverize, *a-tu* to hit, to strike, to kick against.

- (10)¹⁶ T. *togs-pa* to strike, to stumble, to run against, *rdeg(s)-pa*, P. *(b)rdegs*, F. *brdeg*, Imp. *(b)rdeg(s)* to beat, to strike, to knock, to kick, *mfo-ba* a hammer.

K. *tāk* to touch lightly, *kā-tāk* id., *a-tāk* to touch, to strike lightly, to tap.

- (11)¹⁷ T. *ačegs-pa* to lift up, to raise up, (mounted:) to set out on a journey, *teg-pa* to lift, to raise, to hold up, to support, vehicle, carriage, riding animal, *ačeg(s)-pa*, P. *bteg(s)*, F. *gdeg*, Imp. *teg* to lift, to raise, to elevate, to support, *tog* (uppermost part:) top, roof, *tog-ma* summit, upper end, uppermost place, origin, source, beginning, *tog* top, top ornament, *ltag* above, over, *ltag-pa* upper place, upper part, back of the neck (i.e. top of the back), back ("top") of a knife.

K. *tāk* to brace, to prop up, *tek* to rise, to get up.

- (12)¹⁸ T. *pun-po* a heap, a pile, a mass, *spun-ba*, P. and Imp. *spuns* to heap up, to pile up, to accumulate, to amass, *dpun* host, a great number, troops, army, *buns* mass, heap, bulk.

K. *pun* gathering, assembly, congregation, flock, herd, *pān* to gather, to congregate, to assemble, *jä-pān* to collect, to cause to congregate, *n-pān* a clump, a cluster, *mā-pān* a clump, a cluster, *bān* to confer with, to consult, to hold council, *pā* to mix, to mingle, *sā-pā* to consult, to confer, to hold council, *bā* to pack, to get one's goods together.

- (13) T. *ačyug-pa*, P. and Imp. *byugs* to stroke, to pat, to tap lightly.

K. *a-pūk* to tap, to pat, *güm-pūk* to tap, to pat.

- (14)¹⁹ T. *ačbug(s)-pa*, *ačbig(s)-pa*, P. *pug*, *pigs*, F. *dbug*, *dbig*, Imp. *pug*, *pig(s)* to sting, to pierce, to bore, to make a hole, to break into, to break open, *sbug-pa* id., *pug-pa*, *pig-pa* = *ačbug(s)-pa*, *ačbig(s)-pa*, *pug-pa* cave, cavern, *pug(s)* innermost part, inmost apartment, *sbug(s)* (more frequently *sbugs*) hollow, cavity, excavation, recess, interior space, *sbug-po* hollow, *ačbug* awl, chisel, punch, *bug-pa*, *bu-ga* hole, orifice, aperture, *bu-gu* hole, *sbugu* hollow, tubular cavity (as in plant stems).

K. *pāk* hole, cavity, *kā-pāk* to dig out, to hollow out.

- (15)²⁰ T. *ačpog-pa*, P. *pog* to hit, to strike, to touch, to meet.

K. *pāk* to hit with a thud, to whack.

- (16)²¹ T. *smag* dark, darkness, *mog-pa* dark-coloured, *rmon-ba*, P. *rmons* to be obscured, *rmon-ba* obscurity, obscured.

K. *mān* to rise in a cloud (as dust or smoke), *kā-mān*, *gā-mān* id., *šā-mān* to stir up dust, to spread defamatory reports, *lā-mā* to be black, to be dark, to be shaded, *n-mā* to be stained, to be soiled.

- (17)²¹ T. *rmugs-pa* dense fog, languor, languid, *smug-pa* fog, *smug-po* dark bay, cherry brown, purple brown, *mug-pa* overcast, troubled (of the mind: *yid mug-pa* to despair), *rmu-ba* dullness, heaviness, fog.

K. *muk* to be sullen, to be sulky, to be sour-tempered, *mun* to be sullen, to be sulky, to be cloudy, to be overcast, to be dull, *mu* to be cloudy, to be overcast.

- (18)²² T. *mig*, old form, *dmyig* eye.
K. *myi*, *a-myi* eye.
(19) T. *miñ*, old form *myiñ* name.
K. *myiñ* to name, *a-myiñ* a name.

Labial finals

- (20)²³ T. *agebs-pa*, P. *bkab*, F. *dgab*, Imp. *kob* to cover, to spread over, to put on, to protect, *sgab-pa* id., *gab-pa* to hide, to conceal oneself, *agab-pa* (cover one's actions:) to be cautious, to take care, *akeb-pa*, P. *kebs* to cover, to spread over, *kebs*, *Kyebs* covering, coverlet, *skyob-pa*, P. (*b*)*skyabs*, F. *bskyab*, Imp. *skyob(s)* to protect, to defend, to preserve, to save, *skyabs* protection, defence, *skyobs* help, assistance.
K. *gap* to cover, (put up a covering:) to build a house, to pitch a tent, *dā-gap* to cover (especially with something wide and flat), *mā-gap* a cover, a lid, to cover, *lā-gap* (coverer:) one who brings up the rear of a Kachin army, *tin-gap* a cover, a lid, *kāp*, *a-kāp* (covering:) crust, rind, shell, *mā-kāp*, *mā-nāp* to cover, to shield, to defend, defender, defence, protection, *kin-kāp* a sheath (usually of bamboo), *gup* to be covered, to be doubled over, *gup*, *n-gup* (coverer:) mouth, *ka-gup* a hat (*ka-gup gup* to wear a hat), *kā-gup*, *lā-gup* a hat, *dā-gup* to cover, to envelop, *mā-gup* (all-embracing:) every, all, *n-kup* (cover:) to turn over, to fold over, *šā-gup* to fold over, to double over, *kā-yāp* to wrap up, to cover, to encase, *yāp* to be wrapped around, to be wound around.
(21) T. *skum-pa*, P. *bskums*, F. *bskum*, Imp. *skum(s)* to contract, to draw in, to crook, to bend, *kum-pa*, *kum-po*, *kum-kum* crooked, shrivelled, *akum-pa*, P. *kums* to shrink, to be contracted, *kums-pa* crooked.
K. *gum* to bow, to bend forward, to make obeisance, *n-gum* to bend forward, to be flat on the face, *n-num* to bend forward, *dā-gum* bent, curved, concave, arched, *šā-gum* bent, curved, concave, arched, to lie prone, to lie on the face, *mā-gum* the ridge or comb of a house, *mā-kum* a ridge, *n-nup* to bend forward, *dā-gup* to bow low, to sit or kneel with the face towards the ground, to make obeisance.
(22)²⁴ T. *bgom-pa*, P. *bgams* to walk, to step, to stride, *gom-pa* a pace, a step.
K. *n-gam* a step, a notch (of a ladder), *lā-kam* to step, a step, a pace, *kām* to walk, to travel.
(23) T. *agrib-pa* to grow less, to decrease, to diminish, to grow dim, to become dark, *sgrib-pa*, P. *bsgribs*, F. *bsgrib*, Imp. *sgrib(s)* to darken, to obscure, *sgrib-pa* darkened, dark, obscured, (mental darkness:) sin, *grib* shade, shadow, filth, defilement, contamination, *srib-pa* to grow dark, to become dusk, *srib(s)* darkness, gloom, night, shady side, north side, *rab-rib* (> col. *hrab-hrib*) (lessened visibility:) mist, dimness.
K. *krip* to diminish, to subside, to become less, to die down (as a fire), *šā-krip* (take down:) to humble, to punish.

- (24) T. *sgrim-pa*, P. *bsgrims*, F. *bsgrim*, Imp. *sgrim(s)* to hold fast, to force together, to twist together, *krim*s moral law, custom, duty, precept, rule (i.e. restrictions or prohibitions restraining one's actions).
K. *krim* to act in unison, all at once, with one accord, *grim* to act in unison, *krip* to act in unison, *a-krip* unison, concord, unity, harmony, agreement, *lā-krip* to keep step.
(25) T. *agrūm-pa* to pinch off, to nip off, to prune, to lop off, to clip, *dkrum* broken, *grum-pa* lame, crippled, *hrum-pa* to break, to smash, *akrums* (torn:) carcass, game torn by wild beasts, *skrum*, *srum* (carved off:) meat (as food).
K. *krum* to trim, to prune, to lop off.
(26) T. *agrem(s)-pa*, P. *bkram*, F. *dgram*, Imp. *kroms* to put in order, to lay out, to spread out together, to place together (as articles for sale), *krom* market-place (where objects are laid out together for sale), crowd, assemblage, gathering.
K. *kram* to spread out (as a trailing plant on the ground), to become bushy (as trees), *kram* (the spreader:) hamadryad, *ǰā-kram* to widen, to spread, to attain full size, *krem* to be side by side, to be in line, *lā-krem* to come up beside, to edge up to, *n-krem* side of the body, edge or back of a book, *krep* to be in line, to be in a row.
(27) T. *krab-krab* a weeper, one given to tears.
K. *krap* to weep, to cry.
(28) T. *ajum-pa*, P. *bčum*, F. *gžum*, Imp. *čum* to shrink, to contract, to draw in, *ačum(s)-pa* to shrink, to contract.
K. *čyum* to be puckered up (as the lips), to be drawn up, to be contracted.
(29)²⁵ T. *adzom(s)-pa* to come together, to meet.
K. *čyām* to act together, to act in unison, *ǰām* to join forces, to co-operate, together, in unison, in company, *kā-ǰām* to gather round, to crowd round (a common centre), *čyā* to be joined, to be united, to be fitted together, to be related (as by family ties), *šā-čyā* to fit together, to adjust one thing to another, *šin-čyā* to tie together, to bind up together, *mā-čyā* (meeting place:) socket, vulva, *ǰā* to be collected together, to be massed together, *mā-ǰā* to gather together, to tie together, top-knot, *n-ǰā* top-knot.
(30) T. *hams-pa* injured, damaged, spoiled, impaired, stained.
K. *nyam* to be decayed, *čyā-nyam* decayed, crumbling, to be decayed, *nyām* to be decayed, *čyā-nyām* weak, failing, tottering, *nyāp* to be decayed, to be crumbling, to be broken down.
(31)²⁶ T. *sdeb-pa*, P. *bsdebs*, F. *bsdeb*, Imp. *sdebs* to join, to unite, to put together, to mix, *ldeb-pa* to bend back, to double down, *deb-ma* poultice, application, *lteb-pa* to double down, to bend back, *tebs* (put together:) series, succession, *ateb* (added member:) surplus, extra, supernumerary, *ltab-pa*, P. *bltabs*, F. *bltab*, Imp. *ltob* to fold, gather, or lay together, *adab-ma* flat board, wing, petal, leaf, fan, flag, *adabs* side, surface.
K. *tep* to be close together, to be near, *kā-tep* to be close together, to come close up to, *ǰā-tep* to bring close together, *a-tep* (bring the hands together:) to clap, *tep*, *mā-tep* to pinch, to be squeezed together, to be

fastened together, *dep* to be close, to be crowded together, *šin-dep* to be or act in unison, co-operation, *lap* layer, stratum, lamina, *kā-lap* to add, to superimpose, again and again, repeatedly.

- (32) T. *gtam(s)-pa* full, *ltam(s)-pa*, P. *bltams*, F. *bltam* to be full, *ltem-pa* full, overflowing, *tam-pa* full, complete, *tem-pa* to be full, to be complete, to be finished, *qtems-pa* to be sufficient, to suffice.
K. *tām* to have completed, to have finished, *šā-tām* to finish, to complete.
- (33) T. *snabs* mucus, discharge from the nose.
K.²⁷ *nep* mucus, discharge from the nose, *a-nep* id., *nyep* to be soft, mucus, *nyap* to be soft and paste-like, *a-nyap* soft, sticky, viscous, *mā-nyap* soft, moist, spongy, *nya* to be soft, to be pliable, *šā-nya* to soften, to make soft, *čyā-nya* soft, flabby.
- (34)²⁸ T. *snub-pa*, P. *bsnubs*, F. *bsnub*, Imp. *snub(s)* to cause to perish, to suppress, to annul, to destroy, to abolish, to abrogate, *nub-pa* to fall gradually, to sink, to decay, to decline (as religion), to set (of sun and moon), *nub-mo* evening, *nub* the west, evening.
K. *nip* to cast a shadow, to be overcast, *šā-nip*, *šin-nip*, *čyā-nyip* shade, shadow.
- (35) T. *nom-pa*, P. *noms* to seize, to grasp, to lay hold of, *snom-pa*, P. *bsnams*, F. *bsnam* to take, to seize, to grasp, to take up.
K. *nām* to be enclosed, to be housed, to be comprised in, to be held or contained in, *kā-nām*, *gā-nām* to gather, to amass, to collect, to hoard.
- (36) T. *q̄am-pa*, P. *ṗam* to be beaten, to be conquered, to be overcome, to be deprived of power to act (as *bdud* demons).
K. *ṗam* to be numb, to be benumbed, to be without the power of feeling, *kā-ṗam*, *gā-ṗam*, id.
- (37)²⁹ T. *q̄rab* a fluttering movement (as in *q̄rab byed-pa* to flutter (of a wounded bird)).
K. *ṗrap* to flutter, to flicker, to flash, *n-ṗrap* lightning, *kā-ṗrap* to blink (as the eyes), to flutter (as wings), to move back and forth (as animals their ears), *kā-ṗrap*, *ṗrap* to flash (as lightning or a mirror).

From this selection of families in guttural and labial finals we see that the allowable alternations include only *-g* (> K. *-k*) ~ *-ñ* ~ *-O*, and *-b* (> K. *-p*) ~ *-m* ~ *-O*, a fact which we shall have to bear well in mind when dealing with the families in dental finals, where the range is considerably wider, as is exemplified in the following cases.

Dental finals

- (38)³⁰ T. *mgur* (bending part:) neck, throat, *dgur*, *rgur*, *sgur* crooked, *mgul* neck, throat, *dgu-ba* to bend, to make crooked, bow, inflection, bent, stooping.
K. *kun*, *tin-kun* to be bent, to be curved, *tin-kun* to bend, to be pliable, to wriggle, to twist, *šin-kun* (assume a bending position:) to crouch down, to prowl, *mā-kun* to crouch down, *ku* to be bent, to be curved.

- (39)³¹ T. *rkod-pa*, P. (*b*)*rkos*, F. *brko*, Imp. *rkos* to dig, to dig out, to hoe, to engrave, *rkon-pa*, *skon-pa* (scooped out:) basket, *rko-pa* = *rkod-pa*.
K. *gāt* to be scooped out, *dā-gāt* to scoop out, to ladle out, *šā-gāt* to scoop up with the hand, *lā-gāt* to scoop, a scoop, a small shovel, *n-gāt* tray, shallow bamboo basket, *mā-gān* to scoop up, to collect into a heap, *n-gān* bamboo spade (used for digging graves), *gān* to be sunken, to be concave, *din-gān* to undulate (as waves).
- (40) T.³² *rkun-ma* thief, theft, *rku-ba*, P. (*b*)*rkus*, F. *brku*, Imp. *rkus* to steal, to rob.
K. *kut* to rob, *lā-gut* thief, robber, *lā-gu* to steal.
- (41) T. *skar-ma* star, constellation.
K. *šā-gan* star, meteor.
- (42)³³ T. *skad-pa* to say, to tell, to relate, to name, to call, *skad* voice, speech, language, talk, words, *bka* word, speech, *sgo-ba*, P. *bsgo* to say, to bid, to order, *sko-ba*, P. (*b*)*skos* F. *bsko*, Imp. *skos* to appoint, to nominate, to name, to commission.
K. *ga* word, speech, language, *a-ga* word, instruction, command, order, *šā-ga* to call, to summon.
- (43)³⁴ T. *q̄kyil-ba* to be twisted, to be winding, to be spiral, *skyil-ba*, P. and F. *bskyil* to bend, to make crooked, (encircling:) to pen up, to shut up or in, to dam up (also > to retain, to detain).
K. *kyit* to girdle, to gird, to tie round, *šin-kyit* belt, girdle, sash, *mā-kyit* to tie, to make a knot, *gyit* to tie up, to bind together, *a-kyin* to roll into a ball, to make round, *kyin* a package, a bundle, *kā-kyin* to gather (lit. roll) into a heap, *gyin* to roll into ball form, to make pellet-shaped, *šin-gyin* to roll together, pellet, shot, *šā-gyin* ("belt" in:) to tighten a belt, to shorten a strap, *n-gyin*, *kum-gyin* (roll-shaped:) cucumber, *yin* to be turned around, to encompass, to make a circuit, *kā-yin* to turn around, to rotate, *din-yin* to be dizzy, to be giddy, *lā-yin* a four-armed reel for reeling yarn, *gyi* to be curved, to be crinkled, *mā-gyi* to be curled, to be spiral, to be kinked, *tin-gyi* id., *n-gyi* (circular form:) a picture of the sun.
- (44)³⁵ T. *bgrad-pa* to scratch, to scrape, *hrad-pa* to scratch, *q̄brad-pa*, *q̄drad-pa*, P. *brad*, Imp. *brod* to scratch, to scrape, to gnaw, to nibble at, *sbrad-pa*, *dbrad-pa* = *q̄brad-pa*.
K. *gret* to graze (as a bullet), *a-gret* to scratch (as a thorn), to graze (as a bullet), *din-gret* to touch, to rub against, to graze, *kret* to gnaw, gnawing, *mā-kret* to gnaw, *kret* to rasp, to grate, *a-kret* to gnaw, *mā-kret* (scratching:) to draw a line, to rule, to strike a match, a ruler, *pret* to rasp, to grate, *n-ṗrat* to strike a match, to strike fire (as with flint and steel), *bret* rasping noise (as when tearing silk), *mā-ret* to scratch, to lacerate, *rat* to scratch, to wound, to lacerate, to cut, *a-ṗre*, *a-ṗri* to scratch, to dig (as with claws or fingers).
- (45)³⁶ T. *q̄krud-pa*, P. *bkrus*, F. *bkru* to wash (as *gos* clothes), to bathe (as *ka-lag* face and hands), *k̄rus* bath, washing, ablution, *q̄kru-ba* = *q̄krud-pa*.
K. *krut* to wash (as clothing, or *bun* (< *puñ*) the head).

- (46) T. *sred-pa* to desire, to wish for, desire, wish, *ākren-pa* to wish, to desire, to long for.
K. *mā-rit* to desire, to long for, to hanker after, *mā-rin* to be covetous, to be avaricious, to be greedy.
- (47) T. *agril-ba*, P. *gril* to be twisted, to be wrapped round, to be rounded, to be turned, *sgril-ba*, P. and F. *bsgril* (vb. tr.) to wind round, to wrap round, to wrap up, to wind up, *ākri-ba* (vb. intr.) to wind round, to coil, to embrace, to clasp, *gril* a roll, *hril-po* round, globular, *adril-ba*, P. *dril* to be turned round, to be rolled round, to be twisted, to wrap up, *ril-ba*, *ril-po*, *ril-mo* round, globular, cylindrical, *dkri-ba* to wind, to wind up, *ākri-ba* to wind, to roll, to twist, *sri-ba* to wind round, to wrap round.
K. *rit* to twist, to wind, to twine, *tā-rin* to roll, to be rolled, *kri* to revolve, to spin, *mā-kri* a braid, *kri* to braid, *šin-ri*, *sum-ri* a cord, a rope, *ri* thread, string, cord.
- (48) T. *blud* release, ransom, *blus-ma* anything ransomed, *blu-ba*, P. *blus* to ransom.
K. *lāt* to get loose, to escape, to become free, *šā-lāt* to liberate, to set free, *n-lāt*, *šan-lāt* freedman, escaped prisoner, *mā-lā* to loosen, to become loose.
- (49) T. *nur-ba* to grunt (as pigs or yaks), *snur-ba* to snore.
K. *nut* to grunt (as a pig), *nun* to growl, to grumble, to murmur, *a-nun* grumbling, growling.
- (50)³⁷ T. *atsud-pa*, P. *tsud* to be put into, to go into, to enter, *čud-pa* id., *adzud-pa*, P. *btsud*, *zud*, Imp. *tsud* to put into, to lay in, *ajud-pa* id., *adzub-a*, P. *adzus*, to enter, to go in.
K. *jut* to be pierced, *mā-jut*, *num-jut* to pierce, to thrust in, *šā-jut* to pierce, to thrust through, *ju* to prick, to be pricked, thorn, bramble, spike, *a-ju* thorn, bramble, spike, to prick.
- (51) T. *ajun-pa*, *gčun-pa*, P. *bčun*, F. *gžun* to subdue, to make tame, to make soft, *žun-pa* melted, *ačun-pa* to be tamed, to be subdued, to be made to yield, *ajū-ba*, *žu-ba*, *bžu-ba*, P. *bžus*, F. *bžu* to melt, to digest, *ajū-ba* digestion.
K. *tun* to dissolve, to melt, *šā-tun* to liquefy, to melt.
- (52)³⁸ T. *mtsān* grandchild, nephew, *btsas-ma*, *rtsas-ma* (brought forth :) harvest, wages, pay, *btsa-ba*, P. *btsas* to bring forth, to bear, to give birth to, *tsa-bo* grandson, *tsa-mo* grand-daughter, niece.
K. *ša*, *a-ša* child, son, daughter, nephew, niece, *kā-ša* child, young of animals, *mā-ša* human being, man.
- (53)³⁹ T. *rned-pa*, P. *brned*, *brnes*, F. *brned* to get, to obtain, to meet with, *šnen-pa*, *bsnen-pa* to come near, to go near, to approach, *ghen*, *nen* relative, kinsman, *gher-ba* to apply oneself to, to take pains with, to procure, to acquire, *ne-r* (= *ne-bar*) near, *ne-ba* to be near, to approach, *šne-ba*, P. *bsnes*, F. *bsne*, Imp. *šne* to lean against, to lie down on.
K. *ni* to be near, *a-ni* nearness, proximity, to come near, to approach, *šā-ni* to bring near, to put in proximity, *nyē*, *nya* to meet.

- (54) T. *gsal-ba* to be clear, to be bright, to be distinct, clear, bright, pure, *sal-le-ba* clear, bright, brilliant, *sel-ba*, P. and F. *bsal*, Imp. *sol* to cleanse, to remove impurities, to clear.
K. *san* to be clear, to be transparent, to be pure, *a-san* clear, clean, pure, *šā-san* to clear, to purify, *tsan* to clear, to cleanse.
- (55)⁴⁰ T. *gzan-pa* to eat, to devour, to gnaw, *bzan* food of animals, pasture, pasturage, *zan* pap, porridge, fodder, an eater, *ajān-ba* to swallow, to devour, *zas* food, nourishment, *za-ba*, *bza-ba*, P. *zos*, *bzas*, F. *bza*, Imp. *zo*, *zos* to eat, food, meat, victuals.
K. *šat*, *a-šat* (food:) boiled rice, *n-šat* food supply, *mā-šat* food basket (figurative name), *šan*, *a-šan* flesh, meat, *ša* to eat.
- (56)⁴¹ T. *sdud-pa*, P. *bsdus*, F. *bsdu*, Imp. *sdud*, *bsdu* to put together, to join, to unite (others, e.g. *kyo-šug-tu* as husband and wife), to marry, to compress, to condense, *sdud* (pressing together:) folds of a garment, *mdud* knot, bow, *dud-pa* to tie, to knot, *adun-ma* council, association, assembly, meeting, *mdun* (meeting one:) fore-part, front side, *mdun-ma* wife, *adus-pa* assembly, gathering, meeting, *bsdus-pa*, *adus-pa* to consist of, to be made up of, *adu-ba*, P. *adus* to assemble, to come together, to meet, to join one another (e.g. *kyo-šug-tu* as husband and wife), to get married, to be pressed or crowded together, *adu-ba* assembly, gathering, meeting.
K. *tut* to be joined, to be bound together, to be united, *mā-tut* to connect, to join, to link together, *kā-tut* to meet, to run up against, (urge to meet:) to press on, to push on (towards a goal), *dun* to tie together, to tether, to be connected, to be united, to join, to adhere to.
- (57)⁴² T. *sdod-pa*, P. and F. *bsdad* to sit, to stay, to remain, to abide, to halt, to come to a stop.
K. *kā-tāt* to stumble and fall, *mā-tāt* to stub the toe or foot, to kick against an obstruction, *kā-dān* to stumble, to stop abruptly, (of *ga* speech:) to stutter, to stammer, *kā-tā*, *gā-tā* = *kā-tāt*.
- (58)⁴³ T. *mton-po* high, elevated, *mtos* high, elevated, *mto-ba* to be high, height, high, elevated.
K. *kā-tan* to bound up (as a ball), to leap (as a frog), *tan* to raise, to put up (as a ladder), *ta* to be above, to be high, to rise, *lā-ta* upper, *kā-ta* above, overhead, *mā-tā* pinnacle, summit, high, elevated, *tā* (raised:) to transport, to carry, *tsā* to be high, to be tall, to be lofty, *mā-tsā* upper regions, celestial heights, *šā-tsā* to heighten, to raise, to elevate.
- (59)⁴⁴ T. *adrud-pa*, *abrud-pa*, P. and Imp. *drud* to rub, to file, to rasp, to scour, to polish, to smooth, to plane, to drag, to pull along, *bgrud-pa*, P. *bgrus*, F. *bgru* to husk, to shell.
K. *rut* to rub, *a-rut* to rub, to abrade, to erase, *mā-rut* a grater (*mā-rut* *rut* to grate), *mā-krut* to gnaw, *krut* to snatch away, to pull away forcibly, whetstone, *n-krut* whetstone, *krit* to grind (as *wa* the teeth), *a-rit* to rub off, to pull off (as bark from a tree).

- (60)⁴⁵ T. *adred-pa* to slide, to slip, to glide, *adren-pa*, P. *dran(s)*, F. *drañ*, Imp. *dron(s)* to draw, to drag, to pull, to tear out, to press out, to squeeze out (as pus), to conduct (as water), to lead, to guide, to fetch, to transport.
K. *ret* to be snatched up, *kā-rāt*; *gā-rāt* to draw, to drag, to pull, to haul, *sā-rāt* to drag, to scrape (as the feet), *krān* to be dragged, to be pulled, to be led along, to be conducted, *gā-re* to tear away, to snatch away, to pluck away from.
- (61) T. *gnas-pa* to stay, to remain, to dwell, to live at, *gnas* place, spot, abode, dwelling place.
K. *nat* to be fixed, to be held firmly, *mā-nat* to grasp firmly, to hold tightly, *ǰā-nat* for ever, always, constantly, *nan* to stay, to remain, to tarry, to be permanent, *mā-nan* always.
- (62) T. *qabar-ba* to open (of flowers), to bloom, to blossom. K. *pan*, *ban*, *nam-pan* a flower, *lā-pan* (Kauri), id.
- (63) T. *qabar-ba* to burn (intr.), to catch fire, to be ignited, *sbar-ba*, *sbor-ba*. P. and F. *sbar* to set fire to, to kindle, to light.
K. *lā-wāt* cooking place, *wan*, *a-wan* fire, *wān* (Kauri), id.
- (64)⁴⁶ T. *qbud-pa*, P. *bus*, *pu(s)*, F. *dbu*, Imp. *pu(s)* to blow (intr. and tr.), to remove by blowing (as chaff), *sbud-pa* bellows (*sbud qbud-pa* to blow bellows), *bud* (blown by wind:) a cloud of dust, *spun-pa*, *sbun-pa* (blown by wind:) chaff, husks, *sbur-ma* = *sbun-pa*, *pu* a puff of breath, *pu-tse* husks of barley, bran.
K. *wut*, *kā-wut*, *gā-wut* to blow, to puff, to blow upon (as a fire), *n-bun* (blown by wind:) dust, *bun* to scatter dust, to sprinkle liquids, *wu* dust, fine ash (*wan wu* fine ashes from a fire (*wan*)), *n-pu* dust, *a-pu* to scatter dust, to remove dust (as by shaking a garment).
- (65)⁴⁷ T. *pus-mo* knee.
K. *put* knee, to kneel, *lā-put* knee, *pun* to cover (as with a blanket), to put on (as a coat), *bu* to put in place, to place upon (as on a shelf).
- (66) T. *qpar-ba* to bound up, to leap up, to fly up (as sparks), *spar-ba*, *spor-ba*. P. and F. *spar* to lift up, to raise, *qpyar-ba*, Imp. *qpyor*, *pyor* to raise, to lift up, to hoist, *qčar-ba*, P. *šar* to rise, to appear, to become visible, (of the sun:) to shine forth, *šar* the east.
K. *n-pat* (bring up:) to vomit, *pan* to rise, to be raised (as dust by the wind), *kā-pan* to be in motion, to be astir (as a crowd).
- (67) T. *spel-ba* to augment, to increase, to add to, to multiply, to put together, to spread, to propagate, *qpel-ba*, P. *pel* (vb. neut.) to increase, to grow, to become larger, to improve, to grow better, *dpal* glory, splendour, magnificence, abundance, wealth, welfare, *pal-pa* (widely distributed:) usual, common.
K. *ǰā-pat* (enlarge the mind:) to instruct, to teach, *ǰā-pan* id., *šā-pan* to bring up (as a child), to rear, *pan* to be enlarged, to grow, to mature, *pan* to be mature, to be developed, to form, to create, to cause to be, *ba* to be big, to be great, to be large, *mā-ba* (great man:) chief, ruler, *kā-ba* big, great,

- large, *šā-pa* (vb. tr.) to extend, to spread out, to expand, to enlarge, *n-ba* great, big and ferocious.
- (68)⁴⁸ T. *qbyid-pa*, P. *byid*, *pyid* to disappear, to pass away, to make an exit, *dpyid* (time of budding forth:) Spring, *qbyin-pa*, P. and Imp. *pyuñ*, F. *dbyuñ* to cause to come forth, to take out, to remove, to draw out, to pull out, to tear out, to produce, to bring to light, to send out, to emit, to shed (*mči-ma qbyin-pa* to shed tears), to draw (as *krag* blood), to drive out, to turn out, to expel, to throw away, to liberate, to release, *sbyin-pa*, P. and Imp. *byin* to give to, to bestow upon, to hand over to, to deliver over to, *qbyun-ba*, P. and Imp. *byun* to come out, to emerge, to go to, to proceed to, *pyin-pa* to go forth, to proceed, to advance, to come to, to reach, *dpyis* end, conclusion (*dpyis pyin-pa* to reach the end), *qpyi-ba*, *qpyid-pa* to wipe away (*mči-ma qpyi-ba* to wipe away tears), to blot out, to pull out, to tear out (as *rliq* the testicles), to remove, *qbyi-ba*, P. *byi*, *pyi*, *pyis* to be wiped off, to be blotted out, to be effaced.
K. *pyet*, *kā-pyēt* to vanish, to disappear, *šā-byet* to extort, to take away, to levy (as a fine), *šā-pyen* to throw out, to eject, to drive out, to expel, *pyen* to remove, to strip off.
- (69)⁴⁹ T. *gšid* funeral, *gšin-po* a dead man, one deceased, *qči-ba*, *ši-ba*, P. *ši* to die, to disappear (as a flame), to cease, death.
K. *si* to die, to expire, *a-si* death, dead, *čyā-si* dead, a dead person.
- (70)⁵⁰ T. *gčid-pa*, *gči-ba*, P. *gčis*, F. *gči*, Imp. *gčis* to make water, to urinate (*gčin gčid-pa*, *gčin gči-ba* id.), *gčin* urine.
K. *ǰit* urine, *ǰin* vagina, female private parts, *ǰi* to make water, to urinate (*ǰit ǰi* id.).
- (71)⁵¹ T. *mčün-pa* liver.
K. *sin*, *a-sin*, *mā-sin* liver.
- (72) T. *pyen*, *qpyen* wind, flatulence.
K. *pyet*, *a-pyēt* wind, flatulence.
- (73)⁵² T. *qbyed-pa*, P. and Imp. *pye*, *pyed*, *pyes*, F. *dbye* (vb. tr.) to separate, to keep apart, to open, to divide, to distinguish, to pick out, to choose, to select, to classify, *dpyad* an instrument for opening the mouth by force, *pyed* (divided:) half, *dbyen-pa* difference, dissension, discord, schism, *qbyer-ba*, P. and Imp. *byer* (vb. intr.) to disperse, to scatter, to flee in different directions, *dbye-r* (= *dbye-ru* in *dbyer-med*, lit. devoid of difference) difference, distinction, *qbye-ba*, P. and Imp. *bye* (vb. intr.) to open, to divide, to separate, *dbye-ba* parting, partition, division, distinction, section, part, class, species, kind.
K. *šā-byet* to divide into lots, to do up into separate bundles, *kā-čyan*, *lā-čyan* to divide, to deal out, to allot, to apportion, *gin-čyan* to divide, to exchange, *čyen* (divided:) half, *a-čyen* bānd, shred, strip, *lā-ǰen* to divide equally, to apportion, to distribute, *mā-ǰen* a clearing, *ǰe* to tear, to rend asunder, to divide, to separate (as combatants), to cut down (as brush)

(*mǎ-ǰen ǰe* to make (lit. to clear) a clearing (*mǎ-ǰen*)), *ǰye* to allot, to assign, to parcel out.

- (74) T. *byed-pa*, P. *byas*, F. *bya*, Imp. *byos* to make, to do, to cause, to fabricate, *spyod-pa*, *spyad-pa*, P. *spyad* to do, to act, to accomplish, *ačos-pa*, P. *bčos*, *ačos*, F. *bčo*, Imp. *čos* to make, to construct, to manufacture, to build, *ača-ba*, P. *bčas*, *ačas*, F. *bča*, Imp. *čos* to make, to prepare, to construct.

K. *čyen* to do (obsolete word), *šā-čyen* to do, to accomplish, to perform, *lǎ-čyen* work, labour.

- (75) T. *abral-ba*, P. *bral*, Imp. *bröl* to be separated from, to be deprived of, to be parted from, to be bereft of, *brel-ba* to be destitute of, to be without, to be in need of, to be poor, *aṗral-ba*, P. *ṗral*, F. *dbral*, Imp. *ṗrol* (vb. tr.) to separate, to leave, to take away from.

K. *ran* to be apart, to be separated, to be divided, *mǎ-ran* to separate, to push away, to send away, *šā-ran* to place apart, to put down separately, *pǎ-ran* to separate, to sort out, *ṗā-ran* to judge, to decide, *kǎ-ran*, *gǎ-ran* to divide, to distribute, to apportion, *ra* to be parted, to be separated.

- (76) T. *bris* picture, drawing, representation, *bris-ma* written book, *ris* figure, form, design, *ri-mo* figure, picture, painting, drawing, mark, *abri-ba*, P. and Imp. *bris* to write, to draw, to design.

K. *rit* to mark a boundary, to trace a boundary line, *ǰǎ-rit* boundary line, border, *a-rit* dividing line, *mǎ-ri* to mark, to rule, to make a line, *tsǎ-ri* a scribe.

- (77) T. *rman-pa* wounded, *dmas-pa* wounded, *rma-ba*, P. *rmas* to wound, *rma* a wound.

K. ⁵³ *n-ma* wound, cut, laceration, scar.

- (78) T. *rmod-pa*, P. and F. *rmos* (cut the ground:) to plough, *rmed-pa* to plough and sow, *rmon-pa* ploughing, *rmo-ba* = *rmod-pa*.

K. *maṭ*, *maṇ* to cut, to slice, to shave, to castrate.

- (79)⁵⁴ T. *mun-pa* obscurity, darkness, obscure, dark, *dmunpa* darkened, obscured (as *blo* the mind), *rmun-po* dull, heavy, stupid, *rmus-pa* dull, heavy, peevish, listless, foggy, gloomy, dark, *rmu-ba* dullness, heaviness, fog.

K. *mut* to be blue, *a-mut* blue, *čyǎ-mut* blue, (faded:) shabby, dull, dusky, *mǎ-mut* bluish, dark (as clouds), *dǎ-mun* grey.

- (80) T. *rud* a fallen or falling mass (of *ka-ba* snow: a snowslip, of *ču* water: a deluge, of *sa* earth: a landslide).

K. *šǎ-rut* a landslide (*šǎ-rut ru* to cave in, to slide down,) *gum-rut* to slide down, to slip down, *niṅ-rut* to be broken, (fallen in:) ravine, gap, landslide, *ziṅ-rut* pit, pitfall, *rut* to pour out, to spill, *run* to pull down, to tear down, to demolish, to fall down, *šǎ-run* to demolish, to tear down, to destroy, to remove, to strip off, *ru* to fall, to tumble, to pour down.

The most striking thing that we notice here is that while in Tibetan the guttural and labial final families have only two consonantal finals (-g and -ṅ; -b and -m), the dental class has no less than five (-d, -n, -r, -l, and -s), a fact which puts the dental

families at a distinct advantage over the other two. This is, in itself, sufficiently peculiar to suggest a special inquiry into the dental finals to see if they have not undergone in Tibetan some special expansion from an original state where they also possessed only two types, which, by analogy with the other classes, we might suppose were -d and -n, and which actually exist in this form (-t and -n) in Kachin.

In this inquiry it seems to me that something may perhaps be deduced from the behaviour of the suffixes -s and -d with the so-called Perfect roots of verbs. Their occurrence, including the obsolete usages of -d with final -n, -r, and -l, may be summarized as follows:—

Suffix.	Guttural finals.	Labial finals.	Dental finals.
-s	(1) -g	(1) -b	
	(2) -ṅ	(2) -m	
-d			(2) -n, -r, -l

To begin with, the use of the same suffix (-d) after differing finals naturally follows the close relationship in sound between them, and it is, indeed, quite conceivable that -n, -r, and -l may represent simply varieties of one and the same sound, which, in fact, is supported by various developments occurring later in various parts of the Tibeto-Burman field, such as the interchange of -n and -r and -n and -l between Kachin and Tibetan,⁵⁵ and the similar alternation of -n and -l in Manipuri,⁵⁶ and of Tibetan -n with Manipuri -l,⁵⁷ and so on. Between Chinese and Tibetan Simon⁵⁸ has already proposed a number of -n = -l equations, on some of which we shall comment a little later.

This, then, would reduce our dental finals to three: -n, -r, and -l in one group, with -d and -s still standing apart.

Now it is a fact, the significance of which is considerable, that as far back as our knowledge of Tibetan goes, neither -d nor -s can be attached to -d verbs in the "Perfect" tense, but that very frequently -d falls out and -s occurs in its place, giving the type: *abud-pa*, P. *bus* to blow, *byed-pa*, P. *byas* to do, and indeed one receives the distinct impression that here -s of the "Perfect" is for older -ds, an idea which support is also lent by the alternation of -d and -s in the Perfect of one and the same verb, as in *ǰyed* or *ǰyes* (P. of *abyed-pa* to open), *brṅed* or *brṅes* (P. of *rṅed-pa* to find), which is a feature of frequent occurrence seeming to indicate older forms **ǰyeds*, **brṅeds*, and so on.

I am thus led to restate an idea which I first put forward⁵⁹ on general grounds only, and which was afterwards advanced more definitely by Simon,⁶⁰ that -s as a final in Tibetan in a great number of cases presupposes older -ds, which is then the parallel in the dental series of -gs and -bs among the guttural and labial finals, and in what follows we shall somewhat expand this idea, which indeed finds considerable support when the word families of Tibetan, Kachin, and Chinese are examined together.

Let us now, then, fill in our scheme as follows:—

Suffix.	Guttural finals.	Labial finals.	Dental finals.
-s	(1) -g (2) -ñ	(1) -b (2) -m	(1) -d
-d [*]			(2) -n, -r, -l

We then have our two groups corresponding to the situation in the guttural and labial types.

But we are left, then, if this scheme is complete, without any "final" -s in Tibetan. And this, I believe, can be shown with a very high degree of probability to be the case, and that the occurrence of -s as a "final" in Tibetan can be ascribed to phenomena which we have already mentioned and which we shall consider in greater detail almost immediately below.

Before, however, passing to this phase of the question, we may profitably turn aside for a moment to inquire how the situation in practice agrees with the proposals so far made.

We have seen already that Kachin has only -t and -n as dental finals as against Tibetan -d, -n, -r, -l, and -s. Does, then, Kachin represent an older position in this regard than Tibetan? *A priori* this does not seem very probable, and yet it is certainly significant that its equipment is just that which we have suggested may have been original to Tibetan before its supposed expansion of the dental series.

Taking first Tibetan -r and -l we have among the individual families already listed the following representative cases:—

No. 49.	T. -r;	K. -n ~ -t
No. 63.	T. -r;	K. -n ~ -t
No. 66.	T. -r;	K. -n ~ -t
No. 38.	T. -r ~ -l ~ -O;	K. -n ~ -O
No. 62.	T. -r;	K. -n
No. 41.	T. -r;	K. -n
No. 43.	T. -l;	K. -n ~ -t ~ -O
No. 47.	T. -l ~ -O;	K. -n ~ -t ~ -O
No. 67.	T. -l;	K. -n ~ -t ~ -O
No. 75.	T. -l;	K. -n ~ -O
No. 54.	T. -l;	K. -n

which seem, indeed, to give support to the idea that -r and -l on the Tibetan side represent varieties of -n.⁶¹ Phonetically, of course, the close relationship requires no comment, and we have already adduced other concrete instances of the same interchange elsewhere in the Tibeto-Burman family.

We then come again to the question of Tibetan -s. Among the word families already listed we have the following cases:—

No. 61.	T. -s;	K. -t ~ -n
No. 65.	T. -s;	K. -t ~ -n ~ -O
No. 55.	T. -s ~ -n ~ -O;	K. -t ~ -n ~ -O
No. 79.	T. -s ~ -n ~ -O;	K. -t ~ -n
No. 76.	T. -s ~ -O;	K. -t ~ -O

The evidence of cases like these seems, indeed, very straight-forward, and what appears to be an equation -s: -t in the type T. *pus-mo*: K. *put* (No. 65) seems, indeed, to find quite definite support in a number of similar instances which are of particularly frequent occurrence between Tibetan and Lepcha. One thus finds, for instance:—

T. <i>zas</i>	L. (a-)zót pasturage	(K. <i>šat</i> (food:) boiled rice)
T. <i>rus-pa</i>	L. a-hrät bone	(K. <i>n-rut</i>)
T. <i>pus-mo</i>	L. <i>tük-pat</i> knee	(K. <i>put</i>)
T. <i>gñis</i>	L. <i>nat</i> two	
T. <i>gros</i>	L. <i>krut</i> advice	
T. <i>bkres</i>	L. <i>krít</i> hunger	
T. <i>dgos-pa</i>	L. <i>gat</i> to desire	

But the same kind of thing can also be set up between Tibetan and Chinese, as, for instance, in:—

T. <i>mkas-pa</i>	Ch. 黠 <i>gat</i>	K. <i>ket</i>
shrewd, wise	wily, cunning	to be wily
T. <i>šes-pa</i>	Ch. 悉 <i>šjët</i>	
to know, to understand	to know thoroughly	
T. <i>bris</i>	Ch. 筆 <i>pljët</i>	K. <i>a-rit</i>
picture, drawing	stroke in writing	dividing line

and I am strongly of the opinion that all these *-t* forms in Lepcha, Chinese, and Kachin, presuppose a *-d* somewhere in their Tibetan relatives, and that, indeed, the Tibetan words in question almost certainly at one time ended in *-ds*.

To illustrate the consequences of this possibility, I believe, in fact, that we are justified in advancing equations of the following type:—

- (1) T. *pus-mo* (<**puḍs*) knee, Ch. 市 *pjwət* knee cover, K. *put* knee; etc. (See K.WF., H. 117, etc., and Family No. 65, sup.)
- (2) T. *bris* (<**brids*) picture, drawing, representation, Ch. 筆 *pliēt* stylus, writing, stroke in writing, K. *a-rit* dividing line, boundary mark; etc. (See Family No. 76, sup.)
- (3) T. *rmus-pa* (<**rmuds*) dull, listless, Ch. 忽 *χmwət* dull, stupid, K. *má-mut* bluish, dark; etc. (See K.WF., H. 105, etc., and Family No. 79, sup.)
- (4) T. *adus-pa* (<**aduds*) gathering, assembly, meeting (cf. *sdud-pa* vb. tr. to join), Ch. 隊 *dwəd* group of soldiers, regiment, K. *tut* to be joined together, etc. (See K.WF., F. 151, etc., and Family No. 56, sup.)

And we do not then have the *-s*: *-d*, *-t* equations that appear on the surface, but a much more probable T. *-d*, Ch. *-d*, *-t*, K. *-t*.

In this view, then, a considerable number of equations involving the so-called "Perfect" root of Tibetan verbs may be expected, of which the type is again exemplified in e.g.: T. (*b*)*rkos* (<**brkods*) excavated, the so-called "Perfect form of *rko-ba*, *rkod-pa* to dig, Ch. 穴 *giwet*, or 窟 *kwət* hole, pit, cave (<'excavated' place?).")

But what, then, is the final implication of all this? Clearly (1) That it is highly probable that Chinese, as well as Kachin, never possessed any final *-s* of any type, either true final or suffix,⁶² and (2) that the following is a fairly definite series of equations which we may expect between Tibetan and Chinese:

Tibetan	Chinese
<i>-d</i>	<i>-d</i> , <i>-t</i>
<i>-s</i> <* <i>-ds</i>	<i>-d</i> , <i>-t</i>
<i>-n</i>	<i>-n</i> , <i>-r</i> , <i>-l</i> (?)
<i>-r</i>	<i>-r</i> , <i>-n</i> , <i>-l</i> (?)
<i>-l</i>	<i>-r</i> , <i>-n</i> , <i>-l</i> (?)

In other words, the inescapable conclusion seems to be that there was no *-s* in pre-Archaic Chinese at all, and that archaic *-r* can be descended only from pre-Archaic *-r* or *-l* or some variety of *-n*, and I shall be obliged to withdraw a proposal I made on a former occasion⁶³ that the alternations *-s* ~ *-n* and *-s* ~ *-d* of Tibetan and *-r* ~ *-n* and *-r* ~ *-d*, *-r* ~ *-t* of Chinese support the descent of Archaic Chinese *-r* from *-s* in an undetermined number of cases. On the Chinese side there

is, of course, no certainty that any spread of the dental finals ever occurred in the pre-Archaic language producing a series anywhere nearly paralleling Tibetan with its *-d*, *-n*, *-r*, *-l*, and *-s*, and I thus cannot follow Simon⁶⁴ in his suggestion that, for instance, 卷 *kjwan*⁶⁵ a roll, a scroll, has changed an older *-l* into *-n* on the evidence of Tibetan *gril* a roll. There is small doubt to my mind that Chinese *-n* is always older than Tibetan *-l*. In this particular equation of Simon's I also seriously doubt whether 卷 *kjwan* and its relatives (v. K.WF. E. 1-31) are related to Tibetan *gril* and the other members of its family (v. No. 47, sup.) at all.⁶⁶ In the case of Kachin the situation is better known. Not only does the language lack a final or suffixed *-s*, but no spread of the original dental finals *-d* and *-n* can be traced.

I cannot help feeling that this elision theory for Tibetan *-d* explains a very great deal. Even where Tibetan verbs regularly end in *-s* throughout I believe there is ground for supposing the disappearance of *-d* before it. The type is:—

agas-pa, P. *gas* to be split, to be cleft, to be cracked, to be burst asunder.

ages-pa, P. *bkas*, F. *dgas*, Imp. *kos* to split, to cleave, to divide, to cut open.

Here Chinese relatives in *-d* and *-t* appear to be to hand in 害 *gād* (to cut :) to injure, 膾 *kwād* to cut meat to pieces, to mince, 剗 *kwād* cut off, 刈 *kwād*, *kjād* to cut, to wound, 剗 *kjwād* sharp, to cut, to wound, 契 *kiad* to cut, a notch, 剗 *kāt* to cut, 戣 *ket* lance, 刮 *kwāt* cut off, scrape off, 鋸 *giwāt* halberd, 鋸 *kiat* sickle, to cut, 刮 *giwāt* to incise, and we also have in Kachin *kāt* to cut, to hew, to sever, to cleave, *a-kāt* to make a semicircular incision with a dah, *lā-kāt* to cut obliquely, and finally, I believe, Tibetan itself supports *-s* < *-ds* here with: *agved-pa*, P. *bgyes*, F. *bkye* to divide, to scatter, to disperse, to dismiss, to distribute, the transitive verb form corresponding to the intransitive *agye-ba*, P. *gyes* to be divided, to be separated, to come apart.

The origin of this class of verb is, indeed, perhaps to be traced to the habit which Tibetan has of using its so-called "Perfect" roots as secondary Present forms. In this way, for instance, *rgyas-pa* is used as a Present, though properly the Perfect of *rgya-ba* to increase, *agyes-pa* is employed as a Present though really the Perfect of *agye-ba* to disperse, giving, in practice *rgya-ba* or *rgyas-pa*, P. *rgyas*, and *agye-ba*, or *agyes-pa*, P. *agyes*. There is only one more step for the verb then, to take before the "Perfect" form has entirely usurped the field and the verb appears with *-s* throughout, exactly as it does in the case of *agas-pa* and *ages-pa* above.

It thus transpires that we get a somewhat different view of many Tibetan word families, and especially among those with dental finals is it evident that only a critical examination of all the material which they offer with, where possible, a comparison with the related families in other languages, can give us any sure idea of where the equations from word to word should be set up.

The same principle, indeed, applies to words which are apparently completely isolated in their own languages. A case in point is Tibetan *ka* mouth. Only from

the Kachin family *kan* to be pushed back, to be separated, *mā-kan* to push open, to force apart, *sūm-kan* to be open, to gap, *mā-ka* to be open (as a door), to open (as the mouth), *ǰā-ka* to part, to separate, *ka* to be remote, to be at a distance, to lose (as a tooth), *ka* to be parted, to be separated, to gap, to be open, *čyin-ka* door, gate, *lā-ka* to crack open, to chap, *n-ka* door, does it appear that Tibetan *ka* was originally "the opener". However reasonable the unsupported supposition⁶⁷ might have appeared, one could never from Tibetan alone have supported it with a series of similar nature.

Finally, also, as an additional example of how very essential the word stock of one language may be to the correct evaluation of that of another, we may take the following case.

The writer has previously⁶⁸ suggested that in Tibetan there was formerly, with some probability, a word family of the type *-n ~ -O* with the general sense of "to bend". Chinese alone gives one this idea, but within the Tibeto-Burman family additional proof is supplied by Kachin,⁶⁹ where we have *kun*, *tin-kun* to be bent, to be curved, *šin-kun* to bend (as a stick), to be pliable, to wriggle, *šin-kun*, *mā-kun* (assume a bending position:) to crouch down, *ku* to be bent, to be curved.

Erratum

note 29, line 1. For "*apra-va*" read "*apra-ba*".

Notes

- 1 This has already been very clearly stated by Karlgren, "Word Families in Chinese," *Bull. of the Mus. of Far Eastern Antiquities*, No. 5, Stockholm, 1934, p. 9, quoted hereinafter as K.WF.
- 2 Sec, for instance, Dragunov, *OLZ.*, 1931, Sp., 1088–1089.
- 3 For the Chinese connections here see K.WF.; H. 26–44, and *JRAS.*, 1936, pp. 415–416.
- 4 "Tibetisch-Chinesische Wortgleichungen," *Mit. d. Seminars f. Orient. Spr.*, Bd. xxxii (1929), Berlin, 1930, Abt. 1, p. 162. This work I shall hereinafter quote as "Wortgl."
- 5 Assimilation is sometimes clearly the cause of an aberrant final. A well-known example is *mdzub-mo* thumb, beside *mdzug-gu*, in a family with guttural finals (cf. "Language", *JLSA.*, iv (1928), p. 278 (No. 4)). There can be but small doubt here that *mdzub* owes its final *-b* to the influence of the following suffix. At other times associative interference has probably been at work, but the forces involved are obscure and each case will need special treatment by itself.
- 6 With these, Simon (Wortgl., p. 162) would include *snabs* mucus, which gives us a good example of how assemblies uncontrolled by families in related languages may go astray, even under the best of judgment. *snabs*, we shall see below (No. 33) belongs with another family entirely, but from Tibetan alone this would never be apparent.
- 7 The entries, as far as possible, follow the order *-g, -ŋ, -O; -b, -m, -O; -d, -n, -r, -l, -s, -O*. The assemblies must not be regarded as necessarily correct in all particulars. In some cases there are other possible alignments which I have indicated in the footnotes.
- 8 Cf. K.WF., A. 266–275.
- 9 Cf. K.WF., A. 35–7, 330–1.
- 10 Cf. K.WF., A. 266–275.

- 11 Cf. K.WF., A. 27–8?
- 12 Cf. K.WF., B. 150–189.
- 13 Related to No. 50 with dental finals. Cf. K.WF., B. 20–5.
- 14 Cf. K.WF., B. 295–301.
- 15 Cf. K.WF., B. 112–128, 569–571. Cf. No. 10 inf.
- 16 Cf. K.WF., B. 112–128, 569–571, and cf. No. 9 sup.
- 17 Cf. K.WF., B. 64–84.
- 18 Cf. K.WF., D. 188.
- 19 Cf. K.WF., D. 62–71?
- 20 Cf. K.WF., D. 89–94.
- 21 Cf. K.WF., D. 1–23, 24–7.
- 22 Cf. K.WF., D. 60–1.
- 23 Cf. K.WF., I, 1–20.
- 24 The underlying sense here may be one of "succession" or "series" (of events or actions). Cf. Lepcha *góm*, *a-góm* series, chain, train, continuity, whence: *toñ góm* a step, a stride (lit. foot (*toñ*) step), *a-dyañ góm* a step, a pace (lit. foot (*a-dyañ*) step), *kā-góm* a stride.
- 25 Cf. K.WF., K. 79–84.
- 26 Cf. K.WF., K. 16–19.
- 27 On the Kachin side it is possible that *nya*, *šā-nya*, and *čyā-nya* belong with T. *mñen-pa* flexible, pliant, supple, soft, as their final affinities are uncertain. Cf. Burmese *ñan*.
- 28 Cf. K.WF., K. 87–90?
- 29 Also (?): *apra-va*, P. *apras* to kick, to jerk (as the legs); *pra-ba*, id.; *apras-pa* stroke, blow, kick.
- 30 Cf. K.WF., E. 153–162, and *JRAS.*, 1936, pp. 404–5.
- 31 Cf. K.WF., E. 114–123.
- 32 Also (?): *gud* separation, solitude, seclusion (> CT. loss, damage), *gun* loss, damage.
- 33 Cf. K.WF., E. 138–144.
- 34 See *JRAS.*, 1936, p. 408. Jäschke (Dic., p. 358) notes *ap̄yil-ba* to wind, to twist, as a form of *ak̄yil-ba*. Note, however, K. *pyin* to go round, to encircle, windlass, capstan.
- 35 Cf. K.WF., G. 24–34?
- 36 Cf. K.WF., E. 238–246.
- 37 Related to No. 7 with guttural finals.
- 38 Cf. K.WF., F. 46–7.
- 39 Cf. K.WF., G. 40–5.
- 40 Cf. K.WF., F. 100–102. It is possible that the Tibetan and Kachin families here assembled are distinct and that the only relative that Kachin has in Tibetan is *ša* flesh, meat. The position remains in doubt.
- 41 Cf. K.WF., F. 150–3.
- 42 Cf. K.WF., F. 243–6.
- 43 Cf. K.WF., F. 63–7. It is possible that K. *tsā*, *mā-tsā*, and *šā-tsā* do not belong here, but rather with T. *gtsō-bo* highest in perfection, most excellent (of its kind).
- 44 Cf. K.WF., G. 24–34, and No. 60 below.
- 45 Cf. No. 59 above.
- 46 Cf. K.WF., H. 54–7.
- 47 Cf. K.WF., H. 111–134.
- 48 Cf. K.WF., F. 247–250, H. 141–2. This and the next three families are very confusing. They all appear to belong together at base, as is indicated by the various collocations of the type *mč̄i-ma ap̄yi-ba*, etc., where the families are used together as though one. Probably the form *ap̄yin-pa* liver, of the Berlin Ġzer-Myig. (v. Francke, *Asia Major*, vol. i, p. 287) is something more than a homophone, and indicates recognized relationship (present in the scribe's mind) between this word and *ap̄yin-pa* to tear out, of the present family. See footnote to No. 71.

- 49 Cf. K.WF., F. 48–49. See note to No. 68.
- 50 Cf. K.WF., F. 147–9?. See note to No. 68. The basic idea here seems to be that of “ejection” (ejected matter). *m̄ci-ma* (welling forth:) tears, may belong here. Cf. the Chinese family quoted.
- 51 See note to No. 68. Possibly the basic meaning here is “that which is torn out” (pointing to very early hepatoscopy in Tibet?).
- 52 Cf. K.WF., H. 26–44.
- 53 Note also K. *mya* to be torn, to be ragged, *a-mya* to tear, to lacerate, to maul, *čyā-mya* torn, ragged. These, however, may belong with T. *dmyal-ba* to cut up.
- 54 Cf. K.WF., H 94–110.
- 55 See above, Nos. 38, 41, 49, 62, 63, 66, and 43, 47, 54, 67, 75.
- 56 As e.g. in *čen-ba* ~ *čel-ba* to run, *han* ~ *hal* the causative infix, *kanba* ~ *kal-ba* to think, *na-ton* ~ *na-tol* nose, *pun-ba* ~ *pul-ba* to tie, to bind, *sa-gon* ~ *sa-gol* (Beng. *ghōrā*) horse, etc. This *-n* ~ *-l* and also an *-r* ~ *-l* alternation likewise come out strongly in the Bodo and related languages of Assam, notably in Garo, Bārā, and Kachari: G. *pān* ~ *bol* tree, Mikir *iñ-čin*, G. *šil* iron, G., K. *sān*, G. *sāl* sun, G., K. *šur*, G. *šil* iron, K. *bi-bār*, G. *pārr*, *bi-bal* flower, K. *bār*, G. *lam-pār*, *bāl* air, and others. Note also Tibetan *par* exchange, barter, G., K. *pāl* to sell.
- 57 As e.g. T. *rgan-pa*, M. *a-hal* old, T. *mfon-po* high, M. *ma-tol* summit, etc.
- 58 Wortgl. pp. 183–4.
- 59 *Outlines of Tibeto-Burman Linguistic Morphology*, London, 1929, p. 19, n. 1. This will be abbreviated hereafter as “*Outlines*”.
- 60 Wortgl., p. 185.
- 61 It should be noted here that it must have been at a very early time indeed when Tibetan first placed the basic roots of what are now its word families in the final *-n*, and *-r*, and *-l* classes. This is shown by the very great comparative rarity of alternations between *-n* and *-r* in the same family (for examples, see Nos. 53 and 64 in the preceding pages, and *JRAS.*, 1936, p. 415, No. 22, and p. 406), and the almost total absence, so far as I am aware, of *-n* ~ *-l* and *-r* ~ *-l* alternations of similar type (for *-r* ~ *-l* see No. 38, sup.). In other words this move must have taken place while the root was still single and alone, and free of prefixes, which were only added to it in mobile fashion as required (cf. *Outlines*, p. 53). Though at other times families in *-n* and *-r*, *-n* and *-l*, or *-r* and *-l* may approach each other fairly closely in both form and meaning, I do not believe that any such cases involve alternations between these finals. Such families seem to me to be altogether too evidently distinct (v. *JRAS.*, 1936, pp. 407–408, and (for a contrary view), K.WF., p. 36).
- 62 By this I, of course, mean *-s* standing alone as final, or following a vowel as a suffix. We have no knowledge as to the existence of a *-ds* or *-ts* combination in Chinese at some very early time. It is, of course, just possible that a suffixed *-s* of this nature is at the bottom of the *-d*: *-t* differentiation in Archaic Chinese.
- 63 *JRAS.*, 1936, p. 402.
- 64 Wortgl., p. 183, and No. 312.
- 65 K.WF., E. 8.
- 66 Cf. also e.g. Simon No. 320, T. *apral* Ch. 分 *piwən* to divide (K.WF., H. 38). The Chinese family here, I believe, belongs with an entirely different one in Tibetan (v. *JRAS.*, 1936, p. 415, No. 22) where a Tibetan *-n* Ch. *-n* equation is present. For the Tibetan and Kachin relatives of T. *apral-ba* see above No. 75.
- 67 From Tibetan alone one, of course, gets a fairly clear impression of the origin of this word from the fact of its carrying the sense of “opening”, “gap”, “vacancy”, in such combinations as *ka aqebš-pa* to shut an opening, *ka skoñ-ba* to fill a vacancy, etc., but the family as still extant in Kachin is lacking.
- 68 *JRAS.*, 1936, pp. 404–5.
- 69 See No. 38 sup.

VARIABLE FINALS IN PROTO-SINO-TIBETAN*

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In many Tibeto-Burman languages we find that there are a number of forms that are clearly related though differ in one segment. In some cases these variations may be due to regular or common alternations, such as in Tibetan, where you have dental suffixes that can nominalize a verb (e.g. *rkun-po* ‘thief’, from *rku* ‘steal’). In other cases we cannot find any morphological reason for the variation, even though the variation may involve the same segments, as in Tibetan *bka*, *skad* ‘speech’. When we reconstruct the Proto-Tibeto-Burman provenience of these cognates, we sometimes have no way of knowing which form is older, so we must reconstruct two forms that are clearly related, that are what James A. Matisoff has dubbed ‘allofams’. On the Chinese side of Sino-Tibetan we find similar alternations among cognate forms, as in 亡 **mjaŋ*, 無 **mjaŋ* ‘negative/not have’; 往 **gwjaŋ*, 于 **gwjaŋ* ‘go’.

This paper concentrates on variable finals, and argues that just as we find a certain amount of both rule-governed and non-rule governed variation in modern languages, in reconstructing Proto-Sino-Tibetan we should recognize the possibility of these types of variation. Second, the variation we find in PST and its immediate daughters is not as symmetrical and orderly as has been assumed. Third, the causes of the variation are complex and multifarious. Fourth, reconstructing a complex, typologically unlikely system to ‘explain’ the variation, such as the voiced stop finals reconstructed for Old Chinese, may also prevent us from attempting to find out the real causes of the variation. Fifth, the concept of word families is an important one, but we should not be unnecessarily constrained in our search for cognate sets by artifacts of our reconstructed system.

1. Variation in Sino-Tibetan

In working with Tibeto-Burman languages, we find that within each of the languages of the family there are a number of forms that are clearly related though differ in one segment, as in the following examples from Tibetan:

rku 'steal', rkun-po 'thief'
 bka, skad 'speech'
 nye 'near', nyen 'relative'
 gči-ba, gčid 'to urinate', gčin 'urine'
 fibye-ba (intr.), fibyed-pa (trans.) 'open, separate'
 ŋi-ma, ŋin-mo 'day'
 dro-ba 'to be hot', dron-mo 'hot', drod 'heat'.
 ŋu-mo 'weep', ŋud-mo 'a sob'

In some cases these variations may be due to regular or common alternations, such as in Tibetan, where you have dental suffixes that can nominalize a verb, as in rkun-po 'thief', from rku 'steal', and ŋud-mo 'a sob' from ŋu-mo, 'weep', or they can have a causative function, as in fibye-ba (intr.), fibyed-pa (trans.) 'open, separate' (cf. Benedict 1972:100, 1991). In that case it will not affect our reconstruction of the Proto-Tibeto-Burman (PTB) form of, for example, 'steal', though if we find the same derivational process in other TB languages, then we might want to reconstruct that morpheme (and the morphological process) to the proto-language. In other cases we cannot find any morphological reason for the variation, even though the variation may involve the same segments, as in Tibetan ŋi-ma, ŋin-mo 'sun'; ka, skad 'speech'; and Dulong mu²55 (< *muk; LaPolla 1987), ru³1 mut⁵5 'cloud'.

We find similar types of groupings on the Chinese side of Sino-Tibetan as well. These groups of related items are known as 'word families', following Karlgren's famous article (1933; see also Karlgren 1956). Karlgren, and later Wolfenden (1937), argued that in doing cross-language comparative work it is these word families that we should compare, not individual lexical items. Both Karlgren and Wolfenden felt that there were certain regularities to, or restrictions on, the type of variation within each word family, for example a restriction on the point of articulation of the finals such that all the variant forms of one word family would involve the same point of articulation. Wolfenden (1936, 1937) classified each of the forms he presented from Tibetan as to whether they were in the 'velar series', the 'dental series' or the 'labial series' of variation. He did not suggest a historical reason for this type of restriction on the variation.

Because of the recognition of these word families, in doing the comparative work necessary for reconstructing PTB we often need to recognize the same types of variation among languages or dialects in the family, as we often find forms that seem to be cognate in all but one segment, either the initial, the vowel or the final. If it is a case where the variation cannot be seen to be morphological, then we

have to see if it is a matter of one language being aberrant, as in the case of some of the -k and -t finals of Maru and the -n ~ -ŋ variation due to the causative infix of Lepcha,¹ or of a large number of languages being split (possibly along genetic lines) between having one form or the other, as in the case of 'dream', where all languages in Sino-Tibetan having cognate forms except for the Lolo-Burmese languages descend from *r-maŋ, with a velar nasal final, while the Lolo-Burmese forms descend from *r-mak, with a velar stop final. We might want to say in this case it is due to idiosyncratic phonetic change at the Proto-Lolo-Burmese level. The tendency in reconstruction work is still to attempt to reconstruct a single proto-form for the variant forms, though most cases are not as neatly distributed as the case of 'dream', and in these cases, when we reconstruct the PTB form we have no way of knowing which form is older, so we must reconstruct two or more alternate forms which represent the possible variations within the word family. Matisoff (1978:17ff) has dubbed these proto-variants 'allofams' (forms within the same word family, the term being based on analogy with 'allomorph' and 'allophone'), and he marks them with the symbol '⊗' (from > and <, as we do not know which way the relationship goes). Among the most common of the alternations we find is variation in the vowels of closed syllables (e.g. -i- ⊗ -u- ⊗ -a-), variation between pure vowel and diphthong (e.g. a ⊗ ay) (see for example Matisoff 1985), and also variation between stop and nasal final or stop and open final.² In this paper I will be concentrating on variable finals. Here are some examples from TB of the type of allofams I will be talking about:³

*ka ⊗ kat	'speech'	*m-si ⊗ m-sit	'comb'
*la ⊗ lap	'leaf'	*pa ⊗ pan	'palm'
*pyaw ⊗ pyam	'fly (v.)'	*ra ⊗ rat	'cut'
*k-lok ⊗ k-loŋ	'stone'	*yu(w) ⊗ yuk	'descend'
*ma ⊗ mat	'disappear'	*ya ⊗ yan	'night'
*du ⊗ dut ⊗ tu ⊗ tut	'join, tie, knot'		

On the Chinese side of Sino-Tibetan the question of word families is very much intertwined with the concept of rime categories (韻部 yùnbù).⁴ From the study of the rhyming patterns and xié-shēng (諧聲) phenomena⁵ of Old Chinese (OC), we are accustomed to thinking in terms of Chinese words belonging to certain rime categories, and these rime categories to belonging to certain groups of rime categories (類 lèi). The larger groupings are based on the observance that words belonging to a particular category sometimes rhyme with words in certain other rime categories, or the Chinese characters used to represent words belonging to a particular rime category will have the same phonetic components as words in certain other rime categories. We assume this happens because these particular rime categories have similar rimes. An example is the rime categories yú (魚), dúo (鐸), and yáng (陽), which are all said by Li Fang-kuei (1980) to have the vowel *-a plus a velar final consonant: *-g, *-k, and *-ŋ, respectively.

It is because of these 'contacts', as they are referred to, in rhyming or graphic components that Li (following Karlgren) reconstructs a final *-g for what is an open syllable in later Chinese (e.g. 魚 *njag 'fish').⁶ When we find words with the same vowel but different finals with the same point of articulation either rhyming with each other or sharing a phonetic component, we call this 'direct transfer' (對轉 *duì zhuǎn*) or 'connected rhymes' (通韻 *tōng yùn*). We find examples of this kind of cross-rhyming in the Shi Jing (詩經) (from Wang 1980b):⁷

芼 *magw, 樂 *ŋrakw	(宵藥通韻)	《周南：關雎》
敦 *tən, 遺 *rjəd, 摧 *sdəd	(文微通韻)	《邶風：北門》
艾 *ŋadh, 難 *nan	(祭元通韻)	《閔予小子之什：訪落》
來 *lɔg, 贈 *dzəŋh	(之蒸通韻)	《鄭風：女曰雞鳴》

It is not the case that the rhyming patterns always follow the tong yun patterns. In this case it is called 'combined rhymes' (合韻 *hé yùn*).⁸ Here are a few examples (From Wang Li 1980b):

業 *ŋjap	作 *tsak	(盍鐸合韻)	《蕩之什：常武》
答 *təp	退 *thwəd	(緝微合韻)	《節南山之什：雨無正》
躬 *kjəŋw	天 *thin	(中真合韻)	《文王之什：文王》 ⁹
林 *ljəm	冰 *pjəŋ	(侵蒸合韻)	《生蕩之什：常武》
言 ŋjan	行 graŋ	(元陽合韻)	《蕩之什：常武》
人 *ŋjin	訓 *xwjəŋh 刑 *giŋ	(真文耕合韻)	《清廟之什：烈文》
服 *bjək	熾 *thjəgh 急 *kjəp	國 *kwək	(國之緝合韻) 《南有嘉魚之什：六月》
瞻 *tjam	相 *sjaŋ 臧 *tsaŋ	腸 *drjaŋ 狂 *gwjaŋ	(談陽合韻) 《蕩之什：桑扈》

We also find variation within these larger rime classes where a character will have two pronunciations differing only in the final consonant (e.g. 度 *dag

夜 *riagh	夕 *rjiak	'night' (cf. Mei 1979:120ff)
無 *mjag	亡 *mjaŋ	'no, not have'
于 *gwjag	往 *gwjaŋ	'go'
女 *nrjagx	孃 *nrjaŋ	'woman'

Following are some xie-sheng contacts involving different finals:

瞿 *kwjagh	嬰 *kwjak	卒 *tsət	醉 *tsjəd
楮 *tjiagx	赤 *khrjak	弗 *pjət	費 *phjəd
逋 *pag	搏 *pak	必 *pjit	秘 *pjidh
借 *tsjiagh	昔 *sjiak	等 *təŋx/təgx	待 *dəgx
賴 *ladh	嬾 *lanx	能 *nəh	態 *hnəgh
由 *rəgw	迪 *diək	脈 *mrik	派 *phrih

We can also compare forms from Proto-Tibeto-Burman with forms in Old Chinese, and we come up with some interesting variations.

- PTB *la \times lap, OC *rap (葉) 'leaf'.
 PTB *ka \times kat 'speech', OC *kal (歌) 'sing, song'.
 PTB *ba, OC *bak (薄) 'thin'.
 PTB *mra \times mraŋ, OC *mragx (馬) 'horse'.
 PTB *graŋ \times *grak, OC *gljaŋ (涼) 'cool, cold'.
 PTB *kap, OC *gap \times *kabh (吒) 'to cover, cover'.
 PTB *san \times *sat, OC *san (散) \times *sat (撒) 'sow, pour out, disburse'.
 PTB *ŋa \times *ŋan, OC *ŋal (鵝) \times *ŋran (雁) 'goose'.
 PTB *tu \times *tuŋ, OC *duh (豆) \times *təŋ (Cf. 登) 'bean'.
 PTB *na \times *naŋ, OC *njagx (汝) \times *nəgx (乃) \times *njəŋw (戎) '2sg pronoun'.

2. Problems of methodology

Since both sides of the family seem to exhibit the same pattern of variation, we should be able to reconstruct this pattern of variation to Proto-Sino-Tibetan, but there are two problems involved with this hypothesis. First, Wolfenden's 'rule' of Tibetan word families is the result of his choosing some words over others that do not fit his pattern. I found a counter example after looking through a Tibetan dictionary for less than two minutes: sbu-gu 'hollow, cavity; the narrow interior of anything, a tube', sbugs 'hollow stalk, a tube; hole, excavation, interior space', fibugs-pa 'to hollow out, bore', sbun-gter 'meaningless, without substance, hollow, vain', sbub-khoŋ 'a hollow ball', sbub-mo 'hollow tube', sbur-ma 'chaff, husks'. Second, not all of the items that vary within one point of articulation in TB vary within the same point of articulation in OC. For example, Wolfenden gives Written Tibetan rmu-pa 'dullness, heaviness, fog', mun-ba 'obscurity, darkness, obscure, dark'; Kachin śa 'child', WT btsa-ba 'to bear children', tsha-bo, mtsan 'grandchild, nephew'; and WT rkun-ma 'thief', rku-ba 'steal' as all being in the dental series, while their Chinese cognates are all in the velar series: *mjugh (霧), *tsəgx(子), and *khugh (寇) respectively. We can also add OC *pjag/*pragx (扶 / 把), TB *pa \times pan 'palm'. The opposite situation exists for OC *pjidh \times *pjit (昇), TB *biy \times biŋ 'give'. If we were to hold strictly

to the 'same series consonant' rule, we would have to say that the forms in these word families are not cognate.

The problem of which forms to select exists for anyone attempting to identify word families, or even simple cognates. Each researcher has his or her own standards of rigorousness as to what constitutes an acceptable correspondence. Karlgren and Wolfenden limited their word families to only those forms whose finals had the same place of articulation, but as Pulleyblank (1972:11, 1973:120) has argued, 'One can easily find sets of words with the same initial consonant and closely similar meanings but quite different finals that are at least as plausible as the word families collected by Karlgren . . .' Among the examples Pulleyblank gives are the following (1972:11-12, 1973:121):

尼 *njid 'near, close' 呢 *njit 'intimate, familiar; glue' 狃 *njəgwɿ 'be familiar with, treat with contempt' 粘 *njam 'to glue, stick to'.

累 *ljədx 'bind, wrap around' 纒 *liagw, 'bind round, wrap' 摻 *kiəgw, liəgw 'tie round, strangle' 綸 *ljən 'woof, twist a cord, cord'.

From Pulleyblank 1991:30 we can also add

呼 *xag, 喝 *xat 'shout'; 舉 *kjagx, 揭 *kjat 'lift'.

Wang Li (1980a, 1980b, 1982) accepted the concept of classes of rime categories, but unlike most scholars working on Old Chinese, did not follow Karlgren in reconstructing the finals *-b, *-d and *-g.¹⁰ Possibly because of this he was not restricted in his search for cognate characters in Chinese (Wang 1982). He has 101 pairs of suggested cognates where the finals have different points of articulation (or would have in a system with *-g, *-d and *-b). Here are a few examples (converted to Li Fang-kuei's system of reconstruction):¹¹

吾	*ŋag	言	*ŋjan
我	*ŋarx	語	*ŋjagx 'language, speech'
印	*ŋaŋ '1sg pronoun'		
委	*zɰjarx	于	*gwjag
迂迂諸	*zɰjag 'bent'	爰	*gwjan (preposition)
喜	*hjəgx	弗	*pjət
欣	*hjən 'happy, happiness'	不	*pjəg 'not, negative'
急	*kjəp	架	*krarh
亟	*kjək 'urgent, rushed'	格	*krak '(clothes) rack'
額	*ŋrak	剔	*thik
顏	*ŋran 'forehead'	剃	*thidh 'cut hair'
甲	*krap	恨	*gən
介	*krat 'armor'	憾	*gəm 'regret'

It would be difficult, given the semantic correspondences (in most of the above examples, each of the characters is defined using the other from the pair), plus the fact that all other segments of the syllable match up exactly, it would be unwise to throw out these correspondences simply because the finals do not have the same point of articulation. Doing so would also mean we would have to say the phonetic and semantic correspondences between these sets (and many others) are purely coincidental and not due to etymological relatedness.

In terms of xiesheng contacts, Mei & Gong (1992) discuss several examples that differ in rime class, such as 豆 *dugh: 短 *duanx: 登 *təŋ and 取 *tshugx: 最 *tsuats: 叢 *dzuŋ. Pulleyblank (1991:30) also gives the following forms (which are not only phonetically related, but most likely etymologically related as well): *khjagx/h (去) 'leave, go away from', *khjag (祛) 'dispel, exorcise', *khjat (媯) 'go away'. We can also add *khjap (怯) 'cowardly, afraid'.¹²

We have at least three choices when faced with a situation such as we have in Sino-Tibetan. We can attempt to account for all possible variations (or most of them) by reconstructing a very complex proto-language using phonetic symbols (see for example Coblin 1986, where *-g is reconstructed to account for correspondences between OC *-g and TB *-k), we can use non-phonetic symbols to mark those alternate correspondences that are unresolvable (as for example when Austronesianists use *L to represent *l or *ɭ, or we can reconstruct a simple system and try to either explain the variations by some morphological or phonetic means or simply allow a certain amount of variation in our word families. This is a question of methodology. The first method is problematic because the resultant system is often typologically unrealistic (e.g. having three phonemically distinct *-r phonemes), while the second gives an incomplete and formulaic reconstruction. A cross between the two occurs in the case of the voiced finals of Old Chinese, as they are meant both to phonetically explain a particular correspondence, and to serve as symbols for unresolvable correspondences.¹³ This gives us a system that not only does not satisfactorily account for the data, but also gives us a typologically very unlikely system with voiced final consonants and no open finals at all.¹⁴ It is the third methodology I believe is the proper choice given the situation in Sino-Tibetan.

3. Possible explanations

The first thing I would like to suggest is that it is not necessary to assume that the rhyming or xiesheng contacts were anything less than true rhymes and accurate phonetic borrowings. To assume they were not (as is implied by the voiced stop final hypothesis) weakens the whole theoretical underpinnings of the traditional methods of Chinese historical phonology. We must assume the creation of xiesheng characters and the use of rhymes was relatively strict.¹⁵ That is, it is not necessary to say that when a yú bù (魚) word rhymed with a yáng bù (陽) word, that it was *-ag rhyming with *-aŋ. In these cases it was very likely *-a rhyming with *-a

or *-aŋ with *-aŋ, with the difference due to variation of the final of that character/phonetic. If we accept variation in prefixes, initials, and vowels, then accepting variation of finals should not be very problematic.

Dong Tonghe (1981:268) argues that given the variation we find in the finals, 'we cannot say that the characters with stopped finals in Middle Chinese originally had no final consonant in OC, and so could rhyme and have xiesheng contact with non-stopped characters, as if we say this then the contacts between non-stopped rimes should be chaotic; they definitely would not be this clearly separated'. He suggests the only alternative is to follow Karlgren's lead and reconstruct *-g, *-d, and *-b.

The most cogent arguments presented in favor of the voiced final consonant hypothesis are those given in Ting 1979, 1987. In Ting 1979 Chinese loans to Tai are examined (citing Li 1945), and it is shown that of the 12 earth-branch (地支) callendrical signs, one, *mjədh (未), appears in Tai dialects with a -t final, and six of the seven other items reconstructed for OC with voiced stop finals (*-g or *-gw) appear with glide finals in the Tai dialects. The seventh, *ŋagx (午), appears with an -a final in all three dialects. Ting argues that the fact that in all three Tai dialects considered OC *-g, and *-gw have regular but different reflexes is evidence that these characters had different finals in OC. That is, if these characters had simple vowel rimes with open finals (e.g. *-ə), then it would be difficult to explain the appearance of off-glides in all the Tai dialects. Just as some of the off-glides in Modern Mandarin descend from OC voiceless stop finals, Ting argues these Tai off-glides descend from OC voiced stop finals. Ting explains the change of the *-d final of OC *mjədh to Tai -t and not to a glide by reference to the fact that the *-d final rimes (脂微祭) rhymed with rusheng rimes as late as the Nan-Bei-Chao period, while the *-g and *-gw rimes gradually stopped rhyming with rusheng rimes during the Han period. Ting also points out the possibility that the difference is related to the fact that *mjədh is the only qusheng word among all of the 12 callendrical signs.

Ting then (p. 731ff, citing Li 1976) gives a number of lexical items from Siamese that are suggested to be cognate to certain Chinese items, though here the correspondences are less regular, as there are sets of OC *-ag corresponding with Thai -əŋ, OC *-ag/-ug corresponding with Thai -(a)ak/-əŋ, OC əgw/agw corresponding with Thai -uak/-ok, OC *-ad/id corresponding with Thai -əŋt/-et, and OC *-ag corresponding with Thai -aa. Ting takes the former sets as evidence of stop finals in Chinese, and explains the last set as due to the loss of *-g with compensatory lengthening of the vowel.

Next, Ting gives two sets of OC-Tibetan/Burmese correspondences. The first set shows some possible cognate sets where the OC form is reconstructed with a voiced stop final and the Tibetan/Burmese forms have voiceless stop finals. The second set shows possible cognates where the reconstructed OC form has a voiced stop final but the Tibetan/Burmese forms have open finals or glides. Ting argues that the sets where the Tibetan/Burmese forms have stop finals shows that at least some of the OC forms must have had consonant finals, and since the Chinese rime categories cannot be split up, then it must have been Tibetan and Burmese that have changed (p. 733).

In Ting 1987 further evidence is given to show that at least some characters had stop finals of some type. It is shown from an analysis of the cross-rhyming patterns of the different tones that there was a very strong connection between qu and rusheng in the Shijing, but that this connection weakened or changed gradually through the Western Han and Eastern Han periods to the point that in the Wei-Jin period rhyming patterns only those rimes reconstructed with dental finals showed cross-rhyming between the qu and rusheng words. There was in fact an increase in dental cross-rhymes as the velar cross-rhymes decreased (p. 62). Ting suggests that the reason why only the qusheng words, and not the ping and shang-sheng words, show this close connection with the rusheng words is that the pitch value of the qusheng must have been closer to that of the rusheng than were the other tones (p. 61, citing Dong 1954:189). The reason for the drop in velar contacts in later periods is suggested to be that *-g was lost earlier and faster than *-d (p. 63). No reason is given for the increase in dental qu-ru cross-rhymes. In the Wei-Jin period not only do the ping and shang-sheng words not rhyme with rusheng words, they also do not rhyme with qusheng words. Ting's explanation for this is that something about the pitch value of the qusheng caused stop finals to be retained while they were lost from the ping and shang-sheng words.

This is very solid philological work, and there is no reason to doubt Ting's main conclusion that the relevant lexical items had consonant finals in Old Chinese. The question then is was it a voiced stop final or a voiceless one, and do all of those words in the traditional rime categories necessarily share this consonant? Ting's answer is that it was a voiced consonant and all the words in the category traditionally thought to not have a voiceless stop final shared the same voiced stop final. This is one possibility, but not the only one. We are now all in agreement that many variations in the initials of Middle Chinese are due to different prefixes in OC (see for example Pulleyblank 1962-62, 1972, 1973a; Bodman 1980, Benedict 1987, Mei 1989, Baxter 1992). In the same way much of the variation in the finals of Middle Chinese can be explained as due to qusheng (去聲 'departing tone') derivation (see Downer 1959, Pulleyblank 1962-62, 1972, 1973a,b, 1977-78, Mei 1980, Baxter 1992). Rather than assuming that since some words in a particular rime show contacts with rusheng words all words in the rime must have had stop finals, Pulleyblank (1977-78) and Baxter (1992) reconstruct consonant finals only for those items that actually show rusheng contacts, and reconstruct non-stop finals for those words which do not show rusheng contacts. Pulleyblank and Baxter both reconstruct voiceless (rather than voiced) stop finals in those words that show rusheng contacts, assuming that these finals were later lost due to the influence of an *-s suffix which later developed into the departing tone (and possibly a *-ʔ final that developed into the rising tone).¹⁶ All of the evidence presented by Ting is consonant with this hypothesis, and in fact more so than the voiced stop hypothesis, as the Thai and Tibeto-Burman evidence is of a voiceless stop, not a voiced one, and it explains why *ŋagx (午) (which does not have rusheng connections and so is reconstructed with an *-n final by Baxter) does not

show evidence of a consonant final in the Tai dialects. The fact that Li's *-g and *-gw have different off-glide reflexes in the Tai dialects cannot be taken as evidence of voiced stop finals, as any system that differentiates these two rime categories (之 幽) can account for this, especially if you 幽 is reconstructed with an off-glide (e.g. əw). The open final hypothesis also explains the open *-a(a) finals in the Siamese, Tibetan, and Burmese words presented by Ting, as they are all items that do not show rusheng contacts (e.g. 五吾魚無死父余塗署稼), without having to assume the irregular loss of a voiced final in some but not other words. The rhyming patterns are also explained more satisfactorily than by making ad-hoc guesses about pitch contours, as suggested by Dong Tong-he.

What this hypothesis means is that the original tone categories of OC do not coincide completely with those of Middle Chinese. Whereas rusheng is considered a separate tone in Middle Chinese, the three 'tones' (*-Ø, *-2, and *-s) of OC could appear on any type of syllable, including those with voiceless stop finals. According to Baxter (Baxter 1992:309), the *-s suffix ('post-final' in Baxter's book) then caused the loss of the voiceless stop finals in the following stages ('H' is the representation of the Middle Chinese departing tone in Baxter's system):

*-ps	>	*-ts	>	*-js	>	-jH
*-ts	>	*-js	>	-jH		
*-ks	>	*-s	>	-H		
*-wks	>	*-ws	>	-wH		

Given the fact that 90% of all rusheng contacts with non-rusheng words involve qusheng words, this hypothesis explains quite a bit of the variation of finals within Old Chinese. Given this system the contacts would also not be 'chaotic', as feared by Dong Tonghe (see above). This analysis has other strong points as well. As Baxter points out (1992:336), Karlgren originally reconstructed voiced stops both to explain the rusheng contacts and the development of the qusheng, whereas in Li Fang-kuei's system the qusheng is separate from the voiced final, so 'it appears to be a coincidence that *-ad occurs only in qusheng, or that qusheng words often have clear and obvious rusheng connections, while words in other tones can usually be connected with rusheng only indirectly'.¹⁷ It is also not a coincidence that we cannot find TB cognates for any of the OC *-dh and *-bh words that match exactly: as these words were created by a derivational process within Chinese, we would expect to find TB cognates only for the underived forms (i.e. *-t, *-p), not the derived forms. For example, we have TB *r-mok 'to wear on head', OC *mægwh (帽) 'hat'; TB *nup 𠬞 *nip 'enter, sink', OC *nəbh (內) 'inside'; TB *mu:k 'foggy, dark', OC *mjugh (霧) 'fog'. The *-s (written as *-h in Li Fang-kuei's system) of OC only occasionally matches up with cognates in TB languages, as in Written Tibetan rmugs [rmuks] 'thick fog', though the nominalizing *-s we find in TB is presumably cognate to the OC *-s. In terms of phonetic

motivation for sound change, Baxter (1992:311) also mentions that the traditional view that *-b merged with *-d has no phonetic motivation (as *-p did not merge with *-t), whereas *-ps > *-ts can be explained as assimilation of the final to the suffix.

The qusheng (and possibly the shangsheng) derivation hypothesis assumed by Pulleyblank and Baxter explains quite a bit of the variation of finals in Chinese, but not all of it. One important reason for the reconstruction of a series of voiced stop finals is the supposed symmetry of the contacts between different finals. But do we really find a symmetrical system of variation? The evidence is that we do not. Out of the 99 tong yun rhymes marked in Wang Li's *Shijing Yundu* (1980b), 48 are *-Ø (Li's *-g) ~ *-k, and 15 are *-w (Li's *-gw) ~ *-k. Except for the well known shift of *-m, *-n to *-ŋ (8 and 6 tokens respectively), no other pattern shows such regularity (i.e. all have four or less tokens). If we reconstruct the yōu (幽) and xiāo (宵) rimes as *-əw and *-aw respectively (rather than as Li's *-əgw, *-agw) and the jué (覺) and yào (藥) rimes as *-əuk and *-auk respectively (rather than as Li's *-ək, *-ak), then the total number of tong yun rhymes where the difference is the presence or not of a final *-k is 63, or 62%.¹⁸ This is quite significant, statistically, given the large number of tong yun possibilities.¹⁹ In some cases this *-k may be a type of derivational morpheme, as suggested by Pulleyblank (1972:13, 1973:122) as an explanation for the correspondence between the pronouns *gwək (或) 'some one', *mak (莫) 'no one', *djək (孰) 'which one' and possibly *krak (各) 'each' and the forms *gwjəgx (有) 'there is', *mjəg (無) 'there is not', *djəd (誰) 'who', and *kjəgx (舉) 'all' respectively. Karlgren himself (1933:37) mentions that in those cases where a TB form with an open final corresponds to a *-k or *-t final in OC (e.g. 'hundred'), 'these -k and -t must be an innovation, some kind of suffix in one or several Sinitic languages but not primary and common to them all.' He does not take the obvious step and use this to explain the same type of variation within Old Chinese. Examples involving variation of final *-t would include the forms from Pulleyblank (1991:30) given in section 2 above, and the different negative particles used in OC: *pjəg (不): *pjət (弗); *mjəg (毋): *mjət (勿) (see Takashima 1988). Pulleyblank (1991) suggests that Sino-Tibetan had morphological *-n and *-t suffixes to explain the correspondences among these items and between certain other words in Chinese (such as *ŋjəgx (語) ~ *ŋjan (言) 'language, speech') (cf. the *-n 'collective' suffix suggested by Benedict (1972:157ff)). If we accept the *-g final hypothesis, we have to say that the phonetic and semantic similarities of these two items (and dozens of pairs like them) are entirely coincidental, whereas if we take these *-g finals to actually be open finals, then it is a simple matter of *-t/*-n suffixation.

Some variation may also be due to a coalescence of two forms, as suggested for Tibetan by Walter Simon (1941, 1942, 1957). Simon's idea was that many of the finals in Tibetan, such as -g, -n, -l, -r, -s were from the coalescence of two syllables, the second of which originally also had lexical content, such as

-s < sa/so 'place'. We find synchronic variation in Tibetan that points to this kind of development, such as da-ra ~ dar-ba 'type of buttermilk', za-la ~ zal 'clay', bu-ga ~ bug 'hole', lco-ga ~ lcog 'lark', nya-ga ~ nyag 'steelyard', yi-ge ~ yig 'letter', and tha-ga-pa ~ thag-pa 'to weave'. If Proto-Sino-Tibetan had a particle similar to Tibetan -ga, which Das (1902:203) says 'is sometimes used as an affixed particle of a word to complete it', then this would be at least one explanation for the large number of *-Ø ~ *-k variations. Aside from the possibility of coalescence resulting in *-k, and the examples of coalescence we are familiar with in Chinese (e.g. 諸 from 之於), coalescence might explain at least a few of the other odd finals in OC. For example, in one cognate set suggested by Wang Li (1982:435) with 何 *gar, 曷(害) *gat, and 胡 *gag, all question particles, Wang includes 盍 *gap 'negative question ('why not') particle' which according to a commentator on the Guo Yu (國語) is from the coalescence of *gar and *pəg (何不). Changes in the pronunciation of characters caused by their use in connected speech is also suggested by Gong (Mei & Gong 1992:676) as a reason for some characters having unusual pronunciations.

Yet I am not suggesting that these are the only answers. There most probably are other explanations as well. Coblin (1976:52) mentions that in Tibetan 'each verb whose perfect, future and imperative forms end in root final -ŋ has final -n in its present root' (e.g. fiphen, fiphaŋ, fiphans, phoŋ/phans 'throw, cast'). Modifying an idea from Shafer (1951:1028-9), he suggests that the present forms originally had a -d suffix (some forms show this suffix in older texts), and that the -n final was due to assimilation to this suffix. It may be that some such assimilatory process could explain some of the variations between homorganic stop and nasal final in Chinese as well. All these variations may be due to a combination of factors, some morphological, some phonetic. An example of the latter is the change of some PST velar finals to OC dental finals after high front vowels.²⁰ One type of variation may even have multiple sources (e.g. Mei (1980:439) suggests that the qusheng *-s may have had more than one source). Future research would of course be needed to sort out which process determined which variations, and if possible, what motivated the different processes, as has been done in isolating and understanding qusheng derivation (see the references mentioned above, especially Mei 1980).

The system of finals I suggest for PST, and the regular correspondences between OC, PTB, and PST, then are as follows:

PST **-Ø	>	OC *-Ø	PTB *-Ø
PST **-p	>	OC *-p	PTB *-p
PST **-t	>	OC *-t	PTB *-t
PST **-k	>	OC *-k	PTB *-k
PST **-ŋ	>	OC *-ŋ	PTB *-ŋ
PST **-w	>	OC *-w	PTB *-w
PST **-y	>	OC *-y	PTB *-y
PST **-l	>	OC *-y/-Ø	PTB *-l

PST **-r	>	OC *-y/-n	PTB *-r
PST **-s	>	OC *-t	PTB *-s

This set is similar to that proposed in Baxter 1992. Below I compare the rimes proposed in Li 1980 with those in Baxter 1992, TB forms and my proposed ST forms.

rime	Li	Baxter	TB	ST	# of sets in Appendix
之	-əg	-ɪ(/-iks)	-a	-ə(/-əks)	8
職	-ək	-ɪk	-ak	-ək	8
蒸	-əŋ	-ɪŋ	-aŋ	-əŋ	3
幽	-əgw	-u(/-uks)	-uw	-əw(/-əuks)	8
覺	-əkʷ	-uk	-uk	-əuk	7
中(冬)	-əŋw	-uŋ	-uŋ	-əuŋ	4
緝	-əp/-əbh	-[ɪ,u,i]p(s)	-ap/-up	-əp/-up ²¹	7
侵	-əm	-ɪm	-am/-um	-əm/-um	8
微	-əd	-ɪj(/-its)	-əy/ər/ey/iy	-əy/ər/ey/iy	11
文	-ən	-ɪm/-un	-ul/-un	-ul/un	6
物	-ət	-ɪt/-ut	-ay/-at	-ət	1
歌	-ar	-aj	-a/-ay/-al	-a/-ay/-al	17
月/祭	-at/-ad	-at(/-ats)	-at	-at	9/(1)
元	-an	-an	-an/-ar	-an/-ar	17
葉	-ap/-abh	-ap(/-aps)	-ap/-ep	-ap/-ep	6
談	-am	-am	-am	-am	3
魚	-ag	-a(/-aks)	-a	-a(/-aks)	30
鐸	-ak	-ak	-ak	-ak	6
陽	-aŋ	-aŋ	-aŋ	-aŋ	6
宵	-agw	-aw	-aw/-uw	-aw/-uw	7
脂	-il	-ij(/-its)	-iy	-iy(/-its)	9
真	-in	-in	-in/-il	-in/-il	7
佳(支)	-ig	-e(/eks)	-i	-i(/eks)	2
質	-it	-it	-it/-ik	-it/-ik	9
錫	-ik	-ek	-ik	-ik	2
耕	-iŋ	-eŋ	-iŋ	-iŋ	9
侯	-uŋ	-o(/-oks)	-uw	-uw(/-oks)	9
屋	-uk	-ok	-uk	-uk	5
東	-uŋ	-oŋ	-uŋ/-waŋ	-uŋ/-waŋ	3
					227

It can be seen from this comparison that a system such as Baxter's, without voiced stop finals, is closer to the independently reconstructed TB forms, and allows us to reconstruct a more phonetically and typologically plausible Sino-Tibetan system than one with voiced stop finals.²²

4. Conclusions

There are several points I would like to make in this paper. First, just as we find a certain amount of both rule-governed and non-rule governed variation in modern languages, it is necessary to recognize the same types of variation in the proto-language we are attempting to reconstruct. Second, the variation we find in PST and its immediate daughters is not as symmetrical and orderly as has been assumed. Third, the causes of the variation are complex and multifarious. Fourth, reconstructing a complex, typologically unlikely system based on broad generalizations such as the voiced stop final hypothesis not only is unsatisfactory from the typological point of view, but also effectively ends our search for the real causes of the variation. As mentioned earlier (footnote 13), Li Fang-kuei saw the stop final hypothesis as a stopgap measure, not the final solution. Especially given how little we really know about Sino-Tibetan lexical morphology, to limit the possibilities we are willing to consider would be very unwise. Fifth, the concept of word families is an important one, but we should not be unnecessarily constrained in our search for cognate sets by artifacts of our reconstructed system or methodology.

While recognizing the existence of variation, it is also important to emphasize that in terms of methodology we can only recognize variation within the context of regularity. We must first establish solid regular correspondences to establish what is regular, and to serve as the anchor that allows us to be able to talk about variation. For example, I can feel confident that OC *rap 'leaf' and TB *la 'leaf' are cognate (even if I did not know about the *la \times *lap variation within TB) because the initial and the vowel correspond regularly (i.e. there are half a dozen or more parallel examples of each) and the meanings match exactly. We should not push etymologies or cognate sets where we have to explain variation of almost every segment in the forms, as for example when Benedict (1987:48) attempts to support a proposed shift in Chinese from *s-k- to *t- by comparing TB *mkha 'sky, heaven' with Chinese tian 天 'sky, heaven', which he reconstructs as *skhien/thien, giving PST *(-)ka(-n) 'with the PST "collective" plural *-n suffix (= "the heavens") (reg. vowel shift before final dental.)' We then have variation of the prefix, the initial, the vowel, and the final, all within the same set. Were each of these types of variation proposed on the basis of multiple examples of the same type of correspondence appearing in isolation (i.e. the other segments of the forms corresponding regularly), we might be able to accept the cognacy of the forms in such a set, but not only are we asked to accept this set without evidence of such regular correspondences, we are asked to accept this set as corroborating evidence for a proposed development within Chinese!

Appendix: List of suggested OC-PTB correspondences^{2,3}

	Li	Baxter	PTB	GLOSS
魚部				
1. 魚	*ŋjag	*ŋ(r)ja	*ŋya	'fish'
2. 苦	*khagx	*khar	*ka	'bitter'
3. 吾 / 印	*ŋag/*ŋaj	*ŋa/*ŋaj	*ŋa \times *ka	'1sg pronoun'
4. 五	*ŋagx	*ŋar	*b/l-ha	'five'
5. 汝	*ŋjagx	*ŋjar	*na (see below)	'2sg pronoun'
6. 狐	*gwag	*gwa	*gwa	'fox'
7. 厭	*kwag	*kwa	*gwan \times *kwan	'net'
8. 斧	*pjagx	*p(r)jar	*r-p-wa	'axe'
9. 父	*bjagx	*b(r)jar	*pa (=pwa)	'father'
10. 筴	*prag	*pra	*g-p(w)a	'bamboo'
11. 紀	*prag	*pra	*p-wak	'pig'
12. 雨	*gwjagx	*w(r)jar	*r-wa-ŋ	'rain'
13. 子	*gwjag	*w(r)ja	*s-wa (?)	'go'
14. 無	*mjag	*m(r)ja	*ma	'no, not'
15. 扶 / 把	*pjag/*pragx	*p(r)ja/*prar	*pa-n	'palm'
16. 訝	*ŋragh	*ŋras	*ŋra	'meet, encounter'
17. 鼠 / 貉	*hrjagx/*g(l)ak	*h(r)jar/*gak	*rwak	'rat, mouse'
18. 武	*mjagx	*Np(r)jar	*d-mak	'soldier, war'
19. 馬	*mragx	*mra?	*mra-ŋ	'horse'
20. 籩	*kjagx	*k(r)jar	*kak(PLB, JAM1972:30)	'basket'
21. 膊	*phak	*phak	*pak(PLB, JAM 1972:40)	'dismantle'
22. 鄣	*khwak	*kwhak	*kwak	'skin'

(continued)

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
23. 薄	*bak	*bak	*ba	'thin'
25. 戶	*gwagx	*g(w)az	*gwa ɹ m-kha	'door'
26. 雞	*glak	*C-rak	*k-rak	'fowl, bird'
27. 桶	*pagx	*paʔ	*pa	'patch, mend' ²⁴
28. 渡	*dagh	*dak(s)	*da	'ford, cross(a river)'
29. 睹	*tagx	*taʔ	*ta	'see'
30. 夜 / 夕	*tiagħ/*rjiak	*(l)jAks/*z(l)jAk	*s-la ɹ g-la	'moon' (see Mei 1979)
(惡	*rak/rag	*rak/ʔaks	*WT ʔæg	'bad, evil'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
1. 涼	*gɟjaŋ	*g-rjaŋ	*graŋ ɹ *graŋ	'cool, cold'
2. 望	*mjaŋh	*mjajs	*mraŋ	'look, see'
3. 岡	*kah	*kaŋ	*kaŋ (PLB)	'mountain top'
4. 孟	*mraŋh	*mraŋs	*maŋ	'big/older brother'
5. 量	*ljaŋ	*C-rjaŋ	*g-raŋ	'measure/count' ²⁵
6. 硬 / 硬	*kraŋx/ŋraŋh	*kraŋʔ/ŋraŋs	*kraŋ ɹ *kraŋ	'hard, solid, stiff'

<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
歌部			
1. 歌	*kar	*ka ~ kat	'speech'
2. 沙	*srar	*sa > *sa > *say	'earth, sand'
3. 鵞	*ɲar	*ɲa-n (see 雁)	'goose'
4. 蝶	*kwarx	*kway	'bee, wasp'
5. 移	*rar	*lay	'change'
6. 播	*parh	*bwar	'spread, sow'
7. 蟻	*bar	*pwa:r	'white'
8. 疲	*bjar	*bar	'tired'
9. 駕	*krarh	*s-ga	'saddle, yoke horses'
10. 唾	*thuarh	*m-twa > s-twa	'spit, vomit, spittle'
11. 妥	*snarx	*na-r	'rest, cease motion'
12. 何	*gar	*ga-ŋ > *ka	'what, which'
13. 鹹	*dzar	*tsa	'salt, salty'
14. 荷	*gar	*s-gal > gur	'carry on back'
15. 蝸	*kwrar	*kroy	'snail'
16. 簸	*parx/h	*pway	'husks, shavings'
17. 我	*ɲarx	*ɲay	'1sg pronoun'

<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
元部			
1. 蒜	*suanh	*swa-n	'garlic'
2. 餐	*tshan	*dza > *dza	'food, eat'
3. 辮	*bianx	*bat > *ban	'braid'
4. 雁	*ɲranh	*ɲa-n	'goose'
5. 炭	*thanh	*tal > *dul	'dust, ashes, charcoal'
6. 員/圓	*gwjan	*wal	'circle'
7. 連/聯	*ljan	*ren	'connect'
8. 鮮	*sjan	*sar	'fresh'
9. 乾	*kan	*kan	'dry'
10. 酸	*suan	*swa:r	'sour'
11. 霰	*sianh	*ser	'sleet/hail'
12. 鍋/鑊	*tsjuan/*tsuan	*tswan	'pointed, to bore'
13. 燻/焚	*bjan/bjan	*b(w)ar	'burn'
14. 斷	*duanx	*da:n	'cut'
15. 瓣	*brianh	*ba:r	'flower, petal'
16. 散	*sanx/h	*san (PLB, JAMI1985#40)	'sow, disburse'
17. 犬	*khwianx	*s-ɲkway	'dog'
(圖)	*ptun/pɲjan	*pyam	'fly'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
祭部				
1. 大 / 多	*dadh/tar	*lats/*laj ²⁶	*lay	'big'
2. 刺 / 列	*lat/ljat	*C-rat/C-rjat	*(g-)ra-l ɤ *(g-)rya-t	'cut, scrape'
3. 發	*pjat	*pjat	*-pat (PLB, JAM1972:35)	'send forth, vomit'
4. 殺	*sriat	*s(C)rjat	*sat	'kill'
5. 脫	*hluat	*hlot	*g-lwat 0 *s-lwat	'release, let loose'
6. 滅	*mjiat	*mjat	*s-mit	'destroy'
7. 八	*priet	*pret	*b-g-ryat	'eight'
8. 割	*kat	*kat	*(s-)kat	'cut'
9. 撇	*sal	*sat	*sat (PLB, JAM1985#40)	'pour out, disburse'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
葉部				
1. 葉	*rap	*ljap	*la-p	'leaf'
2. 接	*tsjap	*tsjap	*tsyap	'connect'
3. 蓋	*gap ɤ *kabh	*gap ɤ *kaps	*kap	'to cover, cover' ²⁷
4. 蝶	*diap	*lep	*s-lep	'butterfly' ²⁸
5. 攤	*ljap	*C-rjap	*rap	'tread(upon), trample'
6. 疊	*diap	*[d,l]ep	*tap	'fold'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
談部				
1. 多	*sram	*sram	*sam ɤ *isam	'hair'
2. 崱	*khram	*khram	*r-kam	'precipice'
3. 談	*dam	*lam	*g-dam	'talk'
(藍)	*gram	*g-ram	WT rams	'indigo, blue')

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
宵部				
1. 號	*gagwh	*gaws	*gaw/*kaw	'call, yell'
2. 燒	*hɿjagw(-hɿɿjagw?)	*hɿjew	*tsyow	'cook, burn'
3. 嗽	*ɿagw	*ɿaw	*ɿuw	'cry'
4. 膝	*sagw	*saw	*sa:w	'fat'
5. 漂	*phɿjagw	*phɿjew	*pyaw	'float'
6. 熬	*ɿagw	*ɿaw	*r-ɿaw	'fry, roast'
7. 梟	*kiagw	*kew	*ku	'owl'
(刀)	*tagw	*taw	*s-ta	'knife')

<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
之部			
1. 來	*ləg	*ra	'come'
2. 母	*mɛgɣ	*ma	'mother'
3. 子	*tsjɛgɣ	*tsa	'child'
4. 耳	*njɛgɣ	*g/r-na	'ear'
5. 乃 / 戎	*nəgɣ/*njəŋw	*na-ŋ(cf. 乃 *njəŋ)	'2sg pronoun'
6. 牛	*jwɔjɛg	*jwa	'cow'
7. 織	*tjɛk	*tak ɣ *trak	'weave'
8. 息	*sjɛk	*sak	'breath'
9. 咳	*khɛg	*ka:k	'cough'
10. 極	*gɔjɛk	*kak(PLB JAM 1972:31)	'limit, peak'
11. 蝸	*pjɛk	*ba:k	'bat'
12. 寔	*djɛk	*dyak (PLB JAM 1972:30)	'really'
13. 翼	*rɛk	*lak	'arm, wing'
14. 陟	*tɔjɛk	*l-tak	'ascend'
15. 革 / 鞞	*krɛk ɣ *kwɛk	*kok ɣ *r-kwak	'skin'
16. 右	*gwjɛgɣ	*g-ya ɣ gra	'right (side)'
(黑)	*hmɛk	*Tib smag	'black'
(友)	*gwjɛg	*Tib grogs	'friend'
(稻 / 直)	*djɛk/dɔjɛk	*dzuk	'plant, erect'
(止)	*kɔjɛgɣ	*kɔɔ	'foot'

<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
藥部			
1. 夢	*mjɔŋ	*smaŋ ɣ *smak	'dream'
2. 蠅	*rɛŋ	*b-/k-raŋ ɣ yan	'fly'
3. 蔡	*tjɔŋ	*taŋ	'firewood, pine, fir'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
1. 衣	*jəd	*ɕjɨ	*g-wa-t	'clothing'
2. 飛	*pjəd	*pjɨ	*byer	'fly'
3. 類	*ljədn	*C-ɕju/ps	*terəy	'class'
4. 尾	*mjədx	*mjɨʔ	*t-may ɤ *mey	'tail'
5. 寐	*mjədh	*mjits	*t-mwiɣ ɤ *s-mwiɣ	'sleep, dream'
6. 火	*hmərx	*hmɨʔ	*s-mey	'fire'
7. 微	*mjəd	*mjɨ	*mway	'small'
8. 絃 / 韋	*pjət	*pjut	*put ɤ *pit	'knee, knee covers'
9. 開	*khəd	*khɨ	*ka	'open'
10. 唯	*gwjəd	*wɨjɨʔ	*wey(=wiɣ)	'copula'
11. 鼻	*ljədx	*C-ɕjuʔ	*s-ɕrwey	'cane, creeper'
12. 韋	*gwjəd	*wɨjɨ	*kwər	'skin, hide, leather'
(搨)	*gwəl	*gut	*t-ko-t	'dig'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
1. 目	*mjəkw	*m(r)juk	*mik/*myak	'eye'
2. 腹	*pjəkw	*p(r)juk	*puk	'belly'
3. 六	*ljəkw	*C-ɕjuk	*d-ruk	'six'
4. 毒	*dəkw	*duk	*duk/*tuk	'poison'
5. 九	*kjəgwɣ	*k(w)juz	*d-guw/d-gaw	'nine'
6. 舅	*gʲəgwɣ	*g(r)jur	*kuw	'uncle'
7. 寶	*pəgwɣ	*pur	*puw	'precious'
8. 菽	*hɨjəkw(?)	*sɕjɨwk	*s-nuk	'bean'
9. 鳩	*kjəgw	*k(r)ju	*kuw	'pigeon'
10. 牢	*g-ləgw	*C-ru	*kuok(PLB, JAM1973:31)	'pen, corral'
11. 夙	*sjəkw	*sjuk	*C-sok(PLB, JAM1972:55)	'morning, early'
12. 柔	*ɨjəgw	*ɨju	*now	'soft'
13. 帽	*megwh	*muks	*t-mok	'hat, wear on head'
14. 篤	*təkw	*tuk	*tu:k ɤ *tow	'thick'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
文部				
1. 銀	*ŋjien	*ŋjɪn	*ŋul	'silver'
2. 本	*pənx	*pɒrɔ	*pul	'root'
3. 糞	*pjənh	*pj[ɛ,u]ns	*pun	'dung, fertilizer' ²⁹
4. 鈍	*dənh	*dɒns	*dul	'dull'
5. 貧	*bjien	*bjɪn	*bul	'poor'
6. 昏 / 悶	*hmən/mənh	*hmun/*mɒns	*s-mun ɤ *r-mun	'dark, dull, stupid' ³⁰
(洗	*siənx	*sɒrɔ	*m-s(y)il	'wash')
(撥	*pjən	*pjɪn	*byer	'fly')

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
中部				
1. 中	*tʃjəŋw	*k-ljuŋ	*tsyɯ:ŋ=ɯ:ŋ	'middle'
2. 弓	*kjəŋw	*kwjŋŋ	*ku:ŋ	'bow'
3. 躬	*kjəŋw	*k(r)juŋ	*guŋ	'body'
4. 蟲	*dʃjəŋw	*lʃjuŋ	*dyuŋ	'bug'
(宮	*kjəŋw ³¹	*k(r)juŋ	*kyum	'house')

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
縋部				
1. 立	*gljəp	*C-rjəp	*g-ryəp	'stand'
2. 泣	*khjəp	*khrjəp	*krap	'cry'
3. 汲	*kjəp	*g(r)jəp	*ka:p	'draw water'
4. 捻	*niəp	*nep	*nyəp	'pinch'
5. 習	*tjəp	*zlj[ɛ,ɯ]p	*s-ləp	'learn/teach'
6. 内 / 入	*nebh/njəp	*nups/njup	*nup ɹ *nip	'enter/sink'
7. 十	*djəp	*gijp	*gip	'ten'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
侵部				
1. 熊	*gwjəm	*wjum	*d-wam	'bear'
2. 含	*gəm	*g[o,ɯ]m	*gam	'hold in mouth'
3. 飲	*zjəmɣ	*ɹ(r)jumɹ	*am	'drink'
4. 淫	*njəmɣ	*njəmɹ	*njəm	'soft'
5. 燂	*rjəm	*zljum	*lum	'warm'
6. 三	*səm	*sum	*g-sum	'three'
7. 枕	*krjəmɣ	*Kjumɹ	*kum	'pillow'
8. 針	*krjəm	*k[jɛ,ɯ]m	*kap	'needle'
(林)	*gljəm	*C-rjəm	Lushai ram	'forest'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
侯部				
1. 軀	*khjug	*kh(r)jo	*s-kuw=s-kow	'body'
2. 口	*khugx	*kh(r)ɔ?	*kuw (GB)	'mouth'
3. 乳	*njugx	*njo?	*nuw/*new (DL nuɲ ⁵⁵)	'breast, milk'
4. 谷	*kuk	*kok	*grok	'ravine'
5. 寇	*khugh	*khos	*r-kuw	'steal, thief'
6. 豆	*dugh	*dos	*u-ŋ (Cf. xiesheng)	'bean'
7. 角	*kruk	*drok	*kruw	'horn'
8. 搥	*khug	*kho	*ku	'lift, raise'
9. 務	*mjugh	*m(r)jo(k)s	*mow	'effort, work'
10. 霧	*mjugh	*m(r)jo(k)s	*muw ɤ *mu:k	'fog'
11. 局 / 曲	*gjuk/*khjuk	*fikh(r)jok/*kh(r)jok	*guk/*kuk	'bent'
12. 嗽	*suk	*sok	*su (w)	'cough'
13. 屬	*djuk	*djok	*dzuk (PLB)	'vulva' (see Mei 1979)
14. 樹	*djugh	*djos	*dzuk	'plant, erect'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
東部				
1. 孔	*khunx	*khorɲ	*kun	'hole'
2. 洞	*dunh	*doɲs	*dwa:ŋ	'cave, pit, hole'
3. 巷	*grunh	*groɲs	*g-rwa-ŋ	'village/street'

<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
脂部			
1. 二	*n̄jdh	*g-ni-s	'two'
2. 四	*sjdh	*bliy	'four'
3. 死	*sjdx	*siy	'die'
4. 屎	*h̄jdx	*kliy	'shit'
5. 細	*sidh	*ts(y)iy ɤ *ziy	'small, fine'
6. 妣	*pjdx	*piy	'grandmother'
7. 週	*n̄jdx	*ney	'near'
8. 水	*hw̄rjdx	*lwi(y)	'water'
9. 日	*n̄jit	*niy(=n̄oy)	'sun, day'
10. 黍	*tshjit	*tsiy	'juice, paint'
11. 血	*hw̄il	*s-hwiy(=s-syw̄oy)	'blood'
12. 昇	*pjdh	*biy (DL biŋ)	'give'
13. 節	*tsit	*tsik	'joint'
14. 蝨	*srit	*s-rik=*s̄rik	'louse'
15. 結	*kit	*kik	'tie'
16. 蠶	*pjit	*pyik(JAM1970:26)	'thicket'
17. 蛙	*fjit	*m-li:t	'leech'
18. 一	*z̄it	*it	'one'
19. 米	*mid	*may ɤ *mey	'rice'
(脂)	*fjid	*tsil	'fat'
(切)	*tshit	*tsyat	'cut'
(聖)	*tsjit	*WT r̄sig-pa	'masonry, etc.'

<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
鼻部			
1. 眠	*min	*myel	'sleep'
2. 辛	*sjin	*m-sin	'liver'
3. 甥	*sn̄jmx	*r-nil ɤ *s-nil	'gums'
4. 年	*nin	*niŋ	'year, harvest'
5. 薪	*sjin	*siŋ ɤ *sik	'wood, tree'
6. 民	*mj̄in	*r-mi	'people, person'

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
耕部				
1. 頰	*ljingx	*C-rengʔ	*m-ling	'neck'
2. 生 / 腥	*sriŋ/siŋ	*sriŋ	*sriŋ	'live, raw'
3. 名	*mjiŋ	*mjeŋ	*r-miŋ	'name'
4. 定	*diŋh	*deŋs	*diŋ	'certain'
5. 盈	*riŋ	*liŋ	*bliŋ	'full'
6. 平	*bjiŋ	*brjeŋ	*pleŋ	'flat'
7. 脛	*gŋ	*gen/kh-ljeŋ(?)	*r-k(y)aŋ	'leg/shank'
8. 麟	*hjiŋ	*hjeŋ	*kyan	'red'
9. 狴	*sriŋ	*sriŋ	*sre-ŋ	'weasel'
(清)	*tshjiŋ	*tshjeŋ	*tsyay ɤ *syah	'clean, clear, pure') ³²

	<i>Li</i>	<i>Baxter</i>	<i>PTB</i>	<i>GLOSS</i>
佳部				
1. 滴	*tik	*tek	*tki ɤ *tsak	'drip, drop'
2. 隻	*tjik	*tjek	*g-tyik	'one'
3. 縊	*ɳik	*ɳjeks	*ɳik	'strangle'

Notes

- * An earlier version of this paper was presented at the 25th International Conference on Sino-Tibetan Languages and Linguistics, Oct. 14–18, 1992, U.C. Berkeley. I would like to thank all those who gave me comments on early drafts of this paper, especially William Baxter, W. South Coblin, James A. Matisoff, Tsu-lin Mei, Edwin G. Pulleyblank, Jackson T.-S. Sun, Pang-hsin Ting, and an anonymous reviewer.
- 1 Maru has innovative -uk and -it appearing wherever the cognate forms in other languages would lead us to reconstruct *-uw and *-iy respectively (Burling 1966, contra Wolfenden's (1939) view that the Maru -k is original). In Lepcha (Maniwaring 1876:93) causatives are formed by infixing -y- after the initial consonant (e.g. thór 'to escape', thyór 'to cause to escape'). If the final consonant of the simplex form is -ŋ, then the corresponding final in the causative form is -n (e.g. hrónj 'to ascend', hryón 'to cause to ascend').
 - 2 Shafer (1951:711) uses 'morphophonetic' to refer to morphophonemic alternation of vowels, and 'morphosymphonic' for the morphophonemic alternation of consonants.
 - 3 Most of the Tibeto-Burman reconstructions I will be discussing are from the work of Paul Benedict, especially Benedict 1972, and James A. Matisoff (e.g. 1978, 1985, 1989, 1992), though some are from Coblin 1986 or are reconstructions/word families I have put together myself (see LaPolla 1987 and also the appendix to this article). As the works just mentioned cite many of the same examples, I will not mark the source of each individual example.
 - 4 I will here use the spelling 'rime' to mean the part of the syllable excluding the initial consonant or cluster (itself simply called the 'initial'), and 'rhyme' for the usual sense of this word as the poetic use of assonance.
 - 5 This is where two characters share the same phonetic component.
 - 6 The reconstructed forms for Old Chinese I will be using in the body of the paper are based on the system outlined in Li 1980, including forms adapted from other sources.
 - 7 A number of the items mentioned below (e.g. 艾, 織, 退, 賴) are considered ru sheng (入聲) rhymes by Wang Li, due to his hypothesis that OC ru sheng words could be divided into 'long ru' (長入) and 'short ru' (短入) tones, where the long ru became Middle Chinese qu sheng words, while the short ru remained ru sheng words, yet are considered qu sheng words in OC by Li Fang-kuei. As I am using Prof. Li's system in this paper, I have modified some of the examples taken from Wang Li's work to conform to Prof. Li's system.
 - 8 The type of rhyme where the finals are the same but the vowels are different (known also as hé yùn or as 'side transfers' (páng zhuǎn 旁轉)) are not relevant to the present discussion and so will not be discussed here.
 - 9 Wang Li (1980b:334) considers 弱 to be in the 侵 (*-əm) category, but Li Fang-kuei (1980:43) treats this word as being in the 中 category, and reconstructs it as *kǰəw. As I am using Prof. Li's system in this paper, I have used his reconstruction here.
 - 10 Wang Li was quite clear about his lack of appreciation for Karlgren's reconstruction of OC: 'In short, Karlgren's research on Middle Chinese phonology was fruitful (是有成績的), but his research on Old Chinese was not very fruitful (是沒有多大成績的)' (1980a:68).
 - 11 This is not to say that I accept Wang Li's system of reconstruction or the cognacy of all the sets he proposed in his 1982 book, but the cognacy of the items in each of the sets given here is difficult to deny on any grounds but the difference in final consonant.
 - 12 I have doubts about how the judgement of what is a phonetic in a particular character and what is not is made. For example, *ʔjəgh/ʔjək (意 / 憶) 'think, remember' has 音 (*ʔjəm) as part of the character. The Shuowen (說文解字) and Karlgren both treat this as a hul yì (會意) character, so *ʔjəm is not seen as a phonetic in this character, but

- generally in characters with the heart radical, the rest of the character is the phonetic, and *ʔjəm is phonetic in a large number of other characters (the Shuowen includes 暗瘡 暗黯 暗闇 暗語 暗). Compare this with 短 *duanx, which the Shuowen says has the character 豆 *dugh as its phonetic, and 嫫 *ʔəgwɿ which the Shuowen says has 壘 *ʔən as its phonetic. It seems then the decision as to whether *ʔjəm is or is not a phonetic in *ʔjəgh/ʔjək is not due only to the difference in final, but involves some degree of arbitrariness.
- 13 Li Fang-kuei (1983:401) mentions that he used *-b, *-d, and *-g 'merely as an orthographic device without going into their phonetic details. There is no Chinese dialect or Sino-Tibetan dialect, so far as I know, in which there are two series of [final] stops' (see also Li 1980:33).
 - 14 See Baxter 1992:332ff and Pulleyblank 1992:372–375 for further typological arguments against reconstructing a system with voiced stop finals for Old Chinese.
 - 15 Cf. Duan Yucai's statement that 'characters with the same phonetic element must be of the same rhyme group' (同聲必同部) (《六書音韻表》, 蘇州保息局本, p. 22, cited at Wang Li 1980a:60).
 - 16 The idea of an *-s suffix to explain the origin of the departing tone goes back to Haudricourt 1954, and the idea of a glottal stop suffix to explain the origin of the rising tone goes back to Pulleyblank 1962 and Mei 1970.
 - 17 See also Li Yifu 1984 for reasons why ji bù (祭部, Li's *-adh) and yuè bù (月部, Li's *-at) should be considered one rime. In Ting's study of the Wei-Jin period cross-rhyming patterns, the vast majority of contacts were between ji (祭部) and yuè (月部) (Ting 1987:62).
 - 18 Because Bodman, Coblin and others see *-gw etc. as a single final rather than seeing the *-w as part of the vocalism, they give the correspondence TB *-k, OC *-kw. Not seeing the *-w/-u- as a possible part of the vocalism causes them to miss seeing the variation between *-gw and *-kw and the variation of *-Ø and *-k as the same phenomenon.
 - 19 It is interesting to note that of the 110 suggested word families Karlgren (1933: 98–100) lists that differ in having a final consonant or not (the latter including those ending in *-g, *-d, and *-b), 57 of them, more than half, involve a velar final (40 *-k, 17 *-ŋ).
 - 20 E.g. OC *tsit (節), PTB *tsik 'joint'; OC *srit (虱), PTB *s-rik = *s-rik 'louse'; OC *kit (結), PTB *kik 'tie'; OC *pjit (簞) PLB *pyik 'thicket'; OC *nin (年), PTB *niŋ 'year, harvest'; OC *sjin (薪), PTB *siŋ ɣ *sik 'wood, tree'.
 - 21 It may be that ST *-ip and *-im are reflected in OC *-əp and *-əm respectively, as suggested by Gong (1980:468), but I have not found any solid correspondences that would either support or disprove this suggestion.
 - 22 It is not my intention to argue specifically for Baxter's system. It would also be possible to modify Li Fang-kuei's system by removing the voiced finals, much as suggestions have been made to modify it in other ways, such as recognizing the *-s suffix (Mei 1980) and having *-r- for lái (來母) initials (Gong 1990). The good points of Baxter's theory are that it not only incorporates these ideas (both of which originated with Pulleyblank), but that it is a theory worked out character by character rather than by broad generalization.
 - 23 I have evaluated the cognate sets suggested by Benedict (1972, 1987), Bodman (1980), Coblin (1986), Gong (1980, 1990, 1991), Matisoff (1985, 1989, 1992, etc.), Yu Min (1989), and others, plus have put together some new sets. I have been very rigorous and conservative in evaluating the correspondences, including here only those forms for which I have solid PTB reconstructions and the correspondences of which seemed uncontroversial (e.g., I have generally followed the 'same series final' rule). I have excluded all those sets suggested by other authors where only a Written Tibetan form is available, though in a few cases I put likely cognates in parentheses after

- the regular correspondences. This does not mean these will not turn out to be valid cognate sets, just that at present we do not have enough comparative data available to reconstruct PTB forms; it is unwise to reconstruct a PTB form based entirely on a Written Tibetan form.
- 24 The reconstruction of the TB form is based on WB pha, JP ká³¹ pa³¹, Zaiwa pho⁵¹, Bijiāng Nu pha⁵⁵, Mawo Qiang spa, Tangut pa (based on the use of *pa (巴) in transliteration), Achang pho⁵⁵, and Langsu pho³¹.
- 25 The reconstruction of the TB form is based on WT graŋ WB khraŋ, Geman Deng krung⁵⁵, Darang Deng xa³¹ rueng⁵⁵, Menba dsarŋ and Lahu ɣɔ³³ (the etymology for this form is given as PLB *riy in Matisoff 1990, but the etymology suggested here (<*raŋ) better fits the usual Lahu pattern of *-aŋ >ɔ). Bokar (Bo'erga) Luoba ruŋ 'to measure' may also fit here, though the usual Bokar reflex of PTB *-aŋ is -oŋ, as in ju-moŋ 'dream' (Jackson T-S. Sun, p.c.).
- 26 Baxter suggests that it is the latter form, meaning 'much, many' (and 侈 *hljaɣ 'great, large') that is cognate to TB *tay, not the former, as usually assumed.
- 27 The reconstruction of the TB form is based on WT kha gteod 'a cover', sgab-pa 'to cover'; Dulong ta⁵⁵ kop⁵⁵ 'a cover', kap⁵⁵ 'to put a cork in a bottle'; JP ma³¹ kap³¹, Geman Deng ŋkhaɣ, rGyarung ta pkaɣ 'a cover'.
- 28 The reconstruction of the TB form is based on WT phye-ma-leb, Lushai phengphe-hlep, WB lip-pra, Naxi phe³³ le³¹ 'butterfly'.
- 29 The reconstruction of the TB form is based on JP man³¹ phun³³, Darang Deng tu³¹ phu³⁵, Zaiwa phun⁵⁵, Langsu phun³⁵. WT brun may also be related to this form.
- 30 This set is tentative, as the PTB form is based on only WT mun-ba 'dark', rmun-po 'dull' heavy, stupid', WB hmun 'dim, dusky, blurred'. I could not find cognates in any other languages (in the materials I had available).
- 31 Both 宮 and 躬 are in the 冬 rime category, which is often reconstructed with an -m final, which is then said to have changed to a velar nasal. If we accept this hypothesis, then the 'house' set is probably valid and the 'body' set is not, while if we do not accept it (i.e. assume 'body' was always a velar nasal in Chinese), then the 'body' set is valid and the 'house' set is not.
- 32 Benedict (1972:53) mentions that the TB forms might reflect an old *-ya- ɣ *i- alternation. If so, this would be a solid cognate set.

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A COMPARATIVE STUDY OF THE CHINESE, TIBETAN, AND BURMESE VOWEL SYSTEMS*

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I. Introduction

The Sino-Tibetan family comprises hundreds of languages and dialects. Among them, the most important languages having long histories in written form are Chinese, Tibetan, and Burmese. Chinese preserves literature of the first millennium B.C., and of the language in that time we already possess considerable reliable knowledge. For Tibetan there is an Inscription of A.D. 821-822, which was studied by Fang-kuei Li (1956). The earliest document for Burmese is the Myazedi inscription of A.D. 1112, studied by Nishida (1955, 1956). The purpose of this paper is to compare the vowel systems of these three literary languages and to reconstruct the vowels of their parent language.

The development of comparative Sino-Tibetan linguistics is closely connected with progress made in the field of Chinese historical linguistics. When Conrady published his *Eine Indochinesische Causativ-Denominativ-Bildung und ihr Zusammen-hang mit den Tonaccenten* in 1896, the reconstruction of Middle Chinese had not yet begun; consequently, he had to base his comparison on modern Chinese dialects. In 1916 Laufer listed 96 Chinese-Tibetan cognates in the Appendix to his article, "The Si-hia Language." In his comparison he marked most of the Chinese forms with asterisks; however, his reconstruction was made more on *ad hoc* basis than on any clearcut principle.

The first systematic reconstruction of Middle Chinese (called Ancient Chinese at first) was made by Karlgren in 1919 in his "Etudes Historiques." His work provided solid ground for comparative study, and his *Analytic Dictionary of Chinese and Sino-Japanese*, published in 1923, became an indispensable reference book for all students in the field. The road to an extensive comparative study was thus opened.

Simon's "Tibetisch-Chinesische Wortgleichungen: Ein Versuch" (1929) was the first attempt at a systematic comparative study. He gave 338 Chinese and Tibetan likely cognates, with Chinese represented by Middle Chinese forms as reconstructed by Karlgren, and compared them by their final consonants, initials, and vowels. However, as Karlgren (1931:30) pointed out in his review of Simon's work, "Every Chinese vowel seems to correspond to a whole row of different Tibetan vowels, and each of these Tibetan vowels in its turn corresponds to a long series of Chinese vowels." From such correspondences it would be difficult to reconstruct the vowels of the parent language.

However, failure in establishing sound correspondences was largely due to the circumstance that the historical study of Chinese and Tibetan had not yet been finished. Karlgren first published some research on Archaic Chinese (called Old Chinese in this paper) as early as 1923 in his *Analytic Dictionary*; and the research was later joined by Simon and Fang-kuei Li. But achievements in this field were not applied in comparative study until after 1940 when Karlgren published *Grammata Serica*. During this time there was very little progress in the study of Tibetan historical phonology, one of the few thoroughly modern linguistic approaches to the internal reconstruction of Tibetan being made by Li in 1933.

Grammata Serica replaced *Analytic Dictionary* and became the pivot in the comparative study. Most authors turned then to Archaic Chinese for comparison, with the exception of R. Shafer, who remained with Ancient Chinese.

Karlgren's Archaic Chinese system later was partially revised by subsequent study. Tung (1945) recombined the two parts respectively, of the rhyme categories *yü* 魚 and *hou* 候, which had been split by Karlgren, and reconstructed a final consonant *-g for all the members of these two classes. Tōdō (1957) reconstructed a final consonant *-r for the *ko* 歌 rhyme category. Archaic Chinese thus appeared to be a language without open syllables, as Simon argued long ago. But on the other hand Wang Li (1957) reconstructed a whole series of open syllables for the *yin-sheng* 陰聲 part of the *yü* 魚, *hou* 候, *chih* 之, *chih* 支, *yu* 幽, and *hsiao* 宵 rhyme categories. Opinions were divided so far as the final consonants were concerned.

In 1971 Fang-kuei Li published his "Studies on Archaic Chinese Phonology." This article, written tersely in 61 pages, integrates new developments in this field during the previous decades and contains many new solutions of his own to various problems in this reconstruction. Chinese has been regarded as a language with a complicated vowel system. In comparative Sino-Tibetan research, this has been a great obstacle. Li, starting from his basic hypothesis of "the same rhyme category, the same vowel," revising the theory of Yakhontov (1963) and Pulleyblank (1962-63) concerning the -l- medial for words of the second division, and explaining the double rhymes in the second division with *ia, arrived at a reconstruction which is in accordance with his basic hypothesis. The vowel in the *chih* 脂, *chen* 真, *chia* 佳, and *keng* 耕 categories was reconstructed as *e by Karlgren. This reconstruction has been generally accepted since then and it seems that no one has ever wondered why there was *u and no corresponding *i. An Archaic Chinese rhyme category generally contains words of all divisions, but it happens

that the four rhyme categories mentioned above lack words of the first division. Li changed *e into *i and solved all these problems in one stroke. At the same time, the reconstruction *i solves a puzzle in our comparative study.

It is on this reconstruction that I base my study. I have examined many proposed cognate words and selected those which seem certain to me, added some of my own findings, and tried to fix the rules governing these cognate words. I do not mean to deny other kinds of correspondences, but I think a substantial number of examples should be required to establish them.

In the following examples, Chinese tones "level," "rising," and "departing" are designated by A, B, and C in order to facilitate comparison with the Burmese tone system.

II. The vowel systems of Old Chinese, Written Tibetan, and Written Burmese

According to Li (1971:24) there are four vowels: *i, *u, *ə, *a, and three vocalic clusters: *iə, *ia, *ua in Old Chinese.

Vowels	i	u	Vocalic clusters: iə, ia, ua
	ə		
	a		

In written Tibetan there are five vowels: i, u, e, o, a.

i	u
e	o
a	

The vowel system of Written Burmese needs some explanation before it can be applied in comparative study. For convenience of discussion, I cite the following list of finals given in Pulleyblank (1963:216):

	Level	Creaky	Heavy	Final Stop
(a)	ā	a	āḥ [a]	
	aŋ	aŋ.	aḥ [iŋ]	ak [εʔ]
	ań	ań.	aḥ [iŋ, i, ε]	ac [iʔ]
	an	an.	aḥ [aŋ]	at [aʔ]
	am	am.	aḥ [aŋ]	ap [aʔ]
(i)	ī	i	īḥ [i]	
	in	in.	iḥ [eiŋ]	it [eiʔ]
	im	im.	iḥ [eiŋ]	ip [eiʔ]
(u)	ū	u	ūḥ [u]	
	un	un.	uḥ [ouŋ]	ut [ouʔ]
	um	um.	uḥ [ouŋ]	up [ouʔ]
(e)	e	e.	eḥ [e]	

(ai)	ay	ai.	ai	[ε]	
(o)	o'	o.	o	[ɔ]	
	oŋ	oŋ.	oḥ	[auŋ]	ok [auʔ]
(ui)	ui	ui.	uiḥ	[o]	
	uiŋ	uiŋ.	uiḥ	[aiŋ]	uik [aiʔ]

"Level," "Creaky," and "Heavy" represent three different tones. In the present study they will be designated as A, B, and C, respectively. As the vowel length is correlated with the tones and has no phonemic significance, it will be omitted in my transcription. The above list shows that Written Burmese, like Written Tibetan, has five vowels. Irregularity in the distribution, however, suggests that this is not original. As we can see from the table, only a, i, and u can combine with final consonants -m/-p and -n/-t, whereas e and o cannot. The vowel e always occurs alone, whereas o occurs only in front of velar finals -ng/-k. Shafer (1941:22) posits the following shifts:

*-ing > -əing > -ań
*-ik > -əik > -ač

Parallel to this are the shifts:

*-ung > -əung > -əung (transcribed as -ong)
*-uk > -əuk > -auk (transcribed as ok) > -auʔ

By means of this postulation, the parallelism in distribution of a, i, and u is restored.

-ang(k) *-ing(k) > ań(č) *-ung(k) > -ong(k)
-an(t) -in(t) -un(t)
-am(p) -im(p) -um(p)

However, the counterpart of o[ɔ] is not e[e], but ai[ε], as can be seen from their sound values given in square brackets. From the way they are written in the Burmese writing system and from their modern pronunciation, it can be easily inferred that *au and *ai have undergone the following shifts:

*-au > [ɔ] (transcribed as -o)
*-ai > [ε] (transcribed as -ai)

It seems that what we usually transcribe as o has in fact two sources: *-u- (in -ung and -uk) and *-au-. The former must have already broken into -au- and coalesced with original *-au- at the time the Burmese writing system came into being. The later divergent development is conditioned by the presence or absence of the final consonants -ng and -k.

- ** -au > *-au > [ɔ] (transcribed as -o)
 ** -ung > *-aung > [aung] (transcribed as -ong)
 ** -uk > *-auk > [au?] (transcribed as -ok)

The counterpart of e[e] is ui[o], as their modern pronunciation indicates. In the Myazedi inscription, e is written iy, while ui is written with the sign for u below and the sign for i above the consonant. Blagden (1914) transcribed the sound as ui, and since then this transcription has been generally followed. As for its sound value, opinion differs. Wolfenden (1929:197) supposes it was pronounced like the Dutch colloquial "ui" in huis, buis. Nishida (1955:21-22) takes it to be [u]; and since there are in the inscription words of other origin written -uy (which is later written -we in Written Burmese), he writes it ö in order to avoid confusion. The same sound is transcribed as b1 in Miller (1957: 42), and Pulleyblank interprets it as /iw/ in the article quoted above. In a comparative study, Benedict (1972) posits -ui < *-uw in the main text, but in a new footnote (No. 188, p. 57) declares *-əw to be preferable to *-uw.

In my opinion, a new proposal must take the following facts into consideration: (1) It corresponds to OC *-ug and WT -u; (2) it is written with the signs for u and i in the Myazedi orthography; and (3) the later development shows parallelism with -iy > -e. In order to account for all these, I posit the following sound shifts:

- ST *-ug > Myazedi -uī > *-uw > -o
 ST *-id > Myazedi -iy > -iy > -e

At the time of the Myazedi inscription, the second element of ui (our uī must have sound close to i, for it was written with that sign. A sound which goes back to *g and is similar to i might have retained the features of both. It seems therefore reasonable to assume that the sound was back (like g), high and unrounded (like i). (I write [i], which is equal to [u] of the International Phonetic Alphabet.) The shift -uī > -uw can be easily explained by assimilation.

As far as -uing and -uik are concerned, Pulleyblank quotes Shorto to the effect that words with these finals may not be native Burmese. If we exclude them from the list, we get the following system:

1. Closed syllables

(a)	ang	ak
	an	at
	am	ap
(i)	ing > ań	ik > ac
	in	it
	im	ip
(u)	ung > aung (=ong)	uk > au? (=ok)
	un	ut
	um	up

2. Open syllables

(a)	a	ay (=ai)	aw (=o)
(i)	i	iy (> e)	—
(u)	u	uy (> we)	uī > uw (=ui)

According to this analysis, the vowel system of Written Burmese goes back to an earlier three-vowel system.

i u
 a

III. Vowel correspondences and their reconstruction

A	ST (Sino-Tibetan)	*a	OC (Old Chinese)	a :
	WT (Written Tibetan)	a :	WB (Written Burmese)	a

Involved in this kind of correspondence are Chinese words in the *yü* 魚, *yang* 陽, *ko* 歌, *chi* 祭, *yan* 元, *yeh* 葉, and *t'an* 談 categories. Difficulties arise when one bases such a comparison on the reconstruction of Karlgren, who splits the *yü* 魚 category in two parts, one having open syllables with final -o and another having closed syllables with final -ag. The diacritical marks employed to distinguish words of different divisions complicate the matter further and lead to wrong conclusions. The use of Middle Chinese in comparative study and the choice of incorrect cognates also increases confusion. As a matter of fact, the correspondence of ST *a is the clearest one. The problem of medials and final consonants exceeds the scope of the present study and will not be discussed here.

(The number in parentheses refers to the phonetic series in *Grammata Serica Recensa*)

1.	OC	ngag B 五	five (58, a)
	WT	Inga	five
	WB	nga C	five
2.	OC	ngag A 吾	we, my, our (58, f)
	WT	nga	I, we
	WB	nga A	I
3.	OC	ngjag B, C 語	speak (58, t)
	WT	ngag, dngag	speech, talk, word
4.	OC	ngjag A 魚	fish (79, a)
	WT	nya	fish
	WB	nga C	fish
5.	OC	khag B 苦	bitter, suffer (49, u)
	WT	kha	bitter
	WB	kha C	bitter

6. OC	khag C 苦	difficulty, hardship (KYSH 93)
WT	khag-po	difficult, hard
WB	dka-ba	difficult, hardship
WB	khak	difficult, hard
7. OC	pljag A 膚	skin (69, g)
WT	pags, lpags	skin, hide
8. OC	mjag A 無	not, no (103, a)
WT	ma	not
WB	ma B	not
9. OC	tsjag A, tshjiag B 且	on the point of, will soon (46, a)
WT	cha	to be about, to be on the point
WB	ca B	to begin, make a beginning or commencement
10. OC	dag C 渡	to ford (801, b)
WT	'da	to pass over
11. OC	njag A 如	if (94, g)
WT	njak 若	if (777, a)
WT	na	if, in case, supposing
12. OC	njag B 汝	you (94, j)
WB	nang A, B	you, your
13. OC	kjag B 舉	lift, raise (75, a)
WT	'khyog pf. khyag	to lift, lift up
14. OC	bjag B 父	father (102, a)
WT	pha	father
WB	a-pha B	father
15. OC	mjag A 巫	magician (105, a)
WT	'ba	magician, sorcerer, conjurer
16. OC	tag B 睹, 覩	see (45, c', d')
WT	lta	to look, to view
17. OC	mrang B 馬	horse (40, a)
WT	rmang	horse, steed (see Coblin 1974)
WB	mrang C	horse, pony
18. OC	prak < *priak 百	hundred (781, a)
WT	brgya < *brya	hundred (see Li 1959 p. 59)
WB	a-ra A < a-rya	hundred
19. OC	'ak 惡	bad, evil (805, h)
WT	?ag	bad
20. OC	khrijak 赤	red (793, a)
WT	khrag	blood
WB	hrak	to be ashamed, to be shy

21. OC	phjang B 紡	spin (740, r)
WT	phang	spindle
WB	wang B	to spin
22. OC	pjang C 放	loosen, let go, banish (740, i)
WT	spong, spang, pf. spangs	to give up, to renounce
23. OC	dzang A 藏	conceal, to store (727, g')
WT	gsang	to conceal, secret, hidden
24. OC	tsang A 臧	good (772, f')
WT	bzang	good, fair, beautiful
25. OC	trjang A 張	give tension to a bow (721, h)
WT	thang	tense, tight
WB	tang C	to tighten, become tense or taut
26. OC	drjag A, C 除	eliminate, remove, to clear out (82, m)
WT	'dag	to clear, to wash away, to wipe off a hill, ridge (697, a)
27. OC	kang A 岡	a projecting hill or spur
WT	sgang	a strip of high ground, a spur of a range of mountains or hills
WB	khang-A ruw C	cede, yield, give way (730, i)
28. OC	njang C 讓	to give, grant, concede
WT	gnang	to give, deliver over
WB	hnang C	heavy with dew (730, f)
29. OC	njang A 灑	fog, thick mist
WT	na-bun	fog, mist, haze
WB	khug-rna, khug-sna	dew, fog, mist
30. OC	hnang C	in past time, formerly (730, k)
30. OC	nang B 曩	ancient
WT	gna-bo	expel, sacrifice to expel evil influences (730, e, g)
31. OC	njang A 攘, 穰	to drive, to drive away
WB	hnang A	strong (745, e)
32. OC	krang B 硬	hard, stiff, firm
WT	ngrang C 鞮, 硬	hard, solid, firm
WB	mkhrang, khrang	mature, firm
33. OC	rang B	cold (755, l)
33. OC	gljang A 涼	cold, cool
WT	grang	to measure (737, a)
34. OC	ljang A, C 量	to number, to count
WT	'grang	number
WB	grangs	to measure with a measure of capacity
35. OC	khrang A	eight (281, a)
35. OC	priat 八	

WT	brgyad < *bryad	eight (see Li 1959 p. 59)
36. OC	tar B, C 痺	disease, suffering (147, e) wearied, disease arising from overwork
WT	ldar	to be weary, tired
37. OC	ljar A 籬	hedge (23, g)
WT	ra	fence, enclosure, wall
38. OC	nga A 鵝	goose (2, p)
	ngran C 雁	wild-goose (186, a)
WT	ngang	goose
WB	ngan C	goose
39. OC	gar A 河	river (1, g)
WT	rgal	a ford, to ford (a river)
40. OC	gar A, B 荷	carry (1, o)
WT	sgal	load of a beast of burden
	'gel, pf. bkal fut. dgal	to load, to lay on a burden
	khal	burden, load
WB	ka B	to harness, attach a daught ani- mal to a carriage
41. OC	tjan C 顛	shivering, shaking, trembling (Analytic Dictionary p. 279)
WT	'dar	to tremble, shudder, shiver
	sdar	trembling
42. OC	nan A, C 難	difficulty, calamity (152, d)
WT	mnar	to suffer, be tormented, torture
43. OC	sjan A 鮮	fresh fish, fresh meat (209, a)
WT	gsar	new, fresh
WB	sa B	to make anew, do afresh
44. OC	kan A 竿	bamboo pole, rod
WT	mkhar	staff, stick
	'khar	staff
45. OC	tshan C 燦	bright, splendid (154, b)
WT	mtshar	bright, shining, of metals, fine, beautiful
46. OC	djan A 纏	bind, wind (204, c)
WT	star	to tie fast, to fasten to
WB	ta A	to cling to
47. OC	tshan A 餐	eat, food, meal (154, c)
WT	'tshal	to eat
	'tshal-ma	breakfast
48. OC	trjan B 展	roll over, unfold, develop (201, a)

WT	rdal	to spread, to extend
49. OC	kan A 干	shield, violate (139, a)
	gan C 扞, 捍	to ward off, protect, guard (139, q, i')
WT	'gal	violate, to counteract
WB	ka A	a shield of any kind, to make a barrier against, ward off, debar
50. OC	han A 鼾	to snore
WT	hal	to pant, to snort
51. OC	kan A 乾	dry (140, c)
	gan B 旱	drought, dry (139, s)
WB	khan C	to be dried up, exhausted, as a liquid
52. OC	gjan C 健	strong (249, g)
WB	kyan C	to be well, healthy
53. OC	pran A 健	turn round (182, a) (KYSH 381)
WB	pran A < plan	to return, to repeat
54. OC	hrjab C < hrjaps 般	generation, epoch (339, a)
	rap 葉	generation, epoch (633, d)
WT	rabs	generation
55. OC	kab C < kaps 蓋	to cover, conceal, a cover (642, q)
	gap 蓋	to thatch, to cover (642, q)
WT	'gebs, pf. bkab, ft. dgab	to cover, to put on a cover
56. OC	krap 甲	shell (629, ā)
WT	khrab	shield, scales
57. OC	tsjap 接	connect (635, e)
WB	cap	to join, unite, connect
58. OC	tam A 擔	carry on the shoulder (619, k, h)
WB	tam C	to bear or carry on the shoulder
59. OC	dam A 談	speak (617, l)
WT	gtam	talk, discourse, speech
60. OC	phjam C 泛, 汎	to float (641, b; 625, f)
	phjam C 汎	overflow, inundate (626, c)
	bjam A 汜	disperse, float about (626, c)
WT	'byam	to flow over, to be diffused
61. OC	grjam A 鹽	salt (609, n)
WT	rgyam-tshwa	a kind of salt, like crystal
	lgyam-tshwa	a kind of rock-salt

As mentioned above, Li (1971) reconstructs *i for the words in the *chia* 佳, *keng* 耕, *chih* 脂, and *chen* 眞 categories. The vowel of these words corresponds to Tibetan i. Since there are no -im and -ip syllable types in Old Chinese, it seems reasonable to assume that ST *-im and *-ip have shifted to OC *-əm and *-əp and coalesced with the original ST *-əm and *-əp, which are reflected in Chinese words in the *ch'in* 侵 and *ch'i* 緝 categories. In Written Burmese, ST *-ing and *-in have shifted to ań, while ST *-ik and *-it have shifted to ać. In this analysis of Written Burmese, we have seen syllables like -in and -it. However, it turns out that words with these finals do not play a part in the comparison. It seems that we are dealing here with a renovation.

This irregularity in the correspondences of final consonants seems to have been caused by dialectal shifts in Chinese (*-ing > -in, *-ik > -it) on one hand, and by the morphophonemic alternation in Sino-Tibetan languages on the other.

62. OC	tik 滴	a drop, to drop (written as 濟 in the <i>SW</i>)
WT	thigs	a drop
	'thig	to drop, to fall in drops
	gtig(s)	to fall in drops, to drop
	btig	to drop, to let fall in drops
63. OC	mjing A 名	name, fame (826, a)
WT	ming < *mying	name
WB	mań A < *ming	to be named, have a name
	hmań B < *hming	to name, give a name
	a-mań A < *a-ming	a name
64. OC	ljing B 領	neck (823, f)
WT	'jing < *lying	neck, to turn or move round
WB	lań A < *ling	neck, to turn around
65. OC	tsring A 爭	strife, quarrel (811, a)
WT	'dzing	to quarrel, contend, fight
WB	cać < *tsik	war, battle
66. OC	·jit —	one (394, a)
WB	?ać < *?ik	a unit, one
67. OC	srjit 虱	louse (506, a)
WT	shig < *syig	louse
68. OC	njid C 二	two (564, a)
WT	gnyis	two
WB	hnać < *hnit	two
69. OC	sjin A 薪	firewood (382, k)
WT	shing < *sying	tree, wood
WB	sać < *sik	wood, timber

70. OC	sjin A 新	new, renew (382, k)
WB	sać < *sik	new
71. OC	nin A < *ning 年	year (364, a)
WT	na-ning, kha-ning	last year
WB	a-hnać < *hnik	a year
72. OC	njin A < *njing 仁	kind, good (388, f). cf. 佞
		*ning
WT	snying	the heart, the mind
WB	hnać < *hnik	heart
73. OC	rin B 引	draw the bow, pull, stretch, prolong (371, a)
		long, high, tall
WT	ring	to extend, stretch, prolong
	sring	to be long
WB	hrań A < *hring	fear (403, d)
74. OC	ljit 慄	to be afraid of a thing, fear, dread
WT	'jigs < *lyigs	
75. OC	tsit < *tsik 節	knots or joints of bamboo (399, e) ¹
		knee (401, c)
	sjit 膝, 膝	cut (400, f)
	tshit 切	joint, knee, knot
WT	tshigs	to cut in parts
WB	chać < *tshik	a joint
	a-chać < *a-tshik	tie, knot
76. OC	kit 結	to bind
WT	'khyig	to tie, bind, fasten by tying
WB	khyań A < *khing	sun, day (404, a)
77. OC	njit 日	the sun, day
WT	nyi-ma	the sun
	ne A < *niy	a day
	ne C < *niy	vanish (401, a, b)
78. OC	tshjit 漆, 漆	to varnish, to lacquer
	tshjid C 髹	tough, viscous, sticky matter
WT	tshi	paint, pigment
WB	che C < *tshiy	to be sticky, adhesive
	ce C < *tsiy	bottom (590, c)
79. OC	tid B 底	to lower (590, e), low
	tid A 低	bottom, lowest part
WT	mthil	earth, ground, soil (For the semantic connection, cf. English bottom and German Boden.)
WB	mre A < mliy ²	

80. OC	hwrjid B 水	water (576, a), The character is phonetic in 寢 gwjid C all fluids of a somewhat greater consistency
WT	rtsi	
WB	re A < *riy	water (For the semantic connection, cf. WT chab < *thyab water and OC tjəp 汁 juice, sap (686, f). For the phonetic correspondence between WT and WB, cf. WT rtsi, to count and WB re < *riy, to count, enumerate)
81. OC	sjid B 死	die, death (558, a)
WT	'chi < *'syi	to die
WB	se A < *siy	to die
82. OC	sjid C 四	four (518, a)
WT	bzhi < *blyi	four
WB	le C < *liy	four
83. OC	tshjit 七	seven (400, a)
WB	khu B hnać < *khu-hnit	seven
84. OC	njid B 爾	you (359, a)
WT	nyid	self, same, thou, you
85. OC	pjid C 界	give (521, a)
WT	sbyin, pf. byin	to give, to bestow
WB	pe C < *piy	to give, to present for acceptance
86. OC	tjid C 至	arrive, come to (413, a)
WT	mchi < *mtshyi	to come, to go, to appear
WB	ce B < *tsiy	to come, arrive
87. OC	sid C 細	small, minute (1241, l)
WT	se C < *siy	small, fine, slender
88. OC	kjit 吉	luck, auspicious, good (393, a)
WT	skyid	to be happy, happiness
89. OC	dzjin C 盡	exhaust entirely (381, a)
WT	zin	to be consumed (zin-pa med-pa, endless. cf. Ch. 無盡)
90. OC	kjəp 急	hasty (681, g)
WT	grim	to haste, to hurry
91. OC	tshjəm B 寢	lie down to sleep (661, f)
WT	gzim	to fall asleep, to sleep
92. OC	tsjəm C 浸	to soak, overflow (661, m)
WT	sib	to soak in
WB	cim A	to steep, soak in liquor

C

ST

*u

In Old Chinese there are no syllables of the type *-un(t) and *-um(p). However, the correspondence seems to show that ST *-un(t) and *-um(p) shift to *-ən(t) and *-əm(p) and coalesce with the original *-ən(t) (the *wen* 文 and *wei* 微 categories) and *-əm(p) (the *ch'in* 侵 and *ch'i* 緝 categories), Examples Nos. 121–125.

Examples Nos. 114–119 indicate clearly the sound shift ST *-ul > OC *-ən. In examples Nos. 116 and 117 we have OC *-jən instead of simply *-jən. This distinction is made to account for the divergent development from Old Chinese to Middle Chinese on one hand, and the different reflexes of labials and labiodentals in Mandarin on the other (see Li 1971: 37–38). For example:

*bjən > bjuən > fen 墳 tumulus
*bjən > bjən > p'in 貧 poor

Comparative evidence seems to indicate that this distinction in Old Chinese results in the loss of preinitial d-, and that the phenomenon is essentially a kind of compensatory lengthening. For example:

ST *dbjul —> OC *dbjən > bjən 貧 poor
 —> WT dbul
ST *dngjul —> OC *dngjən > ngjən 銀 silver
 —> WT dngul
 —> Myazedi nguy > WB ngwe
cf. ST *pjul —> OC *pjən > pjuən > fen 分 distribute
 —> WT phul pf. imp. of 'bul to give

93. OC	gug C 候	attend, wait upon (113, e)
WT	sgug	to wait, to await
94. OC	khug B 叩	strike, attack (110, d)
	khug C 叩, 扣	strike (110, d, e)
	WB	khauk < *khuk
95. OC	dug C 逗	to remain, to stay
WT	'dug	to remain, to stay, to live, to sit
96. OC	tjug C 晝	time of daylight, day (1075, a)
WT	gdugs	mid-day, noon
97. OC	mjug C 霧	fog, mist (1109, t)
WT	rmugs	a dense fog
	rmu	fog
	rmus	foggy
	WB	mru A khuw C
98. OC	khjug A 軀	fog, mist, haze
		body, person (122, g)

	WT	sku	body
	WB	kuwy A	an animal body
99.	OC	njug B 乳	nipple, milk (135, a)
	WT	nu-ma	breast, female breast, bosom
	WB	nuw B	the breast of a female, milk
100.	OC	khug C 寇	to rob, robber (111, a)
	WT	rku	to steal, to rob
	WB	khuw C	to steal
101.	OC	tug C 囑, 喙	beak (1224, n; 128 u)
	WT	trjug A, C 喙	beak (128, u; 1224 n) 喙
	WT	mchu < *mthyu	lip, beak or bill of birds
102.	OC	tjug B 科	ladle (116, b)
	WT	tjug C 注	to conduct water (129, c)
	WT	'chu < *'thyu	to lade or scoop, to irrigate, to water
103.	OC	kuk 穀	grain, good (1226, i)
	WB	kauk < *kuk	the rice plant, rice
	WB	kaung < *kung C	to be good
104.	OC	tjuk 燭	torch (1224, e)
	WT	dugs	to light, to kindle
	WB	tauk < *tuk	to blaze, flame, to shine
105.	OC	thjuk 觸	to butt, knock against (1224, g)
	WT	thug	to touch
	WT	gtug	to touch, to hit or strike against
	WT	khjuk 曲	to touch
106.	OC	'gug(s)	bend, crooked (1213, a)
	WT	kug	to bend, to make crooked
	WB	kauk < *kuk	crooked, a hook
	WB	suk < *kuk	to be crooked, not straight
107.	OC	suk 嗽	suck, inhale (1222, o)
	WB	sauk < *suk	to drink, to smoke
108.	OC	khung B 孔	empty (1174, a)
	WT	khung A 空	hollow, empty, hole (1172, h)
	WT	khung	hole, pit, hollow, cavity
	WB	khaung C < *khung	to be hollow
109.	OC	thung C 痛	to be pained (1185, q)
	WT	gdung(s)	to feel pain, to be pained
110.	OC	bung A 蜂	bee, wasp (KYSH p. 495)
	WT	phjung A 蟻	bee, wasp (1197, s 蜂, t 蟻)
	WT	bung	a humming and stinging insect, bee

111.	OC	ljung A 龍	dragon (1193, a), phonetic in 龐
	WT	'brug	brung
	WT	'brug	dragon, thunder
112.	OC	tuan B < *tun < **tung 短	short (169, a). The character contains the phonetic 豆 dug
	WT	thung	short
	WB	taung C < *tung	short
	WB	tuw A < *tug	short
113.	OC	tsjot 卒	finish, die (490, a)
	WT	sdud	to close, conclude, finish
114.	OC	kən B 頤	neck
	WT	'gul, mgul	neck, throat
	WT	mgur	neck, throat
115.	OC	pjən A 分	divide, separate, distribute (471, a)
	WT	'bul	to give
	WT	'phul	to give
116.	OC	ngjæn A < *dngjæn	silver (416, k)
	WT	銀	silver
	WT	dngul < *dngjul	silver, money
	WB	ngwe A < nguy	silver
117.	OC	bjæn A < *dbjæn	poor (471, o)
	WT	貧	poor, poverty
	WT	dbul < *dbjul	poor, poverty
118.	OC	dən C 鈍	dull (427, i)
	WT	rtul	blunt, dull
119.	OC	djən C 順	obey, submissive (462, c)
	WT	sdjən A 馴	docile (462, f), tame
	WT	'dul	to tame, to subdue
	WT	dul	soft, tame, gentle
	WT	'jun < *'djun	to subdue, make tame
	WT	'chun < *'thjun	to be tamed, subdued
120.	OC	pjəd A 飛	to fly (580, a)
	WT	pjən A 翁	to fly, soar (471, e)
	WT	pjən C 奮	spread the wings, fly up (473, a)
	WT	'phur	to fly
	WT	hmən A 昏	dusk, evening, darkness (457, k)
121.	OC	mun	obscurity, darkness
	WT	dmun	darkened, obscured
	WT	rmun	dull, heavy, stupid
	WB	hmun A	to be dim, to be dusky
122.	OC	tsən A 尊	to honour, honorable (430, a)
	WT	btsun	respectable, noble, honourable

123. OC	njəp 入	enter (695, a) to sink, to set in the expression 日入而息
WT	nub	to sink, to set, west
WB	ngup	to dive, to go beneath
124. OC	səm A 三	three (648, a)
WT	gsum	three
WB	sum C	three
125. OC	khəm A 殲	to kill (651, v)
WT	'gum	to kill, to put to death

D ST *ə OC *ə : WT a : WB a

The OC vowel *ə in Chinese words of the *chih* 之, *cheng* 蒸, *wei* 微, *wen* 文, *ch'i* 緝, and *ch'in* 侵 categories, which correspond to a in Written Tibetan and Written Burmese, go back to ST *ə. Following are examples of this correspondence:

126. OC	njəg B 耳	ear (981, a)
WT	rna	the ear
WB	na C	the ear
127. OC	tsjəg B 子	child, treat as a child (964, a)
	dzjəg C 字	to breed, to love, fondle, written character (964, n)
	dzjəg A 慈	affectionate, loving (966, j)
	dzjəg A, C 孳	copulate, breed (966, k)
WT	tsha < *tsa	grandchild
	btsa	to bear, to bring forth
	mdza	to love, as friends or kinsmen do
WB	ca A < *dza	to have tender regard, to feel for another, as for one's self, a letter
128. OC	dzrjəg C 事	serve, affair (971, a)
WT	rdzas < *dzras	thing, matter, object
WB	a-ra A < *dzra	a thing, subject, matter
	ca A < *rdza	a thing
129. OC	məg B 母	mother (947, a)
WT	ma	mother
WB	ma B	sister. Compare the similar semantic development in Albania (Jespersen p. 118)
130. OC	ngəg C 礙 (礙)	obstruct (956, g)
WT	'gegs-pa pf. bkag fut. dgag	to hinder, prohibit, stop, to forbid
131. OC	mək 墨	ink, black (904, c)
	hmək 黑	black (904, a)

WT	smag	dark, darkness
WB	mang A	ink
	hmang A	ink
132. OC	dzək 賊	bandit (907, a)
WT	jag	robbing, robbery
133. OC	tjək 織	weave (verb) (920, f)
	tjəg C < *tjəks	stuff made of coloured silk (noun) (920, f)
	織	
WT	'thag < 'tag	to weave
	thags < *tags	texture, web
WB	rak	to weave, whether cloth, a mat, or a basket
134. OC	sjək 息	breathe, sigh, rest (925, a)
WB	a-sak	breath, life
135. OC	rəng A 蠅	a fly (892, a)
WT	sbrang	fly and similar insects without a sting
	yang A	the common house fly
136. OC	tsəng A 憎	hate (894, d)
WT	sdang	to hate
137. OC	hnər B 妥	tranquil, at ease (354, a)
	snjəd A 綏	give repose to, calm (354, g)
WT	rnal	rest, tranquillity of mind
WB	na C	to cease from motion or action through desire for rest
138. OC	pjəd B 誹	slander (579, g)
	pjəd A 非	not, wrong (579, a)
WT	phyar-kha	blame, affront, insult
	'phya-ba	to blame, censure, chide
139. OC	bjən A 焚	to burn, destroy (474, a)
WT	'bar	to burn, to catch fire
	sbar	to light, kindle, inflame
WB	pa B	to shine
140. OC	sən A 孫	grand-son, grand-daughter (434, a)
WT	mtshan ³ < *m-san	nephew
141. OC	mjən A 聞	hear, to be heard (441, f)
WT	mnyan-pa, nyan-pa	to hear, to listen
142. OC	gljəp 立	to stand (694, a)
WT	'khrab	to strike, to stam, tread heavily
	skrab	to beat the ground with one's feet, to stamp, tread
WB	rap < ryap	to stand; to stop, halt, remain

143. OC khljəp 泣 weep (694, h)
 WT khrab-khrab a weeper, one that sheds tears on every occasion
144. OC təp 答 respond to, answer (676, a)
 təb C < təps 對 respond, reply (511, a)
 WT 'debs pf. btab, fut. to answer, to explain
 gtab
145. OC sdjəp 習 to practise, exercise (690, a)
 WT slob pf. bsalabs to learn, to teach
146. OC tjəp 摺 to fold
 diəp 疊, 褶 double (690, g) (1255, a)
 WT ltab to fold or gather up
 WB thap to place one on another, to repeat
147. OC kjəp 汲 draw water (681, h)
 WB khap to dip up, draw water
148. OC tjəp 汁 juice, sap (686, f)
 WT chab < *thyab water
149. OC sjəm A 心 heart (663, a)
 WT sem(s), pf. sems, bsams, fut. bsam to think
 bsam thought, thinking
150. OC njəm B 恁 think (667, q)
 WT nyam(s) soul, mind, thought
 snyam to think, suppose, fancy
151. OC gəm A 含 hold in the mouth, put in the mouth (651, 1')
 WT 'gam to put, or rather throw, into the mouth

Chinese words in the *yu* 幽 category, reconstructed as -əkʷ and -əgw by Li, show a different correspondence from the *chih* 之 category. It seems necessary to project the reconstruction of Old Chinese back into Sino-Tibetan.

ST *-əkʷ OC -əkʷ : WT -ug : WB -auk < *-uk
 *-əgw -əgw -u(g) -o < *-uĩ, -u < *-u
 *-əngw -ən -ung -aung < *-ung

152. OC ljəkʷ 六 six (1032, a)
 WT drug six
 WB khrauk < *khruk six
153. OC dəkw 毒 poison (1016, a)
 WT dug, gdug poison
 WB tauk < *tuk to be poisoned

154. OC tjəkʷ 粥, 糲 rice gruel (1024, a, b)
 WT thug < *tug soup, broth
155. OC təkʷ 篤 firm, solid, (1019, g). The *SW* defines it as 厚 thick
 tən < təngw A solid, thick (464, n, p). The *SW* defines 惇 as 厚 thick. For the sound change, cf. No. 164 (see Gong, 1976, pp. 63-69)
 惇, 敦
 WT 'thug < *tug thick
 mthug < mtug
 stug(s) thickness, density, thick, dense
- WB thu A to be thick, not thin
 thu B thickness
156. OC sthjəgw B 手 hand (1101, a)
 WT sug the hand
157. OC hrjəgw A, C 收 collect, harvest (1103, a)
 WT sgrug, rug to collect, gather, pluck
158. OC njəgw A 揉 to make pliable (1105, b)
 WT nyug to besmear, to rub gently
159. OC kjəgw B 九 nine (992, a)
 WT dgu nine
 WB kuw C nine
160. OC gjəgw B 舅 maternal uncle (1067, b)
 WT klu-bo uncle, on the father's side
 WB kuw A brother
161. OC ktrjəgw A 舟 boat (1084, a). The character is the phonetic in 舫 *gak* (?). See *KYSH* p. 713
 WT gru boat, ferry, ship, vessel
162. OC trjəgw B 肘 wrist, elbow (1073, a)
 WT gru-mo elbow
163. OC njəgw A 柔 soft, mild, tender (1105, a)
 njəgw A 揉 to make pliable (1105, b)
 WT nyug to rub gently
 WB nu C soft, to be made soft by some process
164. OC tən < *təngw A a heap, a mound. For the sound change, cf. No. 155 (see Gong, 1976, pp. 63-69)
 墩
 WT rdung a small mound, hillock
 WB taung A < *tung a hill, mountain

IV. Origins of Tibetan -e and -o

The vowels -a-, -i-, and -u- are shared by Chinese, Tibetan, and Burmese, whereas the vowel -ə- was maintained only in Old Chinese. In the above section we have seen how these four vowels correspond in the three languages. What remains to be analyzed now are the Tibetan vowels -e- and -o-, which are not found in Old Chinese as reconstructed by Li, nor in Written Burmese as I interpret it. The origins of these two Tibetan vowels present many difficulties in comparative study.

If we regard Tibetan -e- and -o- as inherited from the parent language, we are obliged to explain how ST *-e- and *-o- developed in Old Chinese and Written Burmese. Conversely, if we regard them as secondarily developed, we are obliged to explain how they came into existence.

It seems to me that we are here dealing with Tibetan innovations. The following facts can be pointed out in support of this view.

A. Tibetan -e- and -o- in the verb paradigm

The morphology of a language often reveals traces of phonetic change, and this seems also to be the case with Tibetan. As is well known, some Tibetan verbs show the following paradigm:

1.	'gebs-pa	'to cover'	pf. bkab,	fut. dgab,	imp. khob
2.	'debs-pa	'to answer'	btab,	gtab,	thob
3.	gson-pa	'to hear'	bsan,	gsan,	gson
4.	slob-pa	'to learn'	bslabs,	bslab,	slob(s)

In the above examples, the vowel -a- occurs in perfect and in future tenses, whereas -o- occurs in the imperative. As for the present form, we have -e- in the first two verbs and -o- in the last two verbs. In these verbs, vowels show e ~ a ~ o and o ~ a ~ o alternation. Since Schiefner (1851), many writers on the morphology of Tibetan verbs have regarded the vowel -a- as original, and the vowels -e- and -o- as secondarily developed, though different writers have different interpretations as to the process of this development. Schiefner noted, that words often were written in two different ways, varying between -a- and -e- or -a- and -o-; for instance, *kag* or *skag* ("unlucky") is also written *keg* or *skeg*, and *cag* (a plural marker) is also written *cog*. He gave twelve pairs of words showing -a- ~ -e- alternation and thirty-four pairs of words showing -a- ~ -o- alternation, and interpreted the change of -a- into -e- as *Schwächung* and -a- into -o- as *Triübung*. According to him, it was originally nothing but a natural phonetic change. Later, as it became necessary to distinguish the tenses of verbs, these coexisting forms were differentiated, with the "weakened" and "muddy" forms designating the present, and "unweakened" and "unmuddy" forms designating the perfect.

Shafer (1951), who was not satisfied with this interpretation, sought an answer in modern Tibetan dialects. Basing his arguments on the imperative suffix in Murmi, Magari, and Bahing, he reconstructed an imperative suffix *-o for Old Tibetan and explained the phonetic change *-a- > -o- as due to assimilation. For the same sound shift in the present, he assumed either an infix *-o- or a suffix *-o (for instance, he posited *g-o-san > gson, *slab-o > slob). As for the sound shift *-a- > -e- in the present, he explained it either through prefix *ind' (e)- or through suffix *-se/*-es.

Nishida (1957) reconstructed a present suffix *-ed, on the strength of the suffix of the same function in Purik (-ēt) and in Balti (-ed), and explained the *-a- > -e- sound shift in the present as through assimilation. So far as the sound shift *-a- > -o- in the present is concerned, Nishida made extensive use of the infix *-o- in explaining both cases (for example, *g-o-san > gson and *s-o-slab > slob), and kept the suffix *-o exclusive for the imperative, citing the imperative suffix -o in Rong (Lepcha) as additional evidence.

Coblin (1976) revised Nishida's *-ed into *-d and *g-o-/*s-o- into *g-, and systematized the whole process of sound change in a set of rules. On the basis of comparative evidence that shows Tibetan -o- corresponding to Chinese labiovelar *gw + V (see *infra* B), I would like to suggest that Coblin's *g- be revised to *gw-; and on the ground that Tibetan -o in the open syllable partially goes back to ST *-u (see *infra* C), I propose to reconstruct the imperative suffix as *-u, instead of *-o.

B. Tibetan -o- and its correspondences in Chinese

It will be shown in the following examples that Tibetan -o- corresponds to Old Chinese *-wə-, *-wa-, and *-ua- (*w here being a sign for labio-velar). The correspondences clearly show that Tibetan -o- has three different sources, for if we take Tibetan -o- as the original, we cannot explain why it has three reflexes in Old Chinese. From examples Nos. 165–176, I infer that labio-velar initials caused the contiguous vowels *-ə- and *-a- to change into Tibetan -o-.

In Li's reconstruction, the vocalic cluster *-ua- occurs only in the *chi* 祭, *ko* 歌, and *yüan* 元 categories. However, Li conjectured that it might have had a wider distribution in Proto-Chinese.

		1. OC *wə : WT o		
165.	OC	gwjəd	C 胃	a stomach (523, a)
	WT	grod		belly, stomach
166.	OC	gwjəg	B 友	friend, associate (995, e)
	WT	grogs		friend, companion
167.	OC	gwjəd	A 違	go against, oppose, deviate from, err (571, d)
	WT	'gol		to part, to deviate, err

168. OC	gwjət 掘	dig out (496, s)
WT	rkod, rko	to dig, dig-out
169. OC	kwjəd A 歸	return (570, a)
	gwəd A 回	revolve (542, a)
WT	gwjəd A, C 圍	encircle (571, g)
	'khor	circle, circumference
	'khor-ba	to turn round, to go round in a circle
	Skor	circle, repetition
	skor-ba	to surround, encircle, to return
	sgor-mo	round, a circle, a globe
	skyor-ba	to repeat, enclosure, fence
170. OC	gwjəm A 熊	a bear (674, a)
WT	dom	the brown bear
WB	wam A	a bear
2. OC *wa : WT o		
171. OC	kwjak 攫	seize (778, b)
WT	'gog	to take away forcibly, to snatch
172. OC	gwjag A 于	go to (97, a)
	gwjang B 往	go to (739, k)
WT	'gro	to walk, to go
WB	krwa B	to proceed, whether going or coming
173. OC	gwjag C 芋	taro (97, o)
WT	gro-ma	potato
174. OC	gwjag B, C 羽	a feather (98, a)
WT	sgro	a large feather
175. OC	ngwjar C 偽	false, cheat (27, k)
WT	rngod	to deceive
176. OC	gwag B 戶	door (53, a). The character is the phonetic in 扉, which is a <i>ho-k'ou</i> word.
WT	sgo	door
3. OC *ua : WT o		
177. OC	dzuar B, C 坐	sit, seat (12, a)
WT	sdod	to sit, to stay
178. OC	djuar A 垂	hang down, fall (31, a)
WT	'jol < *'dyol	to hang down
179. OC	dzjuat 絕	cut off, break off (296, a)
	tsjuat 鷓	cut off (transitive)

	WT	chod < *tshjod	the cutting off, to be cut off
		gcod-pa	to cut, to cut asunder
180. OC		thuat, duat 脫	take off, escape, careless (324, m)
	WT	lhod, lod, glod	loose, relaxed
	WB	lwat	to be at liberty, free
		hlwat	to free, release, to emancipate
		kjwat < klwat	to be loosed from its proper place
		khjwat < *khlwat	to release, free, emancipate
181. OC		ruat 悅	pleased, glad (324, o)
	WT	brod	joy, joyfulness
182. OC		thuar 唾	spit (31, m)
	WT	to-le	to spit

C. Tibetan -e- and -o- compared in Tibetan and Burmese

1. Tibetan -e- and -o- in open syllables

Miller (1956) reconstructed six vowels (*a, *i, *u, *e, *o, *bl) for Tibeto-Burman, basing on the following correspondences in open syllables:

WT	i	:	WB	e	TB	< *i
	e			i		< *e
	a			a		< *a
	u			o		< *u
	o			u		< *o
	u			bl		< *bl

However, for the correspondence WT -u: WB -o there is only one example:

WT	'bu	to open, to unfold, of flowers
WB	pho	to be swelled

Pulleyblank (1963:219) arranged the correspondences in the following schema:

WT	a	:	WB	a
	e			i
	i			e
	u			ui (=Miller's bl)
	o			u

According to the analysis in this study, the table can be rearranged as:

WT	a	:	WB	a	TB	< *a
	e			i		< *i
	i			iy		< *iy
	u			ui		< *ui
	o			u		< *u

As already mentioned, TB *-iy goes back to ST *-id, whereas TB *-ui goes back to ST *-ug or *-əgw. Accordingly, TB *-y and *-i can be regarded as traces of ST *-d and *-g(w), respectively.

In addition to these correspondences, there are examples of Tibetan -o in open syllables corresponding to Burmese -wa.

WT		WB	
mtho	'a span'	thwa A	'to measure with a span'
so	'tooth'	swa C	'a tooth'

2. Tibetan -o- in closed syllables

Tibetan -o- in closed syllables often corresponds to Burmese -wa-. Following are a few examples:

WT		WB	
nor	'cattle'	nwa C	'a bull, ox, or cow'
dong	'pit'	twang C	'pit'
sbom	'thick, stout'	phwam B	'fat, plump'
dpon	'master, lord'	wan A	'government officer'
rkon	'net'	kwan A	'a casting net'
spobs	'to dare'	wam B	'to dare'

The circumstances here are the same as in the Tibetan and Chinese comparison, both pointing to a secondary origin for the Tibetan vowel -o-.

V. Conclusion

According to the present study, the shift of vowels in Old Chinese, Written Tibetan, and Written Burmese can be summarized as follows:

ST	*-a- > -a-	in all three languages
ST	*-i- > -i-	in all three languages, except before labial finals in OC, where it yielded *-ə-

ST	*-u- > -u-	in all three languages, except before dental and labial finals in OC, where it yielded *-ə-
ST	*-ə- > OC -ə-,	WT and WB -u- before labio-velar finals and -a- elsewhere

Tibetan has -e- and -o-, which are not found in Chinese or Burmese; they are treated here as Tibetan innovations. In addition to the four vowels *-a-, *-i-, *-u-, and *-ə-, there were in ST two vocalic clusters, *-ua- and *-ia-; the former yielded WT -o- and WB -wa-. The development of the latter is not clear, however, in the examples cited above (Nos. 18 and 35), ST*-ria- yielded WT -rgya- and WB -rya-. In OC there was *-iə-, but the two comparisons (Nos. 116 and 117) cited in this study show it is a Chinese innovation. The vowel system of ST is then:

Vowels:	i	u	Vocalic clusters:	ia	ua
				ɔ	
				a	

Notes

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- 1 This character contains the phonetic 𑍑 tsjak (923, a)
- 2 See Yoshio Nishi (1977) p. 42.
- 3 Wolfenden (1928:279). Thomas (1927:74; 1951; II 24, 1955:III29).

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INTRODUCTION TO VOLUME II

Language contact and areal features

This volume of the set is devoted to articles discussing language contact in the development of the languages of the family and the existence of areal features.

We now know from genetic and archaeological evidence that migration into Asia was from the southwest, across Asia and then up to the north, over a period from 18,000–60,000 years ago (Chu et al. 1998; Jin and Su 2000; Ke et al. 2001; HUGO Pan-Asian SNP Consortium 2009). Analysis of genetic distributions and other evidence points to there being two genetic populations in the Neolithic age, roughly north vs. south of the Yangtze River (Zhao and Lee 1989; Zhang Haiguo 1988; Zhang Zhenbiao 1988; Weng et al. 1989; Etlér 1992). Cultures developed in different areas of what we now think of as China, but the one we associate with the early Sino-Tibetans is the Neolithic Yangshao culture of the Yellow River valley (see, for example, Chang 1986; Treistman 1972; Pulleyblank 1983; Fairbank, Reischauer and Craig 1989; Xing 1996). From that area, some 6,000 years ago, there were migrations to the east and south,¹ into areas where speakers of Hmong-Mien, Tai-Kadai (Zhuang-Dong, Kra-Dai), and Austro-Asiatic languages, and precursors of the Austronesian languages, lived (Pulleyblank 1983; Bellwood 1992; Tong 1998; Blust 1984/1985, 1994a, 1994b; Thurgood 1994), and others to the west into and down through the Tibetan plateau, and still others southwest along the river valleys to the east of the Tibetan plateau, where there was also contact with Tai-Kadai and Austroasiatic language speakers. And as the migrations were in waves, there was also contact between earlier and later migrants from the Sino-Tibetan homeland. These migrations led to the current differences among linguistic varieties in the family in two ways: due to the split of the speakers and the resulting diverging developments, and also due to contact with other cultures in areas they migrated to (LaPolla 2001; LaPolla forthcoming; see also Ge et al. (1997) on the history of the migrations).

The serious study of language contact in linguistics is relatively new; although there was Haugen (1950), Weinreich (1953) and Weinreich, Labov and Herzog (1968), the field didn't really take off until the publication of Thomason and Kaufman (1988). But within Sino-Tibetan linguistics there were some pioneers who very early on understood the importance of language contact to the current shape of the

language family and the individual varieties. We present a selection of articles by these pioneers here.

We start off in Chapter 17 with a 1965 general overview of the distribution of certain phonetic² and morphological features by Eugénie Henderson, a pioneer at looking at language contact (see also Henderson (1951)). This is an early example of geolinguistics (typo-geography, linguistic geography, geography of languages or features),³ the mapping of features geographically, which was later developed by Mantaro J. Hashimoto (1978) and his students (see Iwata (1995) and the papers from the conferences of the Asian Geolinguistics Society of Japan [<http://agsj.jimdo.com/>] and the ILCAA joint research project "Studies in Asian Geolinguistics" [www.aa.tufs.ac.jp/en/projects/jrp/jrp210] run by Endo Mitsuaki of Aoyama Gakuin University).⁴ Prof. Hashimoto had a number of papers talking about the distribution of features of all types from north to south in China (1974, 1976a–b, 1984, 1986 and 1992,⁵ among others). Here we present two of these articles (Chapters 18 and 19; 1976a, 1984), which make the same basic point, that there is a cline of features in Chinese that are more Altaic-like in the north and more Tai-Kadai or Austro-Asiatic in the south, but use somewhat different data and phenomena to make the point. Prof. Hashimoto's view is that Sinitic was more like the Tai languages in the past, and came to be as it is due to Altaic influence. See Bennet (1979) for critical comments on the hypothesis, and the suggestion that it was Tai influence in the south, not Altaic influence, that was more important.

Chapter 20 is by Fang-Kuei Li, a pioneer in Sino-Tibetan studies generally, and a specialist on the Tai languages, as well as on Tibetan, Chinese, and certain North American languages. In this article (1945) Prof. Li assumes Tai and Chinese are genetically related (see Chapter 1 in Volume I, Li (1936–1937)), but talks about what he sees as very early loans from Chinese into Tai. In Chapter 21 Prof. Li (1976) explores the relationship between Chinese and Tai, pointing out that there are regular as well as irregular correspondences, so he suggests there must be both loans and genetically related sets of words, though does not take a strong stand as to the nature of the relationship between the languages. This article has often been cited as showing that Tai and Chinese are in fact related, but Prof. Li himself remained agnostic,⁶ and in his oral history (Li 1988) he said that we don't know enough about Chinese or Tai, and when we do, the answer will be clear. Most linguists now go along with Benedict's view (1942, 1976a—see Volume I, Chapters 3 and 6) that Chinese and Tai (and Hmong-Mien) are not related but have a deep contact relationship (see also Matisoff (1973), also in Volume I (Chapter 5), Downer (1963), and Egerod (1976)), but see Luo (2008) for counter-arguments.⁷

Chapter 22 is Anne O-K. Yue-Hashimoto's well-known but difficult-to-get 1976 article "Southern Chinese dialects: the Tai connection", in which she talks about the influence going the other way, from Tai (essentially Zhuang [Chuang]) to the southern Chinese varieties, Yue and Min. She argues for teasing apart the different historical layers in the languages,⁸ and looking at areal influences. From doing this, she argues that a Tai variety formed the oldest layer of the southern dialects.⁹ Yue-Hashimoto argues that the lexical items that are said to be uniquely

Min (using data from Norman (1970)) show affinities with Zhuang. While she mentions syntactic and lexical evidence, Yue-Hashimoto focuses mainly on what she sees as a deep connection between Zhuang and the southern varieties of Chinese in terms of the reflexes of historically voiced initials, which are exclusively unaspirated stops and affricates in the *yáng* (historically voiced) tones in Zhuang, and she argues, can be shown to be the same for what she sees as the oldest stratum of the Min and Yue varieties.¹⁰ She also takes issue with Norman's (1973; see Chapter 50 in Volume III) reconstruction of a three-way distinction in the voiced stops of Proto-Min, arguing that it is not supported by evidence outside Min or in the phonetic compound characters.¹¹

Yue-Hashimoto's view contrasts with that in the following chapter, Norman and Mei (1976), "The Austroasiatics in ancient South China: some lexical evidence", which argues for Austroasiatic influence on the Min varieties, using seven words that seem to be of Yue (here understood as Austroasiatic) provenience found in old Chinese texts, and eight words from modern Min dialects that also seem to be related to Austroasiatic words. The article is very well researched and carefully presented with interdisciplinary arguments. Based on facts related to the fact that the word for the Yangtze River in Chinese is a loan from Austroasiatic they even pinpoint the area where Chinese first came into contact with the Austroasiatics to be where the Han and the Yangtze rivers meet, as the Han river, which runs from Shaanxi through Henan and down to the Yangtze in Hubei, is the route the Chinese used in moving south. Given that, and other data from Chinese texts, they argue the ancient Chu kingdom included the Austroasiatics as one of the ethnic groups.

Both Yue-Hashimoto's and Norman and Mei's articles have been very influential (see for example Schuessler (2007)), though recently Sagart (2008), who argues for a connection between Chinese and Austronesian (Sagart 1993, 2005), has argued that the evidence presented by Norman and Mei is not convincing, and in fact might better support an Austronesian connection, though if one accepts Benedict's (1942) Austric (see also Reid (1994)) or Benedict's later (1966, 1975) assertion of an Austroasiatic substratum in Austronesian, then the question may be moot.¹²

Another language, spoken far to the west of Chinese, in Sikkim, West Bengal, Nepal and Bhutan, that more clearly manifests substratum or adstratum influence by an Austroasiatic language, is Lepcha (Rong). In our next paper, R. A. D. Forrest (1962) says "It is clear that we have in Rong a very mixed form of speech" (p. 335), and presents five dozen words in Lepcha that seem to have clear Austroasiatic connections, and argues that these and many of the prefixes found, plus what he calls "an antipathy to aspirated initials" and richer vocalisms, "all point to an Austroasiatic substratum" (p. 335).¹³ Forrest also teases apart the many Tibetan loans¹⁴ from an older Tibeto-Burman stratum, and, showing that it is quite conservative, argues that the language is important for comparative work.

The next paper, by Nicholas C. Bodman (1988), takes up the position of Lepcha within Tibeto-Burman, but aside from confirming clearly that it is a Tibeto-Burman

language, and showing many similarities with Tibeto-Burman languages to the east, such as Adi, Jinghpaw, Rawang, and Ao, does not take a stand on the exact position of Lepcha in the family. This may be because some of the languages he compares with Lepcha are quite conservative, as is Lepcha itself, and so it is hard to find clear shared innovations. While acknowledging the different strata that Forrest has identified, Bodman questions the nature of the prefixes mentioned by Forrest as being purely Austroasiatic, and points out that some of the examples of Lepcha-Austroasiatic lexical connections are also found in other Tibeto-Burman languages, and even Chinese, so the question is “what direction has the borrowing gone?” (p. 3). He adds another layer to the mix as well, in mentioning “the widespread use of Nepali (even as a first language among many Lepchas)” (p. 3) (see also Nakkeerar n.d.). Very interesting is Bodman’s discussion of word families in Lepcha, and comparisons with those in Tibetan and Chinese, from which he concludes Lepcha is the most conservative of the three. Lepcha has clear morphological affixes, including an infix *-y-*, and suffixes *-m*, *-n*, and *-t*, plus alternations in the initials and vowels with semantic consequences (see LaPolla (1994) on variable finals in Sino-Tibetan generally, and LaPolla (2017) for an overview of affixes and initial alternations in Sino-Tibetan).

The spread of major languages will generally influence the speech habits of the speakers who adopt that language, initially through bilingualism (superstratum influence), and possibly eventually complete language shift, but at the same time the major language will also be affected by the speech habits of those who adopt the language, if their population is large enough (substratum influence—see LaPolla (2005, 2009) on the nature of substratum and superstratum influence). The next five articles discuss the influence of Burmese on other languages of Myanmar, and also the influence of Mon and Pali on Burmese.¹⁵ The first of this set, Chapter 26, from Theodore Stern (1962), talks about the influences of Burmese on Plains Chin, that is, how bilingualism in a genetically related secondary (and dominant) language has caused changes in the primary language. In his introduction he shows the disparity between the hill peoples and the plains peoples in terms of the ratio of the population divided by the number of dialects, with plains peoples’ ratios being ten to eighty times the hill peoples’ ratios, and makes the interesting observation that “Life in the Irrawaddy Plains for many reasons has fostered intercommunication and in all probability the reduction of number of dialects” (p. 1), showing how geography can influence language development.¹⁶ Another interesting point he makes is that the relative social status of the languages can affect the degree of influence: he says that in Sandoway District, although the Burmese were in the majority compared to the Arakanese, the latter had a greater influence on Plains Chin, and this might be due to the fact that Arakanese was closer to Plains Chin in terms of social status. He also gives a nice overview of the migrations and culture of the Chin and some of the differences between the many Chin varieties, and argues there is a cline of acculturation to Burmese, from the urban areas to the forests in the hills. He then outlines the phonological changes the local Arakanese Burmese and Colloquial Burmese have gone through compared to Written

Burmese, and then compares the forms with the Plains Chin forms. He also gives examples of many grammatical forms, including modals and classifiers, and constructions in Plains Chin that are the result of borrowing/contact influence.

The second article of this set, Chapter 27, from Denise Bernot (1975), discusses the influence of Burmese on Singpho, the western variety of Jinghpaw, showing that the loanwords can be distinguished into different historical layers, with some showing more conservative forms than Modern Burmese, and generally fall into different semantic categories.

We then turn to influences on Burmese from Mon and Pali. The Mon have influenced Burmese culture generally since the establishment of the Burmese kingdom in Bagan (Pagan) in the eleventh century. As the Mon already had an established court and written language and religion, in setting up their kingdom, the Burmese modelled their court on the Mon court, used Mon as a prestige and literary language, adapted the Mon alphabet for writing Burmese, and learned Theravada Buddhism and Pali from the Mon. At that stage Mon was a superstrate language (Jenny 2013). What we now think of as southern Myanmar was until the mid eighteenth century a Mon kingdom, and after the Burmese conquered the area, the many Mon speakers there (except for the far south) switched to speaking Burmese, leaving a very strong substratum influence on Burmese. The many loan words from Mon is the subject of Chapter 28 by Hla Pe (1967). See Jenny (2015) for loans from many other languages. The extensive influence of Mon on the phonological system of Burmese, including the prosodic system and word structure, is the topic of Chapter 29 by David Bradley. In terms of influence on grammatical structure, Jenny (2013) talks about the use of the verb *pè* [give] in preverbal position to mark permissive causatives (Okano 2005) as due to Mon influence, and also discusses other Mon-like features found only in the colloquial Burmese of the southern area, and Bauer (2006) talks about four grammatical markers that were borrowed into Burmese from Mon and two grammatical markers that went the other way (but see Jenny (2015) for critical discussion of Bauer’s paper).

The last paper of this set, Chapter 30, by John Okell (1965), is about the influence of Nissaya Burmese, a system of using Burmese to translate Pali texts. Okell argues that the writers felt Pali was a superior language, and so tried to adapt Burmese to be more like Pali, and make the translations more direct. This, Okell argues, influenced the language outside that particular use as well (see also Jenny (2015)).

We then turn to Northeast India and Nepal. The first of this set is Chapter 31, an overview of the language situation in Northeast India by Dipankar Moral (1997). After introducing some of the main languages out of the 220 or so spoken in the area, Moral presents phonological, grammatical, and lexical evidence to show that there are features that are common in Northeast India that are not common in the larger linguistic area (*Sprachbund*) of India generally (Emeneau 1956; Masica 1976), and some of the features of the general Indian linguistic area are not present in Northeast India, so Northeast India should be considered a separate linguistic area from the rest of India. See in this regard the spread of Nepali in this

area and its influence, documented by Sprigg 1987. See also Post 2015, which while acknowledging the areal convergence noticed by Moral, argues that North-east India is an ethnolinguistic crossroads:

Lying directly at the intersection of South Asia, Mainland Southeast Asia, and East Asia (specifically, Southwest China), NEI displays geographical, linguistic, and cultural affinities with all of these regions. NEI as a region is best defined by the diversity that results from this dynamic mixture and broad range of affinities.

(p. 214)

The second paper on this area, Chapter 32, is a very detailed and rigorous analysis of the subtle influences that seem to have caused similarities in the verbal morphology in Nepali and Newar by Edward H. Bendix (1974). The paper argues not so much for similarity in form, but in the semantics/pragmatics of how the forms are used, which represents what Bhattacharya (1974), Ross (2001), and LaPolla (2009—see also 2015) have talked about as converging on a common way of construing events in the world.¹⁷

The last two papers in this volume, Chapters 33 and 34, are about the language contact in the northwest of China, a traditional crossroads where speakers of Tibetan varieties, Turkic varieties, Mongolic varieties, and Sinitic varieties have interacted for centuries. The first of the two papers is by Charles N. Li, one of the first to investigate the contact varieties in that area. In this 1983 paper, “Languages in contact in Western China”, he discusses three varieties: i) the Wutun language, a Chinese variety of Qinghai Province heavily influenced by the surrounding Tibetan variety; ii) the variety of Chinese spoken by the Hui people of the Linxia Hui Autonomous District in southwestern Gansu Province (previously called Hezhou, and so the Chinese variety there is often referred to as Hezhou in English or Hezhouhua in Chinese), which is heavily influenced by Altaic languages;¹⁸ and iii) the Baonan language, a Mongolian language, also spoken in the Linxia Hui Autonomous District, heavily influenced by Chinese. Li (p. 35) points out that in that one district, which he says is about the size of a California county, the following ethnic groups live and interact: “the Baonan people, the Santa people, the Han Chinese, Tibetans, and Salars as well as the Hui”, each speaking different linguistic varieties, from four different language families (Mongolian—Santa and Baonan, Amdo Tibetan, Turkic—Salar, and Sinitic—Hui and Han varieties, which are distinct). The paper and others written since then about these languages show how similar the grammatical and phonological structures have become among these languages.¹⁹ This is why Arienne Dwyer (1995), the author of our next article, refers to this area as a Sprachbund.

Dwyer’s paper in this volume, Chapter 34, “Altaic elements in the Línxià dialect: contact-induced change on the Yellow River Plateau”, like Bendix’s, discussed earlier, looks at convergences in the way people in the area have come

to profile events in the same way, and make certain distinctions that aren’t made in Standard Chinese. She focuses on three aspects of the variety of the Línxià dialect spoken by the Han people (unlike Li’s focus on the variety spoken by the Hui): i) how the Línxià and Xining varieties of Chinese, like other non-Sinitic languages of the area, divide up the semantic domain of “small” with two different lexical items, *ka*⁴⁴ and *çio*⁴⁴, with the former used for the sense of “small and cute”, where the latter just means “small”; ii) forms used to express instrumental and comitative senses are in one case calques on Mongolian, and in the other case a loan of the Mongolian form; iii) the use of what seems to be the Mandarin copula *ǝ* as a clause-final conditional marker in a pattern similar to that of the neighbouring Altaic languages and Tibetan.

Notes

1. As Henry Serruys (1969: 442ff.) notes, the migrations were generally southward, as these areas were more suitable in terms of climate and terrain to Chinese agricultural practices, whereas the north was only suitable for a nomadic herding existence. The migrations might have also been due at least in part to changes in the climate (see Liu and Chen (2012), Chs 2, 7).
2. See also Egerod (1971) and Matisoff (2001) on phonation patterns that appear in languages all over China and Southeast Asia. As Egerod says (p. 170):

Phonation types, registers, tones, and split vowel systems offer interesting examples of the diffusion of phonetic phenomena over a very large area, where the single languages because of different structure and different rate of diachronic change utilize these phenomena in totally different ways.

See also Solnit (1992) on glottalized consonants as an areal feature, Clark (1992) on a certain type of topic marker as an areal feature, and Bisang 2006 on Southeast Asia as a linguistic area.

3. See Grootaers (1943) for the history and a bibliography of geolinguistics up to that time and justification for applying it to Chinese, and Grootaers (1946) for a specific example of its application. See also Paul Serruys (1943), Ballard (1992), and de Sousa (2015).
4. The influence of Prof. Hashimoto can be seen in the fact that several of the papers in this volume or cited in this introduction were published in either *Computational Analyses of Asian and African Languages*, a journal he founded and edited, or *Genetic Relationship, Diffusion, and Typological Similarities of East and Southeast Asian Languages*, a book he edited.
5. See Chapter 52 in Volume III of this set for Hashimoto (1992).
6. Chang and Chang (1976) also remain agnostic after showing many parallel forms and features among Miao-Yao, Tibeto-Burman, and Chinese.
7. Downer (1963) and Chen and Li (1981) both show parallels between Chinese and Hmong-Mien (Miao-Yao), including initial, tone, and rhyme, and agree that they cannot be due to chance, though differ in terms of whether they see the commonalities as due to borrowing or genetic inheritance, the big question in this controversy. But Downer’s position is a bit stronger in that he shows that the similarities are found only in comparison with Ancient Chinese (Middle Chinese), roughly the Chinese of the fourth to seventh centuries, but not with earlier forms of Chinese, and so he argues this is evidence of borrowing at that time. See also Benedict (1976b); Bodman (1980); and Schuessler (2003) on loans into Chinese, even at the Proto-Chinese period, from Tai, Hmong-Mien, and Austroasiatic, and Ballard’s work on the Hmong-Mien (Miao-Yao) influence in

- Wu, Xiang, and Min, and for affinities between these dialects or parts of them with each other (1971, 1985a-b, 1992).
8. See also Yue-Hashimoto (1991). Cf. Firth (1948) on multiple phonological systems within a single language due to contact influence, and Ho (2000) on the differences in the work on strata in Indo-European vs. Chinese linguistics, and the use of such analyses in understanding the history of Chinese, using Min dialects as an example. See also Norman (1979, 1991); Mei and Yang (1995); Chappell (2001); and Tu (2013) on phonetic, lexical, and grammatical strata in Min. See LaPolla 2001 for the migrations that led to the different strata, and Mei (2015) for linguistic evidence of one of those migrations.
 9. See also Xu (1946); Cen (1953); Yuan (1983); and Cao (1997) for commonalities between Zhuang and the southern Chinese dialects, and Huang (1990) on the mutual influence of Zhuang, Cantonese, and the local variety of Mandarin in the Wuming area. See also Bauer (1987a) for arguments that formative elements in bodypart terms in Yue, Min, and Hakka derive from Tai languages, and Bauer (1987b, 1996) on loanwords from Tai (Kadai) into Yue. Yuan (1983: 167) also concludes that the Yue dialects manifest traces of the Zhuang-Dong languages. See FitzGerald (1972: xvii) for an insightful discussion on how a non-Chinese becomes Chinese.
 10. See Yue (2012) for other evidence and her most recent views on the issue.
 11. In fact Norman (1986) and his students (e.g. O'Connor (1976)) did find evidence for the distinctions outside Min. See the discussion of Norman's paper in Volume III of this set.
 12. For an example of more recent and clear interaction and influence between Min, Tai, and Austroasiatic, see Solnit (1982), on Hainan Southern Min, and for a recently created Tai-Chinese contact language in Yunnan see Chen 1996.
 13. Compare Shafer's (1952, 1965) discussion of what he sees as 161 parallel words between Austroasiatic, particularly Khasi, and Sino-Tibetan. Shafer says he cannot decide which way the loans went, but Diffloth (2008) divides up the 102 Khasi-ST parallel forms into three groups: i) 36 items with widespread Austroasiatic cognates; ii) four that only have cognates in the Northern division of Austroasiatic; iii) 47 with no known cognates in Austroasiatic; and iv) 15 forms that "present uncertainties of various kinds" and so aren't discussed (p. 95), and suggests that the first group may be due to borrowing from Austroasiatic into Sino-Tibetan or possibly Austroasiatic substrate influence in Sino-Tibetan, the second set could be local loans from Sino-Tibetan into the Northern division of Austroasiatic, and the third set is most likely loans from Sino-Tibetan into Khasi.
 14. See also Sprigg (1982, 1986).
 15. Here we will cover the situation in Myanmar; for an overview of the linguistic situation in Thailand and the resulting contact, see Matisoff (1983).
 16. See Nichols (2015) and other papers from De Busser and LaPolla (2015) on the influence of geography and other non-linguistic features on the development of languages.
 17. For the general language situation in Nepal, see Toba (1992); Kansakar (1996); and Eagle (1999); and for other examples of the influence of language contact there, see Noonan (1996, 2003, and 2008).
 18. Wurm (1997) argues that Linxia/Hezhou Chinese looks more like a variety that had an Altaic language as its base, with a strong Chinese superstratum influence. This would explain why the structure is mainly Altaic, but the lexical items and phonetics are more Chinese.
 19. For more information about Wutun, see Chen (1986); Lee-Smith and Wurm (1996a); and Sandman (2016). For more information about Hezhou/Linxia Chinese, see Ma (1984); Dwyer (1992); Lee-Smith and Wurm (1996b); Lanzhou Daxue Zhongwenxi Linxia Diaocha Yanjiuzhu (1996) and Wurm (1997). For other languages and more general works about the area, see Zhang and Zhu (1987); Dede (2007); Xu (2014); Yixiweisa (2003); Cao et al. (2015); and Zhou (2016).

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THE TOPOGRAPHY OF CERTAIN
PHONETIC AND MORPHOLOGICAL
CHARACTERISTICS OF
SOUTH EAST ASIAN LANGUAGES

Eugénie J. A. Henderson

Source: *Lingua* 15, 1965, 400-34

In the deliberations of the study group that was the forerunner of the present conference one of the matters that arose upon which there appeared to be the most widespread agreement was the need for more typological studies at all levels – phonological, morphological, syntactic and lexical – of the languages of the Indo-Pacific area. Warnings that such studies should in the first instance be carried out without regard to their correlation with accepted genetic groupings were sounded by several scholars (Robins, Uhlenbeck), but hopes were expressed by others (e.g. Shorto, Simmonds, Egerod) that it would prove possible ultimately to effect a connection between typological and historico-genetic statements. In view of such general interest it is perhaps disappointing (though not surprising to those familiar with the difficulties), that there should be so few ‘pure’ typological studies among the contributions to this conference. Typological material there is, however, in plenty, used sometimes as a means of inferring sub-groups within larger groups of languages whose genetic relationship is hardly to be disputed, and sometimes, more controversially perhaps, as ancillary evidence of genetic relationship alongside the more orthodox evidence supplied by regular correspondences in basic vocabulary. It is clear that many scholars are still not inclined to take too seriously Robins’ warning that ‘inference from one type of comparison to the other are not necessarily valid’ and that ‘it is illicit to exploit the criteria applicable to synchronic comparison to produce or even to buttress historical genetic groupings’.¹⁾

It is the paucity so far of studies in the present collection devoted to typological treatment for its own sake that prompted me to put together the present paper. The time limits within which the materials had to be assembled meant that by no means all relevant authorities were consulted, and it is my sincere hope that

criticisms, corrections and additions will be forthcoming from participants to the conference and from other colleagues.²⁾

My own concern with the languages of the area has been as a phonetician and general linguist and has therefore been primarily with synchronic description rather than with historical hypotheses. In the course of investigations extending over many years into the present phonological and grammatical structure of a variety of languages on the South East Asian mainland, my attention has, however, inescapably been drawn to a number of features which suggest themselves as characteristic of the area, or of sub-areas within the larger area. The extent to which such characteristics coincide with or cross accepted language-family boundaries and the conclusions to be drawn from such coincidences or crossings are matters I am content to leave to my historically orientated colleagues to decide. It is my purpose here merely to suggest what requires to be done in the way of synchronic comparison before reliance can be placed upon statements as to what features can or can not be borrowed from one language to another, or upon the theoretical assumption that some features (e.g. grammatical) are less subject to change and less likely to be borrowed than others (e.g. phonetic).

Among the features which have suggested themselves as typologically characteristic of a South East Asian linguistic area, or of smaller areas within it, and in some instances of larger areas in which the South East Asian linguistic area might be included, are the following:

1. *The presence or absence of 'tone'*, and its correlation with (a) initial consonants, (b) vowel quality, (c) vowel quantity, (d) final consonants, (e) phonation-type, and (f) its use for grammatical, as opposed to lexical, purposes.
2. *The presence or absence of 'register'*³⁾ and its correlation with (a) initial consonants, (b) phonation-type, (c) pitch.
3. *Initial consonant patterns and their distribution*, with special reference to the use made of (a) aspiration distinctions, (b) the voice/voiceless distinction (or alternatively the fortis/lenis distinction), (c) retroflexion, (d) 'preglottalization', (e) 'prenasalization', (f) the distinction between a velar and uvular series of initial consonants, (g) the various initial fricative patterns, (h) the various initial nasal patterns, (j) initial clustering patterns (this latter inextricably bound up with syllabification patterns – see below); (k) the grammatical use made of any of these.
4. *Syllabification patterns*, i.e. the comparative structures of 'tonic' and pre-tonic or post-tonic syllables, or 'major' and 'minor' syllables,⁴⁾ and the permitted combinations of these. Of particular interest here are the relations of the various initial clustering patterns to the restrictions in the permitted initials of pre-tonic syllables as against those of tonic syllables, and to the permitted sequences of pre-tonic and tonic initial consonants. These seem to me to be of prime importance to the understanding of the phonological structure of syllables and 'words' in the area, though the only attempt at a detailed analysis along these lines so far appears to be that by Uhlenbeck for Javanese.⁵⁾ Linked to the study

of syllabification patterns is that of affixation, i.e. the grammatical use of pre- and post-tonic minor syllables, whether as prefixes, infixes or suffixes.

5. *Vowel systems* with special reference to (a) the incidence and distribution of back unrounded vowels, (b) the vowel length distinction, (c) diphthong patterns, (d) correlation of vowels with initial consonants, final consonants, tone or register, (e) 'vowel-gradation', i.e. the grammatical role of vowel quality differences.
6. *Final consonant patterns and their distribution*, with special reference to (a) incidence of final palatals, (b) use of the voice distinction finally, (c) final 'clusters', (d) the grammatical use of final consonants.

On the grammatical and syntactic levels also there are characteristic features which might provide interesting isoglosses, as has been remarked by a number of scholars.⁶⁾ It is necessary here, however, to restrict both the number of features and the number of languages examined, and in this paper I propose to restrict myself to a provisional preliminary glance at the distribution of a mere handful of phonetic features over a range of 59 languages only.

The 59 languages examined are listed by number in the key on page 23 and alphabetically on page 24. The arbitrary nature of their selection should be noted. My preference, derived both from professional training and experience, would be to present only material of which I have first-hand personal knowledge, since, though this may be fallible, one may at least suppose the same bias to run through the whole of it. As my own first-hand experience has been confined to a mere sprinkling of languages on the South East Asian mainland, however, (a fact which is clearly reflected in the maps that follow), I feel that to serve any useful purpose I must cast my net somewhat wider than this to include at any rate some of the Austronesian languages and certain other languages that may be regarded as peripheral to the South East Asian area geographically. I have accordingly ventured, though very tentatively only, to draw upon material contained in the writings of colleagues and participants of this conference, to whom I apologize for any misinterpretations that may have arisen.

The difficulties inherent in using other people's material were pointed out to us last time by Uhlenbeck: 'As language typology can only be carried out satisfactorily if there is similarity in descriptive techniques, it will be necessary to reach a certain minimum of agreement on, or at least a mutual understanding of, the techniques used.'⁷⁾ It is clearly 'preposterous', as Bazell has said, to demand 'neutral descriptions based on agreed criteria identical from linguist to linguist, and from the description of one language to that of all others' and attempts to pursue the selected 'features' through the descriptive accounts of other writers have convinced me of the justness of his view that phonology is a 'most unfavourable domain' for typology, 'for here linguists tend to diverge in their criteria of relevance, so that a feature which is present in the material for one is for the other virtually non-existent.'⁸⁾

It might be supposed, for instance, that it would be a relatively easy matter to decide whether a language is 'tonal' or not, but consideration of linguistic descriptions in our

area shows that this is not the case. Difficulties arise because 'tone' is seldom, if ever, a matter of pitch alone. There are very frequently concomitant features of phonation-type, glottal constriction, stress, etc. which pose problems of interpretation and definition. Similarly, the characteristic phonation-types of 'register' languages such as Mon and Khmer may be accompanied by, or perceived as being accompanied by,⁹⁾ concomitant pitch features. It is necessary, therefore, to be more precise and to define the feature we are examining as 'lexically contrastive pitch' rather than 'tone', or as 'lexically contrastive phonation-type' rather than 'register', if we are to hope to make valid comparisons of the material available. Even so, we shall, of course, be at a loss if the author of the material under examination has not found it necessary for his purposes to note such a feature as phonation-type. Similar difficulties arise with regard to phonemic accounts of languages unless accompanied by a detailed description of allophonic variants. One man's unit phoneme may be another man's cluster; one man may for reasons of 'economy' use a symbol usually associated with a voiced sound to denote a voiceless one; another whose concern is to 'get on with' the grammar as soon as possible may give no account at all of the phonetic values to be attached to his symbols. Contrary, perhaps, to general belief, a phonological description much manipulated in the name of 'economy of phoneme inventory' or 'pattern congruity' within the language concerned may be far less suitable for comparative purposes than one more firmly anchored in similarities of phonic substance or, indeed, in a well-ordered and accurate phonetic description in general terms. Fruitful comparison cannot, however, be made entirely in phonic terms without regard to context and function. Languages which make no lexical use of the distinction between aspirated and unaspirated sounds may nevertheless contain both, phonically speaking; languages which voice utterance-medial plosive sounds in rapid speech may only employ voiceless plosives in other contexts. What is needed therefore, is comparison in what may be called 'pre-phonological' language, in terms of 'prospective phonemes' and the like¹⁰⁾, in the expectation that it is precisely towards those parts of the material that give rise to problems of interpretation that our attention may most usefully be directed.

A further problem relates to what has been called the 'recognition of different strata within one language with different genetic affiliations.'¹¹⁾ It is clear that when such strata are thoroughly integrated into a given language, a synchronic account of that language will include all phonetic and morphological characteristics, whether or not they are to be found in the deepest layer of all. Doubt may arise, however, when certain features appear to be confined to a very small number of obvious loanwords, or to special styles of utterance, or to a small section of the community. It is important that note should be taken of any special restrictions, since sounds or other features subject to them may be the harbingers of future innovation or the survivors of patterns elsewhere obsolete, thus marking the advance and retreat of specific isoglosses.

It is proposed to examine in turn the distribution over the selected languages of the following phonetic features:

- Lexically contrastive pitch
- Lexically contrastive phonation-type

- Lexically contrastive aspiration of initial plosives
- Lexically contrastive voicing of initial plosives
- Lexically contrastive retroflexion of initial plosives
- Lexically contrastive preglottalization of initial plosives
- Lexically contrastive prenasalization of initial plosives
- Lexically contrastive final consonants.

It is proposed also to look briefly at some of the interrelationships between these features, and to note the languages in which they have a grammatical, i.e. morphological, as well as a lexical function to perform.

Initial plosives are selected as representative of the initial consonant systems in the area, since to handle all types of initial consonantal possibilities would overload the present paper. Clusters including plosives are excluded for the reason given on p. 404. The palatal type affricates (*c*, *ch*, etc.) are also excluded since they cannot be handled profitably without the discussion of clustering patterns.

The distribution of the selected features is shown diagrammatically by the appropriate marking of a square on the relevant map. A number key to the language squares on the maps is provided below. It is pointed out that both the number, location and size of squares has been dictated to a large extent by purely practical considerations of space and of ease of reproduction. The size of the squares and their position on the map has only a very rough-and-ready correlation with the geographical location and importance of the languages concerned. The general direction of the fringe languages to the north, east and west is indicated by arrows pointing to the relevant squares.

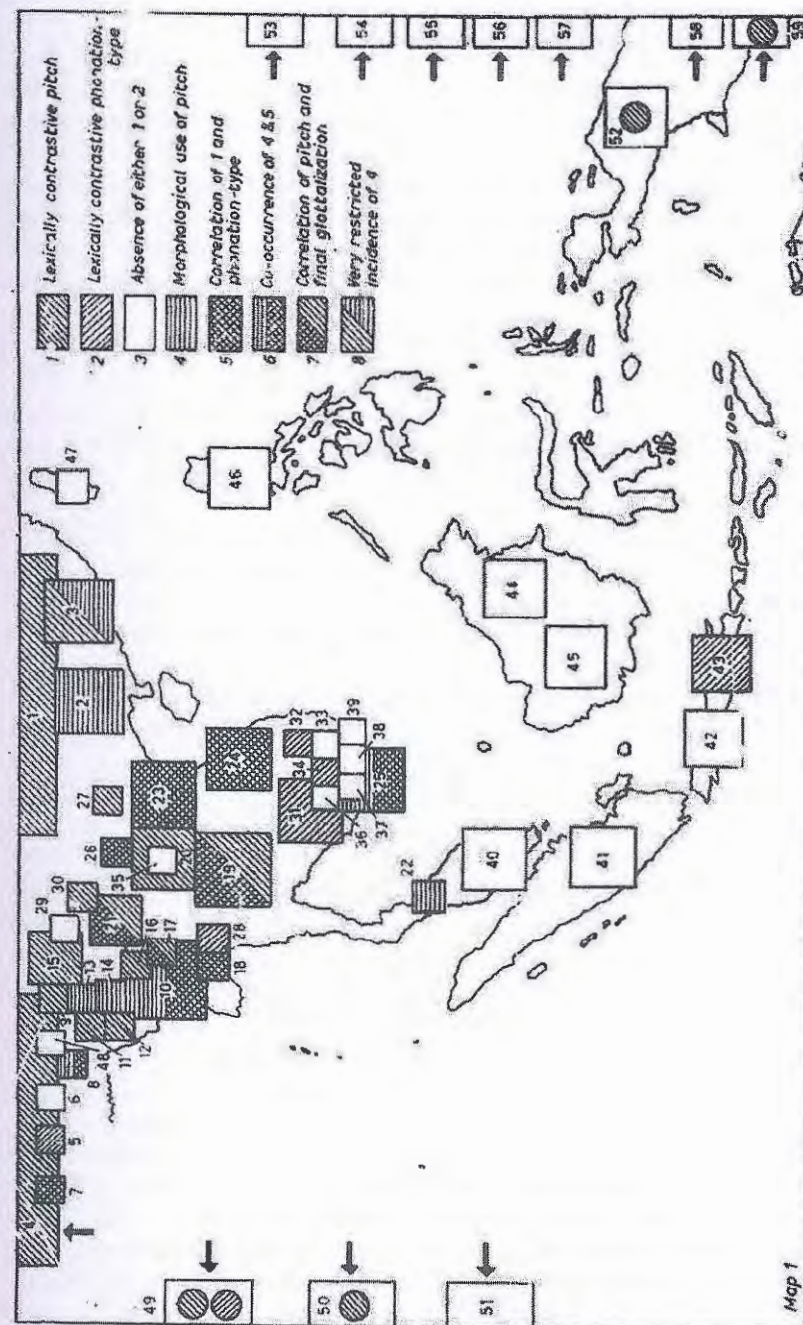
Numerical key to languages

- | | |
|---------------------------------|----------------------------------|
| 1. Mandarin | 21. Shan |
| 2. Cantonese | 22. Southern Thai (Songkhla) |
| 3. Hakka | 23. Northern Vietnamese (Hanoi) |
| 4. Tibetan (Lhasa) | 24. Central Vietnamese (Huê) |
| 5. Limbu | 25. Southern Vietnamese (Saigon) |
| 6. Lepcha | 26. Miao (White) |
| 7. Gurung | 27. Yao (Highland) |
| 8. Boro | 28. Mon |
| 9. Naga (Angami) | 29. Palaung |
| 10. Burmese | 30. Riang-Lang |
| 11. Khyang | 31. Khmer (Cambodian) |
| 12. Marma | 32. Hrê/Sedang |
| 13. Northern Chin (Tiddim) | 33. Bahnar |
| 14. Central Chin (incl. Lushai) | 34. Mnong/Srê |
| 15. Kachin | 35. Khmu? |
| 16. Northern Karen (Taungthu) | 36. Stieng |
| 17. Central Karen (Bwe) | 37. Cham |
| 18. Southern Karen (Pwo, Sgaw) | 38. Chrau |
| 19. Central Thai (Siamese) | 39. Rhadé/Jarai |
| 20. Lao | 40. Malay |

- | | |
|----------------------------------|--------------------------|
| 41. Minangkabau | 51. Dravidian |
| 42. Sundanese | 52. New Guinea languages |
| 43. Javanese | 53. Kapingamarangi |
| 44. Sea Dayak | 54. Fijian |
| 45. Land Dayak | 55. Samoan |
| 46. Tagalog | 56. Gilbertese |
| 47. Atayal | 57. Ellice |
| 48. Khasi | 58. Rarotongan |
| 49. Northern Indian (Indo-Aryan) | 59. New Caledonian |
| 50. Munda | |

Alphabetic key to languages

	Square		Square
Angami Naga	9	Limbu	5
Atayal	47	Lushai	14
Bahnar	33	Malay	40
Boro	8	Mandarin	1
Bwe Karen	17	Marma	12
Burmese	10	Miao (White)	26
Cambodian	31	Minangkabau	41
Cantonese	2	Mnong	34
Cham	37	Mon	28
Chin (Central)	14	Munda	50
Chin (Northern)	13	Naga (Angami)	9
Chinese (Cantonese)	2	New Caledonian	59
Chinese (Hakka)	3	New Guinea languages	52
Chinese (Mandarin)	1	Palaung	29
Chrau	38	Pwo Karen	18
Dayak (Land)	45	Rarotongan	58
Dayak (Sea)	44	Rhadé	39
Dravidian	51	Riang-lang	30
Ellice	57	Samoan	55
Fijian	54	Sedang	32
Gilbertese	56	Sgaw Karen	18
Gurung	7	Shan	21
Hakka	3	Siamese	19
Hrê	32	Songkhla	22
Indo-Aryan (Northern Indian)	49	Srê	34
Jarai	39	Stieng	36
Javanese	43	Sundanese	42
Kachin	15	Tagalog	46
Kapingamarangi	53	Taungthu Karen	16
Karen (Central)	17	Thai (Central)	19
Karen (Northern)	16	Thai (Southern)	22
Karen (Southern)	18	Tibetan (Lhasa)	4
Khasi	48	Tiddim Chin	13
Khmer	31	Vietnamese (Central)	24
Khmu?	35	Vietnamese (Northern)	23
Khyang	11	Vietnamese (Southern)	25
Lao	20	Yao (Highland)	27
Lepcha	6		



Map 1. Lexically contrastive pitch and phonation-type

Map 1 – Lexically contrastive pitch and phonation-type

1.1. Lexically contrastive pitch

Little doubt is likely to be raised over the majority of languages marked in the map as having this feature, but Lepcha illustrates some of the difficulties that may arise.

I understand from Mr. R. K. Sprigg that Professor Bodman of Cornell is inclined to regard the language as tonal. Sprigg reports however, that there are 'no pitch or register distinctions in verb or particle forms, or in monosyllabic nouns, but in *dissyllabic* nouns pitch differences are coarticulated with stress differences as follows:

i. [·-][\] Final stress + high pitch; initial non-stress + low pitch.

ii. [·-][\] Initial stress + high pitch; final non-stress + high/low pitch.

'Type ii is much the less frequent, and includes (high-tone) loanwords from Tibetan, together with a number of 'contrastive' nouns, e.g. *róng-kúp*, *tsong-kúp*, *lum-kúp* (= 'Lepcha', 'Limbu', 'Nepali'), *sung-kung*, *rip-kung*, *tung-kung* (different kinds of tree).

'A few loanwords show, but erratically, a pattern [·-] (iii), e.g. *wo-mo* (Tib. low-tone *wa-mo* 'fox'), *lal-krin* [lalʈin], = English 'lantern', but I think they are not consistent enough to be taken seriously.

'If one did opt for tone rather than stress such examples as the following would make difficulties:

'(i) [zo:bi] [_] 'meal' (rice and vegetables), (ii) [zo'li:] [_] 'rice shoot'. [zo:zo] would have to be high-tone in (i) but low tone in (ii); and yet, apart from stress, the environment is the same (first syllable of a disyllabic noun). One would have to introduce stress to make a tone analysis work; then why not be content with stress alone, the pitch features being correlated in a one-to-one relationship?'

A further problem is raised by such languages as Mon and Srê, both of which Pinnow designates as tone languages,¹²⁾ although Mon is not, to my way of thinking, characterized by lexically contrastive pitch. Smalley's account of Srê describes a pitch feature correlated with length, but sides against pitch as the contrastive feature *unless* 'conscious Vietnamese loans' have to be taken into account, thus raising the important problem of the extent to which loans *should* be taken into account and of how one is to define a 'conscious' loan.¹³⁾

The hatched circle within the New Guinea square relates to Yabem/Bukawac⁴⁾ in North West New Guinea,¹⁴⁾ that within the New Caledonian square to Patyi (and possibly others) as reported by Haudricourt.¹⁵⁾ The circle hatched for lexically contrastive pitch within the Northern Indian square draws attention to the tonal features reported for Panjabi, and possibly other North Indian languages,¹⁶⁾ that within the Munda square is tentatively for the 'tone' reported by Zide for Korku.¹⁷⁾

1.2. Lexically contrastive phonation-type

There are a number of doubtful areas here since this feature has frequently been ignored in published material or described in terms that are difficult to interpret phonetically. I believe that the feature is far more widespread than has hitherto been recognized. I am unable to discover from available published data consulted whether lexically contrastive phonation-type is to be stated for the Cham, Chrau, Stieng etc. group in South Vietnam but suspect that this may be the case, for some of them at least.¹⁸⁾ Javanese is shown as having contrastive phonation-type on the strength of statements by Catford¹⁹⁾ and of Eleanor Horne's description of the 'murmured, fuzzy quality' of the 'heavy' consonants (i.e. those she writes *b*, *d*, *ɖ*, *dj*, *g* and *lh*).²⁰⁾

The circle hatched for contrastive phonation-type in the Northern Indian square relates to Gujarati, as reported by Firth and Pandit.²¹⁾

1.3. Morphological use of pitch

An attempt has been made in the map to designate which of the languages which use pitch contrasts lexically also do so morphologically, i.e. to make grammatical as well as lexical distinctions. One may cite as instances the extensive use made of tonal alternation in the verb in Chin, in related pairs of noun and verb in Cantonese, in certain forms in Southern Vietnamese²²⁾ and in attributive constructions in Burmese. As regards the latter, however, it should be pointed out that Sprigg maintains that in such cases as *eij' fij* 'householder' as contrasted with *eij* 'house', it is phonation-type rather than pitch which expresses the grammatical relation.

The special hatching for Hakka records the fact that in this language the morphological function of pitch is restricted to certain uses of the first person pronoun. Tibetan should perhaps be similarly marked, since Sprigg reports three instances in which it might be said that pitch contrast is playing a grammatical role.

1.4. Correlation of contrastive pitch and phonation-type

In many of the languages of the area certain tones are regularly associated with a given phonation-type, as, for example, in Northern Vietnamese, the 'nói' tone with 'breathy' phonation, the 'ngã', and frequently the 'nặng',²³⁾ tone with 'creaky' phonation, and so on. The distribution of such languages, as contrasted with languages in which there appears to be no such regular association, is shown on the map. In some cases there is a partial correlation in that certain tones are associated with marked glottal constriction or with a final glottal stop at the end of the syllable rather than with 'creaky' phonation of the syllable as a whole. Here one may cite as examples the high and the falling tones of Central Thai (in pre-pause

position), the low level, high level and falling tones of Shan,²⁴) the mid and low tones of Bwe Karen,²⁵) and the 'abrupt' tone of Burmese. Since it is precisely in cases of this kind that differences of opinion may arise as to whether the final glottal element is to be regarded as 'consonantal' or not,²⁶) it has been thought useful to distinguish them on the map from, on the one hand, those languages in which there is no comparable feature and, on the other, those in which the correlated phonation-type runs through the whole syllable. Languages like Burmese and Southern Vietnamese which associate some tones with a characteristic phonation of the whole syllable, others with final glottalization only, are for convenience marked as of the former type.²⁷)

It is possible that in some of the languages marked as having lexically contrastive phonation-type, the phonation-type should be regarded as having optional concomitant pitch features.

1.5. Co-occurrence of the correlation of contrastive pitch and phonation-type and of the morphological use of pitch

Burmese, Southern Vietnamese and Boro are cited as examples here.²⁸

1.6. Correlation of contrastive pitch and phonation-type with initial and final consonants

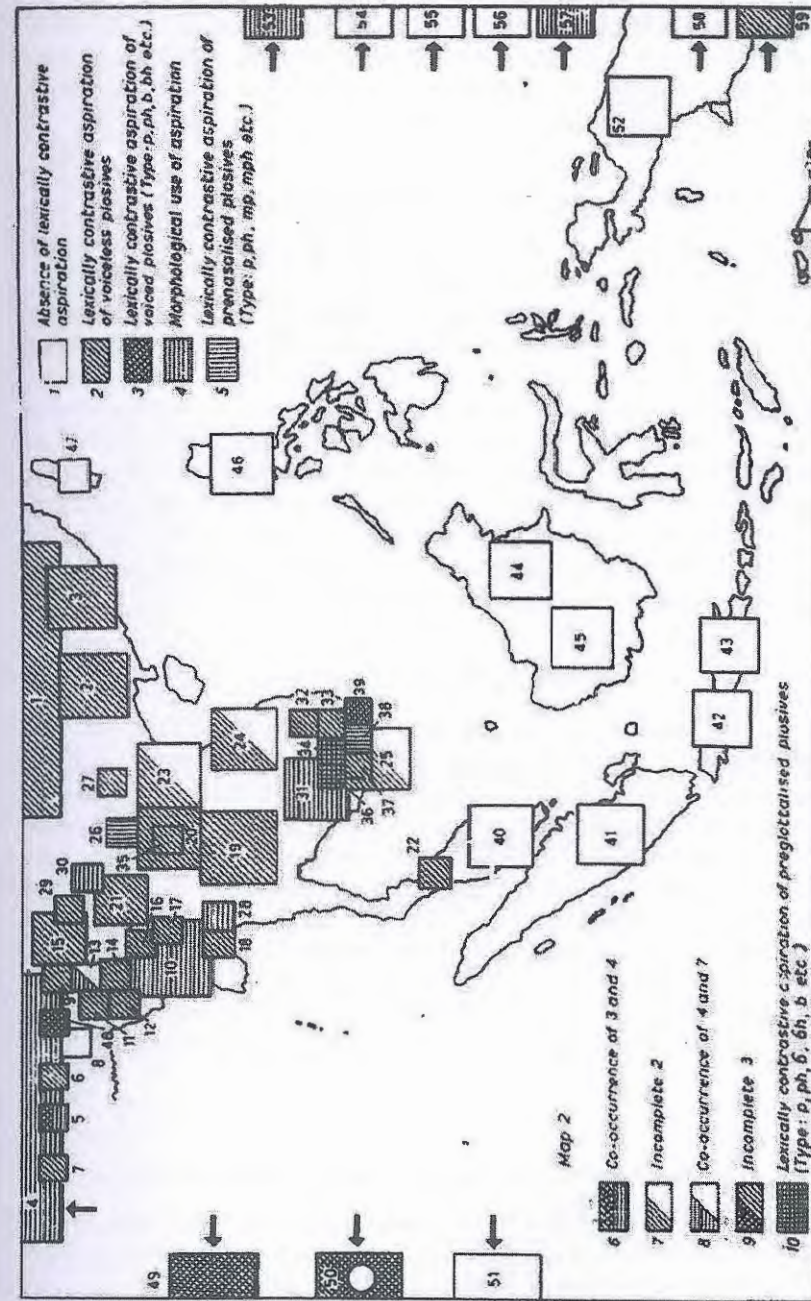
The correlation of 'tone' with final consonants is so general that it requires no map to illustrate it. The only exception I have come across to the rule that syllables ending in stops have fewer tonal possibilities open to them than those ending in continuants is Northern Chin, in which long syllables ending in *-p*, *-t*, *-k* have exactly the same tonal range as syllables ending in vowels, nasals, and *-l*. Short syllables ending in *-p*, *-t*, *-k* are tonally restricted in the usual way.

Map 2 – Lexically contrastive aspiration of initial plosives

Attention is here focussed upon the lexically contrastive use of aspirated as against unaspirated plosives in tonic syllables in utterance-initial position.

2.1. Lexically contrastive aspiration of voiceless plosives

Here the standard type-pattern is *p, ph; t, th; k, kh*. Languages in which this pattern is asymmetrical or incomplete are shown with half the relevant square marked as for absence of contrastive aspiration. An example is Vietnamese, in which the aspiration contrast is incomplete in present day pronunciation, since, though the orthography shows a contrast in writing, *t-*, *th-*, *ph-*, *k-*, *kh-*, these are pronounced [t], [th], [f], [k] and [x] respectively, and there is no initial [p] sound except in a few recent foreign loans such as *pip* < French 'pipe'²⁹).



Map 2. Lexically contrastive aspiration of initial plosives

2.2. Absence of lexically contrastive aspiration

It should be noted that in a given language there may be aspiration of initial voiceless plosives, as there is in English for example, but that it may be lexically non-contrastive. Such languages are marked on the map as being without contrastive aspiration. Boro is a case in point.

2.3. Lexically contrastive aspiration of voiced plosives

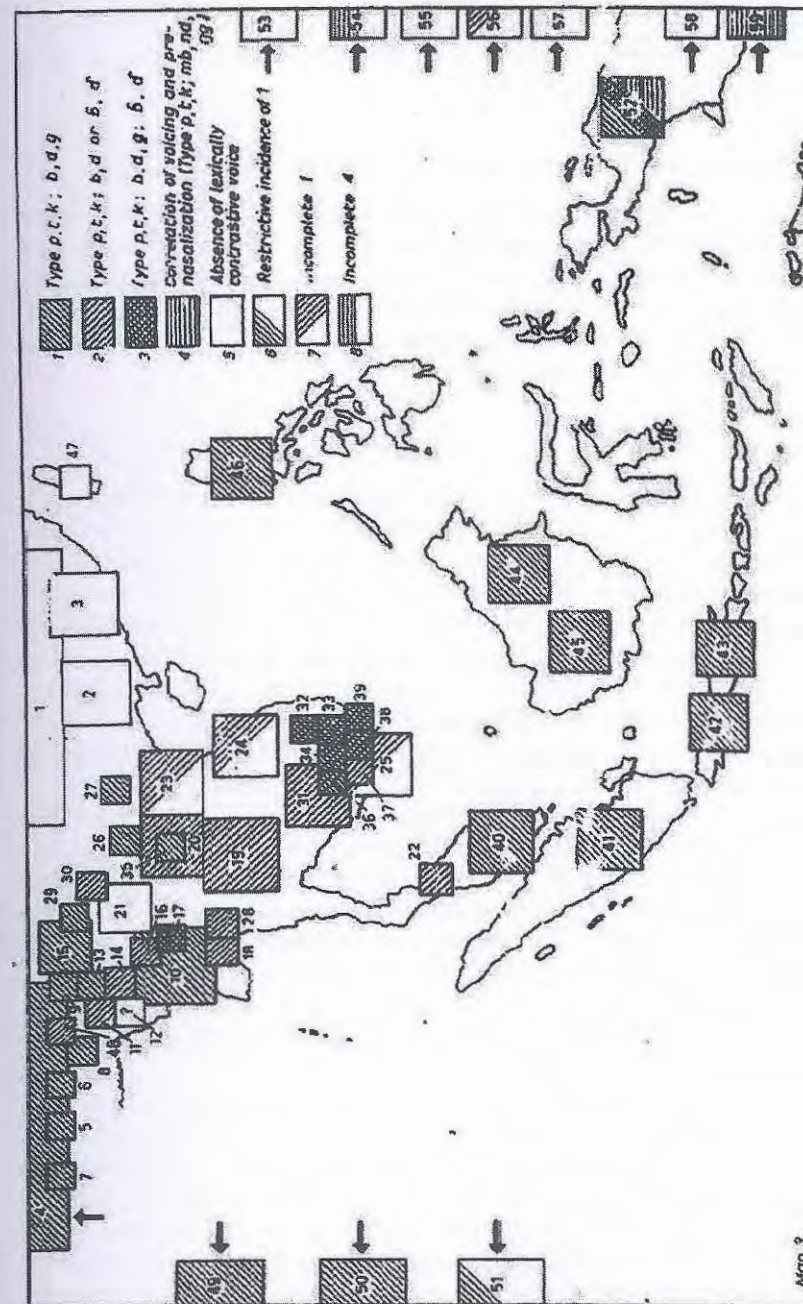
A distinction is drawn between languages with the type-pattern *p, ph; t, th; k, kh* (see above) and those with the type pattern *p, ph, b, bh; t, th, d, dh; k, kh, g, gh*. Among the latter are included the languages of North India and the Munda languages except Sora, which is represented by the small circle within the Munda square. If I interpret Condominas correctly,³⁰ Rhadé has both voiced and voiceless aspirated initial plosives, and the Rhadé/Jarai square has been hatched accordingly, although Jarai is not of this type, as far as I am aware. Khasi is shown as making use of the voiced : voiceless aspiration contrast, but it should be noted that the pattern is incomplete, being *p, ph, b, bh; t, th, d, k, kh; (j, jh)*. Words with initial voiced aspirates all appear to be either loans or 'affective', with the exception of the word *jhur* 'vegetables', which shows signs of a morphological use of aspiration (see below) in that the compounding form is *hur*.³¹

2.4. Morphological use of aspiration

Singled out once again are those languages which make grammatical as well as lexical use of the aspiration contrast. Among such languages are included languages like Khmer in which the aspirated plosives are phonologically clusters made up of two separable units (cp. Khmer *khəŋ* 'to be angry', *kəmhəŋ* 'anger'), and languages like Burmese, Northern Chin and Limbu, in which the aspiration : non-aspiration contrast is sometimes used to express transitive : intransitive relations. The marking for Northern Chin indicates both that use is made of the contrast grammatically and that the pattern is phonetically an incomplete one, viz. *p, ph; t, th; k, -*.³² The marking for Limbu indicates both that limited grammatical use is made of the contrast and that the voiced (or more commonly, lenis) aspirate initials *bh, dh, gh* are restricted to a few loanwords, all nouns.

2.5. Lexically contrastive aspiration of prenasalized plosives

The unusual co-occurrence of contrastive aspiration and contrastive prenasalization is exemplified by Miao and Chrau. The type-pattern for the former is *p, ph; mp, mph; etc.*, that for the latter *p, ph, b; mp, mph, mb; etc.*³³



Map 3. Lexically contrastive voicing of initial plosives

Special attention is drawn to the aspiration contrast found again, after a large intervening area without it, in Kapingamarangi and Ellice,³⁴) and in some languages of New Caledonia.³⁵) Milner's convincing argument for the morphological origin of the contrast in Ellice and Kapingamarangi is of particular interest in throwing light upon innovation processes.

Map 3 – Lexically contrastive voicing of initial plosives

In this map an attempt is made to plot the use made of the opposition of voiced and voiceless plosives in tonic syllables in utterance-initial position. It may well be that it might be more useful to regard the opposition as being a fortis : lenis one, which would give a rather different distribution, but on the whole it has seemed easier to interpret the existing materials in languages of which I have no first hand knowledge in terms of voice and absence of voice.

3.1. Type-patterns

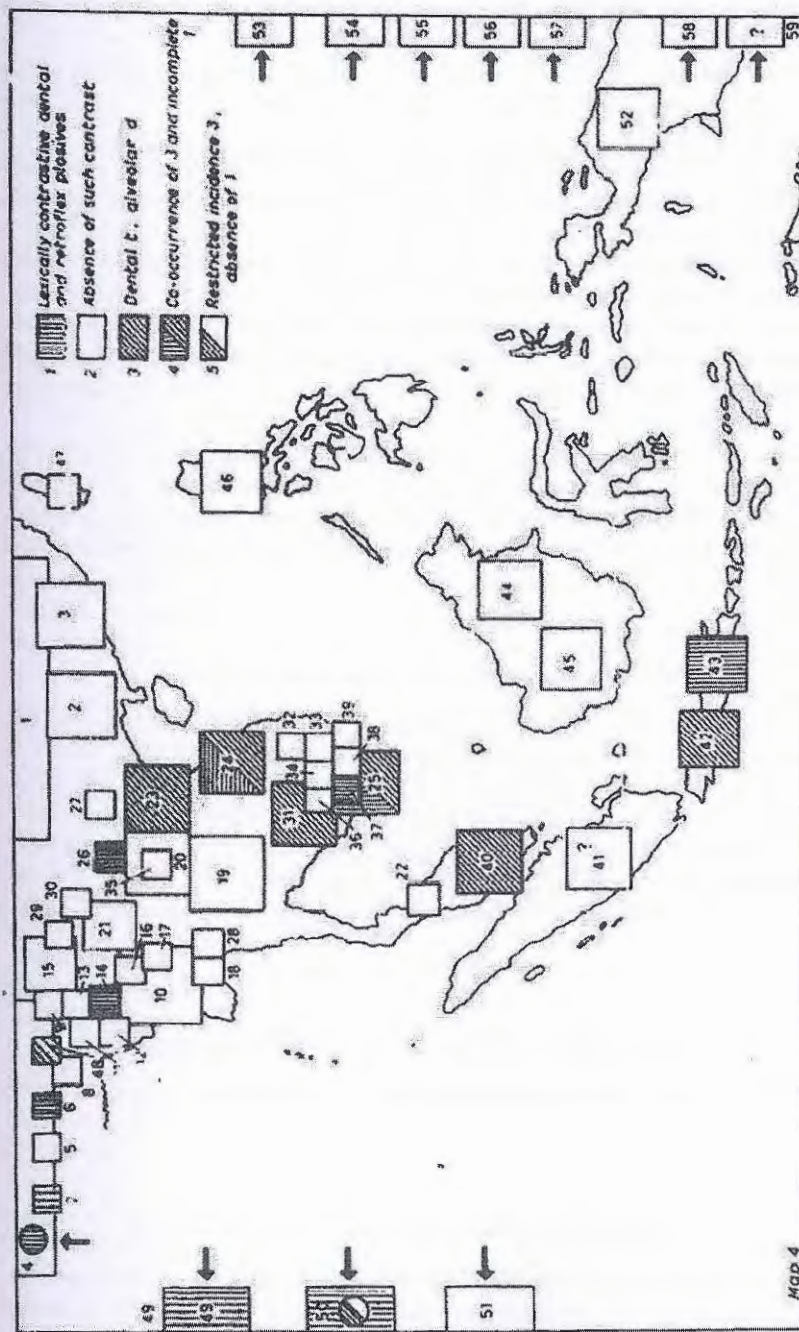
It is important to distinguish here between languages with the type-pattern *p, t, k; b, d, g*, i.e. those making a straight contrast between a voiced and a voiceless series, and those in which *g* is absent. The latter type is very widespread and of such importance in the area that it is not to be regarded as an 'incomplete' *p, t, k; b, d, g* but as a type in its own right. The voiced pair in this type are preglottalized in some languages, not in others, so that two sub-types may be stated, *p, t, k; b, d* and *p, t, k; ʔ, d*. In Map 3 we are, however, only concerned with the general type-pattern *p, t, k; b, d*, or *ʔ, d*. The published evidence for Marma and Khyang is insufficient to decide whether these are *p, t, k; b, d*, or *p, t, k; b, d, g* languages. Only *b* and *d* appear to be recorded for Khyang, but this may be accidental.

Languages in which there are preglottalized plosives *ʔ* and *d̥* in addition to a full voice contrast are stated as having the type-pattern *p, t, k; b, d, g; ʔ, d̥*. Bwe Karen is of this type, so are Bahnar, Hrê, Mnong, Chrau and Rhadé/Jarai. Hauern's Stiang material³⁶) suggests the unusual type-pattern *b, d, g; ʔ, d̥* but a note received from R. L. Phillips implies the more likely pattern *p, t, k; b, d, g; ʔ, d̥*.

The marking for Dravidian indicates that voiced plosives in Tamil (and possibly other languages of the group) only contrast initially with voiceless ones in the 'learned' style of pronunciation of Sanskritic loans, the indigenous and non-learned type pattern being simply *p, t, k*.

It should be noted that Limbu also has voiced initial plosives only in loanwords, and is otherwise a *p, t, k* rather than a *p, t, k; b, d, g* type. The comparative rarity of voiced plosives in absolute initial position in Burmese is also noteworthy.

The Miao picture is a little difficult to interpret, and is probably an example of a language which might be better served by the postulation of a fortis : lenis contrast. There appears, however, to be an opposition which may be interpreted as voiced vs. voiceless. In Downer's preferred transcription the initial labial plosives of White Miao are as follows : *p, ph, pʰ* (see also below).



Map 4. Lexically contrastive retroflexion of initial plosives

The marking for Vietnamese is in recognition of the incompleteness of the voice contrast, the type-pattern here being *t, k; b, d*, with an initial *p* pronounced by some speakers in a few recent loan-words from French. (Vietnamese orthographic 'g' and 'gh' are pronounced [ɣ], with a plosive variant possible for some speakers in certain juncture contexts.) Note that Thompson favours a fortis : lenis contrast for Vietnamese.³⁷⁾

As far as I can judge from the very meagre material I have been able to consult, the pattern of Gilbertese is odd and asymmetrical as regards the voice : voiceless, contrast, namely: *t, k, b*.

Khmu? is marked as a *p, t, k; b, d, g* type language since, although initial nasals may be preglottalized, it appears that plosives are not.

Javanese is also classed provisionally as a *p, t, k; b, d, g* language, but if the postulation of contrastive phonation-type is confirmed for this language, with the phonation-type regularly correlated with a lenis (but not necessarily voiced) plosive series, it should be re-classified.

It will be seen that there are a variety of type-patterns in New Guinea: *p, t, k; b, d, g* patterns, *p, t, k; b, d* patterns and *p, t, k; b, d, g; b, d* patterns.

Among the languages without a contrasting voiced plosive series Samoan presents an interesting sub-type in that one style of utterance has the pattern *p, t, k*, another simply *p, k*.³⁸⁾

3.2. Correlation of voice and prenasalization

In languages such as Fijian and Nemi in New Caledonia³⁹⁾ voicing of initial plosives is regularly correlated with prenasalization. The standard type-pattern for such languages may be stated as *p, t, k; mb, nd, ŋg*. Fijian, however, has only an incomplete pattern of this type since *p* is absent. There is irregular correlation of prenasalization with voicing in Bahnar, in which a prenasalized voiced plosive is a non-contrastive variant of the oral voiced labial plosive.⁴⁰⁾ Contrastive prenasalization of plosives is dealt with in Map 5 and in the accompanying section of the text.

3.3. Lexically contrastive aspiration of preglottalized plosives

Mnong-Bunor appears exceptional in having a type-pattern *p, ph, b, bh, b* etc. (but no *bh*).⁴¹⁾

3.4. Morphological use of the voice : voiceless contrast

There are isolated instances here and there in the area of what might be regarded as grammatical as well as lexical use of the voice : voiceless contrast. Sprigg

reports one for Tibetan, Shorto one for Wa, a few pairs of semantically linked but grammatically differentiated words in Burmese could also be cited. By and large, however, it is true to say that little or no use is made of this particular phonetic contrast for purely grammatical purposes.

Map 4 – Lexically contrastive retroflexion of initial plosives

Any attempt to plot the distribution of this feature in utterance-initial position is fraught with problems of interpretation, since we at once become involved in the wider problem of initial clusters. It is often difficult to decide whether a retroflex articulation in a given language is to be regarded as a plosive, an affricate or a cluster. In view of the potential importance of this feature as an isogloss delimiting the Indian from other linguistic areas, however, it seems worthwhile to make the attempt.⁴²⁾

It seems to me a matter of some interest, possibly not unconnected ultimately with other features such as retroflexion and preglottalization, that in a number of languages of the area, while there is no lexical contrast between a dental and a retroflex series, nevertheless there is a contrast, correlated with voice, and sometimes with both voice and preglottalization, between an initial dental *t* and an initial alveolar (or even postalveolar) *d*.⁴³⁾ Such languages are accordingly also shown on the map. It is probable that the number of such languages is greater than indicated here, since it may be expected that many observers, especially those used to European languages where *t* and *d* pattern together, have failed to observe differences in articulation of *t* and *d* or, if they have observed a difference, have not thought it worth mentioning.

The hatched circle in the Tibetan square is for the retroflex series reported by Sprigg for Sikkimese speakers of Tibetan. It is worth noting in this connection that the contrast in Lepcha is a dental : alveolar one, the words with alveolar initial all appearing to be loans from Sikkimese Tibetan. The retroflexes in Gurung appear to be confined to Nepali loans and are distinct in pronunciation and use from clustered *tr-*.

The circle in the Munda square indicates that though Sora and Korku lack contrasting dental and retroflex plosive series, Sora *t* is dental, and *d* alveolar.⁴⁴⁾

The marking for Southern and Central Vietnamese indicates both that *t* is dental, *d* alveolar (and glottalized), and that there is an initial retroflex articulation, written *tr-* but only occasionally affricate in pronunciation, which contrasts with these.⁴⁵⁾ There is a series of very similar articulations commonly written *tr, thr*, in Lushai and Central Chin.

The position of the Dravidian languages needs clarification. It is commonly assumed that retroflexion as such spread to the Indo-Aryan languages of India from the Dravidian group, and yet as far as my preliminary and admittedly superficial enquiries go, there appears to be no contrast between dental and retroflex plosives initially in such languages as Tamil and Telugu, except perhaps

in Sanskritic loans in certain styles of utterance. Within the terms of reference of this paper, therefore, such languages must be shown as without lexically contrastive retroflexion, until I have had an opportunity of investigating the position further.⁴⁶⁾

Cham, which is reported as having a 'phonemic contrast between [t] and [t]'⁴⁷⁾ is here treated as having contrastive retroflexion, although Blood decides on grounds of 'patterning' to interpret the retroflex plosive as phonemically a cluster, /tr/.

So far as I am aware, no languages make grammatical, as opposed to lexical, use of the retroflex : non-retroflex distinction.

Map 5 – Lexically contrastive prenasalization and preglottalization

Map 5 indicates the distribution in utterance-initial position of the features commonly referred to in the linguistic literature of the area as 'prenasalization' and 'preglottalization'.⁴⁸⁾ The inclusion of both on the same map is a matter of practical convenience, since they are mutually exclusive on the whole. It is not proposed in this paper to examine in detail what is meant by these labels in articulatory terms. For our purpose a 'prenasalized plosive' is a complex articulation of homorganic nasal and following plosive, or a cluster of heterorganic nasal and following plosive. A 'preglottalized plosive' is a complex articulation of a voiced stop with secondary constriction at the larynx, frequently lightly implosive in character.

5.1. Type-pattern *p, t, k; b, d*

Note that some phonemic accounts of *p, t, k; b, d* languages treat initial *b* and *d* as clusters, e.g. /ʔb, ʔd/.

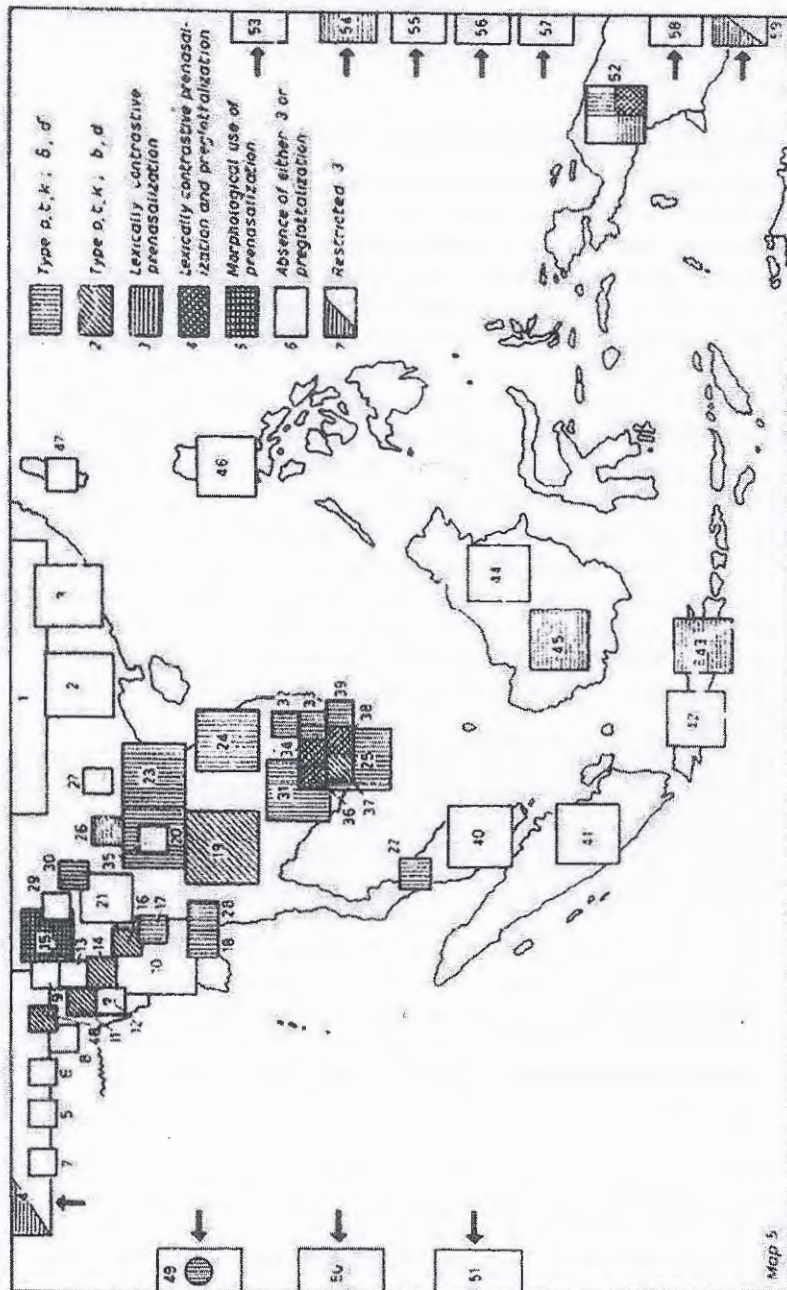
The circle within the Northern Indian square draws attention to the 'recursives' of Sindhi.⁴⁹⁾

For Khyang and Marma see p. 417.

5.2. Lexically contrastive prenasalization

Languages which have contrastive series of oral and prenasalized plosives are included under this head, even when the prenasalization is regularly correlated with voice, as in Fijian (see above).

The hatched area of the Tibetan square draws attention to the fact that Tibetan reading style has prenasalized initial groups, *mb-*, *nd-*, *ŋg*, which are absent in the spoken style except in intervocalic position.



Map 5. Lexically contrastive prenasalization and preglottalization

5.3. Lexically contrastive prenasalization and preglottalization

Stieng, Mnong, Srê, Chrau and some of the New Guinea languages appear to have contrastive series of oral, preglottalized and prenasalized consonants. If I interpret the Condominas and Thomas accounts correctly, Mnong Gar and Chrau share the distinction of having prenasalized preglottalized plosives, *nd*, *mb*.⁵⁰

Attention is drawn once again to the variety of type-patterns reported for New Guinea, in which there are languages with preglottalization but no prenasalization, others with prenasalization but no preglottalization, others again with both, and yet others with neither.

5.4. Morphological use of prenasalization

This appears to be rather rare. Phillips reports such forms as *duh* 'hot', *nduh* 'to heat' and many other examples' from Mnong Bunor.

Kachin is tentatively marked as having distinctive prenasalization and as using this feature morphologically. Information is incomplete, however, and it is possible that we are concerned here with the operation of a single prefix. It should be noted that many other languages of the area in some styles and speeds of utterance pronounce certain unaccented form-words as syllabic nasals, which one might be justified in regarding as 'prenasalization' of the following initial consonant. Such occurrences, however, appear to differ from Kachin usage in that they are not utterance initial and so fall outside the scope of the present investigation. Gilbertese, on the other hand, appears to have such initial clusters as *mt-*, *mk-*, *mb-*, for which there may be a morphological explanation.

It should be noted that in the context of this paper morphological alternation between an initial plosive and an initial nasal (e.g. as in Sea Dayak) does not count as morphological use of prenasalization in phonetic terms.

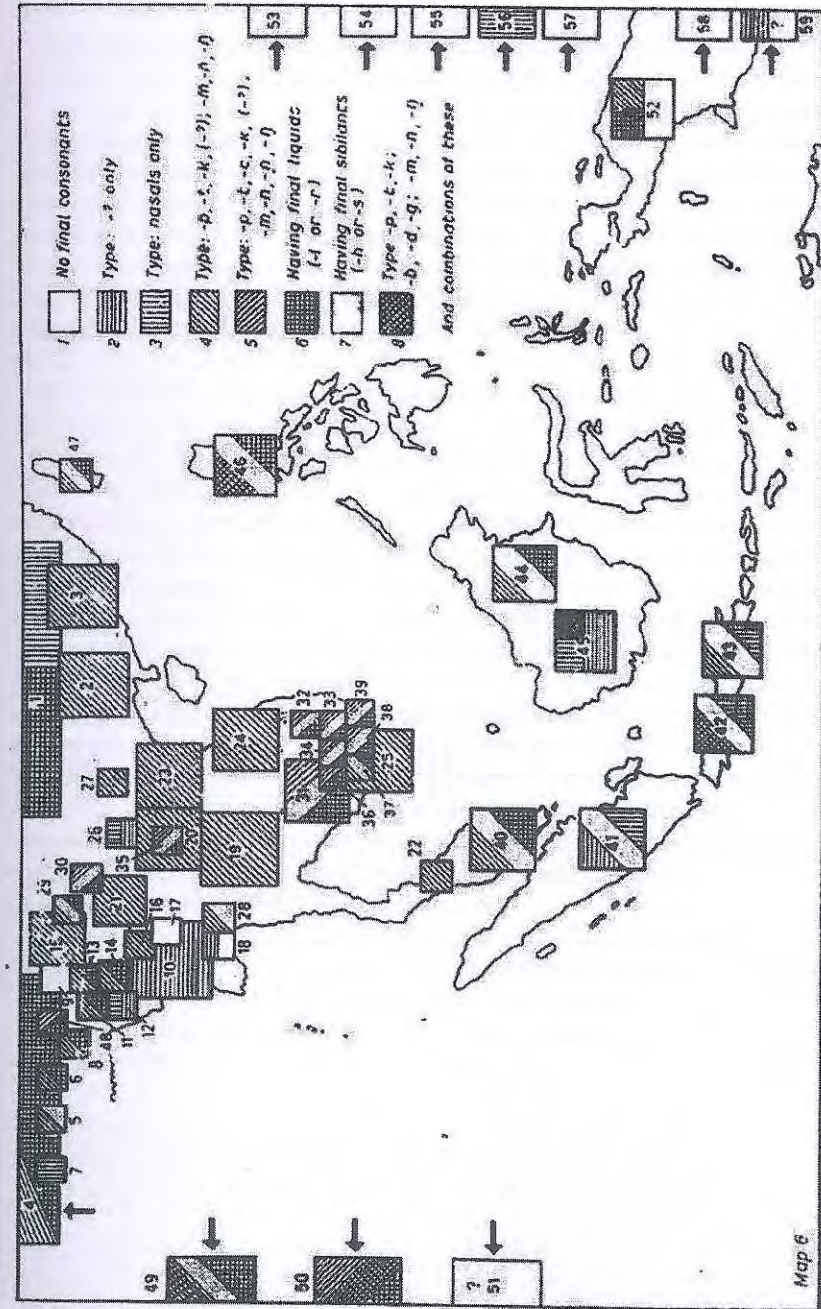
There is no record, as far as I am aware, of a language in which preglottalization is used morphologically.

5.5. Prenasalization and retroflexion

Javanese appears to be the only language with contrasting prenasalized dental and retroflex plosives.

5.6. Co-occurrence of prenasalization and postnasalization

Haudricourt has drawn attention to a rare pattern in Nemi, in New Caledonia,⁵¹ in which there are contrastive series of oral, prenasalized and what he calls 'postnasalized' initial plosives, for which the type-pattern *p*, *pm*, *mb* etc. may be stated. Postnasalization appears sometimes to have a morphological function.



Map 6. Final consonant patterns

Map 6 – Final consonant patterns

Since the contrastive consonant alternance in utterance-final position is everywhere in the area very much more restricted than that in utterance-initial position,⁵²⁾ we shall cast our net wider here to include nasals, liquids and sibilants as well as stops.

Problems of the interpretation of the phonetic data here centre upon final glottal constriction and the glottal stop, and upon such features as final nasal plosion. Where there are other final stop consonants, a final glottal stop offers no special difficulty since it will behave like them as regards tonal restrictions and may be subsumed with them. Where there are no other stop consonants, however, the question may arise as to whether a final glottal stop is to be regarded as the solitary example in the language of a final stop consonant or whether it is to be interpreted as a concomitant feature of the tone or tones with which it occurs. Burmese is a case in point. Final glottal constriction, weaker than that associated with the glottal stop, presents similar problems (when it has been recorded) and some scholars have chosen to regard it as an allophone of a laryngeal phoneme of some sort. Where there is a range of final consonants in the language, glottal constriction of this kind may, unlike the full glottal stop, be associated with tones other than those proper to syllables ending in final stops. Here the solution proposed has sometimes been to postulate final clusters of nasal + *ʔ* etc., just as some scholars have wished to regard initial glottalized consonants as clusters with initial *ʔ*.⁵³⁾ Similar interpretations have also been put forward of the final nasal or lateral plosion which is found as a stylistic or contextual variant of final consonants in some languages of the area, e.g. Mon, Khmer, Songkhla, and Stieng. For the purposes of this study, since such variants are not lexically contrastive they do not require separate plotting on the map. In Land Dayak, however, final nasal plosion does contrast lexically with a simple final nasal articulation (as in such pairs as [kənaŋ] ‘posterior’, and [kənaŋŋ] ‘Straits robin’),⁵⁴⁾ and is accordingly shown on the map with a special blacked-in section on the relevant square.

The various type-patterns and combinations of patterns are plotted on Map 6, and should be readily followed with the key supplied. The following notes and comments may, however, be helpful:

The marking for Southern Karen indicates a ‘partial’ or ‘debateable’ type-pattern *-ʔ*, since these languages may or may not be regarded as having a final consonantal *-ʔ* according to one’s interpretation of the relationship of the final glottal stop and tone.

The shading of the Mandarin square is intended to indicate the presence in that language, which otherwise has final nasals only, of syllabic [r] in final position.

Among the languages with *nasals only* patterns, Gurung appears to have final *-ŋ* only, Gilbertese only final *-m* and *-n*.

The type-pattern *-p, -t, -k, (-ʔ); -m, -n, -ŋ* indicates a final contrast between stops and nasals. An interesting sub-type here would comprise those languages in which there is phonetic alternation between *-k*, and *-ʔ* in some contexts. Note that

some scholars, like Haas and Egerod, use the symbols *-b, -d, -g* rather than *-p, -t, -k* for the final unexploded stops of Tai languages. There is, however, no contrast between final voiced and unvoiced stops in such languages.

Alone among the languages plotted Atayal has contrastive final velar and uvular stops. This is not specifically indicated by the hatching.

The type-pattern *-p, -t, -c, -k, (-ʔ); -m, -n, -ŋ, -ŋ*, refers to languages in which there is a contrast between a final apico-dental (or, usually, alveolar) stop or nasal and a dorso-palatal one. Many scholars class Northern Vietnamese as of this type. The reasons I have not done so have been given elsewhere.⁵⁵⁾

Marma appears to have an asymmetrical type-pattern which is a combination of types 2 and 3 on the map, namely: *-ʔ, -m, -n, -ŋ*. Miao, which is shown in the same way on the map, has a restricted final pattern in which the only contrasting final consonantal articulations are the glottal stop and a nasal, either *n* or *ŋ* depending on the preceding vowel.

Tibetan requires special comment. There are currently three different final consonant patterns here, *-p, -t, -k, ʔ; -m, -n, -ŋ; -r, -l* for the spelling style; *-p, -k, -ʔ; -m, -ŋ; -r* for the reading style; and a much more restricted pattern, *-p* (and rarely *-k*); *-m* for the colloquial style.⁵⁶⁾

A variety of patterns is described for the New Guinea languages, *-p, -t, -k; -m, -n, -ŋ; -l* for some of the Dani languages, and a somewhat erratic pattern for Yabem/Bukawac: *-p, -ʔ; -b; -m* (*-n* rare); *-ŋ*.

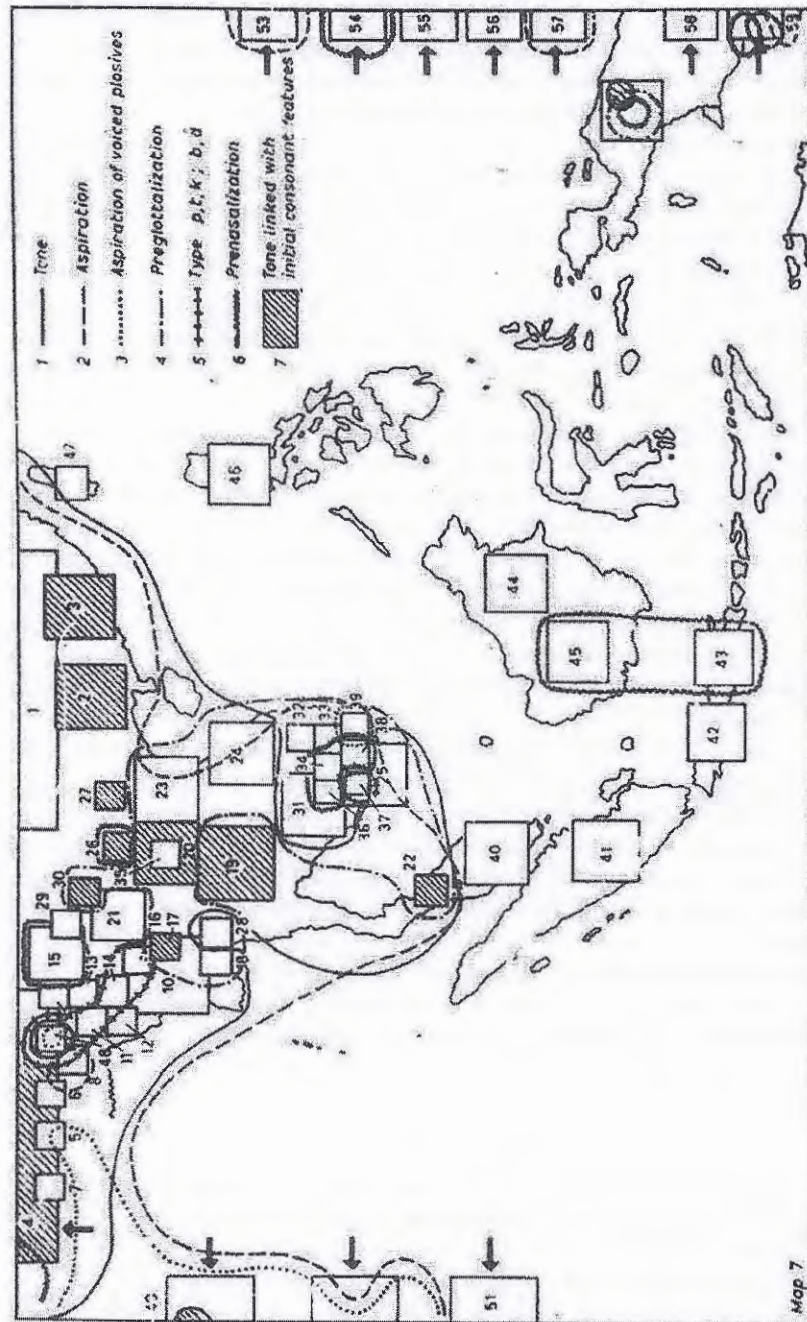
The position in New Caledonia is also mixed. Haudricourt reports a series of final nasals for the northern group of languages whereas Houailou appears only to have final *-ʔ*.⁵⁷⁾

The marking for Munda indicates that the general picture appears to be of the type *-p, -t, -c, -k, (-ʔ); -m, -n, -ŋ, -ŋ* with final liquids, but that Zide assumes an additional final voiced series, and apparently, a final unchecked voiceless series distinct from the voiceless checked series, for Hindi loans in Santali. It is not clear to me, however, how far this assumption is based upon observations of pronunciation and how far upon the orthographic forms in Santali dictionaries and grammars.⁵⁸⁾

The special case of contrastive simple final nasals and final nasal plosion (perhaps the latter might in this context be thought of as an instance of final postnasalized plosives) in Land Dayak has already been mentioned.

Map 7 – Isoglosses

From the contemplation of maps 1–6 one may discern the provisional outlines of a number of areal isoglosses, a few of which it is attempted to show in map 7. ‘Aspiration : non-aspiration’ splits the area into two, and includes on one side roughly the whole North Indian linguistic area and the Sino-Tibetan area on the mainland, and on the other the South Indian languages and the languages of the Islands, with pockets of ‘aspiration’ in the Pacific, and pockets of ‘non-aspiration’ within



Map 7. Isoglosses

Munda and in Assam. This isogloss overruns accepted language-family boundaries, therefore, in that it includes the Sino-Tibetan, Indo-Aryan, Mon-Khmer and most of the Munda languages within one large linguistic area. This area may be further subdivided by the voiced aspirate : voiceless aspirate isogloss, but here again, though we appear to succeed in separating a North Indian linguistic area from the larger one, we are left with pockets of 'voiced aspirate' languages in Rhadé, Lepcha, and Khasi, in the last two of which the feature may be regarded as an encroachment from the neighbouring North Indian linguistic area. The apparently secondary development of a distinctive series of voiceless aspirates in widely separated locations in the Pacific area is particularly interesting.

It is, of course, a commonplace that the 'tone' isogloss corresponds closely with the boundaries of what is generally accepted as the Sino-Tibetan family of languages, with extensions into some of the encircled Mon-Khmer languages and to Vietnamese on the eastern fringe of the mainland.⁵⁹ It is surely significant that disagreement as to which languages of the area are tonal and which are not should centre upon just these encircled languages and upon certain others (e.g. Limbu) on the borders of the Indian linguistic area. The outcrop of tone in both fringe areas, in New Guinea and New Caledonia on the one hand, and Panjabi (and possibly Korku) on the other, should be noted, while the typological affinity with tone languages outside the area, such as those of Africa and America, must not be forgotten. Of especial interest is the fact that in both Panjabi and New Guinea tone is linked to phonetic features associated with initial consonants, with aspiration in the former and with the voice : voiceless contrast in the latter. Similar linkage with initial consonant features is fairly widespread on the South East Asian mainland and is shown by hatching on the map. The isogloss for such linkage delimits a fairly large slice of the mainland extending from Hakka and Cantonese through Miao, Yao and Rianglang southwards to Lao and Thai (central and south) and including Bwe Karen in Burma; there is then a leap to Tibetan, with Shan, Burmese, Chin, most of the Karen dialects, and Vietnamese excluded. As far as I know, no correlation between initial consonants and tone is reported for the tone languages of Africa and America. It may be noted that in attested 'register' languages like Khmer and Mon, and, according to Catford, Javanese, there is always a link between register and initial consonant, though the pattern may sometimes be blurred, as in Modern Mon, by loanwords. 'Register' appears also to be stateable for some of the contiguous tribal languages of South Vietnam, Bahnar, Mnong, Brou, etc. It is noteworthy, however, that no regular correlation between initial consonants and tone can be stated for modern Vietnamese, though such a correlation may have existed in the past.⁶⁰

One of the most characteristic features of the South East Asian mainland area is the incidence of the so-called 'preglottalized' consonants. *b* and *d* are probably the most widespread, but preglottalized nasals and semivowels are also reported in some areas. We shall be concerned here only with the plosives, an isogloss for whose occurrence, as far as can be determined from existing accounts, is shown on the map. The whole problem of the distribution of these

sounds is bedevilled by the fact that one can often not be certain that the record is accurate. Many plosive systems in the area are of the asymmetrical type, *p, t, k; b, d*, with no *g*. Many such systems may, upon further investigation, turn out to be of the type *p, t, k; b, d*. Others certainly are not so at the present time. The isogloss for languages exhibiting the type-pattern *p, t, k; b, d* – which may in some cases represent more accurately *p, t, k; b, d*, – is also shown on the map and will be found, significantly surely, to be by-and-large contiguous to the attested preglottalized area proper, the area of greatest concentration being in the Indo-Chinese peninsula, with fingers reaching up towards Rianglang and Khasi. Karen and Central Chin represent pockets of *p, t, k; b, d* or *p, t, k; b, d* languages in a relatively large area, represented by Burmese, Shan, Palaung and Kachin, which are either *p, t, k; b, d, g* or *p, t, k* languages. Northern Chin appears to have ‘gone over’ to the type-pattern *p, t, k; b, d, g*, the *g*-forms in the language being cognate with *r*-forms in Central Chin and Lushai. Those who incline to the view that the *p, t, k; b, d/h, d* pattern is a Tai one which has spread to contiguous non-Tai languages must find some way to account for the fact that Khasi, entirely without contact with any extant Tai language or with other Mon-Khmer languages, is nevertheless of this type. Is Ahom assumed to be the link here, or is the Tai dissemination theory one which will not hold water? The sporadic outcrop of *p, t, k; b, d* patterns recently reported from certain New Guinea languages must also be taken into account.

A striking feature of this preliminary investigation has been the seeming concentration of putative areal characteristics in the New Guinea group of languages and in the tribal languages of South Vietnam. In the present state of our studies it would be premature to speak either of ‘confluence’ or of ‘dissemination’ in this connection, but it may be helpful to think in terms of ‘concentration areas’. Fuller investigation may well locate other such areas. The available data on the Miao languages, for example, and recent reports on the New Caledonian languages suggest that these may constitute two additional concentration areas.

Notes

1. R. H. Robins, ‘Linguistic comparison’, *LCSEAP*, 9–10.
2. I particularly regret and apologize for inability to take into account more than a fraction of the wealth of material new to me that has been incorporated in the other papers to the conference, as for example in those of Li, *IPLS*, 1, Morse, *IPLS*, 2, Constantino, *IPLS*, 2, Lopez, *IPLS*, 1–2. Time and space have also prevented me from including relevant data from the large amount of unpublished but invaluable firsthand material on the lesser known languages of Burma recently made available to me by Professor G. H. Luce, and from the interesting recent work on typology in the area by Russian scholars, notably V. M. Solntsev: ‘Typological Characteristics of Isolating languages’ (paper submitted to the 26th Int. Congr. Orient., Delhi, 1964), and two papers contained in: *Languages of China and South East Asia*, Moscow, 1963: Solntsev, Rozhdestvenskiy et al., ‘Some general features of Sino-Tibetan and typologically close South East Asian Languages’, and Y. A. Gorgoniev, ‘The position of Khmer amongst the languages of South East Asia’.

- I have, however, taken advantage of the kindness of Professor Egerod in supplying me with an advance copy of an article on Atayal phonology still in the press, to fill in tentatively the Atayal square in my maps. In the course of the conference further information was also received from the following: R. L. Phillips of Cornell, via R. B. Jones (Mnong Bunar, Hrê-Sedang, Vietnamese etc.); L. C. Thompson (Vietnamese); I. Dyen (Javanese); G. Condominas (Mnong Gar, Bahnar); A. Haudricourt (New Caledonian).
3. For the term ‘register’, see Eugénie J. A. Henderson, ‘The main features of Cambodian pronunciation’, *BSOAS*, 14, 1, 1952. In that paper ‘voice quality’ is named as the salient phonetic characteristic of ‘register’. In a forthcoming book on general phonetics Professor David Abercrombie of Edinburgh accepts ‘register’ as an appropriate phonological term but suggests that ‘phonation-type’ is a more suitable term for its phonetic realization, thus reserving the expression ‘voice quality’ for more general use. This seems to me a valid and useful distinction and one which I have accordingly adopted in this paper.
 4. For the terms ‘major’ and ‘minor’ syllable, see Henderson op. cit., and H. L. Shorto, ‘Word and syllable patterns in Palaung’, *BSOAS*, 23, 3, 1960.
 5. E. M. Uhlenbeck, *De structuur van het Javaanse morpheem* (VBG, 78), Bandoeng, 1949.
 6. E.g. M. B. Emeneau, ‘India as a linguistic area’, *Language*, 32, 1, 1956; P. J. Honey and E. H. S. Simmonds, ‘Thai and Vietnamese: Some elements of nominal structure compared’, *LCSEAP*; R. H. Robins, op. cit.; and Hla Pe, and L. C. Thompson on pp. 167, 185, and 29 respectively in this volume.
 7. E. M. Uhlenbeck, ‘The comparative study of the Austronesian languages’, *LCSEAP*.
 8. C. E. Bazell, *Linguistic typology* [inaugural lecture], London, 1958.
 9. Laboratory experiments with Khmer suggest that the perceived ‘lower pitch’ of chest register syllables does not always correspond to physical fact as measured in terms of fundamental frequency.
 10. Cf. Bazell, op. cit., 19.
 11. Robins, op. cit.
 12. See H. J. Pinnow, ‘Personal pronouns in the Austroasiatic languages: a historical study’, *IPLS*, 1.
 13. Cf. W. A. Smalley, ‘Srê phonemes and syllables’, *JAOS*, 74, 1954. In a personal communication at the conference M. Condominas gave it as his view that since the pitch features described by Smalley are clearly phonetically conditioned they are not to be regarded as lexically contrastive in any case.
 14. See A. Capell, ‘Two tonal languages of New Guinea’, *BSOAS*, 13, 1, 1949.
 15. See A. G. Haudricourt, ‘The languages of New Caledonia’, *LCSEAP*.
 16. Cf. J. R. Firth, ‘Phonological features of some Indian languages’, *Proc. 3rd Int. Cong. of Phon. Sciences*, London, 1935; T. Grahame Bailey, ‘The Sindhi Implosives’, *BSOS*, 2, 4, 1923.
 17. Cf. N. H. Zide, ‘Final Stops in Korku and Santali’, *Indian Linguistics*, Turner Jubilee volume, 1, 1958. I am not clear whether what Zide regards as ‘tone’ in Korku is to be referred to lexically contrastive pitch or lexically contrastive phonation-type. Certainly the phenomenon he reconstructs for Proto-Munda in his contribution to this conference sounds very much like ‘register’ (see his paper, ‘Gutob-Remo vocalism and glottalized vowels in Proto-Munda’, *IPLS*, 1).
 18. This has now been confirmed by information received personally at the conference from R. B. Jones, and, indirectly, from R. L. Phillips. It seems quite clear from what they tell me that from the phonetic point of view contrastive phonation-type is present in Hrê, Sedang, the Mnong dialects, Jeh, Brou and, possibly, Bahnar. In some of these the statement of ‘register’ at the phonological level appears self-evident, but since there is always a certain correlation with differences of vowel quality and sometimes

(e.g. in Mnong) with the preceding consonant, differences of phonemic treatment might suggest themselves.

19. See J. C. Catford, 'Phonation Types' in: *In Honour of Daniel Jones*, ed. D. Abercrombie et al., London, 1964.
20. Elinor C. Horne, *Beginning Javanese*, New Haven. London, 1961, xxix: 'The light consonants are sharp and clear, while the heavy consonants have a murmured, fuzzy quality. In addition, the heavy consonants affect the vowel after them by making it a bit lower in pitch and giving it a breathy sound'.
At the conference Professor I. Dyen confirmed personally that there is in Javanese a contrast of phonation-type of the kind under investigation here.
21. See J. R. Firth, 'Phonetic observations on Gujarati,' *BSOAS*, 20, 1957, and P. B. Pandit, 'Nasalization, aspiration and murmur in Gujarati', *Indian Linguistics*, 17, 1957.
22. See Eugénie J. A. Henderson, 'Tonal exponents of pronominal concord in Southern Vietnamese', *Indian Linguistics*, 22, 1961, and R. B. Jones and H. S. Thong, *Introduction to spoken Vietnamese*, Washington, 1957, 17, 29, 120-121. Cf. also the 'subsyllabic morphemes' referred to by Thompson in his paper 'The problem of the word in Vietnamese', *Word*, 19, 1, 1963.
23. For the absence of 'creaky voice' in syllables with final stops see Jean Donaldson, 'A study of the "nặng" tone in the northern dialect of Vietnamese', *Van-Hoa Nguyet-San*, 12, 7, 1963.
24. See S. Egerod, 'Essentials of Shan phonology and script', *Bulletin of the Institute of History and Philology, Academia Sinica*, 29, 1957.
25. Note that the high tone in Bwe is associated with a final breathy off-glide in pre-pause position, never with the glottal stop.
26. Cf. the treatment of Karen in R. B. Jones' *Karen linguistic studies*, and his detailed discussion of the association of tone and glottal constriction in Thai dialects in his contribution to this conference, 'On the reconstruction of Proto-Thai', *IPLS*, 1.
27. As L. C. Thompson has pointed out, the 'nặng' tone in Southern Vietnamese is not characterized by 'creaky' phonation throughout, as in the north, but by a final glottal constriction; but since, according to my personal notes, the 'hói' (or 'ngã') tone in that dialect is accompanied by breathy phonation, Southern Vietnamese is marked on the map as correlating contrastive pitch and phonation-type.
28. Unless, of course, one adopts Sprigg's view that phonation-type is the contrastive feature in Burmese attributive constructions (see p. 27 above), in which case Burmese would stand alone in the area as making grammatical as opposed to lexical use of phonation-type contrasts. It may be remarked in passing that the grammatical use of contrastive phonation-type is quite common in some other parts of the world, e.g. in parts of East Africa and the Sudan.
29. L. C. Thompson, however, considers the contrast *t:th* as fortis: lenis rather than non-aspiration: aspiration. For a detailed exposition of his point of view see his forthcoming *Vietnamese grammar* (in the press).
30. See G. Condominas, 'Enquête linguistique parmi les populations montagnardes du Sud indochinois', *BEFEO*, 46, 2, 1954.
31. *j, jh*, which are not phonetically plosives, are strictly speaking outside the scope of the present paper (see p. 406) but are introduced here since *jh* affords the only example I have been able to discover of vestigial plosive + aspirate clusters in Khasi, such as are found elsewhere in Mon-Khmer. Khasi aspirated voiceless plosives correspond to unaspirated voiceless plosives in such languages as Mon and Khmer, and must be interpreted as monophonemic phonologically, not as clusters.
32. N. Chin (Tiddim) orthographic *kh-* is pronounced [x].

33. A possible interpretation of the Miao data as recorded by Downer seems to be that there is also contrastive *voiced* aspiration. Downer's notation of the whole set of labial plosives is as follows: *p, ph, phi; mp, mph, mphi*.
34. Cf. S. H. Elbert, *Grammar and comparative study of the language of Kapingamangari, texts and word-lists*, Washington, 1950, and G. B. Milner, 'Aspiration in two Polynesian languages', *BSOAS*, 21, 2, 1958.
35. Cf. Haudricourt, op. cit.
36. Cf. R. Haupers, 'Word-final syllabics in Stieng', *Van-Hoa Nguyet-Son*, 9, 7 and 8, 1962.
37. See n. 29.
38. See J. E. Buse, 'Two Samoan ceremonial speeches', *BSOAS*, 24, 1, 1961.
39. See A. G. Haudricourt, 'Les consonnes postnasalisées en Nouvelle Calédonie', *Proc. 9th Int. Cong. Ling.*, The Hague, 1964.
40. See Condominas, op. cit., n. (2) on p. 589.
41. Information supplied by R. L. Phillips.
42. Cf. Emeneau, op. cit., and H. L. Shorto, 'The structural patterns of northern Mon-Khmer languages', *LCSEAP*.
43. In this connection, see F. B. J. Kuiper's contribution to the conference, 'Consonant variation in Munda', *IPLS*, 1.
44. This latter feature is found in other Munda languages also. See Kuiper, op. cit.
45. Also in some Tonkinese dialects, as verbally reported by Thompson.
46. The Dravidian material in this paper is everywhere weak and in need of revision. The heavy Sanskritic overlay, together with the wide contextual variation of phonemes within the indigenous languages themselves, make it peculiarly difficult to elicit from the written accounts the information required without personal consultation with scholars expert in this field.
47. See D. Blood, 'Applying the criterion of patterning in Cham phonology', *Van-Hoa Nguyet-San*, 13, 4, 1964.
48. It should be borne in mind that not all accounts of languages with a *p, t, k; b, d* pattern make it clear whether the *b* and *d* are preglottalized or not.
49. See R. L. Turner, 'The Sindhi recursives or voiced stops preceded by glottal closure', *BSOS*, 3, 1923-1925.
50. Phillips confirms the presence in Mnong of prenasalized preglottalized plosives.
51. See 'Les consonnes postnasalisées en Nouvelle Calédonie', n. 39 above.
52. If one's theoretical standpoint allows one to extract from one's data, for treatment at another level, all features marking syllable boundaries, it is often quite easy to present a *phonological* statement in which the initial and final phoneme inventories are the same (see Eugénie J. A. Henderson, 'Prosodies in Siamese', *Asia Major*, NS. 1, 1949), or very nearly so. Hence it seems to me that David Thomas's comment that Richard Watson's 'Pacoh' is the 'first reported Mon-Khmer language with no major differences in inventory between initial and final consonant phonemes' (see R. Watson, 'Pacoh phonemes', *Mon-Khmer Studies I*, 1964, and Thomas's Introduction to the volume) has no relevance to typological comparative studies. Watson achieves his near-symmetry by deciding to treat final [-u?] and [-i?] as 'word-final allophones' of phonemes whose initial allophones are ['b] and ['d₃]. This procedure, while perfectly defensible from the point of view of a statement of the internal structure of Pacoh, would, if applied to other Mon-Khmer languages, very frequently result in similarly symmetrical, though different, inventories. From the typological point of view it seems less misleading to stick closer to the phonetic substance.
53. Khasi, which cannot by any reckoning be regarded as tonal, is interesting and unusual in that the final consonants pronounced in most contexts as *-p, -t, -c, -k* are frequently pronounced as post-glottalized nasals in pre-pause position, viz. *-mʔ, -nʔ, -ɲʔ, -ŋʔ*.

- Khasi is, however, here classified as having the type-pattern *-p, -t, -c, -k, -ʔ; -m, -n, -ŋ*. For comment upon the secondary character of final *-k*, see my paper to this conference, 'Final *-k* in Khasi: a secondary phonological pattern', *IPLS*, 1.
54. See N. C. Scott, 'Nasal consonants in Land Dayak' in: *In Honour of Daniel Jones*, ed. D. Abercrombie et al., London, 1964.
55. In a paper entitled 'The articulation of final *-nh* and *-ch* in Vietnamese' submitted to the 5th International Congress of Phonetic Sciences, Münster, 1964, and to be published in the proceedings of the Congress.
56. Information by personal communication from R. K. Sprigg.
57. S. Kasarhérou, 'Prosodèmes de la langue mélanésienne de Houailou', *BSL*, 56, 1961.
58. See Zide, 'Final stops in Korku and Santali', cited above.
59. Such a view is dependent, of course, upon the belief that Vietnamese is an Austroasiatic language that has adopted tone, rather than a Tai language with a puzzling number of Austroasiatic words in its everyday vocabulary.
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All the information on Hrê and Sedang was supplied by R. L. Phillips of Cornell, at whose suggestion the Hrê/Sedang square was added to the maps. Much useful information was also received from him on other tribal languages of Vietnam, e.g. Mnong, Srê, Bahnar, Stieng.

For Gilbertese I have referred to recordings made some years ago by H. G. A. Hughes.

LANGUAGE DIFFUSION ON THE ASIAN CONTINENT

Problems of typological diversity in Sino-Tibetan

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Source: *Computational Analyses of Asian and African Languages* (National Inter-University Research Institute of Asian and African Languages and Cultures, Tokyo) 3, 1976, 49–66.

1. Introduction

In analyzing the languages and discussing the linguistic situation in mainland Asia, linguists ordinarily take it for granted that there are at least three or four mutually unrelated major groups—possibly “families”—of languages, namely, besides Afro-Asiatic, Altaic from the west to the east across the northern part, Austroasiatic from the west to the east across the south, and Sino-Tibetan in the middle.¹⁾ This is highly biased by the 19th century’s view on the typological/geneological classification of languages. Since the term “family” implies different geneological origin, and consequently different typological structure to some extent at least, it is not surprising that very few linguists analyzed and described these Asian languages beyond the scope of each “group” (or “family”, though most of them are aware that much has to be done before they can talk about “family” in the scientific sense), unless they happen to be interested in the problems of language contacts or word equation among Asian languages.

This is largely due to the lack of systematic, scientific information on these languages, in addition to the heavy concentration of linguists’ attention to the geneology of languages, which underlies even the purely descriptive studies of these languages.²⁾ However, an enormous amount of scientific data has been accumulated for the Sinitic languages since the establishment of Academia Sinica, and for the Altaic, Austroasiatic and, in particular, Tibeto-Burman languages in the past few decades. This has made the above-mentioned “isolationism” in Asian linguistics very much outdated. The present study endeavors to

demonstrate how indispensable it is to consider linguistic problems at the “inter-family” level, not merely for diachronic studies but also even for synchronic ones, and what kind of new insight we can obtain by studying Asian languages from such an angle.

Another problem we want to pursue in this study is the typological diversity among these languages, examined from the viewpoint of what we want to call “typo-geography”.³⁾ Possible cognates among Sino-Tibetan, for example between Chinese and classical Tibetan in particular, have been earnestly sought by various linguists. The drastic typological—syntactic in particular—diversity of the linguistic structure among these languages has drawn little attention, however, and very little has been done toward a systematic exposition of how and why such diversity came about. We want to demonstrate in this study that the structural diversity of Sinitic languages for example, can be best accounted for as the result of the diffusion of Altaic and Austroasiatic languages.

2. The typo-geography of Chinese

The regional variants of Chinese constitute a near perfect continuum of a transitional linguistic structure within a geographical span as large as, if not much larger than, the entire Europe. The only exception is found in dialects like Hakka which spread across certain areas as a result of large scale migration of the speakers.⁴⁾ This fact has not drawn enough attention, perhaps because the type of linguistic geography developed by G. Wenker, F. Wrede, J. Gilliéron, etc. in Europe was very short-lived in China.⁵⁾ To my knowledge, it was Wang Li and Jerry L. Norman who first gave a general characterization of Chinese dialects, based not merely on phonological features, but also on both morphological and lexical criteria.⁶⁾ Their main concern was, however, to contrast the southern dialects with the northern and draw a line between them. Examining similar data, however, we can also see another aspect of the geographical distribution of Chinese dialects, namely the continuous transition of linguistic features among dialects according to the geographical distance.

2.1. Phonological features

Among the continuum of numerous phonological features, we here choose the following two: tones and syllable structure.

2.1.1. Tonal distinction

Chinese dialects show very clear regional features to tonal distinction. That is, the more toward the south one goes, the greater tonal distinction one can find, and the more toward the north a dialect spreads, the fewer tonal categories the dialect maintains, as can be seen from Table 1.

Table 1

Shensi/Kansu	3
Sian	4
Chi-nan	4
Ch'eng-tu	4
Yang-chou	5
Nan-ch'ang	6
Foochow	7
Ch'ao-chou	8
Cantonese	9

The variant with the least number of tonal distinctions is the Shensi/Kansu dialect spoken by the Dungans who have spent most of their life among the Altaic people. The dialect with the greatest tonal distinction is Cantonese, whose sound system so much resembles that of Tai languages that it has even tonal distinction conditioned by vowel length, a feature which is unique for the Tai languages but which can be found in no other dialects of Chinese.⁷⁾

One can naturally find many exceptions. The K'un-ming dialect of Yunan has, for example, four tones only, though it is spoken farther to the south than for example the Ch'ang-sha dialect of Hunan which has as many as six tones. But we know that this is due to the rather recent settlement of Mandarin speakers in the southwestern part of the continent—as recent as the Ch'ing dynasty. The Wenchow dialect has eight tones, but half of them are conditioned by the voicing of the initial consonants—four of them cooccur with the voiced ones only, and the other four with the voiceless ones. Then what we really have there is only four tones. One can also point out many other individual exceptions, if one really measures the exact geographical location. But no one can ignore the general tendency mentioned above. Then one would naturally associate this phenomenon with the presence of tone languages like Tai to the south, but Altaic languages to the north which do not have the type of syllabic musical tones like those of Chinese, Tai, etc.⁸⁾ To be sure, many students of Chinese linguistics have been aware of the continuum of regional variation in Chinese dialects, and of the general tendency of the variation mentioned above. However, few have ever seen this in the context of the Altaic and the Tai connection.⁹⁾

2.1.2. Syllable structure

Another feature which clearly constitutes a continuum between the Altaic and the Tai languages is the syllable structure. As is shown in Table 2, one can find the simplest syllable structure among Chinese dialects in the north, where we find either CV or CVn/ng, if we exclude the so-called “retroflex endings”, a diminutive morpheme. Phonetically speaking, one can find dialects with simpler syllable structure, namely CV, either with or without nasalization of the vowels. Phonologically, however, these nasalization elements can be reduced to the endings -n and -ng.¹⁰⁾ The syllable structure gets the more complex, the farther south one goes. To the southern end, we can find Cantonese which has CV, CVm/n/ng or CVp/t/k.

Table 2

Manchu	CV, CVn/ng
Shensi/Kansu	CV, CVn/ng
Sian	CV, CVn/ng
Chi-nan	CV, CVn/ng
Ch'eng-tu	CV, CVn/ng
Yang-chou	CV, CVn/ng
Nan-ch'ang	CV, CVn/ng, CVt/k
Foochow	CV, CVng/jng/wng, CVk/jk/wk
Ch'ao-chou	CV, CVn/jn/wn/ng, CVt/jt/wt/k
Cantonese	CV, CVm/n/ng, CVp/t/k

It is by no means an accident that Manchu in the north, for instance, has the syllable structure CV or CVn/ng, while most of the Tai languages gave CV, CVm/n/ng or CVp/t/k. Phonetically speaking, again, one can easily point out exceptions. Sibö, one of the few living dialects of Manchu, for example, has a greater variety of consonantal endings. Except /n/, however, all of them may be interpreted phonologically with a *shwa* following these consonants.¹¹⁾ Vietnamese have palatal nasal endings and their stop counterparts, but for this, too, some linguists argue that they can be interpreted as “fronted velars”.¹²⁾

2.2. Morphological features

What we observed in the preceding section are of course purely surface phenomena. If they remain to be a few isolated features, they themselves may not be of much significance. These phenomena are, however, closely related to the similar tendency of the geographical distribution of other features, both morphological and syntactic.

2.2.1. Classifiers and monosyllabism/polysyllabism

One of the characteristic features of Sino-Tibetan is that many a language of this group have the so-called “classifier”, and very few linguistic introductory books fail to mention this. With respect to this classifiers, too, the geographical distributional pattern of the modern Chinese dialects clearly shows that the farther south one goes, the greater variety of classifiers he can find in the local dialects, and the farther north one moves, the less variety he will observe in the speech of the local people.

Simplification of the classifiers in this case is carried out by the “neutral” classifier *ko* or its cognates, substituted for the individual classifiers. There is a very famous episode reported by Aleksandr A. Dragunov in this connection.¹⁴⁾ Practically every manual of Peking Mandarin lists classifiers *t'iao* and *ker* for something slender and long. Now, Yü Min, a famous Chinese linguist, made inquiries with twenty native Pekinese speakers whether they use *t'iao* or *ker* for *i-pa*(tail).

To his total surprise, nineteen out of the twenty replied that they use ko, the most neutral classifier.¹⁵ As can be seen from Table 3,¹⁶ this substitution of ko for various classifiers increases when one travels from the south to north. In the Ch'eng-tu dialect, both chih and ko are used for 'chicken'; in Chi-nan, ko is substituted for classifiers for 'needle' and 'cow', and in the Sian dialect, for 'chicken', 'boat', and 'bridge'. In the Shensi/Kansu dialect spoken by the Dungan, ko has been substituted for all other classifiers. In other words, Dungan has only one noun classifier ko; since there is no other classifier, the Dungan ko has already become a kind of unique morphological marker for nouns.¹⁷ A sharp observer will also notice in Table 3 that the Nan-ch'ang dialect shows that it represents, as its geographical location does, a mixed type between the Ling-nan (south of the South Range) and the Ling-pei (north of the South Range) groups.

Table 3

Noun	'cow'	'chicken'	'boat'	'bridge'	'needle'
Shensi/Kansu	ko	ko	ko	ko	ko
Sian	t'ou	ko/chih	ko	ko	ken
Chi-nan	ko	chih	chih	tso	ko
Ch'eng-tu	ken/t'iao	chih/ko	chih	tso	ken
Yang-chou	t'iao	chih	t'iao	tso	ken
Nan-ch'ang	chih	chih/t'iao	chih/t'iao	tu	ken/kuan
Mei-hsien	t'ou	chih	t'iao	t'iao	mei
Foochow	t'ou	t'ou	t'iao	t'iao	t'iao
Ch'ao-chou	chih	chih	chih	t'iao	chih
Cantonese	chih	chih	chih	tu/t'iao	yen

When we discuss the classifier, we are talking about a set of morphemes unique to each noun, not about measure words. One of the clearest grammatical differences between classifiers and measure words consists in the fact that, being ordinary nouns merely used to measure the amount of an object, measure words can take modifying adjectives, while such is impermissible with the classifiers:

{ i(one) ta(big) -ch'ün(herd) yang(sheep) 'a large herd of sheep'
 { * i(one) ta(big) -chih(classifier) yang(sheep)

{ i(one) hsiao(small) -wan(bowl) fan(rice) 'a small bowl of rice'
 { * i(one) hsiao(small) -ko(classifier) fan(rice)

{ san(three) man(full) -pa(grab) yen(salt) 'three full grabs of salt'
 { * san(three) ta(big) -pa(classifier) tao -tzu(knife)

Also, since measure words are after all measure words, there is no restriction on the occurrence of nouns following the words as long as the nouns express something measurable, whereas the classifiers can take only those small group of nouns which share common semantic/syntactic features and which are unique to each classifier. Thus the noun that follows the measure words wan(bowl), for example, could be

fan(rice), but it could also be t'ang(soup) or even yen(salt). On the other hand, except for the case of the neutral classifier ko, each classifier has a certain limited number of nouns which are unique to each classifier. Thus the classifier t'iao can be used for 'thread', 'road', 'snake', or even for 'dog' or 'fish', but neither 'box' nor 'book'.

Here one will naturally recall that it is the Tai languages which have the greatest variety of classifiers (and measure words), while the Altaic languages have measure words but not classifiers in the sense defined above. It is interesting to witness that the Dungan language has, as mentioned above, only one classifier ko, but has all sorts of measure words like any other Chinese dialect.

Again, one can point out individual exceptions to the above generalization. The Yang-chiang dialect, spoken to the southwest of Canton, for example, has ko substituted for the classifiers for 'cow', 'chicken', etc. However, the dialect has some other features common among northern Chinese. One will therefore naturally suspect that the settlement of population in such a coastal port town as Yang-chiang may have a very different history from others, and also a dialect spoken in such a town could have had much closer contact with the cultural center of the country than those of inland towns.

One thing which has not yet drawn enough attention among linguists is that the variety and the occurrence of the classifiers are closely related to the morpheme structure (monosyllabic or polysyllabic) of the language. In short, the more monosyllabic nouns a language has, the greater variety of classifiers one can find in the language, and the more polysyllabic the words tend to be, the simpler the classifier system becomes. The substitution of the neutral classifier ko for various classifiers mentioned above is thus closely paralleled by the polysyllabicity of the dialects in question, as can be seen in Table 4.

Again, somewhere around Nan-ch'ang and Foochow one can find a clear transition from the southern monosyllabic type to the northern polysyllabic type. All of this seems to support James Matisoff's view that the Sino-Tibetan classifiers are primarily to give redundancy to monosyllabic nouns.¹⁸

Table 4

Word	'tail'	'crab'	'house'	'desk'
Shensi/Kansu	wei-pa	hsieh-tzu	fang-tzu	cho-tzu
Sian	wei-pa	p'ang-hsieh	fang-tzu	cho-tzu
Chi-nan	wei-pa	p'ang-hsieh	fang-tzu	cho-tzu
Ch'eng-tu	wei-pa	p'ang-hsieh	fang-tzu	cho-tzu
Yang-chou	wei-pa	p'ang-hsieh	fang-tzu	cho-tzu
Nan-ch'ang	wei-pa	p'ang-hsieh	fang-tzu	cho-tzu
Mei-hsien	wei	lao-hsieh	wu	cho-tzu
Foochow	wei	p'ang-hsieh	ts'o	cho
Ch'ao-chou	wei	hsieh	ts'o	ch'uang
Cantonese	wei	hsieh	wu	t'ai

2.2.2. Negative and plural suffix

Among other numerous morphological or morpheme-structure features that constitute the continuum of transition from the southern type to the northern, we want to point out two more here, the negative word and the plural suffix.

Table 5

Word	negative	plural suffix
Shensi/Kansu	pu	mu
Sian	pu	men
Chi-nan	pu	men
Ch'eng-tu	pu	men
Yang-chou	pu	men
Nan-ch'ang	pu	li
Soochow	fe	ni
Wenchow	fu	le
Mei-hsein	m	teu
Foochow	ng	/ ¹⁹⁾
Ch'ao-chou	m	/
Cantonese	m	tei

In short, for the negative words we can observe a transition from labial stop of the north to labial nasal of the south through labial fricative in between, as shown in Table 5. For the plural suffix to pronouns, one can recognize an unmistakable transition from the labial nasal in the north to the dental stop in the south through the intermediate stage of dental lateral/nasal in between as shown in the same table.

While we do not see any clear relationship between these morphemes and those of the Altaic languages, we do have some suspicious cognates in the languages spoken to the south of Chinese. It is well-known that the northern Tai dialects have a syllabic nasal for the negative, and the Thai (Siamese) negative *may* may not be totally unrelated to this. Tai has some different word formation for the plural expression. Nishida Tatsuo suspects that the plural suffix of the Hakka dialect *teu* might be related to the Burmese/*twei*.²⁰⁾ Among the Yüeh dialects known to us, the Kuei-hsien dialect has the suffix *tui*; both Cantonese and Shun-te have *tei*.²¹⁾ It is then reasonable to reconstruct **tuei* as a first approximation toward the Proto-Yüeh plural suffix.

There are many more individual morphemes that connect Chinese with Altaic and Tai. The genitive particle in northern Chinese is either *ti* or *ni* (Cf. Manchu *ni*), but *ke* or *kai* in southern Chinese (Cf. Chuang *ke*, Bê *ke*, Thai *khong*). The third person pronoun in northern Chinese is *t'a*; *li* or *tsi* around the Yang-tzu basin, but *ki* or *qi* in southern Chinese. Bê has *ke*, and Thai has *klaw*, both of which look highly probable cognates.

2.3. Syntactic features

Let NP be noun phrase, N noun, NU numeral, CL classifier, and DM demonstrative. The noun phrase structure of the four major subgroups of Sino-Tibetan is normally characterized as follows:

- a) Chinese NP = NU + CL + N, DM + CL + N
 b) Miao-Yao NP = NU + CL + N, CL + N + DM
 c) Tibeto-Burman NP = N + NU + CL, N + DM + CL
 d) Kam-Tai NP = N + NU + CL, N + CL + DM

What we can observe here is a clear tendency that the northern subgroup tends to place modifying constituents before the head noun, whereas the southern subgroup after the head noun. This is exactly what we find in the modern Chinese dialects—the order given above as of Chinese is merely of Peking Mandarin.²²⁾

2.3.1. Compounds containing noun modifiers

The syntactic feature that best shows the above mentioned tendency is a kind of "fossilized" compound, as given in Table 6.

Table 6

Shensi/Kansu	<u>chien(male)</u> -niu(cattle) 'ox'
Sian	<u>kung(male)</u> -niu(cattle)
Chi-nan	<u>chien(male)</u> -niu(cattle)
Ch'eng-tu	<u>ta(big)</u> -ku(male) -niu(cattle)
Yang-chou	<u>kung(male)</u> -niu(cattle)
Soochow	<u>hsiung(male)</u> -niu(cattle)
Wenchow	<u>hsiung(male)</u> -niu(cattle), or niu(cattle) -ku(male)
Ch'ang-sha	niu(cattle) - <u>kung(male)</u> -tzu(suffix), or <u>ku(male)</u> -tzu(suffix)
Nan-ch'ang	niu(cattle) -ku(male), or <u>kung(male)</u> -niu(cattle)
Mei-hsien	niu(cattle) -ku(male)
Foochow	niu(cattle) - <u>kung(male)</u>
Ch'ao-chou	niu(cattle) -ku(male)
Cantonese	niu(cattle) - <u>kung(male)</u>

It is so clearly observable that northern Chinese all have the morpheme order MALE + CATTLE, while southern Chinese consistently shows the order CATTLE + MALE. What is of paramount interest here is the order in the dialects of Ch'ang-sha, Wenchow and Nan-ch'ang. Just as the location of these dialects shows, these three dialects have alternative word-formation—an exact mixture of the northern and the southern type. Besides 'ox', Nan-ch'ang has the following alternative forms for 'cock':

chi(chicken)-kung(male) / yang(male)-chi(chicken)

Wenchow has many more:

ts'ao(female) -chi(chicken) / chi(chicken) -niang(female) 'hen'
hsiung(male) -chu(pig) / chu(pig) -ku(male) '(male) pig'
ts'ao(female) -chu(pig) / chu(pig) -niang(female) 'sow'
ts'ao(female) -niu(cattle) / niu(cattle) -niang(female) 'cow'
ts'ao(female) -ma(horse) / ma(horse) -niang(female) 'mare'
ts'ao(female) -kou(dog) / ts'ao(female) -kou(dog) -niang-erh(female) 'bitch'
ts'ao(female) -mao(cat) / mao(cat) -niang(female) '(female) cat'

The border line between the southern and the northern type moves according to individual words. In the case of 'cow', '(male) horse', 'mare', and '(male) pig', it comes between Ch'ang-sha and Nan-ch'ang; the former belongs to the southern type, while the latter belongs to the northern type. The reader may be puzzled here, since the Ch'ang-sha dialect belongs to the southern type despite the fact that it is spoken to the north of Nan-ch'ang. (It may not be appropriate to choose Nan-ch'ang here, since, being the capital of Kiangsi, the dialect of Nan-ch'ang is much influenced by the national language (northern Mandarin). The I-ch'un dialect, another prominent dialect of Kiangsi, belongs to the southern type in this respect; the I-ch'un words for 'ox', 'cow', 'cock', 'hen', '(male) pig', 'sow', '(male) horse', 'mare', '(male) dog', 'bitch', 'tomcat', '(female) cat', 'jack' and 'jenny' all have the morpheme order ANIMAL + MALE/FEMALE). In the case of '(male) dog' it comes between Wenchow and Ch'ang-sha; the former of course belongs to the northern type, and the latter to the southern type. Ch'ang-sha belongs to the southern type with respect to 'cow', 'bitch', 'cock' and 'hen', too.

We suspect that the southern type once must have spread further to the north; the Ch'eng-tu dialect has chi(chicken)-kung(male) and chi(chicken)-mu(female) for 'cock' and 'hen' respectively. It is then not surprising to find the Chi(chicken)-kung(male)-ling(range) 'Cock Range' in the Hupeh Province.²³ Naturally the further south one goes, the more compounds with the morpheme order NOUN + MODIFIER one can find. In the southernmost dialect, Cantonese, Ts'en Ch'i-hsiang reports the following instances:²⁴

jen(man) -k'o(guest) 'guest'
 ts'ai(vegetable) -kan(dry) 'dried cabbage'
 chi(chicken) -kung(male) 'cock'

Incidentally, both jen(man) -k'o(guest) and ts'ai(vegetable) -kan(dry) can be found in Mei-hsien, too. Both Amoy and Foochow have, besides jen(man) -k'o(guest), the following:

Amoy:
 ts'ai(vegetable) -su(edible) 'edible green'
 hsieh(shoe) -t'o(drag) 'slipper'
 feng(wind) -t'ai(typhoon) 'typhoon'
 li(calendar) -jih(daily) 'calendar'

Foochow:

hsieh(shoe) -t'o(drag) 'slipper'
 feng(wind) -t'ai(typhoon) 'typhoon'

Anne O. Yue provided the following Cantonese compounds to the present author:

yü(fish) -sheng(raw) '(a raw fish dish)'
 fan(rice) -chiao(burned) 'burned rice'
 hsiung(bear) -jen(man) 'bear' (Cf. T'ai-shan: jen(man) -hsiung(bear))
 nang(skin) -chi(chicken) 'goose flesh' (nang is very possibly from Tai:
 Chuang nang 'skin', Bê nang 'skin')

Tai-shan:

pak(mouth) -lio(many) 'talkative' (Cf. Chuang ?6a : k(mouth)-la : i
(many) 'talkative', Bê ?6ak(mouth) -liu(many) 'talkative')

While these words are more or less "fossilized", the morpheme kan(dry) in Cantonese still remains productive. In addition to ts'ai(vegetable) -kan(dry) 'dried cabbage', li-chih(litchi) -kan(dry) 'dried litchi', lung-yen(lungan) -kan(dry) 'dried lungan', etc., they coined ping(pastry) -kan(dry) 'biscuit' when the western biscuit was introduced to China, and niu(cattle)-jou(meat) -kan(dry) 'dried beef' when they invented processing dried beef for confectionery.²⁵

2.3.2. Adverbials

The same type of word order difference among dialects can be found for verb phrase also. The most conspicuous one can be found in the standard Chinese (primarily northern Chinese) expressions:

- wo(I) tao(to) shang-hai(Shanghai) ch'ü(go) 'I go to Shanghai'.
- wo(I) ch'ü(go) shang-hai(Shanghai) 'I go to Shanghai'.

Although both of them have already been incorporated into the standard language, the former clearly sounds like northern Chinese (Pekinese, Sian, etc.), while the latter unmistakably southern Chinese (the word order found in Wu, Hakka, Min and Yüeh).

One will of course recall here that in the Altaic languages all the adverbial phrases (including constituents like object, complement, etc.) precede the verb. For example, in Manchu:

hūdu(n) quickly alin(mountain) ci(from) wasifi(come down) usin(field-accusative) tari(cultivate) 'Quickly come down from the mountain to cultivate the field'.
amin(Amin) beile(prince) be(accusative) amba(great) beile(prince) i(together) adame(side by side) tebuhe(sit-causative) 'Let Amin prince sit together with the Senior prince'.

On the other hand, in Tai, they always follow the main verb. For example, in Thai:

klāb(return) ma(come) cak(from) pra't'es(country) t'ai(Thai) 'come back from Thailand'.

chān(I) ca'(would like to) pai(go) kāb(together with) t'an(you) 'I want to go together with you'.

This is exactly what we find among the modern Chinese dialects from the north to the south. In Shensi/Kansu, Peking, etc., the adverb hsien(first, ahead) can only precede the verb:

ni(you) hsien(first) ch'ü(go) 'You go ahead!'

Down to the south in Amoy, this order can be reversed:

ni(you) hsien(first) hsing(go) 'You go ahead!', or:

ni(you) hsing(go) tsai(in) hsien(first) 'You go ahead!'

Further to the south in Cantonese, one can only say as follows:

ni(you) ch'ü(go) hsien(first) 'You go ahead!'

just as in Bê, for example:

me(you) ?boi(go) kua-na(first) 'You go ahead!'

In Cantonese the position of this adverb hsien(first) is not affected even if the verb has some other adverbials:

ni(you) pei(give) pen(classifier) shu(book) wo(me) hsien(first)
'Will you give me a book first?'

In the comparative construction of northern Chinese, the comparing phrase can only precede the verb:

ni(you) pi(than) t'a(him) kao(tall) 'You are taller than him'.

In Hakka and northern Min, the pi(than) phrase still has to precede the main verb, but the verb needs a prefix kuo(exceed):

ni(you) pi(than) ch'ü(him) kuo(exceed) -kao(tall) 'You are taller than him'.

Coming down south to Amoy, a prefix chiao(in comparison) suffices to construct a comparative sentence:

ni(you) chiao(in comparison) -kao(tall) i(him) 'You are taller than him'.

Notice here that the compared object follows the main verb. Further down south among the Min dialects, both Ch'ao-chou and Hainan have the comparing phrase following the main verb, with the preposition kuo(exceed):

ni(you) kao(tall) -kuo(exceed) i(him) 'You are taller than him'.

This is exactly what we find in Cantonese, Chuang, Bê and Thai.

We then can summarize the above discussion in the following way:

in the north, both noun-modifying and verb-modifying constituents tend to precede the head noun and the main verb respectively as in the Altaic languages, while in the south they both tend to follow, just as in the Tai languages.

Similar phenomena in the double object construction and the tense/aspect categories of verbs have already been discussed elsewhere.²⁶⁾

3. The historical development of Chinese

What we summarized above precisely reflects the historical development of the syntactic structure of Chinese.

3.1. Noun phrase

What is recorded as follows in the oracle bone inscriptions:

ch'iu(mound) -shang(Shang) 'The Shang mound'

ch'iu(mound) -lei(thunder) 'The Thunder mound'

appear in classical Chinese documents as follows:

shang(Shang) -ch'iu(mound) 'The Shang mound'

lei(thunder) -ch'iu(mound) 'The Thunder mound'

Chinese philologists of pre-modern China were already aware that their ancestors of the pre-Ch'in period often "reversed the word order".

For instance, instead of saying:

ta(big) -yu(road) 'a great road'

ku(valley) -chung(middle) 'in the valley'

pre-Ch'in writers wrote as follows:²⁷⁾

yu(road) -ta(big) 'a great road'

chung(middle) -ku(valley) 'in the valley'

In other words, the Chinese language has been undergoing a continuous change from the Tai type to the Altaic type from the very beginning of its history. Among the various sentence constituents, the noun phrase underwent change first, so that in the modern period we can find trace of the NOUN + MODIFIER structure only in the southern dialects. Since people avoided adding too many modifying constituents to the head noun, and since, therefore, the subject NPs tend to be a monosyllabic noun,²⁸⁾ the Chinese language maintained a variety of classifiers for nouns until it developed polysyllabism in the north.

On the other hand, the verb phrase apparently underwent the same change much later than the noun phrase. The famous sentence of the Shih-chi:

wu(Wu) pai(defeat) yüeh(Yüeh) yü(at) fu-chiao(Fu-chiao)
 'Wu defeated Yüeh at Fu-chiao'.

has all verb-modifying elements following the verb. It was only after the northern Chinese became mixed with the northern "barbarians" that these postverbal elements were "transposed"²⁹⁾ to the preverbal position as in modern Pekinese:

wu-kuo(Wu kingdom) tsai(at) fu-chiao(Fu-chiao) pa(accusative)
 yüeh-kuo(Yüeh kingdom) ta(hit)-pai(defeat) la(perfective)
 'The Wu country defeated the Yüeh country at Fu-chiao'.

And even in Cantonese, where we still find postverbal modifiers, at least the locative is transposed:

wu-kuo(Wu kingdom) tsai(at) fu-chiao(Fu-chiao) ta(hit)-pai(defeat)
 yüeh-kuo(Yüeh kingdom)
 'The Wu country defeated the Yüeh country at Fu-chiao'.

3.2. Verb "classifier"

Now, if we need classifiers for nouns in monosyllabic languages, it is not surprising to find classifiers for verbs, too, though it may not be appropriate to call them "classifiers".

In the Bê language,³⁰⁾ the citation form of the verb does not need any such constituents. But if one wants to describe an action as a specific, concrete one, he always needs a postverbal morpheme, unique to each verb, as in:

kon(eat) p'ia(rice) ?da(at)-?bak(mouth) 'eat(ing) rice (there/here/now)
 suan(sleep)-zeu(continuative) ?da(at)-leng(bed) 'sleep(ing) (there/here/now)
 ?dek(read) sek(book) ?da(at)-mo?(hand) 'read(ing) a book (there/here/now)'

Those postverbal phrases have already lost their cognitive meaning. This can be seen from the fact that ?da(at)-mo?(hand) has become a kind of neutral "classifier" and can be used for any verb which has nothing directly to do with hands. In other words, this is a kind of unique marker for verbs, just as the Mandarin *ko* is for nouns. The noun classifiers can also be used as measure words. Then what we normally regard as verbal measure words like the Mandarin *t'ang* in tsou(walk) *i(one)-t'ang(time?)*, *tun* in ma(scold) *i(one)-tun(time?)*, *hsia* in ta(hit) *i(one)-hsia(time?)*, etc. could be traces of the once flourished verbal "classifiers". They are nowadays used only as measure words, but since each verb takes a unique measure word (though the variety in the modern language is already much limited), they must have been more than mere measure words. Since verbs usually take object, complement, auxiliary verb, tense/aspect markers, etc., the VPs (verb phrases) as a whole tend to be polysyllabic. This must be the reason why verbs lost their "classifiers" much earlier than nouns in monosyllabic languages. The dialectal variants of Chinese also confirm this assumption, since the further south one goes, again the more variety one can find in the local dialects, as shown in Table 7.

Table 7

Word	'(open one) time'	'(hit one) time'
Shensi/Kansu	hui	tun
Sian	hui	tun
Chi-nan	hui	tun
Ch'eng-tu	hui	tun
Yang-chou	hui	tun
Soochow	chuan/t'ang	tun
Wenchow	hui	pien
Ch'ang-sha	hui	tun
Nan-ch'ang	hui	tun
Mei-hsien	pai	tun
Foochow	lun	hui
Ch'ao-chou	tsa	hsia
Cantonese	yün/t'ang	ts'an

5. Concluding remarks

We have examined the typological characteristics of the modern Chinese dialects in connection with the Altaic languages in the north and with the Tai languages in the south, and concluded that the Chinese language has been undergoing a consistent "Altaicization" since the very beginning of its history. This is also confirmed by evidence from historical documents. Without consideration of these surrounding languages, these typological diversities of the modern Chinese dialects must be hard to comprehend. We want to point out here how and where the lack of such a consideration has been distorting our linguistic analyses.

Charles N. Li and Sandra A. Thompson presented a very clear analysis and generalization on the word order change (in the present author's understanding, from the Tai type to the Altaic type), with the premise that "any change observed in Chinese word order must be originated internally", however.³¹⁾ Their justification for this presumption is that China had "the overwhelming dominance of civilization in pre-twentieth century Asia", and "such cultural dominance preclude the possibility of any external influence on Chinese". However, China has been under almost continuous "barbarian" rule—six out of the past ten centuries, for example. When a historian says the Chin dynasty was destroyed by the Mongolian, he does not mean that all the Tungusic people who once occupied the Central Plains were also exterminated. When the Republic of China toppled the Ch'ing dynasty, very few Manchu people were really kicked out from Peking. Then one will realize how misleading the ethnic labels like "Chinese", "Manchu", etc. are. When C.N. Li and S.A. Thompson talked about the Chinese of pre-twentieth century Asia, they were in fact talking about the Tungusic people, though they were Chinized to a great extent. Thus it is not true that the Chinese "cultural dominance precludes ... any external influence on Chinese". On the contrary, our study revealed some constant Altaicization in the

Table 8

I	p	t	k	Cantonese, Mei-hsien, etc.	m	n	ng	Cantonese, Mei-hsien, etc.
IIa	p	t	k	Ch'ao-chou	m	n	ng	Ch'ao-chou
IIb		t	k			n	ng	Peking, Sian, Chi-nan, Ch'eng-tu
III			k				ng	
IV			?				v ⁿ	
V			v				v	
VI			v	Peking, Sian, Chi-nan, Ch'eng-tu			v	

historical development of the Chinese language. Many points both C.N. Li and S.A. Thompson tried to justify should be reexamined from this viewpoint.

This kind of reexamination is particularly necessary for Matthew Chen's illuminating hypothesis of "latitudinal" reconstruction based exclusively on coexisting reflexes in related languages.³²⁾ While he saw a near parallelism between the change of syllable endings, nasal and stop, for Cantonese, Ch'ao-chou, etc. but neither for Peking nor for Sian, as can be seen from Table 8. If he had considered this "Altaicization", he would have arrived at much neater conclusions.

After examining the consonantal decay of the Tibeto-Burman languages, James A. Matisoff generalizes that:

the better-preserved the consonantal system, the fewer the vowels and the fewer the tones; the more vestigial the consonant system, the more proliferation of vowels and tones.³³⁾

We can immediately present counter-evidence. Shensi/Kansu has only 17 consonants and 3 tones, while Soochow still maintains as many as 21 consonants yet has 4—phonetically 7—tones; T'ai-yüan has also 17 consonants and 5 tones, while Shuang-feng still has 24 consonants yet manages to reduce its tone to 5.

It seems that all of the above-mentioned linguists tacitly assume that a family of languages presupposes that the languages belonging to the family (or group) have a more or less homogeneous, closed system. This is true with respect to many natural languages to some extent. We are, however, nowadays discovering more and more heterogeneous aspects, after achieving certain generalization on the deep syntactic structure. It is our conviction that the time has come for us to observe the reality of natural languages, and to uncover the underlying regularities of the linguistic structure without "idealizing" the natural languages.³⁴⁾ Noam A. Chomsky once stated that "insofar as attention is restricted to surface

structures, the most that can be expected is the discovery of statistical tendencies" in connection with the type of inquiry into the universals of language, carried out by people like Joseph H. Greenberg.³⁵⁾ However, we want to emphasize here that if we introduce the geographical dimension, we can come upon many more discoveries even though we limit our "attention to surface structures". Let us repeat that it is through the surface structure that more than one language come into contact, and that there is no "canned", "distilled" language in this world which has had absolutely no contact with others.

Notes

1. The present paper was prepared for the 8th Annual Meeting of the International Conference on Sino-Tibetan Language Studies and Linguistics at Berkeley on October 24-26, 1975.
2. Hence expressions like "Altaic linguistics", "Altaist", etc. for example.
3. M.J. Hashimoto 1974a, p.672.
4. For a recent popular exposition in English of this migration, see J. Edge 1973, p.20.
5. I have in mind several articles by W. A. Grootaers, P. L-M. Serruys, etc.
6. Wang Li 1950 and J. L. Norman 1970.
7. For further resemblance between these languages, see M.J. Hashimoto 1974a, pp.680-3. See in this connection Sören C. Egerod's very interesting remark, recorded as a comment on Paul Kratochvil's article (Inga-Lill Hansson 1971, p.34).
8. J.D. McCawley 1964.
9. The few exceptions being J.L. Norman & T.L. Mei 1970. M.J. Hashimoto 1974a, 1974b and 1975ab, and T.L. Mei & J.L. Norman 1975.
10. M.J. Hashimoto 1956, pp.70-272.
11. Hattori Shiroo & Yamamoto Kengo 1956.
12. E.J.A. Henderson 1964.
13. W.L. Ballard 1969 convincingly argues that the two distinct nasal endings /n/ and /ng/ can be construed for Proto-Wu, though phonemically we need only one nasal phoneme for most of the modern Wu dialects. For Ch'ao-chou, "n" represents nasalization of the preceding vowels, and "t" a glottal stop.
14. A.A. Dragunov 1952, p.52.
15. Yü Min 1949, p.320.
16. for convenience of identification, unless necessary, dialectal words in this paper are all given the corresponding Mandarin pronunciation in the Wade-Giles transcription.
17. A.A. Dragunov 1952, p. 50 and A.A. Kalimov 1955, p.79.
18. J.A. Matisoff's opinion expressed at the 7th Annual Meeting of the International Conference on Sino-Tibetan Language Studies and Linguistics, held in Atlanta on October 18-19, 1974.
19. The Min dialects adopt different word-formation for plural pronouns, of which we do not want to go into detail here.
20. Nishida Tatsuo 1973, p.438. For the syllabic /m/ of Tai, see John F. Hartmann: "Syllabic m in Tai-Lue and neighboring Tai dialects" (Paper read at the 7th Annual Meeting of the International Conference on Sino-Tibetan Language Studies and Linguistics, held in Atlanta on October 18-19, 1974).
21. Data collected by A. O. Yue during her field work in 1973, sponsored by the SSRC/ACLS.
22. Mandarin compound nouns with such word formation as N + CL (like *chih*(paper)-*chang*(classifier) 'paper', *ch'uan*(boat)-*chih*(classifier) 'ship', etc.) could be a trace of this ancient word order. For the similar word formation in Min, see Yüan Chia-hua *et al* 1960, pp.272 and 308.

23. A. O. Yue pointed this out to me.
24. Ts'en Ch'i-hsiang 1953, p.10.
25. The male-female distinction is extended to vegetation, too: mu(tree)-kua(melon)-kung(male) 'male quince' and mu(tree)-kua(melon)-na(female) 'female quince'.
26. M.J. Hashimoto 1974a, 1974b, 1975a and 1975b. See also W. Wang 1965, p.460.
27. Toodoo Akiyasu 1959, p.106.
28. The Chinese language lacks the type of relative pronoun many Indo-European languages have (except, perhaps, *so* in classical Chinese).
29. To say "transpose" here is merely for the convenience of synchronic description. For the exact linguistic mechanism that caused this "transposition", see C.N. Li and S.A. Thompson 1974a or Eric C. So's unpublished paper: "BA-construction and the V-final drift in Chinese" (1973).
30. The Bê data in this paper are all from my field notes, collected in 1973 during my field trip to the Far East.
31. C.N. Li. & S.A. Thompson 1974b.
32. M. Chen 1973.
33. J.A. Matisoff 1973, p.81.
34. Nishida Tatsuo suspects that the language spoken by the Chou people must have had a close tie with Tibeto-Burmese. See Nishida Tatsuo 1975.
35. N.A. Chomsky 1965, p.118; J.H. Greenberg 1963.

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ORIGIN OF THE EAST ASIAN LINGUISTIC STRUCTURE

Latitudinal transitions and longitudinal developments of East and Southeast Asian languages

Mantaro J. Hashimoto

Source: *Computational Analyses of Asian and African Languages* (National Inter-University Research Institute of Asian and African Languages and Cultures, Tokyo) 22, 1984, 35-41.

1. Introduction

The 18th to 19th century's view on the genealogy of human languages gave us the fixed idea, still very much prevalent and persistent among contemporary linguists, that there are at least three major groups of mutually unrelated languages in the East Asian continent – Altaic from the north, Sino-Tibetan in the middle and Austroasiatic in the south. Despite the strong belief, much enthusiasm, tireless efforts and repeated attempts, it still remains to be established that these groups constitute three language-families.

On the other hand, scholars in the field of East Asian linguistics are fully aware that regional variants of languages and dialects of the East Asian continent constitute a near perfect continuum of a transitional linguistic structure – not merely within each language group but also, in many respects, these languages as a whole. When we examine the structure of these languages and dialects in the context of this structural continuum, therefore, we come to face the most fundamental question to modern linguists: what is the notion of 'linguistic genealogy'?

2. In defiance of the monolithic myth

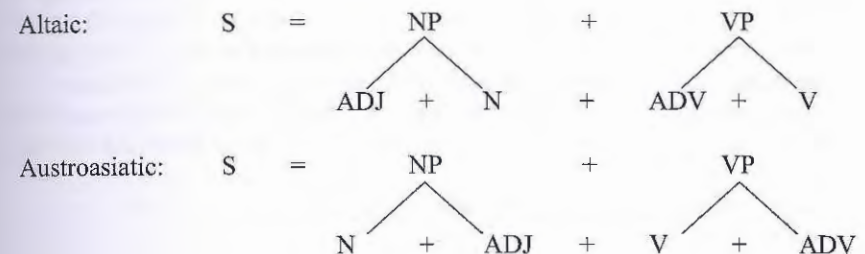
Take the Chinese language as an example. Despite its monolithic-looking label 'the Chinese language', this largest language in the Sino-Tibetan group is by no means as much homogeneous in its linguistic structure as this label implies.

Toward the northern end of its regional variety we find so many linguistic features in common with the Altaic group, while at its southern end no clear line really divides the Chinese and the Tai structure, phonological, morphological, syntactic or lexical.

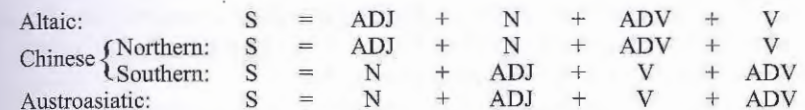
2.1 Tibetan being the middleman

Among numerous features in the syntactic structure of East Asian languages, we here choose the word-order of major sentential components in order to illustrate the heterogeneity, as word order constitutes one of the major syntactic means in the majority of those languages.

Let S stand for sentences, ADJ for adjectivals, N for nouns, ADV for adverbials (i.e. all the syntactic components concatenated with verbs, thus including not merely ordinary adverbs but also other components such as objects, complements, locatives, instrumentals, etc. etc.). Then the typical Altaic and Austroasiatic word-order can be summarized as follows:



To link these northern and southern extremities, the northern variety of modern Chinese dialects is dominated by the ADJ + N and ADV + V structure, while the southern variety maintains a lot of traces of N + ADJ and V + ADV structure. For example, 'raw fish' is sheng(raw) + yu(fish) in Peking, but yu(fish) + sang(raw) in Canton [though this Cantonese word is a kind of fossilized expression and nowadays means a dish, consisting of uncooked fishmeat fillets and hot rice-gruel poured on them]. Thus the above summary can be revised as follows:



The dividing line between the ADJ + N and N + ADJ groups of Chinese dialects is roughly the Yangtze River.

To make things more interesting, Tibetan, exactly reflecting its geographical location, comes between these north-south groups of Chinese and has the following structure:



In other words, the NP part shares the same structure with the southern group of Chinese, while the VP with the northern group. Thus the summary revised above should be rearranged as follows:

Altaic:	S	=	ADJ	+	N	+	ADV	+	V
Chinese: Northern:	S	=	ADJ	+	N	+	ADV	+	V
Tibetan:	S	=	N	+	ADJ	+	ADV	+	V
Chinese: Southern:	S	=	N	+	ADJ	+	V	+	ADV
Austroasiatic:	S	=	N	+	ADJ	+	V	+	ADV

2.2. "Une triste histoire" or "une histoire triste"?

Students of Chinese history will find the well-known problem of *gudai dao Zhuang* (inverted [word] order in the ancient times) extremely relevant here.

It has been well established by a series of typological surveys of the world languages that the ADJ + N languages place the PROPER NOUN before the COMMON NOUN¹) [thus, *Mao (Mao)* + *zhuxi* (chairman) 'Chairman *Mao*' in (northern) Chinese, while the N + ADJ languages place the same sentential components the other way round (thus, *le* + *president* + *DeGaulle* in French).

Incidentally, English is in this respect structurally very heterogeneous. In the fairly limited area of the same Pacific Northwest in the North American continent, they allow both:

Ozette Lake, *Wynoochee Lake*, *Sammamish Lake*, etc.

and:

Lake Crescent, *Lake Washington*, *Lake Chelan*, etc.

So, even those who were born in that corner sometimes find it awfully difficult to determine whether it was 'Lake Crescent' or 'Crescent Lake'.

Grammarians' ordinary excuse for this type of fluctuation in English is that the latter set represents the oppositional construction, while the former the attributive. The underlying principles related to this type of fluctuation is that the English language has the idiosyncrasy of allowing both ADJ + N and N + ADJ structures. In other words, the language places adjectivals after the head noun when the speaker found them (the adjectivals) too long, while maintaining them before the head nouns if they are short – or, strictly speaking, English has its adjectivals after their head nouns, but when and only when the adjectivals happen to be fairly short, the language places them before the head nouns. Thus,

"He solved the above-mentioned problems" [the hyphen should be there between 'above' and 'mentioned', otherwise the pretense that these two words constitute a single word will be lost, and the condition "short adjectivals" will be violated.]

but:

"He solved the problems mentioned above quite often and most enthusiastically." [If one is determined to place all of these adjectival words before the head noun, it is not impossible, though a pretense will be needed that these words in fact constitute a single component, thus having to hyphenate all of

them, like: "He solved the quite-often-and-most-enthusiastically-mentioned-above problems."]

To return to the problems of Chinese history, Yin-(Western) Zhou seems to be the turning point for ancient inverted (word) order. As listed in the *Ben-ji* of Sima Qian's *Historical Records*, names of Pre-Zhou rulers after the Yellow Emperor are, legendary or historical, all of the same word order: COMMON NOUN + PROPER NOUN. Thus,

Di (Emperor) *Yao(Yao)*

Di (Emperor) *Shun(Shun)*

Di (Emperor) *Jia(First Heavenly Stem)*

Di (Emperor) *Yi(Second Heavenly Stem)*, etc.

while Zhou and post-Zhou kings are all of the PROPER NOUN + COMMON NOUN order. Thus,

Wu(Wu) Wang(King)

Cheng(Cheng) Wang(King)

Kang(Kang) Wang(King)

Zhao(Zhao) Wang(King), etc.

Of paramount interest here is the use of Heavenly Stems for personal names as witnessed since the end of the legendary Xia dynasty and the beginning of Yin (around 1500 B.C.):

Zu(Grandfather) *Yi(Second Heavenly Stem)* "Grandfather Yi"

Fu(Father) *Ding(Fourth Heavenly Stem)* "Father Ding"

Bi(Deceased mother) *Jia(First Heavenly Stem)* "Deceased Mother Jia"

It is a fortunate coincidence that this type of heavenly stems' use for personal names revives, after almost ten centuries, in the State of Qi during the Spring and Autumn period (770–404 B.C.), where the offsprings of founder Tai-gong are all named with heavenly stems, but this time always having them before, not after, the common noun *gong* (duke):²)

Yi(Second Heavenly Stem) Gong(Duke) "Duke Yi"

Ding(Fourth Heavenly Stem) Gong(Duke) "Duke Ding"

Jia(First Heavenly Stem) Gong(Duke) "Duke Jia"

The exactly same trace of ancient word order can also be found with respect to place names. Thus, the modern place name:

Shang(Shang)-*qiu* (mound)

in Henan is:

Qiu (mound)-*shang(Shang)*

as it occurs in the oracle bone inscriptions.

Cheng (Town)-*pu(Pu)*

of the State of Wei during the Spring and Autumn period corresponds to modern:

Pu(Pu)-*cheng* (town)

of Shandong.

Doesn't it then occur to us that *Bo-yi* and *Shu-qi* of Yin should in fact be:

Yi(Eastern Barbarian)-*bo* (elder uncle or first brother)

Qi(Qi State)-*shu* (younger uncle or third brother)

respectively, if we are to attempt a modern translation to such proper nouns?

Most Asian historians agree that the social changes from Yin to Zhou constitute the turning point of the history of China, since we believe that the Han race as we know nowadays appeared in the history in this period. Prior to that, the Yin people seem to have already emerged as a people having the basic features of the Han race, judging from the fact, among others, that we find no fundamental discrepancy between the Zhou-Qin uses of xie-sheng characters and those in the oracle bone inscriptions. But that is something to be established in the future.

In any event, we believe that the NP part of the Chinese language underwent the change from the N + ADJ to ADJ + N structures in the very early part of the history and imperial names like Di(Emperor) Yao(Yao) or the Pre-Qin place names like Qiu(Mound)-Shang(Shang) are the last remnants of these older structures.

2.3. "Lisez-le" or "(Je) le lis"?

On the VP side, we find exactly the same type of regional transitions and historical changes.

The grammatical construction of the sentence "You are taller than him" in Peking and Canton can be contrasted as follows:

Peking: ni(You) + bi(than) + ta(him) + GAO(IS+TALL).

Canton: ney(you) + GO(IS+TALL) + guo(than) + koy(him).

where the main verb 'is tall' is capitalized just in order to make the two different placements of adverbials more conspicuous. This is an instance of comparative adverbials, but one can find the same contrast with respect to many other adverbials.

Exactly the same change can be observed in the history of the Chinese language. The famous phrase from one of the Chinese classics:

Wu(Wu army) + BAI(DEFEATED) + yue(Yue army) + yu(at) + fujiao(Fujiao).

"The Wu army defeated the Yue army in Fujiao."

can be translated into modern (northern) Chinese as follows:

Wu(Wu) + jun(army) + zai(at) + fujiao(Fujiao) + ba(accusative) + yue(Yue) + jun(army) + DA(HIT) + BAI(DEFEATED) + le(perfective).

where we find what was previously before the verb all transferred to the post verbal position. This change on the VP side seems to have followed that on the NP side and took place in our historical times.

It seems that, when a language undergoes word-order changes of this sort, its NP's undergo first, and VP's seem to follow the same track, just like English lost practically all the former inflections of nouns, but verbs still maintain some trace of their older inflection system.³⁾

The same type of south-to-north transitions, paralleled by the ancient-to-modern changes can be observed in practically every aspect of the linguistic structure of East Asian languages. To list a few of them:

1. General structure: Monosyllabic, isolating languages in the south, exemplified by numerous Tai languages and dialects and some of the Austroasiatic languages, are contrasted to the polysyllabic, agglutinative languages of the

Altaic group in the north. Interlinking these two groups, modern Chinese dialects show a beautiful transition from the monosyllabic, postpositionless southern group to the polysyllabic, postpositional northern group. The polysyllabicization of some of the basic words whose number sharply increases as we move to the north, is truly remarkable, exactly paralleled by the ancient to modern changes in Chinese. To cite a few nouns for body parts:

	Ancient Chinese	Cantonese	Pekinese
'head'	shou	tau-hok	nao-dai-gua-r
'forehead'	(ng)e	ngak-tau	nao-men-zi
'finger'	zhi	shau-chi	shou-zhi-tou-r
'knee'	xi	shi-tau-go	bo-leng-gai-r

But between Cantonese and Pekinese, there is still a very sharp contrast of monosyllabism and polysyllabism, as shown below:

	Cantonese	Pekinese
'eye'	ngan	yan-jing
'tongue'	lei	shou-tou
'neck'	geng	bo-zi

2. Sound system: Numerous Tai and Miao-Yao languages in the south maintain 10 to 15 tones, contrasted to only three or at most four syllabic intonations in some Altaic languages in the north. Placed between these two extremities, a Chinese dialect spoken in Guangxi at the southern end of the Chinese speaking territory, distinguishes 10 tones,⁴⁾ while up in the north in Ningxia a dialect is reported to have only three tones.⁵⁾ Between these two, again, we find a gradual decrease of tones from the south to the north.

If we count those tonal distinctions due to the voicing of initial consonants, Ancient Chinese should have maintained a system containing at least 8 tones, which is now reduced to 4 in modern standard Chinese.

3. Prosody: Because of its non-alphabetic writing system, we have no way of determining the precise nature of ancient Chinese prosodic features. But judging from the use of Chinese characters, we have very good reasons to believe that ancient Chinese was a typical isolating language, just as we nowadays find at and beyond the southern end of the Chinese-speaking territory.

It is hard to believe that a language could be purely monosyllabic and isolating, as this implies that sentences in the language remain to be mere successions of monosyllabic words, with no other elements marking boundaries of phonemic phrases. Without such marks, it is not easy to decipher [or 'parse'] the hierarchical structures underlying any sentence of any language. It has been assumed by some linguists that in typical isolating languages like Thai or Cantonese, rhythm of each sentence gives us the clue for this kind of parsing. This immediately reminds us that what was most valued in composing fine sentences in ancient China was to maintain its rhythm, like successions of four syllable phrases, or five which, in turn, could be subdivided into three plus two or two plus three. As a clue to this division into

four or five syllable phrases, abundant use of antitheses can be found in any fine sentences. Thus, for example, a succession of words with absolutely no declension or concord:

qing(blue) + shan(mountain) + heng(lay) + bei(north) + guo(suburb) + bai(white) + shui(river) + rao(surround) + dong(eastern) + cheng(town).....

can be first divided into two between the fifth word, guo(suburb), and the sixth word, bai (white), as it is easy to see the first word, qing(blue), is contrasted with the sixth word, bai (white); so is the second word, shan(mountain), with the seventh word, shui(river), etc. etc. A close structural tie between ancient Chinese and modern dialects of Chinese in the south is unmistakable.

As we move to the north, we notice a gradual overlapping of the stress accent on Chinese phonemic phrases. In Amoy, one step north from Canton, we already detect that the end of each phonemic phrase loses its prominence and receives certain tonal modification. One more step up to the north, in Shanghai, we find the tone in the initial syllable dominating tones of any other syllable within each phonemic phrase. Further up in the north in Pekinese any phonetic configuration of tones is strictly conditioned by the stress accent overlapping on each word, and the overwhelming majority of single word stress is of the initial stress pattern — the exact replica assumed for proto-Altaiic by Nicholas N. Poppe.⁶)

3. Conclusion

In the preceding section, we have seen, taking the Chinese language as an example, toward the northern end of its regional variety we find so many features in common with the Altaic group, while in its southern end no clear line divides the Chinese from the Tai structure, phonological, morphological, syntactic or lexical.

It is the genealogical position of a language that we are truly concerned with here, not a mere grouping or subgrouping of existing languages. If such a position is not something to be predetermined by its speakers' existence in this word as an ethnic group, as large as a nation or as small as a minority group of a few hundred within a multi-ethnic society, we then have to come to an absurd conclusion that there does not exist a unique linguistic structure to be characterized as Chinese, just as we have to conclude that what does exist there are 'blue' and 'yellow', when we are given the color continuum from 'blue' to 'yellow' through 'green', and asked about its genealogical constituents.

Needless to say that it is totally absurd to question the very existence of the Chinese language — it is there in the East Asian continent, having a speakers' population perhaps larger than any other language and having a history, comparable to that of Indo-European.

It is truly intriguing here what these regional transition [latitudinal developments] and these historical evolutions [longitudinal developments] imply. If these structural developments along these two mutually independent axes coincide as a whole if not in minute details, we have to conclude that the proto-type of the the

East Asian linguistic structure must be nothing but the a) monosyllabic, b) isolating, c) N + ADJ, V + ADV structure. Then in so far as the linguistic structure is concerned, the East Asian languages must have come from the south, definitely not from the north, judging from the contemporary distribution of linguistic types in the continent.

In view of the recent developments in the archaeological and anthropological studies on East and Southeast Asia, this conclusion from the field of linguistics should be extremely intriguing to anybody in the field of East and Southeast Asian studies. We feel a greater need for closer cooperation between linguists and anthropologists-archaeologists, or specialists in any field of social sciences for that matter.

Notes

1. Greenberg 1963, p. 89. This study is supported by the Japan Society for the Promotion of Sciences with its travel and research grant for specific countries for the academic year 1982-1983.
2. Tooodoo 1959, p. 109.
3. Bever-Langendoen 1972.
4. Wang 1932.
5. Gao 1983.
6. Poppe 1965, pp. 180-181.

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SOME OLD CHINESE LOAN WORDS IN THE TAI LANGUAGES

Li Fang-kuei

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In recent years the reconstruction of Archaic Chinese,¹ roughly of the *Shih-ching* period, has progressed far enough to allow us to seek some confirmation of the results in the cognate languages such as Tibetan and Siamese. The study of the *Shih-ching* rimes, of phonetic compounds, and of phonetic loans has enabled us to determine with increasing confidence the phonological system of Archaic Chinese, but there are still many difficult problems which cannot be solved satisfactorily from the Chinese sources alone. We are justified to expect that the comparative study of the Sino-Tibetan Languages will help us to disentangle some of the problems and will confirm some of the results already obtained. Walter Simon's *Tibetisch-chinesische Wortgleichungen* (Berlin 1930) is an attempt along this line. Unfortunately our knowledge of the Tibeto-Burman phonology and morphology remains meagre, and in spite of the abundant comparative data gathered by earlier as well as recent authors, we still cannot apply standards demanded by the more rigorous methods of a modern philologist.²

Another line of attack would be the study of loan words. It does not matter whether it is Chinese loan words in other languages or words borrowed from other languages into Chinese. If they are sufficiently old, they will throw light upon our reconstructions, and, as we shall see later, arouse interesting problems. In this study we shall confine ourselves to a limited number of Chinese loan words in the Tai languages.

As the Tai group of languages is generally recognized to be related to Chinese, extreme care must be exercised in selecting words that are surely loans. There are many words which may be considered either as loans or as cognate words.³ Failure to distinguish them in our study may give rise to hopeless confusion in our results. As the comparative study of Chinese and Tai has hardly begun, we have no phonological criterion to discriminate loans from cognate words as we have, for instance, in the Indo-European languages. For this reason a series of cyclic terms, namely *ti-chih* 地支, is chosen which appears in the earliest Chinese inscriptions (2nd millennium

B. C.) and which is still found in use in some Tai languages. The advantage of these terms is that, being highly specialized cultural terms, they are definitely loans, and, being a series of terms, they are homogeneous in regard to the date of the loan.

The meaning of the cyclic terms, both *t'ien-kan* 天干 and *ti-chih* 地支, is practically unknown. As early as the Han dynasty there were philosophical speculations about their meanings, usually by way of paronomastic definitions, e. g., *shên* defined as *shên* 申身也. Such seems to be the fashion of explaining characters, particularly in the work *Shih-ming* 釋名, and it is a method adopted by most authors of that period to explain characters whose meaning is obscure, like the cyclic terms. It is evident that such explanations cannot be relied upon, but, if used with care, may be utilized to a certain extent in determining the pronunciation of the cyclic terms in that period.

The cyclic terms were used in the earliest inscriptions, the oracle bones of the Yin dynasty, chiefly to name and to enumerate days. Later, they were also used to enumerate years. In the Dìoi 仲家 dialects of Kweichow, *ti-chih* are still the only words used to enumerate days and have the important function of determining the market dates and occasionally of giving names to villages where such markets take place. *T'ien-kan* are not so used, though known undoubtedly to the more sophisticated natives. The Chinese in Kweichow, having as elsewhere associated the cyclic terms with the twelve animals, ordinarily denote market dates by animal names, such as dragon-market day 龍場天, ox-market day 牛場天, etc., and we have many place names derived therefrom. The Dìoi do not seem to associate the dates with the animal names, although they know perfectly well from the Chinese the animals corresponding to the twelve cyclic terms.

Ahom, an extinct Tai language of Assam, Lao of Indo-China, and Lü of Yunnan employ also the cyclic terms to enumerate years, but no longer use them to denote days. They use both *t'ien-kan* and *ti-chih*. The *t'ien-kan* terms seem to be so different from the Chinese that their origin remains doubtful, and therefore they are not included in this study. The *ti-chih* terms bear a close resemblance to the Chinese forms.

In the following list the twelve *ti-chih* terms are chosen from Chinese, Ahom, Lü and Dìoi.⁴ The Lao forms are omitted because they seem to come from a dialect slightly different from the main body of the dictionary of Guignard, and for this reason we have no control over their phonology and tones. They do not seem to differ from the Ahom and the Lü forms.

Animal	Anc. Ch.	Arc. Ch.	Ahom	Lü	Dìoi	
1. 子 rat	'tsi	tsjəg	cheu	teai ³	chaeu ³	[faə]
2. 丑 ox	't'jəu	t'njòg	plāo	pau ³	piaou ³	[piau]
3. 寅 tiger	'jēn	djən	ngi	ji ²	gnien ²	[nien]
4. 卯 hare	'mau	mlòg	māo	mau ³	maou ³	[mau]
5. 辰 dragon	'zjēn	djən	shi	si ¹	chi ²	[ji]
6. 巳 snake	'zi	dzjəg	sheu	sai ³	seu ³	[sə]
7. 午 horse	'nguo	ngo	shi-ngā	sa-ŋa ⁴	sa ₃	[sa]
8. 未 goat	mjwēi'	mjwəd	mut	met ⁶	fat ₄	[fat]
9. 申 ape	'sjēn	sjēn	shān	san ¹	san ¹	[san]
10. 酉 cock	'jəu	zjòg	rāo	hrau ⁶	thou ₃	[əu]

11.	戌 dog	sjuēt.	(?)	mit	set ⁵	seut ¹	[sət]
12.	亥 pig	'yâi	g'æg	keu	kai ⁶	kaeu ₃	[kəə]

Tone correspondences

The tone-classes of Archaic Chinese are largely unknown. The Ahom tones are not recorded, although they must have existed. We therefore can only compare the tones of Lü and Dioi with the Ancient Chinese tone-classes. Lü has six tones indicated by numerals after the forms quoted: (1) a high tone slightly rising at the end, (2) a low falling tone, (3) a low rising tone, (4) a half-low level tone, (5) a mid-rising tone, and (6) a mid-level tone. Dioi has seven tones indicated according to the dictionary by either raised or subscribed numerals: *a'* a high tone, *a*, a middle tone, *a²* a low and long tone, *a³* a high falling tone, *a₃* a low falling tone, *a⁴* a rising tone, and *a⁵* a low and short tone (rare).

In Ancient Chinese there are four tone-classes indicated here according to the old Chinese system of making little half circles at the four corners of the character: 'a *p'ing-shêng*, 'a *shang-shêng*, 'a *ch'ü-shêng*, and 'a *ju-shêng*. The *ju-shêng* is strictly speaking not a tone-class, but a special class of words which end in a final stop consonant. All such words have only one tone, which the old Chinese phonologists did not associate with any of the other three tones. Thus, a syllable *tan* may have three tones, *p'ing*, *shang*, or *ch'ü*, but the syllable *tat* may have only one tone, which is then taken as a special tone-class. The development of these four tone-classes in the modern Chinese dialects is a complicated affair, but the initial consonant, especially as regards its *manner* of articulation, has a dominating influence on the development: the tone developing in one way with voiceless initials and another with voiced initials, one way with unaspirated surds, another with aspirated surds, one way with nasals, another with fricatives, etc., etc.

In the Tai languages we have almost an identical situation.⁵ The Primitive Tai may also be said to have four tone-classes, if we follow the Chinese tradition of considering the syllables ending in a stop consonant as a special class. These four tone-classes are later differentiated into various tones, chiefly depending on the nature of the initial consonant. If we indicate the four classes in Tai by A, B, C, and D, followed by numeral 1 or 2 which we employ to denote respectively the development of tone from a voiceless or a voiced initial, we shall get the following correspondences as exemplified by the cyclic terms.

(Anc.) Chinese		Lü	Dioi	Examples
<i>p'ing-shêng</i>	{ voiceless	A1	A1	申 No. 9
	{ voiced	A2	A2	寅 No. 3
<i>shang-shêng</i>	{ voiceless	C1	C1	子丑 Nos. 1, 2
	{ voiced	C2	C2	午酉亥 Nos. 7, 10, 12
<i>ch'ü-shêng</i>	{ voiceless	D2	D2	未 No. 8
	{ voiced			
<i>ju-shêng</i>	{ voiceless	D1	D1	戎 No. 11
	{ voiced			

No. 5 辰 with a voiced initial in Chinese should be A2 in Lü as well as in Dioi, but is A1 in Lü; Nos. 4 卯 and 6 巳 with a voiced initial should be C2, but are C1 in both Lü and Dioi; in No. 8 the final *-d*, dropped in Ancient Chinese, is represented by *-t* in the Tai languages, and the tone is therefore represented by D2 instead of B2. It is clear that the variances in tonal correspondence consist chiefly in a few voiced initials in Chinese which are treated, as revealed by the tone, as voiceless in the Tai languages; otherwise the correspondences are exact. The forms *met*, *fat* (No. 8) are of particular interest, because the Archaic Chinese form *miwəd* is reconstructed purely on circumstantial evidence. The final *-d* is not supported by any direct riming with *-t* in *Shih-ching*, nor supported by any phonetic compounds in *-t*. Here the Tai forms with *-t* definitely confirm the Archaic reconstruction.

Initials

The correspondences among the initials are far more complicated than among the tones. Even in Archaic Chinese we are much less confident about our initials in our reconstructions than we are about our finals, and the Tai forms here give rise to a number of questions we are not able as yet to solve. We shall comment on the initials one by one.

1. Anc. Ch. *ts-* (<Arc. *ts-*) is represented by Ahom *ch-* and Lü *tc-*. As there are no dental but palatalized affricatives in Ahom and Lü and there is probably only one series of affricates in the Primitive Tai period, the Tai forms here give no difficulty. Dioi *ch-* is a fricative, regularly representing all Tai affricates; there are no affricates in Dioi except in a few Chinese loan words and in a few cases where they are the results of palatalization of *k-* (written in the dictionary as *ki-*).
2. Anc. Ch. *t'-* is represented here by Ahom *pl-*, Lü *p-* and Dioi *pi-*, which all point to a Primitive Tai *pl-*. This suggests for Anc. Ch. *t'-* an altogether different origin from the *t'n-* as reconstructed by Karlgren from Chinese sources alone.
3. Anc. Ch. *(i)-* (<Arc. *d(i)-*) is represented by Ahom *ng-*, Lü *j-*, and Dioi *gn-*, which all seem to point back to a Primitive Tai palatalized nasal. If this is a good representation of Arc. *d(i)-*, it means probably that the Archaic unaspirated *d-* must have a good deal of nasal quality, possibly something like *nd-*.
4. Anc. Ch. *m-* (<Arc. *ml-*) is here represented by *m-* in all three languages. As Ahom regularly preserves an initial cluster such as *ml-*, and as we also expect a trace of it in Dioi (cf. No. 2, where the *-l-* is vocalized into *-i-*), the Archaic form *ml-* is extremely doubtful, unless we can show that *ml-*, different from *pl-*, had been simplified into *m-* before it was loaned into the Tai languages. Furthermore the tone in both languages where tones are known to us indicates a 'voiceless initial.'⁶
5. Anc. Ch. *z-* is represented by Ahom *sh-*, Lü *s-*, and Dioi *ch-*, which do not seem to tally well with the Archaic reconstruction *z'*. Lü *s-*, as indicated

by the tone, points back to a voiceless sibilant, while Dioi *ch-* points back to a voiced affricative. An exact parallel is found in the numeral "ten," Anc. Ch. *zjəp* (<Arc. *đjəp*), Ahom *ship*, Lü *sip*¹, Dioi *chip*₁, and in the word "well-cooked," Anc. Ch. *zjuk* (<Arc. *đjók*), Lü *suk*¹, Dioi *chouk*₁, where the tone of Lü is again that of a voiceless initial and the tone of Dioi that of a voiced. Of course the two words may be true Tai words and not loans from Chinese, but if the parallel is not accidental we may expect that Anc. Ch. *z-* and its cognate form in Tai differ from the other voiced initials in their influence on tone in Lü and in some other Tai languages such as Siamese, Lao, Shan, etc.

6. Anc. Ch. *z-* (<Arc. *dz-*) is represented by Ahom *sh-* and Lü, Dioi *s-*. As the Primitive Tai *z-* is unvoiced into Ahom *sh-* and Lü, Dioi *s-*, the forms here agree with the Anc. Chinese *z-*, rather than with the Arc. *dz-*. The tone, however, indicates a development from a voiceless initial.
7. Here forms *shi-nga*, *sa-ŋa*, and *sa* all point back not to a simple guttural nasal but to a compound initial somewhat like *zŋ-* (not *sŋ-* which would give us a different set of tones according to tone rules in Tai⁷).
8. Anc. Ch. *m-* is represented here by Ahom, Lü *m-* and Dioi *f-*. The Dioi form may indicate a labio-dental nasal at the time of the loan, but more probably it is a separate development in Dioi, for some strictly Tai words have gone through the same process, for example, Lü *mu* "hand," Dioi *feung*; Lü *mai* "tree," Dioi *fai* (also *mai*).
9. Anc. Ch. *s-* is represented by Ahom *sh-* and Lü, Dioi *s-*, which all point back to a Primitive Tai *s-* (there is no distinction of *s-* and *s'-* in Prim. Tai).
10. Anc. Ch. (*j*) - (<Arc. *z(j)-*) is represented here by Ahom *r-*, Lü *hr-*, and Dioi *th-*, which all point back to a Primitive Tai *r-*. It is significant that Karlgren has reconstructed for the same Anc. Ch. (*j*)- two Arc. initials *d(j)-* (cf. No. 3) and *z(j)-*. The forms here point to the fact that the *z-* was already sounded like an *r-*, for otherwise it would be represented by Ahom *sh-* and Lü, Dioi *s-*. The Han scholars explain this cyclic character by 老 *lâu* (*Shih-chi*, *Lü-shu* 史記、律書 and *Pai-hu-t'ung*, *Wu-hsing* 白虎通、五行) and by 留 *liəu* (*Han-shu*, *Lü-li-chih* 漢書、律歷志), showing that characters with a liquid *l-* were close enough in sound to serve as explanations.
11. Anc. Ch. *s-* is here represented by Ahom *m-* and Lü, Dioi *s-*. It is plain that the Anc. Ch. *s-* cannot be the original initial, for that leaves the Ahom *m-* inexplicable. The Han scholars explain this cyclic character by 滅 *mjät* (*Shih-chi*, *Lü-shu* and *Pai-hu-t'ung*, *Wu-hsing*) and it has as phonetic compounds 威 *xjwät* and 滅 *mjät* (ordinarily not recognized as having 戎 as their phonetic). All these seem to indicate a compound initial, possibly *sm-* from which Ahom *m-* and Lü, Dioi *s-* may be derived.
12. Anc. Ch. *ɣ-* (<Arc. *g'-*) is represented by *k-* in all three languages. The Tai *k-* seems to agree more with the Arc. *g'-* than with the later Anc. Ch. *ɣ-*, for Primitive Tai *ɣ-* gives *k-* in Ahom and Lü but *h-* in Dioi, while Primitive Tai *g-* gives *k-* in all three languages. For example, Ahom *kān* 'a pole for carrying

a burden,' Lü *ka:n*², Dioi *han*² (from Prim. Tai *ɣ-*); Lü *ku*⁶ 'a pair,' Dioi *kou*₁ (from Prim. Tai *g-*).

Finals

In Chinese phonology the final consists of a medial element, *i*, *u*, or *w*, a main vowel or diphthong, and a final consonant. A glance at the Tai forms shows us that the medial element is completely left out, although we may detect here and there some influence of it on the initial or the vowel. For instance, Ahom *mut* (Arc. Ch. *mjwəd*) shows a *u* vowel which is probably due to the influence of the medial *-w-*, and the Dioi *fat* has an initial *f-* due to the following medial *-jw-* which caused the *m-* to become first a labio-dental, and then unvoiced into *f-*.

As to the final consonant, Anc. Ch. and Arc. *-t* is preserved in the Tai forms, and Arc. *-d*, which is lost in Anc. Chinese, is still preserved as *-t* in the Tai languages. This is an Archaic feature. Final *-n* is sometimes preserved and sometimes lost in the Tai languages for reasons we cannot quite understand. No. 3 *jěn* has an alternate reading *i* (<Arc. *đjər*) which might explain the Ahom *ngi* and Lü *ji*; and we may assume an alternate reading *zi* (<Arc. *đjər*) for No. 5 *ziěn* to explain Ahom *shi*, Lü *si*, and Dioi *chi*, although such a reading is not recorded in ancient dictionaries. But still such alternation of *-r* and *-n* in the same word in Archaic Chinese does not seem to be a purely phonological but rather a morphological problem for which we need further elucidation. The final *-g* which we have reconstructed in Archaic Chinese is nowhere confirmed in the Tai forms, although there are strong indications in Chinese, i. e. 亥 *ɣai* is phonetic in 劬 *k'ək*, 劬 *ɣək*, etc. We may assume then the *-g*, unlike the *-d*, disappeared or was on the point of disappearing when these terms were borrowed in the Tai languages.

While the dropping of *-g* in the Tai forms seems to indicate that the loans were made in a later period than the one for which our Archaic forms are reconstructed, there seems to be closer correspondence with the Archaic as a whole than with the Ancient Chinese forms. If we start from the Ancient Chinese, it is difficult to explain how Anc. Ch. *-i* and *-ai* can be represented by such divergent forms as Ahom *-eu*, Lü *-ai*, and Dioi *-aeu*, *-eu*. On the other hand the Archaic *-əg*, *-jəg* will give us first *-əɣ*, *-iəɣ*, and then *-əu*, *-jəu* (*-u*, being unrounded *-u*, is very close to *-ɣ* acoustically and in tongue position) which are probably the Primitive Tai forms from which Ahom *-eu*, Lü *-ai*, and Dioi *-aeu*, *-eu* are derived. Similarly Ahom *-āo*, Lü *-au*, and Dioi *-aou*, *-ou* may be derived from *-ōu*, *-jōu* (from *-oɣ*, *-ioɣ* < Arc. *-ōg*, *-jōg*), rather than from Anc. Chinese *-au*, *-jəu*; for Anc. Ch. *-au* would give us Lü *-a:u* instead of *-au*, and Dioi *-ao* instead of *-aou*.

If the forms Ahom *ngi* and Lü *ji* correspond to Anc. Ch. *i* (<Arc. *đjər*), they indicate that Arc. *-iər* first becomes *-jəi* from which the Tai forms are derived. Notice the great difference in the development of Anc. Ch. *i* (<Arc. *-iəg*).

The vowel *-a* in Ahom *shi-nga*, Lü *sa-ŋa*, and Dioi *sa* is the regular correspondence for Anc. Ch. *-uo*, Arc. *-o*, for example, Anc. Ch. *nguo* 'five,' Ahom, Lü, and Dioi *ha*; Anc. Ch. *nuo* 'cross-bow,' Dioi *na*, etc. These words may however be cognates to rather than loans from Chinese.

The rest of the finals needs no comment, for we cannot as yet go very thoroughly into the strict rules of correspondence on account of the limited material at our disposal.

Conclusion

From the preceding it seems clear that the Tai forms show many Archaic features, such as the preservation of the final *-d* (No. 8 未), the indication of compound initials such as *pl-*, *zŋ-*, *sm-* (Nos. 2 丑, 7午, 11戌), and the general development of finals. It is certain that these cyclic terms could not have been loaned later than the period of Ancient Chinese (6th century). While the dropping of the final *-g* may indicate that the borrowing was later than the period of Archaic Chinese, we cannot exclude the possibility that there may be parallel development in Tai resulting also in the dropping of *-g*, and therefore the borrowing may have been contemporaneous with Archaic Chinese. It is hoped that when we have more data about the phonology of the transitional period from Archaic Chinese to Ancient Chinese, particularly of the late Chou, Ch'in, and early Han times, we may be able to determine with more precision the date of the borrowing.

Notes

1. Cf. B. Karlgren, *Analytic Dictionary of Chinese and Sino-Japanese*, Paris, 1923, Introduction, pp. 1-33.
B. Karlgren, Problems in Archaic Chinese, *JRAS*, 1928, pp. 769-813.
B. Karlgren, Shi-king Researches, *BMFEA* 4, Stockholm, 1932, pp. 117-185.
B. Karlgren, Word Families in Chinese, *ibid.* No. 5, 1934, pp. 9-120.
B. Karlgren, Grammata Serica, *ibid.* No. 12, 1940.
W. Simon, Zur Rekonstruktion der altchinesischen Endkonsonanten, *MSOS*, Berlin, Bd. 30, 31, 1928, 1929.
F. K. Li, Sources of Ancient Chinese Vowel *a*, *CYYY* 3, pt. 1, 1931, pp. 1-38.
F. K. Li, Ancient Chinese *-ung*, *-uk*, *-uong*, *-uok*, etc. in Archaic Chinese, *ibid.* 3, pt. 3, 1933, pp. 375-414.
F. K. Li, Archaic Chinese *-jwəŋ*, *-jwəg*, and *-jwək*, *ibid.* 5, pt. 1, 1935, pp. 65-74.
2. Cf. B. Karlgren, Tibetan and Chinese, *TP* 28, 1931, pp. 1-46.
3. Cf. F. K. Li, *The Tai Dialect of Lungchow*, Shanghai, 1940, p. 20.
4. For the Chinese forms both Ancient Chinese and Archaic Chinese are given according to Karlgren's recent work *Grammata Serica*. Although I do not agree with him in many details of reconstruction, his formulae can serve as a good starting point for our discussion.

The Ahom forms are given in their original transcription from Borua, *Ahom-Assamese-English Dictionary*, Calcutta, 1920. The transcription is an adaption to the English orthography.

The Dioi forms are given in their original orthography from Jos. Esquirol et Gust. Williate, *Essai de Dictionnaire Dioi-Français*, Hongkong, 1908, p. xxviii. As the orthography follows the French, an approximate transcription in phonetic alphabet is given in brackets after the quoted forms.

The Lü forms are my own, gathered in 1936-7 from a native of Chieng-tung 整董, Yunnan.

The Lao forms can be found in T. Guignard, *Dictionnaire Lao-tien Français*, Hongkong, 1912, p. xlix (not quoted in this study).

5. Cf. H. Maspero, Contribution a l'étude phonétique des langues Tai, *BEFEO* 11, 153-169.
K. Wulff, *Chinesisch und Tai*, København, 1934, pp. 123-166.
F. K. Li, A Hypothesis of a Series of Pre-glottalized Consonants in Primitive Tai, *CYYY* 11, pt. 2, 1943, §9-14.
6. When we say that the tone indicates a voiceless initial, it simply means that it is a tone ordinarily developed from a voiceless initial. Under special conditions a voiceless initial may give a tone similar to that of a voiced initial and vice versa, cf. Li, *op. cit.*, §9-14.
7. Cf. Li, *op. cit.*, §6.

SINO-TAI

Fang-kuei Li

Source: *Computational Analyses of Asian and African Languages* (National Inter-University Research Institute of Asian and African Languages and Cultures, Tokyo) 3, 1976, 39-48.

The purpose of this paper is an examination of a number of lexical items which have been suggested or are now being suggested to be related to Chinese. The problem of proving these items to be Chinese loans to Tai or Tai loans to Chinese, or to be otherwise related is a difficult one. The vocabulary of a proto-language may be established by selecting those words which are wide spread in the different languages and dialects. By using this method we may be fairly certain that these words existed in the proto-language. Nevertheless it is quite possible that some items may spread through a wide area in fairly recent times without being in the proto-language, and some isolated forms in one or two obscure dialects may be old relics. Furthermore items that can be thus established to have existed in the proto-language may still be loans from one source to another, but we know so little about the character and sources of a proto-vocabulary that we have to leave these problems open.

In my study of Chinese loan words in Lungchow (1940) and Wu-ming (1956), two Tai dialects in Kwang sai, a distinction is made between words which show regular correspondence among the different Tai languages, but show phonological discrepancy with Chinese forms, and words which disagree with those in the Tai languages, but agree with the Chinese forms. For instance, Lungchow kau B1 'old, ancient' has regular correspondences in all Tai dialects, showing an original voiceless velar initial, but the form kau B2, with a different tone, differs from other Tai dialects, but agrees with the Chinese forms, Mandarin chiu, Cantonese kau, etc., which all show a development from an Archaic Chinese voiced velar initial. It can be demonstrated that the latter form is a loan from Chinese, because it is used only in certain stereotyped Chinese phrases such as jiin kau (仍舊) 'as before'. I tentatively accept that the former form is a real Tai word in the Proto-Tai vocabulary, but not the latter form. For one who believes that the former word must be also a loan from Chinese, albeit irregular, I can see no reason to support the fact that a voiceless initial is substituted in Tai for the voiced one in Chinese,

since Proto-Tai had also a corresponding voiced consonant. Other irregularities in consonants or tones appear also in the following list, and words showing such irregularities can only be lamely accepted as loans.

The comparison of Chinese and Tai is as complicated as that of Chinese and Tibetan. While the genetic relationship of Chinese and Tibetan is generally accepted, at least, as a working hypothesis, the relation of Chinese and Tai is assumed to be that of borrowing by some scholars. It seems to me that the problem should be examined without prejudice. This is not to deny the eventual genetic relationship of Tai with other family of languages, such as Austronesian or Austroasiatic, but rather to offer some material for the consideration of Sino-Tai relationship. It does not merely consists of typological similarities such as the tone system and the syllabic structure.

The Tai forms are chiefly quoted from Siamese and given the Proto-Tai reconstruction of the initial, with the proper tone marks used in the reconstructed tone system of the Proto-Tai such as A1, A2, B1, B2, C1, C2, D1S, D2S, D1L, and D2L. We recognize four tone classes in Proto-Tai, A, B, C, and D and each is followed by the numeral 1 or 2 indicating the high or low register (Li, 1966). The Chinese forms are usually common words or words attested in old texts, or at least given in old dictionaries, followed by their Archaic Chinese reconstructions according to the system proposed by me in 1971. We recognize also four tone classes in Archaic Chinese, generally known to sinologists as p'ing, shang, ch'ü, and ju. The p'ing is not marked, the shang is marked by the letter x at the end of the reconstructed form, the ch'ü by the letter h at the end, and the ju by the final consonant -p, -t, or -k. Occasionally Tibetan forms are appended to show possible relationships.

I shall give, first, some comparisons which show regular correspondence between Tai and Chinese in their finals (vowel + final consonants), and then to the more complicated correspondence in the initial consonants. For example:

- Siam. thoŋ < *d- C2 'stomach': Ch. 肚 tu < *dagx 'stomach' also
< *tagx 'animal's stomach used as food': cf.
Tib. Ito-ba 'belly, stomach'.
Siam. noŋ < *n- C2 'younger sibling': Ch. 孀 nu < *nag 'wife and children';
cf. Tib. nu-bo 'a man's younger brother' and
nu-mo 'younger sister of a female'.
Siam. kloŋ < *kl- A1 'drum': Ch. 鼓 ku < *kagx < **klagx; cf. Tib. skrog-
pa 'to beat the drum' and 'khrol-ba, dkrol,
khrol 'tq cause to sound, to beat a gong'.
Siam. poŋ < *p- C1 'to protect, cover up': Ch. 補 pu < *pagx 'to mend,
repair, assist'.

If these etymologies are acceptable, it does not seem that they are loans. The general assumption that Tai words, that can be related to Chinese, usually form a series or a group of certain semantic or cultural area, such as the numerals, commerce, etc., and are likely due to borrowing cannot be maintained here. In

the examples above, we have a body part, a kinship term, a common noun, and a common verb.

There is another set of correspondences which show Tai * -aa and Archaic Chinese * -ag, namely:

Siam. thaa < *d- B2 'wharf', landing'. This word has regularly the meaning 'river' in most other Tai languages: Ch. 途 *tu < *dagh 'to ford a river; a ford', cf. Tib. 'da-'ba, das 'to pass over'.

Siam. thaa < *d- A2 'to smear, paint': Ch. 塗 *t'u < *dag 'to plaster, soil'.

Siam. raa < *r- A2 'we'. This is an archaic word in Siamese, rarely used now:

Ch. 余 yu *rag 'I'.

Siam. thaa < *d- C2 'to challenge, dare': Ch. 賭 tu < *tagx 'to gamble, bet'.

Siam. haa < *h_ŋ -? C1 'five': Ch. 五 wu < *ngagx 'five', cf. Tib. lnga.

Siam. klaa < *kl- C1 'young rice plant': Ch. 稼 chia < *kragh 'grain, to sow'.

Siam. khaa < *g- B2 'price': Ch. 價 chia < *kragh.

Siam. khaa < *g- C2 'to trade, to do business': Ch. 賈 ku < *kagx 'merchant, to do business'.

White Tai xaa < *x- B1 'to give a girl in marriage': Ch. 嫁 chia < *kragh 'to give a girl in marriage'.

Wu-ming kla < *g1- C2 'orphan'. Siamese has kamphraa < *br- C2 with a prefix kam-: Ch. 孤 ku < *kwag 'orphan'.

A few cases of Archaic Chinese *-jag becomes -ɔ after labials in Siamese, for example:

Siam. phoo < *b- B2 'father': Ch. 父 fu < *bjagx 'father', cf. Tib. pha.

Siam. moo < *hm- A1 'doctor, socerer': Ch. 巫 wu < *mjag 'magician' cf.

Tib. 'ba-po.

As we can see from the above examples, what has been reconstructed as final *-g in Archaic Chinese, is lost both in modern Chinese and in the Tai languages but there are cases where final *-g appears in Siamese as -k:

Siam. mook < *hm- D1L 'fog, mist': Ch. 霧 wu < *mjəgw 'fog', cf. Tib. rmu-ba 'fog', rmugs-pa 'a dense fog'.

Siam. muak < *hm- DIL 'hat, cap': Ch. 帽 mao < *məgw 'to cover, hat' cf. Tib. rmog 'helmet'.

Siam. pliak < *pl- < *pl- D1L 'husk, bark': Ch. 膚 fu < *pljag 'skin', cf. Tib. pags, -lpags < *-plags 'skin'.

Siam. (naa-) phaak < *phl/r- D1L 'forehead': Ch. 顛 lu < *blag 'skull', cf. Tib. dpral-ba 'forehead'.

In an exploratory attempt, as it is done here, we cannot go into the details of all the Chinese finals and their correspondences in Tai, nor can we, at the moment, formulate any theory to account for the complexities involved. In the following examples we shall concentrate on the initial consonants.

The initial consonants may be divided into what may be called simple initials namely p-, ph-, b-, m-, etc., and what may be called clusters, namely, pl-, pr-, kl-, kr-,

etc. Both Proto-Tai and Archaic Chinese show both types of initials, and therefore can be compared, although the reconstruction of clusters in Archaic Chinese is less certain. In both Proto-Tai and Archaic Chinese, there are cases where we cannot reconstruct a cluster on the basis of Tai or Chinese material alone. We do not attempt to reconstruct clusters in such cases on the basis of the comparative material presented here. We therefore have cases where Tai shows clusters but not Chinese, and vice versa.

We shall first examine some cases of perfect fit as far as the consonants are concerned, namely, Proto-Tai *b-, *p-, *ph-, etc. corresponds to Archaic Chinese *b-, *p-, *ph-, etc.

Proto-Tai *b-, *p-, *ph-, *m- : Archaic Chinese *b-, *p-, *ph-, *m- :

Siam. phoo < *b- B2 'father': Ch. 父 fu < *bjagx.

Siam. (sa-) phai < *b- C2 '(daughter)-in-law': Ch. 婦 fu < *bjəgx 'woman, wife'.

Siam. phaa < *b- A2 'to take along': Ch. 扶 fu < *bjag 'to support, assist'.

Siam. pan < *p- A1 'to divide into shares': Ch. 分 fen < *pjən 'to divide' cf. *bjənh 'a share'.

Siam. pok < *p- D1S 'to cover; book-cover': Ch. 保 pao < *pəgw 'to preserve, protect'.

Siam. phaa < *ph- B1 'to split, cut': Ch. 跛 pho < *pharh 'to split, break'.

Siam. mee < *m- B2 'mother': Ch. 母 mu < *məgx; cf. Tib. ma.

Proto-Tai *d-, *t-, *th-, *n-, *ʔd- ; Archaic Chinese *d-, *t-, *th-, *n- :

Siam. thaa < *da- A2 'to smear, paint': Ch. 塗 thu < *dag 'to plaster, to soil'.

Siam. thaa < *d- B2 'wharf, landing': Ch. 渡 tu < *dagh 'to ford a river, a ford'.

Siam. thooj < *d- C2 'stomach': Ch. 肚 tu < *dagx 'stomach'.

Siam. thop < *d- D2S 'to fold', perhaps related to thap < *d- D2S 'to overlay, superimpose': Ch. 摺 tieh < *diəp 'double, lined (garment)', cf. also 摺 che < *tjiep 'to fold', cf. also Tib. ltab-pa 'to fold', ldab-pa 'to do again, to repeat'.

Siam. tak < *t- D1S 'to dip up water': Ch. 倒 cho < *tjakw 'to dip up water'.

Siam. tok < *t- D1S 'to fall down': Ch. 倒 tao < *tagwx 'to turn over, fall down'.

Siam. theep < *th- D1L 'classifier for long, flat, narrow objects': Ch. 帖 t'ieh < *thiap 'tablet', also 牒 tieh < *diap 'tablet', cf. Tib. ldeb 'leaf, sheet of paper';

Siam. thook < *th- D1L 'right, cheap, to touch': Ch. 觸 ch'u < *thjuk 'to butt, to knock against' cf. Tib. thug-pa 'to touch', also gthug-pa.

- Siam. nɔɔŋ < *n- C2 'younger sibling': Ch. 孿 nu < *nag 'wife and children'. Related is also Siam. naa < *n- C2 'younger sibling of one's mother'.
- Siam. n̄a < *n- C2 'flesh, meat': Ch. 肉 jou < *njəkw 'flesh, meat'.
- Siam. nai < ? 'inside'. This word is found to have a nasal initial in the South-western group of Tai languages, but ?d- (or its equivalent) in other languages. : Ch. 内 nui, nei < *nəbh 'inside', related to 入 ju < *njəp 'to enter'.
- Siam. deɛ t < *ʔd- D1L 'sun light': Ch. 日 jih < *njit 'sun', cf. Tib. nyi-ma 'sun', nyi-'od 'sunshine'.
- Siam. diat < *ʔd- D1L '(a liquid) to boil, to be boiling (mad)': Ch. 熱 jeh < *njat 'hot'.
- Siam. dai < *ʔd- C1 'to get, to be able to': Ch. 能 neng, nai < *nəng, *nəgh 'to be able, ability'.

Proto Tai *g-, *ɣ-, *k-, *ŋ-, *hŋ- : Archaic Chinese *g-, *k-, *ng-, *hng- :

- Siam. khuu < *g- B2 'pair': Ch. 俵, 仇 ch'iu < *g(w)jəgw 'mate', also 友 yu *gwjəgx 'friend', cf. Tib. grogs 'friend'.
- Siam. khəɔ < *ɣ- A2 'neck, throat': Ch. 喉 hou < *gug 'throat', cf. Tib. mgul 'throat'. We reconstruct in Archaic Chinese only *g- and no *ɣ.
- Siam. khaa < *ɣ- A2 'straw, thatch grain': Ch. 禾 ho *gwar 'plant(of grains)'.
- Siam. kai < *k- B1 'chicken': Ch. 鷄 chi < *kig 'fowl'.
- Siam. kaan < *k- C1 'stem, stalk': Ch. 幹 kan < *kanh 'stem'.
- Siam. kau < *k- C1 'nine': Ch. 九 chiu < *kjəgw, cf. Tib. dgu.
- Siam. kuut < *k- D1L 'a kind of fern': Ch. 蕨 chüeh < *kwjat 'fern'.
- Siam. ŋua < *ŋ- A2 'ox': Ch. 牛 niu < *ngwəjəg 'ox'. This word is not found in the Northern dialects where one would expect it if it is a Chinese loan. In the Central dialects, it appears as mo (< *ŋw-ʔ).
- Siam. hai < *h- < *hŋ- C1 'to give, to have (someone do something)': Ch. 許 hsü < *hngjəgx 'to allow, to promise (to give)'.

Proto-Tai *s-, *z-, *č-, *ʃ- : Archaic Chinese *s-, *dj-, *tj-, *tsj-, *dzj- :

- Siam. saam < *s- A1 'three' Ch. 三 san < *səm, cf. Tib. gsum.
- Siam. sii < *s- B1 'four': Ch. 四 szu < *sjidh, cf. Tib. bzhi.
- Siam. soŋ < *s- B1 'to send': Ch. 送 sung < *sungh.
- Siam. suuj < *s- A1 'high': Ch. 嵩 sung < *sjəngw 'high'.
- Siam. s̄i < *z- C2 'to buy': Ch. 市 shih < *djəgx 'market, to deal, to trade'.

- Siam. (ruu-) čak < *č- D1S 'to be acquainted with, know': Ch. 識 chih < *tjəgh 'to remember', also read shih < *sthjək 'to know'.
- Siam. čum < *č- B1 'to soak': Ch. 浸 chin < *tsjemh 'to soak, make wet'.
- Siam. chum < *j- B2 'soaked, wet': Ch. 潛 chien < *dzjiem 'to lie on the bottom of water, sink in, soaked in'.
- Siam. čhaaŋ < *j- B2 'to be skilled at, artistic': Ch. 匠 chiang < *dzjangh 'carpenter, skillful'.

Proto-Tai *l-, *hl-, *r- : Archaic Chinese *l-, *r-. There are occasional confusion of *l-, and *r- between the two language; similarly Tibetan and Chinese show some confusion also.

- Siam. lin < *l- B2 'pangolin': Ch. 鱗 lin < *ljen 'scale of a fish or a reptile'.
- Siam. lia < *hl- A1 'to be left over': Ch. 餘 yu < *rag 'remains, surplus, cf. Tib. lhag 'more, beyond', lhags 'remains'.
- Siam. raa < *r- A2 'we': Ch. 余 yü < *rag
- Siam. rai < *r- B2 'field, dry field': Ch. 畚 yü *rag 'field' in the third (second) year of cultivation'.
- Siam. rua < *r- B2 'to leak': Ch. 漏 lou < *lugh 'to leak'.
- Siam. rua < *r- C2 'fence': Ch. 籬 li < *ljar 'fence', cf. Tib. ra-ba 'fence, wall'.
- Proto-Tai *ʔ-, *ʔj- : Archaic Chinese *ʔj- :
- Siam. juu < *ʔj- B1 'to be at, stay': Ch. 於 yü < *jag, *jagh 'at'.
- Siam. jaa < *ʔj- A1 'medicine': Ch. 醫 i < *ʔjag 'physician, potion'.
- Siam. ʔau < *ʔj- A1 'to take': Ch. 要 yao < *ʔjagwh 'to seek, demand'.

There are alternations of voiced and voiceless consonants, and of aspirated and unaspirated consonants in the comparison of Tai and Chinese forms. Such alternations can be easily observed in Classical Tibetan, particularly in the verbal inflections. Whether they are voicing and deaspiration prefixes, which cause such alternations, scholars differ in opinion. Such alternations are observed also in Chinese such as 見 chien < *kianh 'to see' versus 見 < *gian 'to appear', 敗 pai < *pradh 'to defeat' versus 敗 < *bradh 'to be defeated', etc. Similar phenomenon can also be observed in Tai, although this aspect of Tai linguistics has not been sufficiently studied. For example, Siam. čum < *c- B1 'to soak' versus čum *jh- B2 'soaked, wet', Siam. khot < *kh- D1S 'to coil, curled up' versus khot < *g- D2S 'to bend, crooked', etc. (see Li, 1970). The following are some examples, classified into labials, dentals, velars, etc.

Labials:

- Siam. pat < *p- D1S 'to wipe off', brush off: Ch. 拂 fu < *phjət 'to brush off, shake off'.

- Siam. poot < *p- D1L 'lung': Ch. 肺 fei < *phjadh 'lung'.
 Siam. phua < *ph- A1 'husband': Ch. 夫 fu < *pjag 'man'.
 Siam. mɔɔ < *hm- A1 'doctor, socerer': Ch. 巫 wu < *mjag 'magician'.
 Siam. muak < *hm- D1L 'hat, cap': Ch. 冒, 帽 mao < *mɛgwh 'to cover, hat'. cf. Tib. rmog 'helmet'.
 Siam. mɔɔk < *hm- D1L 'fog, mist': Ch. 霧 wu < *mjəgwh 'fog', cf. Tib. rmu-ba 'fog', rmugs-pa 'a dense fog'.

Dentals:

- Siam. thik < *th- D1S 'young male animal'. This word appears in the Central and Northern Tai dialects with a tone and an initial which indicate *d-: Ch. 特 the < *dek 'male animal'.
 Siam. thua < *th- B1 'bean'. The Northern Tai dialects have forms derived from *d-: Ch. 荳 tou < *dugh 'bean'.
 Siam. thaa < *d- C2 'to challenge, dare': Ch. 賭 tu < *tagx 'to gamble, challenge'.
 Siam. naa(-mai) < *hn- C1 'cross bow': Ch. 弩 nu < *nagx.

Velars:

- Siam. kau < *k- B1 'old': Ch. 耄 chiu < *gwjəgh 'old, ancient'.
 Siam. kee < *k- B1 'old': Ch. 耆 ch'i < *gjid 'old'.
 Siam. khaa < *kh- A1 'leg': Ch. 股 ku < *kagx 'thigh'.
 Po-ai. haan < *x- A1 'steel': Ch. 鋼 kang < *kang 'steel'.
 Siam. khot < *g- D2S 'to bend, crooked': Ch. 屈 ch'ü < khwjət 'to bend'.
 Cf. also Siam. khot < *kh- D1S 'to coil', a related word. Cf. Tib. dgu-ba 'to bend' dgur 'crooked', 'gugs-pa 'to bend'.
 Siam. khut < *x- D1S 'to dig up': Ch. 掘 chüeh < *gwjiət 'to dig', Cf. Tib. rko-ba 'to dig', also rkod-pa(?).
 Siam. khaan < *ʎ - A2 'pole': Ch. 竿 kan < *kan 'a bamboo pole'.
 Siam. haa < *hɲ- ? C1 'five': Ch. 五 wu < *ngagx, cf. Tib. lnga

Sibilants and palatals:

- Siam. sip < *s- D1S 'ten', but Northern dialects have forms derived from a voiced initial: Ch. + shih < *djəp, cf. Tib. bcu.
 Siam. suk < *s- D1S 'ripe', but Northern dialects have forms derived from a voiced consonant: Ch. 熟 shou < *djəkw.
 Siam. čet < *c- D1S 'seven': Ch. 七 ch'i < *tshjit.

- Siam. čhaŋ < *j- B2 'to weigh': Ch. 稱 ch'eng < *thjəŋ 'to weigh', also read thjəŋgh 'scale, balance'.
 Siam. čhaŋ < *j- A2 'to hate, detest': Ch. 憎 tseng < *tsəŋ 'to hate'.

There are cases where the Tai languages show initial clusters or initial clusters can be reconstructed, and they correspond to clusters which can be reconstructed in Archaic Chinese.

Labial clusters:

- Siam. pliak < *pl- D1L 'husk, bark': Ch. 膚 fu < *pljag 'skin', cf. Tib. pags, -lpags 'skin'.
 Siam. phaa < *phl/r- A1 'cliff, rock': Ch. 璞 p'u < *phruk 'unworked precious stone', cf. Tib. brag 'rock'.
 Siam. (naa-)phaak < *phl/r- D1L 'forehead': Ch. 顛 lu < *blag 'skull', cf. Tib. dpral-ba 'forehead'.
 Siam. phĭak < *phl/r-? D1L 'white, albino': Ch. 白 pai < *brak or *briak 'white'.
 Siam. ma-lɛɛŋ < *ml/r- A2 'insect'. There is a doublet mɛɛŋ 'insect, used also in some aquatic invertebrates': Ch. 蠅 ying < *rəŋ 'fly', 𧈧 meng < *mrəŋ 'toad', 蟲 meng < *mrang 'gadfly'. Probably also related is 螟蛉 ming-ling < *ming-ling, reduplicated from **mling 'insect on mulberry leaves', cf. Tib. sbrang 'fly, insect'.

Dental clusters:

- Siam. hak < *thr- D1S 'to be broken (stick)': Ch. 磔 che < *trak 'to rip open'.
 Siam. (kra-)duuk < *ʔdl/r- D1L 'bone': Ch. 髑髏 tu-lou < *duk-lug 'skull', reduplicated from **dlug, cf. Tib. rus 'bone, family'.

Velar clusters:

- Siam. klaa < *kl- C1 'young rice plant': Ch. 稼 chia < *kragh 'grain, to sow'.
 Siam. kliau < *kl- A1 'to be twisted': Ch. 交 chiao < *kragw or *kriagw 'to cross', also 絞 chiao < kragwx or kriagwx 'to twist, strangle'.
 Siam. kloɔn < *kl- A1 'bolt, latch': Ch. 關 kuan < *kwran 'bar, barrier, to close'.
 Siam. khloɔŋ < *g1 - A2 'canal, watercourse': Ch. 汀. chiang < *krung 'river'.
 Siam. khrua < *gr- A2 'kitchen, family': Ch. 家 chia < *krag 'house, family'.
 Siam. khraat < *gr- D2L 'to rake, harrow': Ch. 刮 kua < *kwrat 'to scrape, polish'.

- Wu-ming klop < *k1 - D1S 'bamboo hat': Ch. 笠 li < *gljəp
 Siam. khraam < *gr- A2 'indigo': Ch. 藍 lan < *glam 'indigo, blue', cf. Tib.
 rams 'indigo'.
 Siam. hok < *xr- D1S 'six': Ch. 六 liou < *gwljəkw, cf. Tib. drug.

There are cases where the Tai languages show initial clusters or initial clusters can be reconstructed, but Chinese shows no cluster or not enough material is available to reconstruct a cluster.

Labials:

- Siam. ploj < *p1 - A1 'to lay down, relinquish': Ch. 放 fang < *pjəŋh 'to put
 down, release', cf. Tib. spong-ba 'to give
 up, renounce'.
 Siam. malet < *m1 - D2S 'seed', also met 'seed, kernel', and let 'seed, kernel'
 : Ch. 米 mi < *midx 'rice', cf. Tib. 'bras
 'rice', also 'bru' grain, seed'.
 Siam. (nam-)laai < *m1 - A2 'saliva': Ch. 涎 hsien < *rjan 'saliva', cf. Tib.
 zlan 'moisture, liquid'.
 Siam. taak < *pr- D1L 'to expose to the sun, to dry': Ch. 暴 p'u < *buk 'to
 expose to the sun'.

Dentals:

- Siam. taa < *tr- A1 'eye': Ch. 賭 tu < *tagx 'to see', cf. Tib. hta-ba 'to look,
 inspect'.
 Siam. tem < *t1 - A1 'full': Ch. 斟 chen < *tjəm 'to pour in (< to fill up)'.
 Perhaps also related is 甚 shen < *djəmh
 'excessive, much'.
 Siam. thai < *th1 - A1 'to plough': Ch. 摯 li < *lid 'plough, to plough'.
 Siam. thuj < *th1 - A1 'bag, sack': Ch. 籠 lung < *ljung 'basket, cage'.
 Siam. haam < *thr- A1 'to carry (by two or more persons)': Ch. 拈 tan < *tam
 'to carry on the shoulder', also < *tamh
 'load'.
 Siam. hua < *thr- A1 'head': Ch. 頭 t'ou < *dug 'head', cf. Tib. thog-pə
 'upper part'.
 Siam. rīa < *dr- A2 'boat': Ch. 舟 chou < *tjəgw 'boat', cf. Tib. gru.
 Siam. rīat < *dr- D2L 'bed bug': Ch. 蝨 shih < *srjit 'flea, louse', cf. Tib.
 'ji-ba < *dyi-, also lji-ba < *ldyi-
 < *dlyi-'flea'.
 Siam. lep < *d1 - D2S 'finger or toe nail': Ch. 甲 chia < *krap 'shell, nail,
 armor, etc.', cf. Tib. khrab 'shield, scale'.
 Siam. dīan < *?dl/r- A1 'earthworm': Ch. 蟻蚓 yin < *rinx 'earthworm' cf.
 Tib. srin 'worm'.

Velars:

- Siam. klua < *kl- A1 'to fear': Ch. 懼 chü < *gwjiagh 'to fear', cf. Tib. 'gul-
 ba 'to tremble'.
 Siam. klat < *k1 - D1S 'to button, pin together': Ch. 結 chieh < *kit 'to tie, a
 knot', cf. Tib. rgyud-pa 'to fasten, string'.
 Siam. klīa < *k1 - A1 'salt': Ch. 鹽 ku < *kag, < *kagx 'salt, salty marsh' cf.
 also 鹵 lu < *lagx 'salty'.
 Siam. klan < *k1 - C1 'to restrain, to suppress': Ch. 緊 chin < *kjinx 'to bind,
 to tight, to press'.
 Siam. klaau < *k1 - B1 'to say, declare': Ch. 告 kao < *kəgw, also *kəkwh
 'to announce, to inform', cf. Tib. gleng-ba
 'to say, talk'.
 Siam. kləw < *k1 - A1 'drum': Ch. 鼓 ku < *kagx.
 Wu-ming kla < *g1 - C2 'orphan', but Siam. has kamphraa < *br- with a pre-
 fix: Ch. 孤 ku < *kag 'orphan'.
 Siam. kraat < *kr- D1L 'to drive in a wedge, a peg for tightening' (pallegoix):
 Ch. 楔 hsieh < *skiat 'wedge'.
 Siam. kheej < *kh1/r- A1 'hard, strong', cf. Wu-ming klerj 'hard, solid': Ch.
 疆 ch'iang < *gjang 'strong'.

There are also cases where the Tai languages show no cluster, but clusters can be reconstructed in Archaic Chinese.

Labials:

- Siam. paa < *p- B1 'meadow': Ch. 墳 pa < *prarh 'flat valley' (a Szechua-
 nese word still current in Southwest
 China).
 Siam. pook < *p- D1L 'to peel': Ch. 剝 po < *pruk 'to peel, cut', cf. also 泉
 lu < *bluk 'to carve wood'.
 Siam. peet < *p- D1L: Ch. 入 pa < *priet, cf. Tib. brgyad < *bryad.
 Shan pak < *p- D1L 'hundred': Ch. 百 pai < *prak or *priak, cf. Tib. brgya <
 *brya.
 Siam. phaa < *ph- C1 'cloth': Ch. 帛 po < *brak 'silk', also 布 pu < *pagh
 'cloth', cf. Tib. phrug 'cloth'.
 Siam. pheec < *b- C2 'to be defeated, lose': Ch. 敗 pai *bradh 'to be defeated',
 also read pai < *pradh 'to defeat'.

Velars:

- Siam. kaau < *k- A1 'glue': Ch. 膠 chiao < *krəgw 'glue, to glue together'.
 Siam. kee < *k- C1 'to untie, explain': Ch. 解 chieh < *krigx 'to cut up, dis-
 solve, explain'.

- Siam. *kɛɛm* < *k- C1 'cheek': Ch. 臉 *lien*, older reading *chien* < *kljamx 'face', related is 頰 *chia* < *kiap 'cheek, face', cf. Tib. 'gram-pa 'cheek'.
- Siam. (phak-) *kaat* < *kr- D1L 'cabbage, mustard plant, seed': 芥 *cheeh* < *krath < *hriadh 'mustard plant'.
- White Tai *xaa* < *x- B1 'to give a girl in marriage': Ch. 嫁 *chia* < *kragh.
- Siam. *khaa* < *g- B2 'price': Ch. 價 *chia* < *kragh 'price', cf. Tib. *gla* 'pay, wages'.
- Siam. *khaa* < *g- C2 'to trade, business': Ch. 賈 *chia* < *kragx 'merchant, to do business', also read *ku* < *kagx.
- Siam. *khaa* < *kh- A1 'horn': Ch. 角 *chiao* < *kruk 'horn', cf. Tib. *ru*.
- Siam. *khem* < *g- A2 'salty': Ch. 鹽 *yen* < *gryam 'salt', also 鹹 *hsien* < *grəm or *grīəm 'salty', cf. Tib. *rgyam-tswa* < *gryam- 'a kind of salt'.
- Siam. *haan* < *hŋ - B1 'goose': Ch. 雁 *yen* < *ngranh 'wild goose', cf. 鵝 *o* < *ngar 'goose'; cf. also Tib. *ngang-pa* 'goose'.

The preceding list is but a sample of possibly related words. The first serious attempt at comparing Chinese and Tai words was done by Wulff (1934), and more recently by Nishida 1960 and by Benedict 1967. There is no attempt here to incorporate extensively their findings, or to criticize their etymologies. Undoubtedly scholars in Austronesian and in Austroasiatic fields will find many forms here which may be compared with their languages. We have as yet no critical apparatus to decide what etymologies are acceptable and what are not, and no criteria to judge what are loans and what are not. Some words which are extremely similar in meaning, such as the numerals (included here), etc., show irregular correspondences with Chinese. For example, why has the numeral '5' an initial *h-* (< *hŋ -?) which is regular throughout all the Tai languages instead of *ŋ-* as in Chinese and Tibetan? Why has the numeral '6' an initial *h-* or *r-* (< *xr-) in the Tai languages instead of *l-* (< *gwl-) as in Chinese? Why has the word 'to give a girl in marriage' (highly suspicious as a loan because of its cultural implications) an *x-* in White Tai and *h-* in Po-ai (< *x-) instead of *k-* (< *kr-) as in Chinese, which is borrowed in the Central Tai dialects such as *kjaa* in Lung Chow? These can hardly be construed as sound substitutions in borrowing, as the modern Tai languages, as well as the Proto-Tai, have *ŋ*, *l*, *k*- etc. Loans such as Swatow loan words in Siamese, studied by Egerod (1959), show much more phonological regularity than is the case of numerals in Tai.

The comparison of Tibetan and Chinese shows no less complicated problems as we have here, cf. the summary in Benedict (1972), pp. 195-197, or conveniently the index of Chinese words in Chou (1972), pp. 203-229. This state of affairs originated from several causes, the most important of which is that there were morphological processes in the derivation of words, such as prefixes, suffixes and vocalic alternations which are abundantly clear in Classical Tibetan, but leave

very little trace in Chinese and Tai. Even in Tibetan the functions of these processes are hardly known. In Chinese we have alternations of initial consonants and tones – no longer active – as possible traces of original prefixes and suffixes. In Tai the problem has been hardly studied. I have shown that in the Tai languages we have also traces of alternations of initial consonants and of tones in the derivation of words, as we find in Chinese. For example, the alternation of initial consonants can be illustrated by such pair of words as Siam. *čum* (< *č- B1 or C1) 'to soak', but *chum* (< *j- B2) 'soaked wet': *khiau* (< *x- C1) 'canine tooth', but *khiau* (< *g- C2) 'to chew': *khot* (< *kh- D1S) 'to coil, to roll into a coil' but *khot* (< *g- D2s) 'to bend crooked', etc. For the alternation of tones, we have Siam. *khaa* (< *g- B2) 'price' and *khaa* (< *g- C2) 'to trade'; *siam* (< *s- A1) 'a pointed instrument' and *siam* (< *s- C1) 'to sharpen a point', etc. (Li, 1970).

These processes are grammatical processes which show strong resemblances between Tai and Chinese, and are not likely, though not impossible, to be borrowed from one language to the other like the lexical items.

The other cause of complication is when these grammatical processes are specialized, generalized or reformulated in different ways by different languages. There are some cases of this happening even in the modern languages, such as Lao *kiau* (< *k- B1) 'to reap; a sickle', while Siamese has *kiau* (< *k- B1) 'to cut with a sickle', but *khiau* (< *g- A2) 'sickle'; apparently Lao has generalized the form with the original voiceless initial.

The correspondence of tones between Chinese and Tai words as established by Wulff (1934), is as follows:

Tai		Chinese
A1, 2	:	P'ing (unmarked)
B1, 2	:	Ch'u (marked by -h)
C1, 2	:	Shang (marked by -x)
D1, 2	:	Ju (marked by -p -t -k)

These correspondences between the tone classes are maintained in various dialects such as in Wu-ming and Lungchow, although the phonetic values such as high or low rising or falling, etc. are different. Modern borrowings do not follow these rules as the Swatow loans in Siamese. In our examples listed above, about 70 percent follow these rules.

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SOUTHERN CHINESE DIALECTS

The Tai connection

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1. Introduction

Affinity between the southern Chinese dialects – mainly Yüeh and Min¹ – on the one hand and the Tai languages (now spoken in southwestern China and mainland Southeast Asia but believed to have had a much wider sphere geographically in earlier times) on the other has often been observed by linguists with respect to certain phonetic features and especially with respect to morphological formations and syntactic characteristics. For example, the tense versus lax phonetic distinction of vowels in Cantonese (seldom found in even other Yüeh dialects) has been pointed out as possible influence from Chuang (Tai dialects spoken in southwestern China), which, like most Tai dialects, distinguishes between long and short vowels. The occurrence of lateral fricatives in the Sei-yap (consisting of four prefectures southwest of Canton) and the Nan-lu (area west of Sei-yap in southwestern Kuangtung) dialects of Yüeh is also common among the Chuang dialects.² In morphology, the most commonly cited example is the so-called "reverse" order of word formation found in these dialects. In the northern Chinese dialects the normal order of compounds is qualifying elements preceding the qualified, but sometimes the reverse is the case in the southern dialects. Thus, while the gender marker is prefixed to animal terms in the north – male + chicken, it is suffixed in the south – chicken + male, exactly as in the Tai dialects (this formation, however, is not limited to the Min and Yüeh dialect, it is prevalent among the Hakka, the Kan and the Hsiang groups too). Syntactically speaking, the most conspicuous similarity between the southern dialects and the Tai languages is the structure of the comparative construction, in which the comparative degree is expressed just as in English: 'A + is taller + than + B' whereas in the northern dialects: 'A + than + B + is taller' is the acceptable form.³

As a matter of fact, many of the lexical items normally considered to be characteristic of Yüeh or Min – so-called colloquial words with no congenates with northern Chinese – readily find related forms in Chuang. Among the dozen or so

vocabulary items which Norman listed as particular to Min⁴ we find the following related to words in various Chuang dialects:⁵

(FC = Foochow, AM = Amoy, KY = Kienyang, a western Min dialect, FT = Futing, an eastern Min dialect, SC = Sui-chi, LM = Lung-ming, LC = Lungchow, a southern Min dialect spoken in southwestern Kuangtung, the latter two being Chuang dialects spoken in Kuangsi)⁶

	FC	AM	KY	FT	SC	LM	LC
foot	k'a ¹	k'a ¹	k'a ¹	k'a ¹	k'a ¹	k'a ¹	k'a ¹
kill	t'ai ²	t'ai ²	hoi ²	t'ai ²	t'ai ²	t'ai:i ¹	(='to die')
many(7)	sa ⁶	tsue ⁶	lai ⁶	se ⁶	tsoi ¹	la:i ¹	la:i ¹
saliva	laŋ ³	nua ⁴	lueŋ ⁵	—	nua ³	na:i	na:i ² (='dew')

Another interesting item, though not listed by Norman, is:

(FA = Fu-an, NT = Ning-te, all eastern Min dialects)⁸

	FT	FA	NT	SC	LM
wet	taŋ ²	tam ²	tA:m ²	tam ²	tom ²

Between the Yüeh dialects and Chuang, even more such items can be found:

(Cant. = Cantonese, TS = Tai-shan, YC = Yang-ch'un, HH = Hua-hsien, the latter two are spoken in southwestern Kuangtung, WM = Wu-ming, Kuangsi Chuang dialect)⁹

	Cant.	TS	YC	HH	WM
pronominal plural	tei ⁶	(10)	tei	?de ⁶	tphi ⁶ (='team')
frog	kap ⁷	ka:p ⁷	kap ⁷	kuop ⁷	kop ⁸
pomelo	luk ⁷ jau*	pu ³ louk ⁷	puk ⁸ tsei ³	lo ¹ jau*	luk ⁹ puk ⁹
to blow the nose	saŋ ⁵	lin ⁵	laŋ ⁵	laŋ ⁵	θaŋ ⁵
to push	uŋ ³	ouŋ ³	uŋ ³	uŋ ³	ŋouŋ ⁴
to shake	ŋou ²	ŋou ²	ŋou ²	ŋou ²	ŋau ²
hot	na:t ⁷	na:t ⁷	nak ⁷	la:t ⁷	?dat ⁵

2. Aspiration and tones

Up to now we have summarized and presented only fragmentary examples illustrating the close relationship between the southern Chinese dialects and the Chuang dialects. It now remains for us to point out a more widespread phenomenon common to both groups. One of the most prominent phonetic features of Chuang (and most Tai dialects) is the exclusive occurrence of unaspirated stops and affricates in the so-called *yang*-tone categories.¹¹ This correlation between aspiration and tone, or rather, in terms of historical development, the evolution of the Ancient Chinese voiced stops and affricates into aspirates and nonaspirates in general in the *yang*-tone categories in the modern dialects, has been adopted as an important criterion for classifying these dialects. For example,¹² Mandarin is characterized accordingly as having aspirated surds for these Ancient sounds in the level or p'ing-tone¹³ but unaspirated ones in the oblique tones; the Wu dialects, having aspirated voiced sounds as reflexes for these initials in all tones; the Hsiang dialects, having nonaspirates as reflexes in all tones; the Kan-Hakka dialects, having aspirates as reflexes in all tones; the Yüeh dialects, having aspirated

surds as reflexes in the level tone and a number of them in colloquial words in the rising or *shang*-tone but unaspirated ones in the departing (or *ch'ü*-) and the entering (or *ju*-) tone; while the Min dialects, having both aspirated and unaspirated surds as reflexes in all tones.¹⁴ While there are exceptions under each dialect group — for example, Yüeh dialects like Hua-hsien, Lien-chou, Po-pai, etc. may be classified as Kan-Hakka under this criterion, since the reflexes of these Ancient sounds have all become aspirated surds regardless of tones — this characterization still holds as a general guideline. A recent study of some Yüeh and Min dialects in connection with the concept of layer distinction suggests however, that the description of these two dialect groups with respect to the said phonetic development should be reviewed from a different angle, and that as a result these two dialect groups are found to present exactly the same phonetic phenomenon in their deepest or oldest layer as that found in the Chuang dialects.

3. The Min problem

As already stated in the preceding section, the development of Ancient voiced stops and affricates into Min aspirates and nonaspirates is not conditioned by tones. In addition, this division into aspirates and nonaspirates does not correlate with any known distinction in Ancient or in Archaic Chinese. For example:

(KO = Kienow, a western Min dialect, CC = Chaochow, a southern Min dialect)¹⁵

	FC	KO	KY	FT	AM	CC	SC
terrace 臺	tai ²	to ³	lai ²	—	tai ²	—	tai ²
moss 苔	t'ai ¹	t'ai ²	hai ¹ /the ²	—	t'i ²	—	t'ai ²
skin 皮	p'ui	p'y ²	phui ² /hui ²	p'oi ²	p'e ²	p'ue ²	p'ue ²
fat 肥	pui ²	py ⁵	py ²	pui ²	—	pui ²	pui ²

Generally speaking however, the majority of the reflexes of the Ancient voiced stops and affricates are nonaspirates; moreover, among the aspirated reflexes nouns are more numerous than for example verbs or adjectives.

Another point to be remembered is that although in general there is considerable agreement among the various Min dialects with respect to aspiration in such reflexes, one can also find not a few cases of disparity. For example:

	FC	KO	KY	AM	CC	SC
navel 臍	tse ²	ts'e ² *	the ²	tsai ²	tai ²	tsi ²
to stand 椅	k'ie ⁶	kye ⁴	kye ⁵	k'i ³	k'ia ⁴	k'ia ³
to carry in the arms 抱	po ⁶ (16)	p'au ⁶	phau ⁵	p'au ⁶	p'au ⁴	p'o ⁶
front 前	(seiŋ ²)	ts'ieŋ ⁵	tshieŋ ²	tieng ²	tsōi ²	tsai ²
wall 牆	ts'ioŋ ²	tsioŋ *	tsioŋ ²	ts'ioŋ ²	ts'ie ²	ts'io ²
to sink 沉	t'ein ²	tsieŋ ² *	toiŋ ²	tiam ²	tim ²	t'iam ²
flower petal 瓣	paŋ ⁶	p'aiŋ ⁶	phaŋ ⁵	pan ⁶	—	paŋ ³
to read 讀	t'phi ⁷	—	lo ⁸	t'ak ⁸	t'ak ⁸	t'ak ⁸
to float 浮	p'eu ²	—	peu ²	p'u ²	p'u ²	po ²
to earn 賺	tsaŋ ⁵	t'eŋ ⁵ *	hoiŋ ⁵	—	—	tsuaŋ ⁶
temperament 脾	pi ²	pi *	phui ² /hui ²	pi ²	p'i ²	p'i ²

*(These forms are taken from T-C. Huang)

3.1 Pulleyblank's assumption

Recently Pulleyblank made the assumption that Ancient Chinese voiced initials originate from a prefix [f-], basing his argument on the fact that many lexically related words in Chinese are distinguished as transitive versus intransitive by means of voicing.¹⁷ For example:

Mandarin (level tone)	Ancient p'-	Proto fip
被(departing tone)	b- (or Pulleyblank's ph-)	

He thinks that his assumption can explain the split into aspirates versus nonaspirates in the Min dialects. Thus:

Proto fip	>	Min p	cf.	Proto fip' > b/ph	Other dialects p' (level tone)
fip'	>	p'		fip' > b/ph	< p (oblique)

While his assumption is extremely interesting, only three sets of his examples apply to Min. Apart from the pair cited above, they include:

帆 (cf. 沉 *p')	>	Min	p'
浮 (cf. 桴 *p')	>		p'

Although the word for 'a sail' does carry an aspirated initial in the various Min dialects, as can be seen from examples given in the last section, not all the Min dialects agree in aspiration with respect to the word 'to float'. The difficulty with Pulleyblank's assumption as applied to the Min dialects is that the set of such lexically related words do not necessarily agree with the sets of aspirates versus nonaspirates in Min.

In this connection we may also mention the possibility of explaining the said phenomenon in Min — aspiration versus nonaspiration, as a word derivation device of nominal versus non-nominal, since most of the words with aspirated initials are nouns. For example, while the Min dialects carry an aspirated initial for the words 'hammer' and 'nose', in the Ch'i-Lin Pa-yin, a Foochow rime dictionary, an unaspirated initial is indicated for the words 'to hammer' and 'to smell' (the latter also unaspirated in Kienow). Similarly, while these dialects give an aspirated initial for the word 'walking stick' (杖), they give an unaspirated one for the word 'to lean on' (仗). Again this can give only piecemeal explanation to the phenomenon in question. Together with Pulleyblank's assumption, it may indicate some archaic residue of word formation in Min, but we still need an overall satisfactory explanation to account for all cases.

3.2 Norman's proto-Min reconstruction

Based on his research on the development of tones in the western Min dialects (Kienyang, Kienow, Shaowu), Norman reconstructed a three-way distinction for the voiced stops (and affricates) in proto-Min, unaspirated, aspirated and lenis, all of which being derived from the Archaic Chinese voiced aspirated stops (and affricates):

b	d	g
bh	dh	gh
-b	-d	-g

It will be outside the scope of this paper to go into details of Norman's proposal and its implications here,¹⁸ especially his reconstruction of a set of lenis voiced stops, which anyway he suggested may be derived from prefixes. We shall concern ourselves only with the feasibility of reconstructing both an aspirated and an unaspirated set of voiced initials for proto-Min. If the proposal is accepted without modification, it will imply that a two-way distinction must be set up for the Archaic Chinese voiced aspirated stops (and affricates), which will be in contrast with a set of voiced unaspirated stops established on other grounds. Thus, for the labial stops we shall have for example:

Archaic	**b-
	**bh ₁ - (proto-Min *b-)
	**bh ₂ - (proto-Min *bh-)

The problem lies not in the phonetic feasibility of setting up such a distinction but in the fact that apart from the Min evidence, so far the distinction has not been supported by similar correlations in other dialect groups or in the so-called *hsie-sheng* materials indicating groups of riming characters.

3.3 Review of the Min situation

In section 3 we have pointed out that aspirated reflexes of the Ancient voiced stops (and affricates) in Min are among the minority. However, they contain many colloquial words, a list of which is given below:

	FC	KO	KY	FT	AM	CC	SC
firewood 柴	ts'a ²	ts'ɔ ^{3*}	thau ²	ts'a ²	ts'a ²	ts'a ²	ts'a ²
skin 皮	p'ui ²	p'ye ⁵	phui ² /hui ²	p'oi ²	p'e ²	p'ue ²	p'ue ²
covering 被	p'ui ⁶	p'ye ⁶	phui ³ /hui ³	p'oi ⁶	p'e ⁶	p'ue ⁴	p'ue ³
nose 鼻	p'ei ⁵	p'i ⁶	phoi ⁶ /hoi ⁶	p'i ⁵	p'iñ ⁶	p'i ⁶	p'i ⁶
market 市	ts'ei ⁶	ts'i ^{6*}	tshi ⁶	—	ts'i ⁶	ts'i ⁴	ts'i ³
hammer 錘	t'ui ²	t'y *	hy ²	—	t'ui ²	t'ui ²	t'ui ²
head 頭	t'au ²	t'e ⁵	heu ²	t'au ²	t'o ²	t'au ²	t'au ²
pincers 甜	k'ij ²	k'ij ²	khi ²	—	k'iñ ²	k'iam ²	k'iam ²
a sail 帆	p'un ²	p'on ^{2*}	phon ²	p'un ²	p'ang ²	p'aj ²	p'aj ²
sugar 糖	t'ou ²	t'on ²	ho ²	t'on ²	t'ng ²	t'j ²	t'o ²
hail 霍	p'oi ^{7*}	p'au ⁶	pho ⁸	—	p'au ⁸	p'ak ⁸	p'au ¹
thief 賊	ts'ei ^{7*}	ts'e ⁶	the ⁸	ts'e ^{7*}	ts'at ⁸	ts'ak ⁸	ts'ak ⁸
worm 為	t'oi ²	t'on ⁵	ho ²	t'ej ²	t'ang ²	t'aj ²	t'aj ²
pillar 柱	t'iu ⁶	t'iu ⁶	hiu ⁵	—	t'iau ⁹	—	t'iau ³
moss 筍	t'ai ²	t'ai ^{2*}	hai ¹ /the ²	—	t'i ²	—	t'ai ²
to sun 曝	p'uo ⁸	p'u ⁶	—	p'uo ^{7*}	p'ak ⁸	p'ak ⁸	p'ak ⁸
hoe 働	t'y ²	ts'u ⁵ /ty ⁵	hy ²	—	t'u ²	t'j ²	ts'o ²
field	ts'ein ²	ts'ain ⁵	lie ² /thai ²	ts'en ²	ts'an ²	ts'aj ²	ts'aj ²

*(These forms are taken from T-C. Huang)

Notice in the last two items that either Kienow or Kienyang has an alternative form with an unaspirated initial. The form for 'thief' also carries an aspirated instead of the expected unaspirated initial in the Yüeh dialects.

Based on such data, it is but logical that the reconstruction for such forms should contain aspirated initials.

The so-called literary versus colloquial pronunciation of words is well-known in Min. While the difference usually involves the difference of finals (portion of a syllable minus its initial consonant), there are cases where the difference lies also in the aspiration of the initials. For example, in Chaochow, the words 平 'level', 瓶 'vase', 齊 'orderly', 長 'long', 重 'repetitive', 全 'complete', 綴 'to mend' bear aspirated initials in the literary pronunciation but unaspirated ones in the colloquial pronunciation.¹⁹ In the Sui-chi dialect, such difference in aspiration is even more common in pairs of literary versus colloquial forms. For example:

Literary	Colloquial
婆 p'o (as in 'grandmother')	po (as in 'midwife')
臺 t'ai (as in 'stage')	tai (as in 'steps')
桃 t'o (as in 'peach')	to (as in 'willow-peach')
齊 ts'i	tsoi
k'i for 麒 'unicorn'	ki for 棋 'chess', 旗 'flag'
盤 (as in 'tray')	pua (as in 'abacus')
盆 p'un (as in 'vase')	pua (as in 'seedling bowl')
t'i for 提 'carry', 啼 'to crow'	toi for 蹄 'hoof', 題 'topic'
p'ui for 陪 'accompany'	pue for 賠 'compensate'

In the last five cases, the finals also indicate that words in the right column are more colloquial. All of the above forms bear tone 2.

If we take this layer distinction into consideration, aspiration in the type of Min words under consideration may be interpreted in a different light. What we mean by layer distinction is not confined to the dichotomy of literary versus colloquial. In fact, such a dichotomy is misleading, for the term 'literary' is often associated with 'reading pronunciation'. While it is of course true that such reading pronunciation does exist as one of the layers, there may be multiple layers, in fact there must be, in a language or dialect. We shall be talking about layers in terms of time and language contact. In Min and Yüeh, one of these layers is doubtless connected with Chuang and Tai. We would like to propose here that this is in fact the oldest layer in both of these dialect groups. In this layer, Min and Yüeh (the Yüeh case will be discussed in the next section) have unaspirated stops and affricates corresponding to Ancient Chinese voiced stop and affricates and Archaic voiced aspirated stops and affricates. Since reflexes of Ancient and Archaic voiced stops and affricates in general occur in the *yang*-tone categories in the modern dialect, this situation exactly parallel that in Chuang and Tai.

One of the oldest vestige of Archaic Chinese in Min is a group of words whose initial can be traced to what is commonly reconstructed as Archaic *[ɣ]²⁰ which later developed into the Ancient *[ɣ]²¹ and whose initial has become an unaspirated voiceless velar stop in the colloquial forms of the modern dialects:

	FC	KO	KY	FT	AM	CC	SQ
paste 糊	ku ²	ku ³ /u ³	o ⁹	—	ko ²	kou ²	keu ²
monkey 猴	kau(22)	ke ³	eu ⁹	—	kau ²	kau ²	kau ²
thick 厚	kau ⁶	ke ⁴	eu ⁵	kau ⁶	kau ⁶	kau ⁴	kau ⁶

to hold in 含							
the mouth	k-(23)	aŋ ³	aŋ ⁹	—	kam ² (24)	kam ²	kam ²
salty 鹹	keiŋ ²	ken ³	kiŋ ⁹	ken ²	kiam ²	kiam ²	kiam ²
cold 寒	kaŋ ²	kuəŋ ³ /ueŋ ³	—	—	kuaf ²	kūaf ²	kua ²
slippery 滑	kou ²	ko ⁴	kui ⁸	ko ²	kut ⁸	kuk ⁸	kuk ⁸
cunning 猾	—	—	kui ⁸	—	kut ⁸	kuk ⁸	kuk ⁸
tall 懸	keiŋ ²	—	—	ken ²	—	kūi ²	kuai ²
prefecture 懸	kaiŋ ⁶	kyeŋ ⁶	kyeŋ ⁶ /yeŋ ⁶	ken ⁶	kuaiŋ ⁶	kūi ⁶	kuai ¹
to walk 行	kiaŋ ²	kiaŋ ³	iaŋ ⁹	kiaŋ ²	kiaŋ ²	kīa ²	kia ²

In all other dialects than Min, the reflex for the initial of such words is generally [x.] or [h]. In fact, the literary reading of such words in Min also bears the initial [h]. It is by no means accidental that the colloquial reading bears [k] and not [k']. This seems to confirm our assumption that in the oldest layer of Min only unaspirated stops and affricates occur in the *yang*-tone categories.

The introduction of aspirated stops and affricates in the *yang*-tone must be due to northern influence. Such aspirated colloquial words listed above may have been borrowed at quite an early date and might have replaced some earlier native forms. For example, in Yüeh the word for 'skin' is a cognate form with the northern dialects — [p'ei²] in Cantonese, [p'i²] in Tai-shan, etc., but the same word of Tai origin is preserved in such colloquial expression as [naŋ¹ ('skin') kai¹ ('chicken')] 'goose flesh'. The fact that such borrowed words later acquired literary counterparts is not surprising, since borrowings can occur at different periods of time.

4. The Yüeh case

The Min situation is not unique. Although the so-called literary versus colloquial reading in the Yüeh dialects is, like in Min, generally distinguished by the difference of finals, there are cases where aspiration plays an important part. The most well-known one is that a number of colloquial words with initials derived from the Ancient voiced category still remain in the *yang*-rising tone with aspirated surds as initials in the modern dialects, while the majority (about two-third in Cantonese, for example) of words with similar derivational history are pronounced now with the (*yang*-) departing tone and voiceless unaspirated initials, just like in the northern dialects. For example (all of the following forms bear the *yang*-rising tone -- tone 4 unless specified otherwise, except that Yang-ch'un does not distinguish between *yin* and *yang* in the rising tone):²⁵

	Canton	Nan-hai	Yang-ch'un	Kao-chou
rudder 舵	t'ai	ha:i	t'ai	t'o
to sit 坐	ts'o	t'o	ts'o	ts'o
stomach 肚	t'ou	hau	t'ou	t'ou
twice as much 倍	p'ui	p'ui	p'ui	p'ui
covering 被	p'ei	p'ai	p'ei	p'ei
to stand 椅	k'ei	k'i	k'ei	k'ei
to resemble 似	ts'i	t'y ³	ts'ei	ts'i
to hold				
in the arms 抱	p'ou	—	—	—
bride (新) 婦	p'ou	(fu ³)	p'ou	(fu)
uncle 舅	k'au	ts'au	k'ieu	(kau ⁶)

insipid 淡	t'a:m	ha:m	t'a:m	t'a:m
company 伴	p'un	—	—	—
broken 斷	t'yn	hyn	t'uŋ	t'yn
near 近	k'an	—	(kaŋ)	k'an
mussel 蚌	p'oŋ	—	—	p'oŋ
heavy 重	ts'uŋ	t'uŋ	ts'uŋ	ts'uŋ

It then seems that aspiration in Yüeh plays exactly the opposite role as in Min, at least with respect to the rising tone — aspirates for colloquial forms and nonaspirates for literary forms. However, there are Yüeh dialects in which aspiration correlates with tone in the Min manner. We find that in Shun-te (directly southwest of Canton in the Pearl River delta area), Kao-yao and Kao-ming (west of Canton along the West River), reflexes of the Ancient voiced stops and affricates (examples of Kao-yao and Kao-ming are limited to labials and dentals only) display unaspirated instead of the expected aspirated initials in some colloquial words in both the level and the rising tone.²⁶ The following are examples with the yang-level tone (tone 2) unless specified otherwise:²⁷

(KY = Kao-yao, KM = Kao ming; HL = Huang-lien, TL = Ta-liang, YP = Yüeh-pu, CT = Ch'en-ts'uen, the latter four being subdialects of Shun-te)

	KY/KM	TS	HL	YP	CT
grandmother 婆	po	po	po	po	—
to compensate 賠	pui	pui	pui	pui	pui
skin 皮	pei	pei	pei	pi	pi
tray (托) 盤	pun	pun*	pun*	pun*	pun
table 檯	toi	toi*	toi*	toi*	toi
head 頭	tau	tau	tau	tau	tau
sweet 甜	tim	tim	tim	tim	tim
copper 銅	tuj	tuj	tuj	tuj	tuj
sausage (腺) 腸	—	tsøŋ*	tsøŋ*	tsiøŋ	—

with rising tone words, there is disagreement among the subdialects: the following examples all bear tone 4 unless specified otherwise:

	KY	KM	TL	HL	YP	CT
rudder 舵	t'a:i	ta:i	t'a:i	t'a:i	ta:i	—
stomach 肚	tou	tou	tou	t'ou	tu	tu
twice as many 倍	(not used)	p'ui	p'ui	p'ui	pui	pui
to hold in the arms 抱	p'a:u	pa:u	p'o	p'o	p'ou	pou
bride (新) 婦	pu	pu	p'u	p'ou	mou	—
insipid 淡	ta:m	ta:m	t'a:m	t'a:m	ta:m	—
company 伴	(not used)	—	pun ³	—	(not used)	—
broken 斷	tyn	tyn	tyn	t'un	tyn	—
mussel 蚌	—	—	poŋ	—	—	poŋ

Although the set of nonaspirates in these Yüeh dialects do not all coincide with the same in Min, it is not accidental that aspiration plays such a similar role in relation with tones in both dialect groups. And naturally one would think of the

phenomenon in terms of the Tai connection, and consider it as a common phonetic feature of these southern languages.

As for dialects of the Cantonese type, they may represent a different subgroup of Yüeh dialects. In addition, Canton being the provincial capital and cultural center for ages, northern influence must be much stronger. We would therefore rather consider the Shun-te group representing the oldest layer in Yüeh with respect to the problem under discussion.

5. Concluding remark

While both Min and Yüeh preserve many traits of Ancient Chinese — to mention just one, they often show an [h] or [fi] or traces of a guttural for the Ancient Yüinitial, while other dialects generally have a glide for the same —, as we have outlined above, they also share many features with the neighboring Chuang and Tai languages, which differentiate them from northern Chinese. In pursuing the study of southern Chinese dialects, we feel that it is indispensable to take into consideration layer distinction and areal linguistics. Hopefully in the future, these dialects will be studied in an even wider context which will provide us with an ever deeper perspective.

Notes

- I am indebted to the Social Science Research Council and the American Council of Learned Societies for a research grant which enabled me to carry out field work with various southern Chinese dialects as well as a Chuang dialect in Hong Kong in the first half of 1973. The data of these dialects have provided a basis for my assumptions in the present paper.
- Hakka is often included as one of the southern groups; however, the settlement of the Hakka from the north to the south is later than either the Yüeh or the Min, and the Hakka language contains far fewer elements aboriginal to the south; therefore, we would like to exclude it in our following discussions.
- See Ts'en Ch'i-hsiang 1953.
- In northern Min, some dialects, like Foochow, have both forms.
- See Norman 1970, p. 29.
- Numerals designate the categories of the tone corresponding to the Ancient Chinese categories of p'ing (1, 2), shang (3, 4), chü (5, 6) and ju (7, 8); odd numbers signify the yin category and even numbers the yang category found in the modern dialects. In general, but not exclusively, the yin category has a higher tone register than that of the yang in these dialects. An asterisk indicates pienyin or the morphological change of tone.
- Data for Foochow, Amoy, Kienyang and Fu-ting are taken from Norman 1970 and 1972, those for Lungchow taken from F-K. Li 1940, while those for Lung-ming and Sui-ch'i are from my field notes.
- This item also occurs in the Tai-shan dialect of Yüeh: pak⁷ liau⁶ tsa* (pak⁷ = 'mouth', cf. LM pa:k⁷ 'mouth') 'garrulous person' as well as the Lin-kao dialect (spoken in Hainan, investigation carried out by M. J. Hashimoto) of Li: ?bak⁷liau⁶ 'talkative'.
- Data of Fu-an and Ning-te are taken from Norman 1972, P.33.
- Data for Wu-ming are taken from F-K. Li 1956, and other from my field notes.
- Tai-shan, like other Sei-yap dialects, forms the pronominal plural by the change of tone, which is also observed in Yang-jiang, prefecture adjacent to Yang-ch'un.
- According to Prof. F-K. Li, some Tai dialect in northern Thailand does possess aspirated initials in the yang-tone category; however, this is very rare.
- See F-K. Li 1973.
- Usually yang-p'ing, unless the dialect does not distinguish between a yin and a yang category, such as found in some northern Shansi dialects.

14. This description of Min follows Norman's revision of F-K. Li's earlier account which describes Min as having unaspirated surds as reflexes in all tones.
15. Data of Foochow, Kienyang, Kienow and Fu-ting are based on Norman 1971a, 1971b and 1972 unless specified otherwise, those on Amoy on C-P. Lo 1956, of Chaochow on Y-M. Li 1959, and those of Sui-ch'i on my own field notes. Only colloquial forms are given here.
16. Two eastern Min dialects, Fu-an and Ning-te, also have [p] for this form.
17. For details of his argument, see Pulleyblank 1973.
18. See Norman 1973. Some preliminary thoughts on the subject are given in my paper "Phonological distinctions among Old Chinese initials" read at the November monthly meeting of the Chinese Linguistic Society of Japan Meeting of the Tokyo Branch in 1973, which will appear in the Bulletin of the Society in late 1975 or early 1976.
19. Cases of exactly the opposite situation are very rare; but 匠 as in 'carpenter' and 企 as in 'corporation' are given with unaspirated initials in the literary pronunciation but aspirated ones in the colloquial pronunciation in Chaochow.
20. Except for a few marginal cases, Archaic **[y] is in complementary distribution with Archaic** [g'], the latter occurring only in Division III of the rime tables.
21. So-called Hsia-mu words occurring in Divisions I, II and IV of the rime tables.
22. Form taken from Y-M. Tao 1956.
23. An unaspirated velar initial is designated for the word in Ch'i-Lin Pa-yin.
24. The word listed in C-P. Lo 1956 is 衡.
25. Data all taken from my field notes. The Nan-hai dialect recorded here is that of Chiu-chiang. It is spoken to the direct southwest of Canton, while Kao-chou is one of the Nan-lu dialects.
26. The T'eng-hsien dialect of Kuangsi has nonaspirates corresponding to the Ancient initials in question despite of tones. However, the case is not as interesting as that of Shun-te, Kao-yao and Kao-ming, since T'eng-hsien may have been influenced by the Hsiang dialects, and since the settlement of Yüeh speakers in T'eng-hsien is later than that of the other three.
27. Except for Shun-te Ch'en-ts'uen, which is taken from Ball 1900, data for all dialects are based on my field notes.

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THE AUSTROASIATICS IN
ANCIENT SOUTH CHINA

Some lexical evidence*

*Jerry Norman and Tsu-lin Mei*Source: *Monumenta Serica* 32, 1976, 274-301.

It is well known that ancient South China was almost exclusively populated by non-Chinese peoples whose identity and location, however, remain to be determined. The purpose of this paper is to contribute some lexical evidence towards the solution of this problem. In particular, we will try to show that the Austroasiatics inhabited the shores of the middle Yangtze and parts of the southeast coast during the first half of the first millennium B.C., and that the Chinese borrowed the name of the Yangtze from them. Other words indicating early contact between these two peoples will also be discussed.

The Austroasiatic (hereafter AA) family of languages includes the following groups: Munda in northeast India; Khasi in Assam; Palaung-Wa in Upper Burma and southern Yunnan; Mon-Khmer in Lower Burma and Cambodia, as well as in parts of Vietnam, Laos, and Thailand; and Vietnamese-Muong in Vietnam.¹ Here we accept Haudricourt's view that Vietnamese is a Mon-Khmer language which came under the influence of Tai and Chinese.² A recent study by Ruth Wilson shows that Muong occupies an intermediate position between Vietnamese and Mon-Khmer, thus lending support to Haudricourt's thesis.³

The present location of the AA languages is strictly to the south of China, with two possible exceptions. The Miao-Yao languages, whose tonal system is similar to that of Chinese, are usually classified as Tibeto-Burman. But according to Davies, Forrest, and Haudricourt Miao-Yao is AA.⁴ The genetic affiliation of Tai remains a problem. Traditionally, Tai and Chinese were regarded as constituting a sub-family under Sino-Tibetan.⁵ But Benedict proposed some thirty years ago that Thai, Kadai, and Indonesian belong together in an Austro-Thai family.⁶ In a recent series of papers, Benedict has further suggested an AA sub-stratum in Austronesian, which he now calls Austro-Thai.⁷ While the AA relationship to Miao-Yao and Thai are both still in dispute, there are other reasons for believing that AA once extended far into the present borders of China.

The evidence consists of loan words into Chinese. If the word in question is also a place word, then once the fact of borrowing has been established, it is possible to tell not only which two peoples were involved but also where the contact was made. Archaic loans between AA and Chinese have previously been proposed by Pulleyblank, Forrest, and Benedict.⁸ We have in some cases incorporated their proposals and added philological and historical details. Another impetus to our endeavor is the recent publication of several studies in AA linguistics, particularly Pinnow's work on Kharia, the volume of the essays edited by Zide, and dictionaries on various modern languages.⁹ In addition to supplying valuable information on many hitherto inaccessible AA languages, these studies also provide the means by which the time depth of an AA word may be estimated via its geographic distribution. Admittedly we are on rather shaky ground here, since we have no records of the AA languages which we believe were once spoken in South China. We must depend on modern AA evidence such as the forms contained in Pinnow and Zide, and the languages consulted are probably not the direct descendents of the source of the Chinese loans. Under these circumstances, it seems to us, we cannot expect too great a rigor in making phonetic equations; nonetheless, we have tried to avoid extravagant or totally unsupported claims. Obviously part of the difficulty is the inadequacy of the available reconstructions of Old Chinese (hereafter OC).

Before proceeding to discuss loan words, we wish to present some evidence for the fact that the Yüeh people was at least partly AA. The term Yüeh 越 has always had an intimate connection with the peoples of South China; Yüeh is the name of a state that flourished during the fifth and sixth century B.C. in Chekiang and Fukien; it is also part of the name Vietnam, anciently Nan-yüeh, whose territory then extended into Kwangtung and Kwangsi and included Hainan.¹⁰ During the Ch'in and Han dynasties the term Pai-yüeh 百越 'the hundred Yüeh' was used to refer to the various "barbarians" inhabiting South China. Earlier, in the oracle bones and bronze inscriptions, the graph was simply the pictograph of an axe.¹¹ Here we may mention the fact that the rectangular axe and the shouldered axe were respectively associated with the Austronesians and the AA's.¹² The supposition that the Yüeh peoples were Austronesian or AA is highly attractive, but no convincing proof has yet been offered. The only piece of linguistic evidence previously studied is the Yüeh song contained in Liu Hsiang's *Shuo-yüan*, which, according to Izui Hisanosuke, is in a language resembling Cham.¹³ But the Chinese translation accompanying the Yüeh original gives little indication as to which transliterated syllable corresponds to which Chinese word. Consequently, Izui's claim is difficult to evaluate. On the other hand, a number of Yüeh words were preserved in various ancient texts.¹⁴ In what follows, we will show that two items represent the AA words for "die" and "dog."

(1) 札 ***tsət*¹⁵ 'to die'

In Cheng Hsüan's commentary on the *Chou-li*, the gloss 越人謂死爲札 "The Yüeh people call 'to die' 札" occurs.¹⁶ Cheng Hsüan lived during the Eastern Han (127-200 A.D.) and there seem to be no grounds to doubt the authenticity of this gloss. According to Karlgren's *Grammata Serica Recensa* the OC reading of the character 札 was **tsät*.

This is Karlgren's group II. There is good reason to believe that his reconstruction is erroneous. Tuan Yü-ts'ai assigns this character to his group twelve, which corresponds most nearly to Karlgren's group V.¹⁷ Chiang Yu-kao places it in his 脂 group which also corresponds most nearly to Karlgren's group V.¹⁸ How do we explain this discrepancy? There are several ways to assign a given character to an OC rhyme group. It may be assigned on the basis of its occurrence in a rhymed text, but if it does not appear as a rhyme word, then there are only two alternative methods for determining its proper membership: a few Middle Chinese (hereafter MC) rhymes all go back to a single OC category; this is the case, for example, with the MC rhyme 唐 which derives from the OC 陽 group in its entirety. For such MC rhymes, the assignment to an OC rhyme category is mechanical. Frequently, however, a given MC rhyme has more than one OC origin. This, in fact, is true of the character in question. 札 belongs to the MC 酷 rhyme; this rhyme derives from three different OC rhyme categories: 祭, 微, and 脂 corresponding roughly to Karlgren's II, V, and X. The only way to determine which OC rhyme category such words as this belong to is to examine their *hsieh-sheng* connections. In the *Shuo-wen*, 札 is defined as follows: 札牒也, 从木乙聲. In *GSR* 505 a reading **iEt* is given for 乙; this is Karlgren's group V. And in the *Shih-ming*, written by Liu Hsi, a younger contemporary of Cheng Hsüan, the sound gloss is 札, 摘也 (櫛**tsjEt*, OC 脂 group).¹⁹ Clearly 札 should belong to the same group as 乙; the proper reconstruction is **tsEt* and not *tsät* as given in *GSR* 280b. Tung T'ung-ho does not give this character in his *Shang-ku yin-yün piao-kao*,²⁰ but it is simple enough to place it where it belongs—viz. on page 215 in Tung's 微 group; the proper form in Tung's system is **tsät*.

There can be no doubt that this word represents the AA word for 'to die': VN *chêt*; Muong *chít*, *chét*; Chrau *chu't*, Bahnar *kycit*; Katu *chet*; Gua *test*; Hre *ko'chit*; Bonam *kachet*; Brou *kuchêit*; Mon *chvt*. More cognate forms can be found in Pinnow, p. 259, item K324f. The Proto-Mon-Khmer form has been reconstructed by Shorto as *kcət*,²¹ which is extremely close to our OC form. There is even the possibility that Proto-MK **k-* is reflected in the glottal initial of the phonetic 乙.

"To die" in other east and southeast Asian languages are: Chinese 死 **sjər*; Tib 'chi-ba, *šhi*; Lolo-Burm **šei*;²² Proto-Tai **tai*;²³ Proto-Miao **dai*.²⁴ Here Chinese goes together with Tibeto-Burman, and Proto-Tai goes together with Proto-Miao. None of these forms has any resemblance to **tsEt*.

(2) 猓 **sjô(g)* 'dog'

The *Shuo-wen* says 南越名犬英獲 "Nan-yüeh calls 'dog' **nôgsjôg*." This explanation occurs under the entry for 猓, which implies that the meaning "dog" is attached to this character. The first character of the compound probably represents a pre-syllable of some kind. Tuan Yü-ts'ai mentioned in his Commentary to the *Shuo-wen* that this word was still used in Kiangsu and Chekiang, but did not give any further detail.

Karlgren gives *sjôg* as the OC value for 猓 (*GSR* 1097h). At the time of the *Shuo-wen* (121 A.D.), -*g* had probably already disappeared; in Eastern Han poetry, MC open syllables (OC -*b*, -*d*, -*g*) seldom rhyme with stopped syllables (OC -*p*, -*t*, -*k*); in old Chinese loan words in Tai (specifically, the names for twelve earth's

branches 地支 *ti-chih*), probably reflecting Han dynasty pronunciation, Proto-Tai -*t* corresponds to OC -*d*, but no trace can be found for -*g*. The proper value for our purpose is therefore *sjô*.

This is the AA word for "dog," as the following list shows:

"dog": VN *chó*; Palaung *sho:*; Khum, Wa *so?*; Riang *s'o?*; Kat, Suk, Aak, Niahon, Lave *có*; Boloben, Sedang *có*; Curu, Crau *šö*; Huei, Sue, Hin, Cor *sor*; Sakai *cho*; Semang *cú, co*; Kharia *so'lo?, šo'lo?*; Ju *solok*; Gutob, Pareng, Remo *guso*; Khasi *ksew*; Mon *kliw*; Old Mon *cliw*; Khmer *chke*.

The forms after VN represent almost all the major groups spoken in the Indo-China and Malay Peninsulas, as well as the Palaung-Wa, Khmer, and Malakka groups. The proto-form for these languages appears to be *so?* or *co?*, preceded perhaps by *k-* (cf. Khasi, Gutob, etc.). On the basis of Mon, Haudricourt suggested that VN *ch-<kl-*.²⁵ But there is another possibility, namely, VN *ch-<kc-*; "to die" **kcət*, VN *chêt*, Kuy *kacet*, Kaseng *sit*. And even if VN *ch-* did come from *kl-*, this change must have occurred quite early, since in all the AA languages except Mon, the initial is either a sibilant fricative or affricate.

"Nan-yüeh" refers to North Vietnam and parts of Kwangtung and Kwangsi. With this piece of evidence, we know that the language spoken there in the second century A.D. was AA. This is also the earliest record of the language of Vietnam.

We now come to old AA loan words in Chinese.

(3) 江 ***krong / kang / Chiang* 'Yangtze River', 'river'

"river" in Mon-Khmer: VN *sông*; Bahnar, Sedang *krong*; Katu *karung*; Bru *klong*; Gar, Koho *rong*; La?ven *dakhom*; Biat *n'hong*; Hre *khroang*; Old Mon *krung*.

Cf. Tib. *kluñ* 'river'; Thai *khlo:n* 'canal'.

Chiang has a Second Division final in MC, and according to the Yakhontov-Pulleyblank theory, this implies a medial -*r-* or -*l-* in OC.²⁶ The OC reading for this word in Li Fang-kuei's system is **krung*.²⁷ Further evidence for -*r-* consists of the fact that some words with 工 as their phonetic have disyllabic doublets, whose first syllable has a velar initial and whose second syllable is *lung*: 空 = 窟籠 'hole, empty,' 項 = 喉嚇 'neck, throat,' 鴻 = 屈籠 'wild goose'.²⁸ The final has been reconstructed as -*ung* by Karlgren and Tung T'ung-ho, -*awng* by Pulleyblank, and -*ong* by Yakhontov.²⁹ In spite of these minor differences, it is clear that the final had a rounded back vowel in OC.

It is immediately clear that the Mon-Khmer forms are related to the Chinese form. What remains to be discussed is the direction of the loan.

There are several reasons for thinking that the Chinese borrowed this word from the AA's. OC has four common words for names of rivers: 水 *shui*, 川 *ch'uan*, 江 *chiang*, 河 *ho*. The first two are general words; the last two are proper names, *chiang*

'Yangtze River' and *ho* 'Yellow River.' On the other hand, *krong* etc. is a general word for 'river' in AA. In borrowing, a general word or a descriptive term often becomes a proper name in the receiving language; witness *Mississippi* and *Wisconsin*, 'big river' and 'big lake' in Algonquin, which became proper names in American English.

The two general words for 'water' and 'river' in OC, *shui* and *ch'uan*, occur in the oracle bones and can be traced to Sino-Tibetan: 'water' Tib. *ch'u*; Bara, Naga *dui*; Kuki-chin *tui*; Chinese 水 **siwər/swi/shui*, 川 **t'iwən/tš'iwän/ch'uan*. The nasal final in *ch'uan* probably represents the vestigial form of a plural ending, and there is a phonological parallel in the sound gloss in the *Shuo-wen* 水, 準也 (準 **hñwən*); *shui* and *ch'uan* are therefore cognates. OC 河 *ya/g'â* earlier **g'al* or **g'ar*, we suspect, is a borrowing from Altaic.³⁰

Chiang is of relatively late origin. It did not occur in the oracle bones.³¹ The bronze inscriptions contain one occurrence of this word, and the *Book of Odes*, nine occurrences, in five poems. When the word *chiang* acquired the general meaning of 'river,' its use as names of rivers was limited to south of the Yangtze. Both these facts again suggest that *chiang* was a borrowed word.

Other etymologies for *chiang* are less plausible. Tibetan had *kluñ* 'river.' But a Sino-Tibetan origin of *kluñ/krong* is ruled out because *chiang* is a late word with a restricted geographic distribution, and because MC 2nd Division generally corresponds to Tib. -r- but not to -l-. Similarly, the basic word for 'river' and 'water' in Tai is *na:m*; *khlɔːŋ* is a secondary word restricted in its meaning to 'canal', with limited distribution in the Tai family; it is unlikely to be the source of Chinese **krong*. The most plausible explanation is that both Tibetan and Thai also borrowed *kluñ* and *khlɔːŋ* from AA.

We will now try to show that the Chinese first came into contact with the Yangtze in Hupei, anciently part of the Ch'u Kingdom. This must be the region where the Chinese first came into contact with AA's and borrowed *chiang* from them.

The Han River has its source in Shensi whence it passes through Honan and joins the Yangtze in Hupei. As the Chinese came down from their homeland in the Yellow River valleys, it was natural for them to follow the course of the Han River. This general conclusion is also supported by textual evidence. The word *chiang* 'Yangtze River' occurs in five poems in the *Book of Odes*. In Ode 9, 204, 262, and 263, *chiang* occurs in conjunction with *han* 'Han River,' either in the compound *chiang-han* or in an antithetical construction with *han* in the other part. The only poem containing *chiang* but not *han* is Ode 22. But this poem belongs to the section Chao-nan 召南, and this term is also what the Chou people used for the region which formerly belonged to Ch'u.³² Moreover, according to several authorities, the term 江南 (literally 'south of the River') as used during the Han dynasty refers to Ch'ang-sha 長沙 and Yü-chang 豫章, in present Hunan and Kiangsi.³³ The implication is that *chiang* in *chiang-nan* refers to the middle section of the Yangtze and not the entire river.

The notion that the Chinese met the AA's in the Middle Yangtze region of course does not exclude their presence elsewhere; it just gives a precise indication of one of their habitats. It is perhaps pertinent to mention that the Vietnamese

believed that their homeland once included the region around the Tung-t'ing Lake 洞庭湖 which is in that general area.³⁴ Another Vietnamese legend states that their forefather married the daughter of the dragon king of Tung-t'ing Lake.³⁵

Textual and epigraphic evidence indicates that the word *chiang* came into the Chinese language between 500 and 1000 B.C. Mao Hang's Commentary to the *Odes* also assigned all poems celebrating the southern conquest to the reign of King Hsüan (827-781 B.C.). The first half of the first millennium B.C. can therefore be taken as a tentative date for the AA presence in the Middle Yangtze region. Recently, however, archaeologists are increasingly inclined to the view that contact between North China and South China occurred as early as the Shang dynasty: artifacts showing strong Shang and early Chou influence have been discovered in the lower Yangtze region, and according to some scholars, also in the Han River region.³⁶ If further investigations show that pre-Chou traffic between the North and the South was extensive and bi-directional, we may have to revise the date for *chiang* upward.

(4) 𧈧 ***riwəi/iwi/wei* 'fly'³⁷

'fly' in Mon-Khmer: VN *ruđi*; Camb. *ruy*; Lawa *rue*; Mon *riy*; Chaobon *riuy*; Kuy *ʔaruəy*; Souei *ʔarəy*; Bru *riay*; Ngeʔ, Alak, Tampuon *rəy*; Loven, Brao, Stieng *ruay*; Chong *rəy*; Pear *roy*.
Cf. Proto-AA **ruwaj* (Pinnow, p. 268, item 356).

The word 𧈧 *wei* 'fly, gnat' occurs in the Ch'u-yü 楚語 section of the *Kuo-yü* 國語: "It is as if horses and cattle were placed in extreme heat, with many gnats and flies (on them) 宝儘之既多, and yet they are unable to swish their tails." *GSR* 575 defines *wei* as 'gnat' and gives its OC value as **djwər*. Karlgren's definition 'gnat' (or our 'fly') fits the above passage, the locus classicus of this word. It is further substantiated by old dictionaries; the *Kwang-ya* 廣雅 defines 𧈧 as 𧈧, and the *Fang-yen* 方言 states that 羊 (𧈧) is a dialect form of 蠅 'fly.' Karlgren's OC value, however, requires revision.

The OC value of 𧈧 can be ascertained via its phonetic 維 *wei*; the form of the character indicates that it is the name of an insect pronounced like 維. The initial of *wei* in MC is 喻四, the *yü* initial. Li Fang-kuei has argued convincingly that the OC value of *yü* IV is a flapped *r*- or *l*-, somewhat like the second consonant of *ladder* in American English; he writes it as **r*-.³⁸ 烏犬山離 'Alexandria,' a Han dynasty transcription, has 戈 MC *ʔək* (with a *yü* IV initial) matching *-lek(s)*-. The word 酉, one of the twelve earth's branches, has **r*- in Proto-Tai, still attested in several modern dialects. Sino-Tibetan correspondences point to the same value, for example, 'leaf' Chinese 葉 ***rap* / *jäp* / *yeh*; Tib. *lob-ma*, *ldeb* (**dl*-).

The final of *wei* has been reconstructed as *-d* by Tung T'ung-ho and Li Fang-kuei, and as *-r* by Karlgren. These are values for the earlier stage of OC. By the time of the *Kuo-yü*, which is relatively late, *-d* or *-r* had probably already become *-i*.

The Mon-Khmer forms have a wide distribution. More cognate forms, including some in the Munda branch, can be found in Pinnow, p. 268, item 356. VN *ruđi* etc., then, is a very old word in AA; it is also the general word for 'fly.' The standard word for 'fly' in OC is 蠅 ***riəng*, which was already attested in the *Odes*. The word 蠻 *wei* 'fly,' on the other hand, is a hapax legomenon. Clearly, *wei* 'fly' was borrowed from the AA's into the ancient Ch'u dialect.

In Li's system, the distinction between *ho-k'ou* and *k'ai-k'ou* (with or without *-u/-w-*) is non-phonemic in OC, and the OC value of 維 in his system is **rəd*. In terms of our problem, there are two possibilities. Either OC had no *-w-* at all, phonemic or non-phonemic, in which case the best the Chinese could do to approximate the AA form (which has a rounded back vowel is **rəi<*rəd*; or else, OC had a non-phonemic *-w-*, in which case the OC form is **rwəi*. We have chosen the latter alternative.

The two loan words, *chiang* 'Yangtze River' and *wei* 'fly', suggest the following sequence of events. The Chinese came to the middle Yangtze between 1000 and 500 B.C., and there met the AA's. Subsequently, some of the AA's migrated toward the south, and some were absorbed into the Ch'u population. That is why this word shows up in the Ch'u-yü section of the *Kuo-yü* and nowhere else.

It seems appropriate to mention in this connection that the Ch'u people clearly contained non-Chinese elements. King Wu of Ch'u acknowledged that he was a southern barbarian; the poet Ch'ü Yüan lamented, "I was sad that the southern tribesmen could not understand me"; and the *Lü-shih ch'un-ch'iu* stated that "Ch'u was derived from the barbarians."³⁹ In view of what has just been said, we know that one of the ethnic groups constituting the Ch'u people was AA.

(5) 虎 'tiger' ***k'la(g) / Xuo / hu*

'tiger' in AA: **kala?*; Munda *ki'ɾɔ?*, *kul*, *kula*, *kilo*, etc.; Old Mon *kla*; Mon *kla*; Bahnar, Sedang *kla*; Sue *kala*; Brou *klo*; Old Khmer, *klā*; Khmer *khla* 'felines'; Khasi *khla*; VN *khái*; Muong *k'al*, *k'lal*, *kanh*, etc.

Pinnow reconstructs the Proto-Munda form as **kala* (Pinnow, p. 142, item 281), and we propose an alternate Proto-AA form, **kala?*. Let us now turn to the Chinese side.

虎 *hu* belongs to the OC 魚 *yü* group. According to Yakhontov, Pulleyblank, and Li, this group had *-a* as its main vowel. It may or may not have had a final voiced consonant of some sort in OC; Yakhontov has none, and Li would have *-g*. In Li's system 虎 MC *Xuo* would derive from an OC ***Xag*. Now, 虎 serves as the phonetic in some words with MC *l-* initial: 盧 MC *luo*, 慮 MC *liwo*, etc.⁴⁰ Therefore, in Li's system, *hu* 'tiger' could be reconstructed as **Xlag*, since his OC medial *-l-* simply drops in MC; *-r-* on the other hand yields the Second Division vowels. Further, certain Western Min dialects have an initial aspirated *k'* in the word for tiger: Kienyang *k'oʔ*, Shaowu *k'uʔ*. This is not an isolated phenomenon in Min; for example, 許 Amoy *k'oʔ*, but MC *xjwo*; 火 Kienyang *k'uiʔ*, MC *Xuá*; 壑

Foochow *k'auʔ*, MC *Xuát*. From this we can see that MC *x-* (in some cases) may go back to a stop **k'-*. Since 虎 is one of the words involved in this change, we are justified in reconstructing it as ***k'la(g)*. This form is very close to Pinnow's Proto-Munda reconstruction **kala*.

Our reconstruction of the Proto-AA form as **kala?* is motivated by the fact that *-ʔ* is present in the word for tiger in several Munda languages. The Chinese word *hu* 'tiger' is in the rising tone, and one of the present authors has argued elsewhere that the MC rising tone derives from a final glottal stop.⁴¹ If so, the correspondence between Proto-AA **kala?* and OC ***k'la?* is even closer.

Two other considerations may be offered. There is no plausible Tibeto-Burman etymology for 虎 *hu* 'tiger'; Tib. has *stag* 'tiger,' a totally unrelated word; Old Burmese has *kla*, but in all probability it was a loan from Mon. The present habitats of the tiger (*Panthera tigris*) in China are the Southwest, the Southeastern coastal area, the Yangtze valleys, and Manchuria, with South China as the area of highest concentration.⁴² Appearances of the tiger in historical records coincide with the above, but also include northern Hopei and Shansi. Skeletal remains of the tiger were also found at the site of An-yang, in Honan.⁴³ The distribution of the tiger is noteworthy in two respects: the heaviest concentration is in South China, presumably the habitats of the AA's, and the area of total absence includes the steppes and loessland of northwest China, the probable homeland of the Sino-Tibetan ancestors of the Chinese. From this perspective, it is easy to see why there is no word for tiger in Sino-Tibetan, or in the oldest stage of Chinese. To be sure, the word was attested as a pictograph in the oracle bones. What this means is that small bands of AA's occupied parts of the Yellow River basin before the arrival of the Chinese. The AA's had the word for tiger in their language and transmitted it to the Chinese.

It is possible that 虎 had a disyllabic doublet, derived from the same AA source. The *Tso-chuan* says 楚人謂乳穀，謂虎於冤，"The Ch'u people call 'to nurse' 穀, and 'tiger' 於冤." The initial of 於 has the value *ʔ-* in MC, but there is some reason to believe that its OC value is *k-* or *k'-*. 於 is a variant of 于, and the latter was used to transcribe "Khotan" in the *Shih-chi*: 于閼. 於冤 also has a variant 狗賓; Kuo P'u's 郭璞 commentary to the *Fang-yen* states under 於應 'tiger': 今江南山夷呼虎爲應，音狗賓 "Nowadays the hill tribes in the south of the Yangtze call 'tiger' 趙, pronounced as 狗賓 (MC *kəu-təu*)." The OC form of the Ch'u word for 'tiger' was therefore something like ***kat'a*.

The only difference between AA **kala?* and Chinese is *-l-* versus *-t'-* or *-t-*, which may conceivably be explained as follows. Some AA forms have a dental stop: Pinnow regards Khmer *khla* 'felines' as a cognate of *dho* (*thom*) 'tiger royal,' and according to Kuhn, Karia *kiɾɔ?* < **kil-dɔ?* (Pinnow, p. 142). Kuiper has noted that there is a variation among Munda *d*, *t*, and *l* in initial position.⁴⁴ It may be that AA **kala?* had a dialect form *kata?*, and the latter was represented by the Ch'u word for 'tiger.' The above two paragraphs were offered merely as a speculative conjecture, since much remains uncertain on both the Chinese and the AA side.

(6) 牙 ***ngra/nga/ya* 'tooth, tusk, ivory'

AA: VN *ngà* 'ivory'; Proto-Mnong (Bahnar) **ngo'la* 'tusk';⁴⁵ Proto-Tai **nga*.

Chinese *ya* has a 2nd Division final in MC, which, according to the Yakhontov-Pulleyblank theory, calls for a medial *-r-* in OC. And it is our belief that OC **ngra* was derived from an AA form similar to Proto-Mnong **ngo'la*.

Our theory that Chinese *ya* was a loan is based upon the following considerations. (1) The oldest Chinese word for 'tooth' is *ch'ih* 齒, which once had an unrestricted range of application, including 'molar,' 'tusk,' and 'ivory.' (2) *Ya* is of relatively late origin. When it first appeared, it was only used for 'animal tooth' and 'tusk,' which was and still is the meaning in AA. (3) While North China once had elephants, they became quite rare during the Shang and Chou dynasties, and ivory had to be imported from the middle and lower Yangtze region. Imported items not infrequently bear their original names, and by our previous argument, the Yangtze valley was inhabited by the AA's during the first millennium B.C.

Ch'ih 齒 consists of a phonetic 止 and the remaining part as a signific. The latter is a pictograph showing the teeth in an open mouth. Ancestral forms of the pictograph occurred frequently in the oracle bones. Since adding a phonetic is a standard method for creating new graphs for old words, we can be reasonably certain that the oracle bone forms cited represented *ch'ih*. The graph of *ya*, however, has no identifiable occurrence in the oracle bones and only one probable occurrence in the bronze inscriptions. This statement is based upon the fact that *ya* is listed neither in Li Hsiao-ting's compendium of oracle bone graphs nor in Yung Keng's dictionary of bronze graphs.⁴⁶ Karlgren cited a bronze form for *ya* in *GSR* (37b). But Kuo Muo-jo marked this occurrence of *ya* as a proper name, which makes it impossible to ascertain the meaning further.⁴⁷

There are reasons to believe that the absence of *ya* from early epigraphic records was not merely accidental. The oracle bones contained many records of prognosis concerning illness, and among them tooth-ache.⁴⁸ The graphs used were always ancestral forms of *ch'ih*. The oracle bones also contained a representative list of terms for parts of the body, including head, ear, eye, mouth, tongue, foot, and probably also elbow, heel, buttock, shank⁴⁹. The absence of *ya* under such circumstances is quite conspicuous.

A graph must first exist before it can become a part of another graph, and the older a graph, the more chances it has to serve as part of other graphs. By this criterion, *ch'ih* is much older than *ya*. In the oracle bones, *ch'ih* occurs as the signific of three graphs. In the *Shuowen*, *ch'ih* occurs as the signific of forty-one graphs, all having something to do with tooth; *ya*, only two graphs, one of which has a variant form with *ch'ih* as the signific. The *Shuowen* also tells us that *ya* has a *ku-wen* form in which the graph for *ch'ih* appeared under the graph for *ya*. What this seems to indicate is that when 牙 first appeared, it was so unfamiliar that some scribes found it necessary to add the graph for *ch'ih* in order to remind themselves what *ya* was

supposed to mean. 牙 also occurs as the phonetic of eight graphs (six according to Karlgren). But none of these graphs is older than 牙, and our conclusion is not affected.

The meaning of *ch'ih* in the oracle bones is primarily 'human tooth', including 'molar.' On one shell, there occurred the statement.... 允有來入齒 which has been interpreted, "Yün came to send a tribute of elephant's tusks."⁵⁰ But other interpretations are also possible. The use of *ch'ih* as 'tusk, ivory' is most clearly illustrated in Ode 299 憬彼淮夷, 來獻其深, 元龜象齒 "Far away are those Huai tribes, but they come to present their treasures, big tortoise, elephant's tusks"; and not quite so clearly in two passages in the 禹貢 "Yü kung," both of which listed 齒, 革, 羽, 毛 as items of tribute. Here *ch'ih* can mean either 'ivory' or 'bones and tusks of animals,' all used for carving. Lastly, *ch'ih* also applies to tooth of other animals, 相鼠有齒 "Look at the rat, it has its teeth" (Ode 52).

Beginning with the *Book of Odes* we have unambiguous evidence for the use of *ya*. But in the pre-Han texts *ya* still did not occur frequently, and an analysis of this small corpus reveals that *ya* was never used for human tooth. Hence the *Shuowen*'s definition of *ya* as 牡齒, usually interpreted as 'molar,' seems to reflect a later, probably post-Ch'in, development.⁵¹ The most frequent occurrence of *ya* in the sense of 'tooth' is in the compound 爪牙 'claw and tooth,' and there the reference to animal tooth is quite clear. The *Yi-ching* contains a line in which the meaning of *ya* was 'tusk': 續豕之牙吉 'the tusk of a castrated hog: [the sign is] propitious.' The line in Ode 17 誰謂鼠無牙 probably means 'Who says the rat has no tusks?' but some scholars prefer to interpret *ya* simply as 'teeth (incisors).'

Elephants once existed in North China; remains of elephants have been unearthed in neolithic sites as well as in An-yang.⁵² Ivory carving was also a highly developed craft during the Shang dynasty.⁵³ These facts, however, should not mislead us into thinking that elephants had always been common in ancient North China. Yang Chung-chien and Liu Tung-sheng made an analysis of over six thousand mammalian remains from the An-yang site and reported the following finding: over 100 individuals, dog, pig, deer, lamb, cow, etc.; between 10 and 100 individuals, tiger, rabbit, horse, bear, badger (鼬) etc.; under 10 individuals, elephant, monkey, whale, fox, rhinoceros, etc.⁵⁴ The authors went on to say that rare species such as the whale, the rhinoceros, and the elephant were obviously imported from outside, and their uses were limited to that of display as items of curiosity. This view is also confirmed by literary sources. In the *Han Fei-tzu*, it is said that when King Chou of the Shang dynasty made ivory chopsticks, Chi Tzu, a loyal minister, became apprehensive – implying that when as rare an item as ivory was used for chopsticks, the king's other extravagances could be easily imagined.⁵⁵ Importation of ivory in the form of tribute was also reported in Ode 299 and in the "Yü-kung," both of which were cited above.

The history of *ya* and *ch'ih* can now be reconstructed as follows: The people of the Shang and Chou dynasties have always depended upon import for their supply of ivory. But during the early stage, ivory and other animal tusks and bones were designated by *ch'ih*, which was also the general word for 'tooth.' Items

made of ivory were also indicated by adding a modifier 象 *hsiang* 'elephant' before the noun, for example 象筓, 象珥, 象箸 'ivory comb-pin,' 'ivory bow tip,' 'ivory chopsticks.'⁵⁶ Then *ya* came into the Chinese language in the sense of 'tusk.' Because a tusk is larger than other types of teeth, *ya* gradually acquired the meaning of 'big tooth, molar' by extension, thus encroaching upon the former domain of *ch'ih*. When later lexicographers defined *ya* as 'molar' and *ch'ih* as 'front tooth,' they are describing, though without clear awareness, the usage of the Han dynasty and thereafter. By further extension, *ya* also became the general word for 'tooth,' while retaining its special meaning of 'ivory.'

Some Min dialects still employ 齒 in the sense of tooth. The common word for tooth in Amoy is simply *k'i*³. Foochow has *nai*³ which is a fusion of ηa^2 plus *k'i*³, i.e. 牙齒. This strongly suggests that in Min the real old word for 'tooth' is 齒 as in Amoy, the implication being that this was still the colloquial word for 'tooth' well into Han when Fukien was first settled by the Chinese. The Japanese use 齒 as *kanji* to write *ha* 'tooth' in their language; 牙 rarely occurs. Both these facts provide supplementary evidence for the thesis that the use of *ya* as the general word for 'tooth' was a relatively late development.

In a note published in *BSOAS*, vol. 18, Walter Simon proposed that Tibetan *so* 'tooth' and Chinese *ya* 牙 (OC **ngâ*) are cognates, thus reviving a view once expressed by Sten Konow. Simon's entire argument was based upon historical phonology; he tried to show (a) OC had consonant clusters of the type *sng-* and *Cγ-*, (b) by reconstructing 牙 as *sngâ > zngâ > nga* and 邪 as *zγâ > zjâ*, one can affirm Hsü Shen's view that 邪 has 牙 as its phonetic, and (c) Chinese *sngâ* can then be related to a Proto-Tibetan **sngwa* and Burmese *swa:* $> \theta wa:$.

Our etymology for *ya* 'tooth' implies a rejection of Simon's view; if *ya* is borrowed from AA, then the question of Sino-Tibetan comparison simply does not arise. And even if our theory is not accepted, there is no reason to adopt Simon's analysis; *ya* is clearly a word of relatively late origin, and the fact that 邪 has 牙 as its phonetic can be explained by assuming that the *z-* of 邪 resulted from the palatalization of an earlier *g-*.⁵⁷

(7) 弯 **na / nuo / nu* 'crossbow'

'crossbow' in AA: VN *ná*; Proto-Mnong **so'na*;⁵⁸ Proto-Tai **hmaa*.

Cf. Mon, Old Mon *tja*; Palaung *kanj*³, *kanja*?; Tibeto-Burman: Nung *the-na*; Moso *ta-na*.

The crossbow is at present widely used by the tribes in southwest China and Indo-China. The cover of *Mon-Khmer Studies* II,⁵⁹ for example, shows a picture of the crossbow. Early references to the crossbow in Chinese texts also point to that general region as the place of origin. The *Han-shu* explicitly mentioned the crossbow as one of the weapons used by the tribes inhabiting Hainan Island, and implied that it was also used by other tribes farther south.⁶⁰ The *Shih-chi* stated that the crossbow produced in the state of Han 韓 was called "Hsi-tzu" 雞子,

which is also the name of a southern tribe.⁶¹ Szechuan was famous for its crossbow. Both the *Hua-yang-kuo chih* 華陽國志 and the *Hou-han-shu* reported that when a white tiger roamed the area of Ch'in and neighboring states, a man from Pa (巴郡閬中人) had to be called in, and he killed the tiger with a crossbow made of white bamboo. King An-yang, a prince from Szechuan, is said to have brought along the crossbow as he entered Vietnam when Chao T'o tried to conquer Vietnam at the end of the Ch'in dynasty; he was for a time stymied by King An-yang's archers using crossbows.⁶²

The fact that the crossbow has a southern distribution, past and present, suggests that it was acquired by the Chinese. Phonology provides another reason. The Tai and Vietnamese, because of their proximity to Chinese speaking peoples, were the most likely points of contact. The Tai form implies voiceless initial *-p-*. VN *ná* is in the *sác* tone, which comes from a voiceless initial. Proto-Mnong **so'na* indicates that perhaps the Proto-AA form should be **s-na*. Now, under the hypothesis that Chinese borrowed this word from AA, we only need to assume that **s-* (or the voicelessness of the initial **n-*) was lost in the process of borrowing. Under the contrary hypothesis that the loan was in the opposite direction, none of the AA or Thai forms can be easily explained.

The crossbow was widely used during the Han dynasty. The character 'crossbow' and the terms for the trigger of the crossbow (機括, 發機) appeared in texts written during the Warring States Period, but not earlier.⁶³ The third and fourth century B.C. seems to be the time when the crossbow and the term for it were introduced into China.

The Japanese scholar Fujita Toyohachi believes that the Chinese crossbow came from India, on the strength of the Sanskrit word *dhanu* 'bow' and the fact that India already used the crossbow in warfare during the fourth century B.C.⁶⁴ The Sanskrit word may have something to do with Mon and Old Mon *tja*, Nung *thə-na*, Moso *ta-na*, but is unlikely to be the direct source of 弯; 弯 belongs to the MC 魚 rhyme, and as Chou Fa-kao has shown, Sanskrit *-o* and *-u* were regularly transcribed before the T'ang dynasty by words belonging to 尤, 侯, 虞, 模 rhymes but seldom by words belonging to the 魚 rhyme.⁶⁵ Whether the ultimate origin of the crossbow is to be sought in India or elsewhere is a question lying beyond the scope of this paper.

We would now like to consider the possibility of the survival of AA forms in some modern Chinese dialects spoken in areas occupied by the ancient Yüeh peoples.

The Min dialects spoken in Fukien and northeastern Kwangtung represent the most aberrant group of dialects in China. While most of the vocabulary found in these dialects can be traced back to early Chinese sources, there remains a residue of forms which cannot be explained in this way. A possible explanation of such words would be to consider them relic forms from the non-Chinese language spoken in this region before the Chinese began to settle there in the Han dynasty. The pre-Han inhabitants of Fukien were the Min Yüeh; they appear to have been a semi-civilized state which was finally destroyed by Han Wu Ti in 110 B.C.⁶⁶

Above we have demonstrated that the language of the Nan Yüeh was most likely Austroasiatic. Might we not go one step further and suppose that all the

various Yüeh peoples of ancient southeastern China were AA speaking? In other words, we would propose that the term Yüeh was essentially linguistic. If this supposition is correct, then the present day Min dialects have an AA substratum, and we should expect to find a certain number of relic words of AA origin in these dialects. We believe that this is indeed the case, and below we list and discuss such forms as we have been able to identify up until now.

It is noteworthy that the forms we discuss are best represented in Vietnamese. This is not surprising since the modern Vietnamese are the descendants of the ancient Yueh and their present territory represents the AA-speaking region closest to Fukien and northeastern Kwangtung.

In discussing Min words we will give the forms in Foochow (FC hereafter) and Amoy (AM hereafter); other dialects will be cited where relevant. Dialect forms will be given in a broad IPA transcription; tones will be indicated by superscript numerals.⁶⁷

(8) FC *tɕyŋ*² / AM *taŋ*² 'shaman, spirit healer, medium'

It is not entirely clear whether the word in question is basically a nominal or verbal root since it occurs in constructions of both types. Thus in FC dialect we have *tɕyŋ*²-*tsi*³ 'shaman,' *tɕyŋ*²-*siŋ*¹ 'id.,' *pha*⁷-*tɕyŋ*² 'to shamanize,' *tɕyŋ*²-*thau*² 'shaman's assistant'; in Amoy we have *taŋ*²-*ki*¹ 'id.,' *taŋ*²-*sin*¹ 'id.,' *tio*²-*taŋ*² 'to dance under the influence of spirits,' *thiau*⁵-*taŋ*² 'id.' (note: both *tio*² and *thiau*⁵ mean 'to leap, to dance'), *the*⁵-*taŋ*² 'the spirit leaves the shaman,' *lia*⁸-*taŋ*² 'to become possessed.' In the Kienyang dialect (northwest Fukien) we have *loŋ*⁹-*si*¹ 'shaman' and *kyeŋ*¹-*loŋ*⁹ 'to become possessed.' Yungan (Central Fukien) has *täu*⁵ - *täu*² 'to shamanize' (*täu*⁵ 'to jump, to dance'), *täu*²-*tsä*³ 'shaman.' The common element in all these expressions is Foochow *tɕyŋ*², Amoy *taŋ*², Kienyang *loŋ*⁹, and Yungan *täu*²; these forms point back to a Proto-Min **doŋ* in the tonal category corresponding to the classical *p'ing* tone. All of the dialects show lower register (*yang*) tones indicating that the protoform had a voiced initial. The word in question is sometimes written with the character 童 (MC *d'ung*) which means 'boy, lad, child'; but it is hard to see what relationship the two words have, since a shaman is always an adult and never a young boy.

In Vietnamese we find a word which both semantically and phonologically corresponds to the unexplained Min etymon perfectly: *đông* 'to shamanize, to communicate with spirits,' *đông câu* 'male shamanistic spirit,' *đông bóng* 'to shamanize, to communicate with spirits,' *bà đông* 'shamaness,' *đông cô* 'female shamanistic spirit,' *đông cốt* 'shaman, sorcerer.'⁶⁸ This word is not confined to Vietnamese within Austroasiatic. In Written Mon the cognate is *don* 'to dance (as if) under daemonic possession,' *dän* 'trance or ?shaman.'⁶⁹ In Modern Mon the corresponding form is *tòŋ* 'to leap with the feet together, to proceed by leaps, to dance while under daemonic possession, to climb'; Shorto also lists a derived meaning 'shaman (?).'⁷⁰ Further AA connections can be adduced: Shorto links the Written Mon form with Khasi *lyngdoh* 'priest'; to support this equation, one can

cite similar examples of Mon final -ŋ corresponding to Khasi -h: Spoken Mon *pɕŋ*, Written Mon *buŋ* 'belly,' Khasi *kə-poh* 'id.' On the Munda side, there are at least three good cognates: Santali *don* 'a kind of dance, drumming and singing connected with marriage'; Ho *dong* 'a wedding song'; Sora *toŋ* 'to dance.'⁷¹

(9) 𠵼 FC *kian*³ / AM *kiä*³ 'son, child'

This word like the preceding one is attested for all Min dialects. From the conservative dialects of northeastern Fukien, we can see that the word originally ended in -*n*: Fuan *kie* ŋ³, Ningteh *kian*³. The Proto-Min form was probably something like **kian* with the tone which corresponds to the classical *shang* or rising tone. This word is attested textually quite early. The T'ang poet Ku K'uang 顧況 (?725 -?816) composed a poem when he was serving in Fukien in which he used the word in question. In the poet's own preface to the poem he explains the word 𠵼: "it is pronounced like the word 蹇 (MC *kjən-kjän-shang* tone); in Fukien 'son' is called 𠵼 in the popular language."⁷² This word is clearly the same as the modern Min words for 'son, child.'

We would like to suggest that the Min word is related to the AA etymon represented by VN *con* 'child.' This etymon is very widely distributed throughout Austroasiatic: Khmer *koun*, Spoken Mon *kon*, Written Mon *kon*, *kwən*, Bru *kəən*, Chong *kheen*, Wa *kən*, Khasi *khu:n*;⁷³ it is also well represented in Munda: Kharia *kəən* 'small,' Santali *hən* 'son, child,' Ho *hon* 'child.'⁷⁴ The Min form agrees with the AA forms which have mid back rounded vowels whereas the Min forms predominantly show low to mid unrounded vowels. The Min form of Kienyang *kyeŋ*³, however, has a rounded medial which may indicate that the Min forms derive from some type of earlier rounded vowel.

(10) AM *tam*² / Fuan *tam*² 'damp, wet, moist'

These forms which are attested in most eastern Min dialects except Foochow can be related to VN *đăm*, *đăm* 'wet, moist.'

(11) FC *siŋ*² / AM *tsim*² 'a type of crab'

These forms may bear some relationship to VN *sam* 'king crab.' The VN form is probably further related to Mon-Khmer forms such as Bahnar *kytam*, Written Mon *khatham*, etc.⁷⁵

(12) FC *pai*⁷ / AM *bat*⁷ 'to know, to recognize'

AM *b-* generally corresponds to FC *m-*; the upper register tone with a voiced initial is also incongruous. Douglas gives a Tung-an form *pat*⁷ for Southern Min, so we regard the AM form as irregular. We can compare all these forms with VN *biết* 'to know, to recognize.'

(13) FC p'uoʔ⁸ / AM p'eʔ⁸, cf. Fuan p'ut⁸ 'scum, froth'

Compare VN *bət* 'scum, bubbles, froth.'

(14) FC p'iu² / AM p'io² 'duckweed'

This word is recorded in Kuo P'u's (AD 276 – 324) commentary to the *Erh-ya* where he states that *p'iao* was the *chiang-tung* (southeastern China south of the Yangtze) word for 'duckweed.'⁷⁶ VN *bèo* 'duckweed' is obviously related to all these forms. The VN form is probably further related to Spoken Mon *pè*, Written Mon *bew* 'to ride low in the water.'

(15) FC kie² / AM kue², cf. Kienyang ai³ '(small) salted fish'

Baldwin and Maclay define the Foochow word as follows: "a kind of salted seafish; it is small varying from one to four or five inches in length." There is a VN word *kè* which is defined as a 'type of fish; it is small and resembles the gecko.' The primitive Yüeh etymon probably meant a small fish of some sort, and the specialization of meaning took place in the various languages later.

We will conclude with two general observations.

Until the 1950's, archaic loans into Chinese have not been seriously studied. Part of the reason is quite understandable. As alluded to before, the languages of China's neighbors and ethnic minorities were not sufficiently known, and without such knowledge, it was impossible to estimate the time-depth of a non-Chinese word suspected as the source of a loan, or to reconstruct its old form. But this handicap is rapidly being removed. There is, however, another reason – in fact, a prejudice – that is blocking progress in the field. We have in mind the widely held belief that the Chinese culture was so superior that there was no need for her to borrow anything, linguistic elements included.⁷⁷ When a Chinese word shows similarity to a non-Chinese word, it was automatically assumed that Chinese was the donor, and not the receiver. With the recent discovery of cereal grains and bronze artifacts at archaeological sites in Northern Thailand, we now know that Southeast Asia had a highly developed culture in remote antiquity, quite capable of serving as the originator and donor of cultural inventions. Leaving aside the question of relative cultural superiority – which can never be subject to precise scientific proof – it seems evident that when two peoples are in contact, borrowing is almost always a two-way street. Witness the large number of American Indian words in English and vice versa. A people may have given more than what she receives. But to assert that a certain people in principle cannot and need not receive anything seems to go against common sense and all known instances of cultural contact. The evidence presented

above, we hope, will help to undermine that ancient myth whose downfall is long overdue.

Chinese is one of the major languages of the world without an adequate etymological dictionary,⁷⁸ and we may take a moment to consider what sort of preparatory work is necessary to bring it into existence. Obviously one of the basic unresolved questions is the linguistic affiliation of Chinese. If Chinese is related to Tibetan or Tibeto-Burman, as most scholars believe to be the case, then the origin of a Chinese word is ascertained once its cognates in these languages are found. The same applies to Tai if Tai also turns out to be related to Chinese. Here already we encounter a problem, for the assumption is that we are dealing with an original Chinese word. How can we be sure? Phonological regularity provides one test. If, for example, a Chinese word and a Tibetan word in the same semantic range show regular phonological correspondence, then this fact provides strong evidence that both are derived from the proto-language. Even here there is the possibility that both words are loans from a third language, witness Chinese ***kron* and Tibetan *kluñ*. Further, in the present state of Sino-Tibetan studies there is much uncertainty concerning phonological matters, and therefore this test has only limited application.

Another often followed procedure is to look up *GSR* and see if the word is included. This, we submit, is only the first step and not the last. The *GSR* includes words from the oracle bones up to texts written before the Ch'in dynasty, a period of over a thousand years, during which time many things could have happened to the lexicon. To ascertain whether a word is old, or new and therefore possibly a loan, we need to ask a number of questions. Is it attested in the oracle bones or bronze inscriptions? Does it have a skewed geographic distribution? Does it have many synonyms or few? Is its meaning unusually restricted, as loan words tend to be when first introduced into a language? Finally, there is always one way to show the relative recency of a word, that is, to establish the fact that it is a loan. In this sense, the study of loan words is complementary to the comparative reconstruction of words in the proto-language, and provides the peripheral vision without which no etymological work can proceed safely.

Notes

- * This paper was first presented to the 3rd Sino-Tibetan Conference, 1970, and since then, we have benefited from the criticism and suggestions of many colleagues, especially Bodman, Huffman, and Gedney. The authors also wish to thank the China-Japan Program of Cornell University for financial support which made the writing of this paper possible.
1. We follow the scheme set forth by Norman Zide in his Introduction to Zide ed., *Studies in comparative Austroasiatic linguistics* (Hague, 1966), hereafter *SCAL*; H. J. Pinnow's *Versuch einer historischen Lautlehre der Kharia-Sprache* (Wiesbaden, 1959) has a convenient linguistic map of the AA languages, but he did not include Vietnamese-Muong.

2. A. Haudricourt, "La place du vietnamien dans les langues austroasiatiques," *Bulletin de la Société de Linguistique* 49 (1953), 122-28, and "L'origine des tons vietnamiens," *JA* 242 (1954), 69-82.
3. Ruth Wilson, "Muong and some Mon-Khmer languages," in *SCAL*.
4. H.R. Davies, *Yun-nan, the link between India and the Yangtze* (Cambridge, 1909), p. 341; R. A. D. Forrest, *The Chinese language* (second edition, London, 1965), p. 95; A. Haudricourt, "Austroasiatic in the northeast," in *SCAL*, p. 54 ff.
5. A. Meillet and M. Cohen, *Les langues du monde*, 1st ed. (1924), K. Wulff, *Chinesisch und Tai* (Copenhagen, 1934).
6. Paul Benedict, "Thai, Kadai and Indonesian: a new alignment in Southeastern Asia," *Am. Anthr.* 44 (1942), 576-601.
7. P. K. Benedict, "Austro-Thai studies," I, *Behavior Science Notes*, vol. 1, no. 4 (1966); II, *BSN*, vol. 2, no. 3 (1967); III, *BSN*, vol. 2, no. 4 (1967). See especially the 1966 article, pp. 258-259.
8. E. Pulleyblank, "Chinese and Indo-Europeans," *JRAS* (Great Britain & Ireland) (1966), 9-39; R. A. D. Forrest, *op. cit.*, p. 135; Benedict, especially the third article, "Austro-Thai studies, III; Chinese and Austro-Thai."
9. Dictionaries such as H. L. Shorto's two Mon dictionaries; see notes 69, 70 below.
10. L. Aurousseau, "La première conquête chinoise de pays annamites," *BEFEO* 23 (1924), 137-266.
11. Lo Hsiang-lin 羅香林, 百越文化與源流 (Taipei, 1955), p. 10; on the oracle bone form of *yüeh*: Jung Keng 容庚, 鳥書考, *Yen-ching Hsüeh-pao* 16 (1934); on the bronze form of 戊(=越): Paul Serruys, "Five word studies on *Fang Yen* (second part)," *Monumenta Serica* 21 (1962), p. 279, no. 35; Serruys thinks that *yüeh* was a stepped adze, but that may be going too far.
12. L. Finot, "L'Indochine préhistorique," *Bull. Comité Asie française*, Feb./July, 1919; also G. Coedès, *Les Peuples de la péninsule Indochine* (Paris, 1962), p. 32. Chang Kwang-chih, *Archaeology of Ancient China* (New Haven, 1963), p. 123, note 40, and p. 129.
13. Izumi Hisanosuke 泉井久之助, "劉向'說苑' 卷十一の越歌について," *Gengo Kenkyū* 22/23 (1953), pp. 41-5.
14. Lo Hsiang-lin, *op. cit.*, pp. 151-172 has a convenient collection of such words.
15. The sign **means our reconstruction of OC; *means Karlgren's OC reconstruction as given in *GSR*.
16. *Chou Li*, *SPTK* 4, 21a; Cheng's commentary is attached to 國凶札, 則無 關門.
17. Tuan Yü-ts'ai 段玉裁, 說文解字注, Yi-wen reprint, Taipei (1965), p. 268.
18. Chiang Yu-kao 江有誥, 諧聲表 (in 音韻學叢書, 二十一部, 11b).
19. N. Bodman, *A linguistic study of the Shih-ming* (Cambridge, Mass., 1954), p. 100, no. 779.
20. Tung T'ung-ho 董同龢, 上古音韻表稿, reprinted 1967, Academia Sinica.
21. H. L. Shorto, "Mon labial clusters," *BSOAS* 32, part 1 (1969), p. 8.
22. R. Burling, *Proto Lolo-Burmese* (= *International Journal of American Linguistics*, 33, no. 2, part II, [April 1967]), p. 78.
23. Benedict, "Austro-Thai studies III; Chinese and Austro-Thai," cited above.
24. A. Haudricourt, "Introduction à la phonologie historique des langues miao-yao," *BEFEO* 44 (1954), 2, p. 568, item no. 56.
25. A. Haudricourt, "Austroasiatics in the northeast," *SCAL*, p. 55.
26. S. E. Yakhontov, "Consonant combinations in Archaic Chinese," *XXV International Congress of Orientalists*, papers presented by the USSR delegation (Moscow, 1960); E. Pulleyblank, "The consonantal system of Old Chinese," part 1, *Asia Major* (new series) 9 (1962), pp. 59-144.

27. Li Fang-kuei 李方桂, 上古音研究, *Tsing Hua Journal of Chinese Studies* (new series) 9.1 & 2 (1971), 1-61.
28. See Wen I-to 聞一多, 聞一多全集 II, p. 206.
29. Tung T'ung-ho, *op. cit.*; E. Pulleyblank, "The consonantal system of Old Chinese," part 2, *Asia Major* 9 (1963), 206-65; S. E. Yakhontov, "Fonetika kitaiskogo yazyka I tsysyacheletiya do n.e. (sistema finalei)" in two parts, *Problemy vostokovedeniya* 2 (1959), 137-47, (1960), 102-15, English translation by Jerry Norman in *Chilin* (Publication of the Chinese Linguistic Project, Princeton University), nos. 1 & 6.
30. Cf. Mongolian *yool* 'river'; but it may have some connection with Tibetan *rgal* 'a ford,' *rgal-ba* 'to cross, to ford.' In a future article we hope to set forth evidence for final -l in 歌部 of OC.
31. Li Hsiao-ting 李孝定, 甲骨文字集釋, 16 volumes, Academia Sinica (Taipei, 1965). All subsequent reference to the oracle bones, unless otherwise noted, is to this work.
32. Fu Ssu-nien 傅斯年, 周頌說, *BIHP* 1 (1928), 107-108.
33. Tuan Yü-ts'ai, 說文解字注 under 英; Ch'ien Ta-hsin 錢大昕, 十駕齋養, 新錄, *chüan* 11. For the opposite view, see Jao Tsung-yi 饒宗頤, 楚辭地理考 (Shanghai, 1946), 78-83.
34. L. Aurousseau, *op. cit.*, p. 263.
35. 大越史記外紀全書卷一鴻謙記.
36. Chang Kwang-chih, *op. cit.*, 249-255.
37. We are indebted to Professor Nicholas Bodman of Cornell University for pointing this out to us. The Mon-Khmer data is taken from Franklin Huffman, "An examination of lexical correspondences between Vietnamese and some other Mon-Khmer languages," a paper presented to the Cornell Linguistics Club, April, 1974 and also to the 8th Sino-Tibetan Conference.
38. Li Fang-kuei, *op. cit.*, p. 10.
39. 史記楚世家, 熊渠曰: "我蠻夷也, 不與中國之號證"; 楚辭九章涉江, "哀南夷之莫吾知也"; 呂氏春秋, "楚變於蠻者也".
40. We have presented more detailed arguments in Tsu-lin Mei and Jerry Norman, "Cl->s- in some Northern Min dialects," *Tsing-hua Journal of Chinese Studies* (new series) 9, 1 & 2 (1971), 96-105.
41. Tsu-lin Mei, "Tones and prosody in Middle Chinese and the origin of the rising tone," *HJAS* 30 (1970), 86-110.
42. Shou Chen-huang 壽振黃主編, 中國經濟動物誌; 獸類 (Peking, 1962); G. M. Allen, *The Mammals of China and Mongolia* (New York, 1940).
43. Yang Chung-chien and Liu Tung-sheng 楊鍾健, 劉東生, "安陽知墟之哺乳動物群補遺," *考古學報* 4 (1949), 145-153.
44. F. B. J. Kuiper, "Consonant variation in Munda," *Lingua* 14 (1964), 85-87.
45. Henry Blood, *A reconstruction of Proto-Mnong* (Summer Institute of Linguistics, 1966), p. 9 & p. 72.
46. Li Hsiao-ting, *op. cit.*, Yung Keng 容庚, 金文編.
47. Kuo Muo-jo 郭沫若, 兩周金文大系考釋, p. 196.
48. Chang Ping-ch'üan 張秉權, 殷虛文字丙編, 上輯 (二) (Academia Sinica, 1959), p. 132 ff.; Hu Hou-hsüan 胡厚宣, "殷人疾病考," 甲骨學商史論叢初集 (1944).
49. Chang Ping-ch'üan, *ibid.*
50. Li Hsiao-ting, *op. cit.*, p. 0625.
51. Tuan Yü-ts'ai, *op. cit.*, see Tuan's note under *ya*.
52. Hsü Chung-shu 徐中舒, 殷人服象及象之南遷, *BIHP* 2 (1930), 60-75; Yang Chung-chien and Liu Tung-sheng, *op. cit.*
53. Kuo Pao-chün 郭寶鈞, 中國青銅器時代 (Peking, 1963), p. 77.
54. Yang Chung-chien and Liu Tung-sheng, *op. cit.*
55. 韓非子, 喻老, "昔者村爲象箸而箕子怖."

56. 象摘 *Ode* No. 107, 象弭 *Ode* No. 167, 象塞 *Han-fei-tzu*.
57. For example, S. E. Yakhontov, *Drevne-Kitaiskii Yazyk* [The Old Chinese language], (Moscow, 1965), pp. 30-31.
58. Henry Blood, *op. cit.*
59. *Mon-Khmer Studies* 2 (1966), Publications of the Linguistic Circle of Saigon.
60. 漢書地理志.
61. 史記蘇秦傳.
62. 舊唐書卷四十一.
63. See the quotations cited from *Mo-tzu*, *Chuang-tzu*, *Sun-tzu*, *Huai-nan-tzu* in Hsü Chung-shu 徐中舒, "弋射與弩之淵源及關於此類名物之考釋," *BIHP* 4 (1934), p. 427. Hsü asserts that 续 (a graphic variant of 弯) appeared in a Western Chou bronze vessel, 農卣, and goes on to argue that the crossbow already existed during that Western Chou. Without other supporting evidence, Hsü's case seems doubtful.
64. Fujita Toyohachi 藤田豊八, "支那石刻之由來," *Tōyō Gakuhō* 16, 2 (1927), pp. 170-171.
65. Chou Fa-cao 周法高, "切韻魚虞之音讀及其演變" *BIHP* 13 (1948), 119-152.
66. Fan Wen-lan 范文瀾, *中國通史簡編* (Peking, 1964), part II, p. 90.
67. Foochow forms are based on R. S. Maclay and C. C. Baldwin, *An alphabetic dictionary of the Chinese language in Foochow dialect* (Foochow, 1870); Amoy forms are taken from Carstairs Douglas, *Chinese-English dictionary of the vernacular or spoken language of Amoy* (London, 1899). Forms from other Min dialects are from J. Norman's field notes. For Proto-Min, see Jerry Norman, "Tonal development in Min," *Journal of Chinese Linguistics* 1.2 (1973), 222-238; and "The Initials of Proto-Min," *JCL* 2,1 (1974), 27-36.
68. VN forms are taken from Ho Ch'eng 何成 et al., *越漢辭典* (Peking, 1966). Hereafter all VN forms will be cited from this source.
69. H. L. Shorto, *A dictionary of the Mon inscriptions* (London, 1971), p. 200.
70. H. L. Shorto, *A dictionary of modern spoken Mon* (London, 1962), p. 117.
71. Munda forms are taken from the following sources: Santali – P. O. Bodding, *A Santal dictionary* (Oslo, 1934); Ho – Lionel Burrows, *Ho grammar* (Calcutta, 1915); Sora – Rao Sahib G. V. Ramamurti, *Sora-English dictionary* (Madras, 1938).
72. For the quotation from Ku K'uang, see The Institute of Literature of the Chinese Academy of Sciences, *中國文學史* (Peking, 1963), vol. II, p. 414.
73. See Franklin Huffman, *op. cit.*
74. Pinnow, *op. cit.*; pp. 111-112.
75. Pinnow, *op. cit.*, p. 77.
76. This definition is discussed at length by Wang Nien-sun 王念孫 in his *Kuang ya shu-cheng* 廣雅疏證, ch. 10a.
77. The latest example of this belief is found in Charles Li and Sandra Thompson, "An explanation of word order change SVO>SOV," *Foundations of Language* 12:2 (1974), where it is stated that China had "the overwhelming dominance of civilization in pre-twentieth century Asia..." and "such cultural dominance precludes the possibility of an external influence on Chinese."
78. One way to measure the distance future etymological work has to advance is to examine the work by Tōdō Akiyasu 藤堂明保, *漢字語源辭典* [An etymological dictionary of Chinese characters].

THE LINGUISTIC POSITION OF RONG (LEPCHA)

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Source: *Journal of the American Oriental Society* 82, 3, 1962, 331-5.

Sten Konow, in the *Linguistic Survey of India*, assigned Rong to the "unpronominalised Himalayan group" of Tibeto-Burman languages, though he did indeed note certain traits (vigesimal numeration, vestigial classification of nouns into animate and inanimate, etc.) which point to an ancient influence of tongues of Munda type. He is followed by Schmidt in his *Sprachfamilien und Sprechkreise der Erde* (Heidelberg, 1926), who however, assigned to Rong a position apart from the other unpronominalised languages, justified by its sharp differences from the dialects with which Konow had ranged it; and the *Langues du Monde* (1952 edition) likewise follows Konow's classification. So far as classification goes this is probably as accurate as one may expect; but in calling Rong a Tibeto-Burman language without qualification we are giving too little weight to its peculiar features.

The principal sources of our knowledge of Rong are G. B. Mainwaring's *Grammar* (Calcutta, 1876) and *Dictionary* (Berlin, 1898), a work generally satisfactory. In it the author has marked those words which he recognised as being of Tibetan derivation, i. e., plainly traceable to the Tibetan written language or to the modern Lhasa pronunciation; omissions are few, and questionable inclusions among those marked words are uncommon. As examples of this stratum we may quote the following:

- R. *ča*, 'bird': Tib. *bya*
 R. *čhak*, 'hand': T. *phyag*
 R. *čho*, 'religion': T. *chhos*
 R. *khuk*, 'bag': T. *khug*
 R. *khvek*, 'freeze': T. *ñkhyag*
 R. *thop*, 'find, get': T. *thob-pa*
 R. *thók*, 'string': T. *thag*
 R. *do*, 'stone': T. *rdo*
 R. *lo*, 'learned': T. *slob*
 R. *sañ*, 'straighten': T. *sroñ-ba*

- R. *khe*, 'tax': T. *khral*
 R. *šap*, *šóp*, 'foundation': T. *žabs*
 R. *sūk*, 'joint': T. *tshigs*
 R. *šók*, 'cut': T. *gšag-pa*

It is to be noted i) that among these asterisked forms there are none with initial dentals (including *l-*) + *-y-*; ii) that asterisked forms constitute a much larger proportion among words with initial aspirate consonants than elsewhere; and iii) that compound initial consonants are very rare among the asterisked forms, though common elsewhere. The significance of these facts will appear later.

There is, however, a much older TB stratum in Rong which bears witness to a phase of TB development anterior to that preserved in the oldest written Tibetan. Many of the features here preserved in something like their original forms had been already reached by comparison of the modern TB dialects; some throw light on the forms restored in Karlgren's "Archaic" stage of Chinese. Among these are the following:

- The metathesis of **kr-*, etc., to *rk-*, etc., of written Tibetan had not yet taken place when these words came into Rong:
 - R. *kryók*, 'to throw down': T. *rgyag-pa*;
 - R. *lók*, 'to lick': T. *ldag-pa*;
 - R. *rón*, *tš-ryón*, 'net': T. *rkon-pa*;
 - R. *grya-lš*, 'thin': T. *rke-ba* < **krya*;
 - R. *dyóp*, 'throw' (< **dryóp*; Rong rejects the initial combination dental + *-r-*, *-l-*): T. *rdeb-pa* < **dryab*;
 - R. *bryuk*, 'stout': T. *rgyags-pa* < **g-ryag-s* (with change of prefix);
 - R. *len*, 'near': T. *ldan-pa*.
- The Tibetan developments **ly-* > *ž-*, **tly-* > *ch-*, etc., and not yet occurred, and Rong remains at the stage of most other TB dialects:
 - R. *klak*, 'end': T. *gžug*, *mjug* (*mžug*), in which latter form *-d-* probably arose directly in the *-l-* stage, as in T. *mda*, 'arrow,' < **mla*;
 - R. *fa-lí*, 'four': T. *bži* < **b-lyi*;
 - R. *lyaň*, 'land, field': T. *žin* < **lyiaň*;
 - R. *tšuk-liň*, 'neck': T. *ňjin* < **ndlyiaň*; cf. Burmese *laň* < **lyañ*;
 - R. *a-klyam*, 'sweet': T. *žim* < **lyiam*;
 - R. *lyo*, 'take': T. *ňju-ba* < **ndlyu-*;
 - R. *a-lí*, 'tongue': T. *ltse* < **trya*;
 - R. *hlyot*, 'twist': T. *ltsud-pa* < **tryuad*; cf. Burmese *rwat*.
- Tibetan had not yet resolved final *-ts* into *-s*:
 - R. *bát*, 'to swell': T. *sbos*;
 - R. *nyat*, 'two': T. *gňis* < **g-nyiat-s*; cf. Burmese *hnac* < **nyat*.

- Enigmatic are the cases in which the Tibetan prefix appears to be represented in Rong by *h-*, whereas in other occurrences of the same consonantal sequence Rong preserves the Tibetan prefix. Such cases may be due to a later borrowing, at a stage when the Tibetan prefix was being weakened in pronunciation prior to its ultimate loss:
 - R. *hryaň*, 'distance': T. *dgyaň-ba* < **gry-* (The final *-n* in Rong may be due to assimilation to the type of Rong verbal nouns in *-n*);
 - R. *kš-hryak*, 'pheasant': T. *sreg-pa*;
 - R. *hlap*, 'learn': T. *slob-pa*;
 - R. *a-hryol*, 'to loose, set free': T. *ňgrol-ba*;
 - R. *hryup*, 'to suck': T. *ňjib-pa* < **ndriap* < **ndryup*.
 - In a few cases the prefix has remained syllabic in Rong:
 - R. *tš-ršk*, 'six': T. *d-rug*;
 - R. *sš-ryóm*, 'otter': T. *s-ram*.

Cf. also the word for "four" in para. 2 above.
 - Rong *f-*, *v-* arise in circumstances not clearly definable from a labial followed by *-ry-*, *-ly-*, *-y-*:
 - R. *vyär*, 'quick': T. *myur-ba*;
 - R. *vyón*, 'call, invite': T. *s-bron-pa*;
 - R. *fat*, 'to do': T. *byed-pa*;
 - R. *fraň*, 'firm': T. *brliň-ba* < **b-rliañ*;
 - R. *fót*, 'to open': T. *m-byed-pa*;
 - R. *fren*, 'a sore, ulcer': T. *rmen-pa* < **mryan*; cf. Burmese *mraň*;
 - R. *flut*, 'to slip': T. *mbyid-pa* < **mblyut*;
 - R. *fleň*, 'to stretch': T. *rmyiň* < **mriaň*;
 - R. *a-fo*, 'taste': T. *bro*;
 - R. *fik*, 'to tear': T. *bžag-pa* < **blyak*.

In *frón*, 'to reckon': T. *bgraň*, Burm. *khraň*, and in R. *vól*, 'to carry': T. *ňkhrol-ba*, it is possible that Rong took over a form with labial prefix which has not been preserved in the other languages.
 - Finally, a few words show isolated evolution in Rong. R. *bryañ*, name, is not derivable from T. *miň* nor even from its preclassical forms **miaň* or *myiň*, the former of which we may infer from Burmese *amaň*. For the loss of *-r-* in T. *ntshag-pa*, 'to sift': R. *rók*, see my article "On Certain Tibetan Initial Consonant Groups," in *Wennti*, 3 (Yale, 1952).
- It will be observed that in the above lists a few Rong forms are quoted with syllabic prefixes (*tš-*, *tšuk-*, etc.) which have no counterparts in Tibetan. These prefixes, used fairly freely with words of Tibeto-Burman but pre-Tibetan affinities, appear also, though rarely, with the modern borrowings asterisked by Mainwaring:

- R. *čǎ*, 'to do mischief' (T. *skyo-ba*) > *nǔn-čǎ*, 'annoyance';
 R. *jít*, 'splendour' (T. *brjid-pa*) > *nǔn-jít*, 'speckled, bright';
 R. *bar*, 'middle' (T. *bar*) > *tǔn-bar*, 'half.'

We turn now to an examination of these syllabic prefixes.

In the table which follows, I have set out the commonest prefixes in Rong for comparison with those in three Austroasiatic languages where the prefixal system survives as a living process of word-formation. Two of these prefixes, *kǎ-* and *sǎ-*, seem to have equivalents in Tibetan, where they have ceased, of course, to form syllables or to be used freely in new formations; in both Rong and Tibetan they appear conspicuously in the names of animals, as they do in Austroasiatic dialects: R. *kǎ-li*, 'squirrel,' *kǎ-šer* 'hedgehog'; T. *gzig*, 'leopard,' *gyag*, 'yak'; Khasi *ksi*, flea, 'ksâr', 'fox,' etc.; R. *sǎ-čǎk*, 'leopard,' *sǎ-na*, 'bear'; T. *sbal*, 'frog,' *stag*, 'tiger'; Khasi *skáin*, 'fly,' *sniang*, 'swine.' The remainder of the prefixes appear to have equivalents, if anywhere, only among the Austroasiatic dialects. The TB prefix having the most evident function, T. *s-* of causative force, is totally absent from Rong, where its place is taken by a *-y-* infix; on the other hand, it has not been possible to identify in Rong the Austroasiatic instrumental *-n-*.

RONG	PALAUNG	KHASI	KHMER
<i>kǎ-</i> animals, plants	<i>ka-</i> animals, parts of the body	<i>k-</i> animals, relations, parts of the body	<i>kh-</i> animals, esp. insects, parts of the body, etc.
<i>kǎn-</i> , <i>kǎm-</i> , &c. animals, plants	<i>kan-</i> verbs, adjectives	<i>kyn-</i> , <i>kyn-</i> intensive	<i>kám-</i> instrumental, causative
<i>luk-</i> , <i>lun-</i> animals, plants	...	<i>lyng-</i> animals	...
<i>nǔn-</i> , <i>nǔm-</i> abstract nouns, adjectives	...	<i>nong-</i> agentive	...
<i>pǎ-</i> , <i>pǔr-</i> instrumental, adverbial	<i>par-</i> , agentive <i>p-</i> , causative	<i>pyn-</i> , <i>pyl-</i> causative	<i>bám-</i> , <i>bân-</i> causative
<i>mǎ-</i> , <i>mǔn-</i> abstract nouns	<i>m-</i> abstracts
<i>sǎ-</i> animals, abstracts	<i>s'a-</i> ?	<i>s-</i> , animals <i>sa-</i> , possessive	...
<i>sǔn-</i> , <i>sǔm-</i> instrumental	...	<i>syn-</i> , <i>syn-</i> , <i>syng-</i> instrumental	...
<i>tǔn-</i> abstract nouns	...	<i>tyng-</i> abstracts	...

Other important Austroasiatic prefixes, such as Palaung *ra-*, causative, Khasi *jym-*, *jyn-*, *jyng-* instrumental, *tyr-*, *thyn-*, *thyl-* diminutive, cannot be equated with anything in Rong. Nevertheless it will be seen that Rong has in common with Austroasiatic languages as large a proportion of its phonetically identifiable prefixes as those languages have in common with each other. If there remains any doubt as to the reality of the Austroasiatic provenance of this feature in Rong, the probability of its affinity is corroborated by a plentiful series of lexical correspondences:

- Ask: R. *jăt*, Bahnar *jēt*, Khmer *čōt*
 Backbone: R. *glyañ*, Palaung *löng*, Biat *klun*
 Barn: R. *klyón*, Khmer *khlǎñ*
 Bear, endure: R. *kyón*, Bahnar *chón*, W. *gun*, Miao *čan*
 Belly: R. *bak*, Khasi *kpho*, Khmer *pūh*
 Burn: R. *dyak*, Bahnar *tōk*, Stieng *đuk*
 Bury: R. *lap*, Khmer *lap*, Bahnar *lǎp*, Khasi *khyllap*
 Come: R. *lat*, Stieng *luh*, Sre *lot*, Lave *leč*
 Copulate: R. *kut*, Riang *kot*
 Cover: R. *kap*, Biat *kôp*, Khmer *kǎp*
 Cut: R. *nar*, Khasi *ngór*
 Devil, spirit: R. *blyak*, Khmer *brah*, Stieng *brah*, Chrau *m'brǎh*
 Dog: R. *kǎ-ju*, Khasi *ksew*, Stieng *sōu*, Biat *čho*, Riang *sho*, etc.
 Dung: R. *ít*, Khasi *eit*, Khmer *ǎč*, Bahnar *ik*, Stieng *ech*, Biat *áč*, etc.
 Eat: R. *fyóm*, Khasi *bâm*, Palaung *bâm* (chew), etc.
 Fat (adj.): R. *pak*, Bahnar *běk*
 Flesh: R. *čók*, Khasi *pa-soh*, Khmer *sǎch*, Bahnar *xek*
 Frog: R. *tǎ-kryuk*, Khasi *hyn-roh*, HuaMiao *qa*, Bahnar *drök*,
 Riang *rök*, etc.
 Foot: R. *dyañ*, Khmer *jōn*, Bahnar & Stieng *jong*, Riang *tsəŋ*, etc.
 Hard: R. *krón*, TsaKhmu *grǎng*, Mon *krəŋ*, etc.
 Hawk: R. *kǎ-lyuñ*, Khasi *klīng*, Bahnar *klāng*, HuaMiao *klañ* (The word has been borrowed into TB, e.g. Kachin *kalang*, and even into Chinese: *Grammata Serica*, series 890, ʔjəŋ < *qluŋ, where the restoration of *-l-* is warranted by comparison of other words in the phonetic series).
 Heap: R. *t'yul*, Khmer *tuol*
 To heap up: R. *bok*, Khmer *ph-n-ók*, Riang *buic*
 High: R. *krón*, Khasi *jřong*, Riang *tsəŋ*
 Hinder: R. *k'añ*, Khasi *khang*, Bahnar, etc., *kañ*
 Hook, fishhook: R. *vór*, Khasi *woh*, Palaung *kavo*
 Horn: R. *ron*, Khasi *reng*, Riang *kəm-rəŋ*, Wa *run*
 Illness: R. *a-đák*, Niahön *deh*, Sò *tič*
 Jaw: R. *kam*, Khmer *thkéam*, Stieng *gam*, Sre & Biat *kang*, etc.
 Kindle: R. *čǎp*, Palaung *tsap*, Bahnar *čoh*, Stieng *ču*, Wa *tsǎp*, etc.
 Knife: R. *ban*, Mon *ʔbun*
 Left (side): R. *ví*, Palaung *ivē*, Wa *kave*, TsaKhmu *vē*
 Light (noun): R. *a-óm*, Bahnar, Sre, Biat *ang*

- Middle: R. diñ, Khasi pdeng, HuaMiao ntañ
 Midge: R. dyũm, Palaung ta-dʒo:m, Sò rāyuñ, ChuanMiao jon
 Monkey: R. dūk, Khmer dōc, Bahnar dōk, Stieng duk, Biat dōk
 Mouth: R. a-boñ, Mon pāñ, Biat m'bung
 Needle: R. ryũm, Bahnar jòrum, Sre jurum
 Net: R. hróp, Rieng rup, Wa rup, Palaung rarap
 Pestle: R. tiñ-rí, Khasi syn-rei, Rieng re, Palaung gre:
 Pull out: R. dot, Bahnar duòt, Rieng tet ple, Sre dus
 Reach (vb.): R. lat, Bahnar klech, Rieng laic, Palaung hlæ:x
 Ring (noun): R. vyañ, Khmer vông, Bahnar uañ, Mon wuiñ
 Round: R. pum, Bahnar apom
 Scratch: R. kor, Khmer kōs, Bahnar khôr
 Sharp: R. let, Khasi lit (sharpen), Palaung lat (sharpen)
 Shoulder: R. pā-li (scapula), Stieng po'lik, Biat m'lik
 Shut: R. hap, hyup, Palaung hjo:p, Khasi khap
 Skin: R. a-kap, Stieng kup
 Skin: R. kan-du, Bahnar kōdoh (bark), Sò andōk (bark), Khasi dop (bark), Sre göl-tau (leather), Biat n'tou
 Sow (vb.): R. frót, Biat m'braç, Mon gra:t, Khmer prūh, Palaung p'rat
 Spit (vb.): R. éóp, Stieng éōh, Biat r'chōh, Sò kuéc
 Split: R. bík, Khmer pek, pāk, Bahnar pāk, Stieng bêk, pāk, Mon pāk, ChuanMiao mbai
 Split: R. blok, Sre blah, Rieng plök, Biat plāh, Palaung plo:x
 Squeeze: R. pít, Rieng piat, Bahnar pēt, Stieng pāt, Mon pat, ChuanMiao mbai
 Stab: R. tsät, Boloven and Stieng chat, Bahnar sát, Mon át, Palaung ʃat, ChuanMiao tʃʰau
 Stick, adhere: R. krap, Bahnar krāp, Biat krêp
 Stop up: R. dáp, Khmer kdōp, Rieng tap, Sre kōl-dop
 Strength: R. frañ, blañ, Khasi khlain, Khmer khlañ, Bahnar prān, Sre pran, Rieng krañ, Palaung paŋre:ŋ, etc.
 Take: R. kít, Mon ket
 Thread: R. a-bram < bră, Boloven, Biat, Stieng brai, Sre brac
 Stretch out: R. dañ, Khmer dañ, Bahnar täng, Mon dāñ
 Throw: R. nók, Khasi noh, Boloven norr
 Twist: R. nyók, Palaung ŋok
 Twist: R. vuñ, Khmer vñh, Biat wāñ
 Under: R. sã-gram, Khmer krōm, Bahnar rom, Palaung kru:m, ChuanMiao qəŋ
 Water: R. uñ, Khasi um, Rieng om, Palaung om, HuaMiao au
 Water: R. dă, Khmer dīk, Stieng dāk (Possibly identical with Archaic Chinese *dŋk, Gram, Ser. series 790)
 Wrap: R. gryóm, Khmer rum, Bahnar lóm, Biat n'klom
 Year: R. nam, Khasi snem, Bahnar hanâm, Sre (sö)nam, etc.

The above list excludes all ambiguous cases, i. e., where the same or a phonetically similar root exists in both Tibeto-Burman and Austroasiatic. It is clear that we have in Rong a very mixed form of speech, even if the very large number of vocables showing no resemblance to those of similar meaning in two major groups of languages does not indicate a third stratum. But it is much less easy to determine whether the Austroasiatic or the older Tibeto-Burman (or Tibetan?) stratum is the more fundamental. The word order, part of the basic vocabulary, the use of modification of finals in word-formation, and the agentive suffix all tell in favour of Tibeto-Burman affinity; while the extensive use of syllabic prefixes, many of them close to corresponding forms in Khasi, etc., and a large part of the basic vocabulary are equally clearly Austroasiatic. There is no trace of the *-n-* infix denoting the instrument in many Austroasiatic dialects, while on the other hand the *-y-* regularly used in Rong to form the causative of verbs has a parallel only in Chinese, where it is employed sparingly. It is possible that the phonetic tendencies of Rong may be a truer index of its fundamental type; here, an antipathy to aspirated initials (which seem to arise in Austroasiatic generally as a result of composition) and to palatalisation (far commoner in Tibeto-Burman than in Austroasiatic, though by no means unknown in the latter), as well as the richer vocalism and the development of labial fricatives (cf. Rieng, Palaung, Miao, etc.) all point to an Austroasiatic substratum. However the Rong language be classified (and in such a case this must be a matter of practical convenience rather than of objective fact), there is no doubt as to its great importance as an aid towards recovery of earlier phases of Tibetan and Tibeto-Burman languages in general.

ON THE PLACE OF LEPCHA IN SINO-TIBETAN

A lexical comparison¹

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This is very much a data-oriented study. After a brief outline of Lepcha [Lep.] phonology and a discussion of influences from other languages, I place Lepcha firmly as a member of Tibeto-Burman, despite lexical resemblances from such a distantly related language as Chinese or by borrowing from Austroasiatic languages (like Khasi). Most of the Tibeto-Burman languages most similar in lexicon to Lepcha (like Adi) lie somewhat to the east. The exception is Tibetan itself which stretches east and west to the north. There are different levels of relationship here -- some cognates with Tibetan belong to a rather recent body of borrowings; many of course may be older borrowings, and a rather large number belong to the common Tibeto-Burman stage. Such relationships are often manifested as doublets. Examples are **nyí** and **nyāt** 'two': both forms are to be related to Written Tibetan **gnyis**, one as a relatively recent borrowing, and the other at the cognate level. The Lepcha forms cited here are in the orthography of the Mainwaring-Grünwedel Dictionary. (In the comparative tables following I cite first the 'dictionary' spellings and below these I give my phonological representation.)

Lepcha **nyāt** 'two' represents Tibetan (and Tibeto-Burman) **-s** as **-t**. The same correspondence can be seen in Tib. **bkres-pa** 'hunger, hungry' and Lep. **krít** id. and in Tib. **zas** 'food (for man or beast)' and Lep. **zót** 'food, fodder'. Lep **-t** in these examples (and others) is to be traced back to PTB ***-s**. (See Morphological Table 2 [below] where Lep. **-t** is a suffix alternating with vocalic finals in word families). There are less obvious cases where Lep. **-t** may go back to TB ***-t**. In the following we have to do with borrowings from Tibetan: Lep. **dút-muń** from Tib. **bdud** 'demon, evil spirit' and Lep. **dot** from Tib. **dođ** 'equivalent, indemnity'.

Lepcha is especially rich in initial consonant clusters. Here (as elsewhere) I write **ng** rather than **n** when not using Dictionary spellings. I do not represent the weak glottal onset before vowels, but since **y** and **'y** are in contrast the onset must be

represented here. Where the dictionary writes **ts** and **ts'**, I substitute **c** and **ch**, where **h** stands for aspiration as it does elsewhere: **kh**, **th**, **ph**. Where the dictionary has **č**, **č'** and **j** (all palatals), I write **cy**, **chy** and **zy**. Similarly I write **sy** for **ś**. **ny** also occurs.

Table 1 Initials and clusters

p	ph	b	m	f	v	k	kh	g	ng	'y	h	t	th	d	n	c	ch	z	s
py	phy	by	my	fy	vy	ky	khy	gy		y	hy	ty	thy	dy	ny	cy	chy	zy	sy
pr		br	mr	fr		kr		gr	ngr	r	hr								
pry		bry	mry	fry		kry		gry		ry	hry								
pl		bl	ml	fl		kl		gl		l	hl								
ply		bly	mly	fly		kly		gly		ly	hly								

The aspirated initials cluster only with **-y-**. **ng** clusters only with **-r-**. The dentals and affricates cluster only with **-y-**. **ph**, **phy**, **kh**, **khy-** are rather rare. They seem to occur predominantly in loanwords from the recent Tibetan stratum or in native Lepcha reduplications. I have indicated in some of the comparative tables, especially the Lepcha-Rawang and Lepcha-Jinghpaw tables, that Lepcha **h-** may come from earlier ***kh-** and Lepcha **f-** may come, at least in part, from earlier ***ph-**. Thus, Lepcha **kh-** and **ph-** may have been introduced in rather recent borrowings. Lepcha lacks **-s** and **-s** clusters which occur in Written Tibetan, but is otherwise equally as rich as Tibetan in final consonants, having **-p**, **-t**, **-k**, **-m**, **-n**, **-ng**, **-l** and **-r**.

Lepcha vowels have been organized as follows:

Table 2

Sprigg's Phonetic Symbols	Grünwedel Spelling in 'Dictionary'	Phonemic Orthography Adopted Here
i u u	i u ú	i ʊ u
e y o	e á o	e ɔ o
a ɔ	a ó	a ɔ

We owe much to R. K. Sprigg for knowledge of Lepcha and its borrowings from Tibetan. His works of 1983 and 1986 deal largely with this matter and his analysis of Lepcha vowels. Phonetic [ɛ] occurs with dental codas: I analyze it as /ya/, thus /myal/ 'hair' which is phonetically [mɛl] or [myɛl]. The high back unrounded vowel before stops may be more central or even lowered to schwa: 'child' is [kʉp, kɪp, kəp]. For ease in transcription I write /ʉ/ and for the lower vowel /ɔ/. The vowel occurring unstressed in prefixes can be regarded as an allophone of /a/; in the examples it is written as schwa, a 'luxury' notation: thus fəli 'four' rather than /fa-'li/ where stress on the main syllable has to be marked.

Apart from unstressed prefixes, vowels in mý present view may be either short (as **fo** in **a-fo** 'tooth') or long (as in **fo:** 'bird'). Of the many words with two or three syllables, perhaps the majority have an unstressed prefix; equally stressed compounds are largely bisyllabic. 'Accent', which sometimes sounds like 'tone', comprises features of vowel length, pitch and stress. Sprigg's 1966 work posits two pitch levels such that a form if emphatic may be stressed differently than in the

normal case. Sprigg likens this to a contrast possible in English, like 'Burmese' and 'Burmese'. The second type is much less common. There are hardly any minimal pitch contrasts such as one might expect in a tonal language. The words for 'tongue' and 'seed' may be homophonous - both are *li*. One wonders if a former tonal system has broken down. Perhaps more likely are emergent tonal features, but whatever the case, the widespread use of Nepali (even as a first language among many Lepchas) and Nepali intonational features has helped to bring about the present situation.

Forrest's 1962 work 'The Linguistic Position of Rong (Lepcha)' lists many good examples of Lepcha words cognate to Tibetan. He goes on to list over sixty Austroasiatic forms which are startlingly also obviously related to Lepcha. I give below some of the most convincing comparisons, using Forrest's transcriptions:

Table 3

		Lepcha	Austroasiatic	
barn, granary	klyón	Khasi	khläñ	[wrongly entered as
dog	kā-ju	Khasi	ksew	Khmer]
hard	krón	Mon	krong	
knife	ban	Mon	?bun	
mouth	a-boñ	Biat	m'bung	
needle	ryüm	Sre	jurum	
stick, adhere	krap	Bahnar	krap	
under	sa-gram	Khmer	krom	
year	nam	Khasi	snem	

Forrest also finds some correlation between prefixes in Lepcha and Austroasiatic. I find this much less convincing, since related prefixes and lexical roots hardly occur together; however, we do have a good example in the Lepcha and Khmer words for 'dog'. One would expect more similarities between Lepcha and Khasi since they are closer geographically. Khasi happens to be isolated from most of the other Austroasiatic languages, but it is most closely related to the northern subgroup including Khmu? and Palaung-Wa. Nevertheless I cannot see a closer relationship to Lepcha in this subgroup. Some of the Austroasiatic examples given by Forrest occur in various Tibeto-Burman languages; are these then to be regarded as genuine borrowings, and if so, in what direction has the borrowing gone? Examples from his 1962 article include:

Table 4

	Lepcha	Austroasiatic	Tibeto-Burman		蓋
bury	lap	Khmer	lap	Limbu	lup
		Bahnar	läp	Tib.	rlubs 'grave'
cover	kap	Biat	kôp	T bkab	OC keps 'cover, lid'
		Khmer	kăp	PTB	*klup (STC #479)
skin (covering)	a-kap	Stieng	kup		
dung, feces	it	Khasi	eit	Kuki-	*e.k
		Khmer	ać	Naga	
		Bahnar	ik	Pwo, Sgo	e (STC p. 146. n. 399)
horn	rón	Wa	ruñ	Konyak	əruŋ (STC #85 *ruŋ)
				Garó	gronj

We can see that Lepcha and other Tibeto-Burman languages have borrowings from Austroasiatic, but whether the number of such items is significantly larger in Lepcha is unclear. It may be so, of course. However, for sheer numbers, the Tibeto-Burman element in Lepcha wins out. This is apparent in the various tables that follow. Lepcha, like all languages, has unique items that are unrelatable to other languages. As a matter of fact, Lepcha is pretty much unlike other Tibeto-Burman languages whose subgroups show clear relationships such as Tamang, Bodo, Kuki and many others. The tables show that those most similar in lexicon to Lepcha are Adi, Rawang, Jinghpaw and Ao, but even these relationships are not very close. Mikir also appears in my general comparison. Bauman's work, scheduled for the 1976 Sino-Tibetan Conference (Copenhagen) but not presented, contains much valuable material.

The Lepcha personal pronouns *go* 'I', *hə* 'thou' and *hə* 'he, she' are untypical for Tibeto-Burman languages. The closest relatives may be Sunwar *go* 'I' and *ge.goy* 'thou'. Sunwar is spoken three hundred miles or so to the west in Nepal. The Khasi word for 'I' is *ŋa*, which could well be a borrowing from Tibeto-Burman, where a form *ŋa* is most widespread.

Lepcha is indeed valuable for an illustration of word family morphological relationships. A word family meaning 'old' can vary by having infix *-y-*, suffix *-m* and suffix *-t*. Note that *n* is the velar nasal as in Tibetan, but the sequence *n* and *y* does not occur--instead we find *ny*:

a-ño	'old'	tă-ñot	'old, white-haired'
a-nyo	'old (of vegetables)'	pă-nyóm	'old man'

A related Tibetan word family is *rga-ba*, pft. *rgas* 'be old, aged,' *rgad-po* 'old man', *rgas-ka* 'old age'. Since Tibetan has the sequence *rn-*, the occurrence here of *rg-* instead is unexplained. (Tibetan does not have *nr-*). Chinese has a cognate here with the velar nasal initial: 艾 *ngas 'white-haired, old' (represented by the homophonous character for 'artemisia', Grammata Serica 347, Karlgren's ng âd/ng âi-). The correspondence here with Lepcha *tă-ñot* 'old, white-haired' is remarkably close. One would not expect many such correspondences between two distant areas--it may be due to phonological conservatism in the reconstructed oldest stages of Chinese. At any rate, there is a fair number of such correspondences. Some interesting ones are listed here. In the next example, Chinese has a doublet, probably due to dialect differences.

Lepcha	tă-gryu	'cheek'	頰 Chinese	**gwryu	'bones of the face'
			頰 Chinese	*gwrju, gwřjə/ gwji³ [GSR 988a]	
			頰 Chinese	**gwyu	'cheekbones; face'
			頰 Chinese	*gwju / gjəu [GSR 992e]	
Lepcha	tă-lyoñ	'young blades of corn, rice'	Tibetan	ljañ-pa	'green corn in first stage of growth'
			秧 Chinese	*?lyang? 'rice shoot, ?jang/?jāng sprout'	
				(Not in GSR. Phonetic is GSR 718.)	
				**d-lyañ	
				>*ldyañ > ljañ	

The above example shows that the Lepcha form is the most conservative. For the Tibetan, one must assume a similar sequence of dental plus *ly-* and then a

metathesis; finally the sequence **-dy-** is palatalized. For the Chinese initial, a reconstruction of ***ɳly-** is reasonable, but this may not correspond exactly to the assumed prefix occurring in the Lepcha and Tibetan forms.

The next example assumes a semantic shift that is not unreasonable: from an original meaning of 'double' to the narrower meaning in Chinese of 'steamer', which is a double cooking vessel. Lepcha exhibits also a word family and Chinese has a doublet form:

Lepcha		Chinese	
ñrel 'have recourse to again'		廚瓦 *ngràls, ngrjans/ngiän³	'steamer' (double vessel)
a-ñel 'repetition'		also:	
nyel 'to repeat' (*ñy-)		*ngyals ngjans/ngjen- [GSR 252d]	" "
Lepacha	Tibetan	Chinese	
kil 'a screw'	ħkhyil 'twist, wind'	*k(r)jiw:/kiëu: [GSR 1064b]	'strangle'
kíl	ħkhril 'wind, coil'	*krjiw / kiëu	'twist'
kyül 'wind around'		*mrjiw / miëu [GSR 1069]	"
myil 'to wind'			

The Lepcha forms for 'screw' and 'wind around' may be recent borrowings from Tibetan. The Tibetan forms for 'twist' and 'wind' show a contrast in medial of **-y-** and **-r-**, two members of a word family. Chinese has two related words, one with **k-** and one with **m-**, written with the same character, and in parallel fashion, Lepcha also has two forms with the two initials. Sino-Tibetan **-l** corresponds frequently to OC **-w**, although OC **-n** is a more common reflex.

Finally, the following group of correspondences shows related words in both Lepcha and Chinese with either vowel finals or **-m**. In Lepcha, **-m** is a common suffix (see the Morphology Table preceding the Bibliography); **-m** may also have been a derivational suffix in early Chinese.

Lepcha		Chinese	
prya, pryó	'honorary title'	婁 *p(r)ja:/piu: [GSR 102n, 102a]	'honoric second part of name'
prya, pryó	'celebrate in song, sing of'	貝戔 *p(r)jas/ piu- [GSR 104g]	'ballad, to chant'
pryóm	'be in tune, in harmony'	貝戔 *p(r)jim/ping [GSR 625h]	'(wind), air, tune'
a-pryóm	'time, tone of a song'	also compare: 諷 *p(r)jims/piung- [GSR 625o]	'to recite'
		風 *b(r)jim [GSR 625p]	'easy flowing (of sound)'
myä	'affirm, take an oath'	盟 *mrjang/mjwong [GSR 760e]	'covenant'

For the very last item we unfortunately lack an attested Lepcha form with **-m**. In Chinese when labial initials occurred in conjunction with final **-m**, this final regularly dissimilated to **-ng** (Bodman 1980 pp. 120-1). Compare also the negatives meaning 'not have' 無 mja/mju and 亡 *mjang/mjwang, where the alternation may be explained similarly.

The reconstructions of Old Chinese, (and Proto-Chinese) are in what we call the Bodman/Baxter system. Baxter is chiefly responsible for detailed work on Old Chinese, while I have largely worked from the comparative Sino-Tibetan aspect. The last seven groups of examples come from my own research, but the reconstructions have been checked with Baxter and we are in general agreement here.

Notes on the tables

The first table consists of three pages of lexical comparisons, all of which involve common, high-frequency words. For most of these there is no doubt of their cognate relationship, though the differences in many items show how distant the relationship may be. Where there seems to be no plausible relationship I have left the space blank. An attempt is made to show the degree of relatedness by ordering the forms according to their apparent closeness; this refers to lexical similarity only and it cannot help but be somewhat arbitrary. Thus it seems that Adi (Abor-Miri), Rawang, Jinghpaw, Ao Naga, and Mikir may be the living languages most closely related to Lepcha, although they show considerable differences in morphology among themselves.

Some reconstructions of subgroups appear among the 'proto-languages'. Proto Bodo is taken from Burling 1959 (see Bibliography). *PLB (Proto-Lolo-Burmese) comes from Nishida 1969. Proto-Karen is according to Jones 1961. WTibetan refers to Written Tibetan. *STC stands for Benedict 1972 (*Sino-Tibetan: a Conspectus*). (I have taken the liberty of representing his ***iy/*ay** category as ***iy** which accords with Baxter's ***-ij** Old Chinese category) (see Baxter 1985). Near the bottom of the sheets appear Karlgren's reconstructions for Old and Middle Chinese, which he termed Archaic and Ancient Chinese. The last line refers to the so-called Bodman-Baxter reconstruction system for Chinese (see under Baxter and Bodman in the Bibliography).

A number of the entries are taken from my own field notes which included Lepcha, Adi, Rawang, Jinghpaw, Ao, Mikir, Kanauri, Magar, Chepang (and long ago even Tamang). However, I have substituted forms from Hale 1973 for Magar, Chepang, and Tamang, since it is a readily accessible source and more complete than my own work. For Jinghpaw I have used Burling 1965 and for Lushai Bright's works of 1957. For Written Tibetan, I use Jäschke 1881.

For Ao, I use **ˊ** to mark rising or high tone and **ˋ** to mark falling or low tone. High and mid central vowels are transcribed with **ɨ** and **ɛ** respectively. The same vowel notations are also used for Adi (which has no tones). For Rawang I use the superscripted **ë** for a mid back unrounded vowel. For the Nokmung dialect of Rawang the three tones are high, low and mid level; they are represented by **ˊ**, **ˋ**, and **ˉ** accents, respectively. Mikir also has high, low, and mid tones marked **ˊ**, **ˋ**, and **ˉ**. See also Grüssner 1978.

Following the lexical list, there are three comparative lists (arranged by initial consonants of Lepcha) with Adi, Rawang, and Jinghpaw respectively. Next is a section on Lepcha morphology derived from the 'Dictionary' and written in the dictionary spelling. The Bibliography appears at the end.

All the above materials were originally used in my Sino-Tibetan classes on handwritten mimeographed sheets from 1967 and later. The present typed version has been slightly augmented and revised.

	leaf (1)	leaf (2)	stone	sky	heavy	seed	tonguc	four	fire	eye
Lepcha(Dict.)	lóp		lán	tá-lyan	'a-lim	'a-li	'a-li	fá-li	mf	'a-mik
" (NCB)	lop		long	talyang	'alim	'ali	'ali	fali	mi	amik
Adi	soláp		eling	taleng	ali	ali	(avo)	appi	emç	amik
Rawang	láp		lung		li	nl̄	phèlè	api:apli	thəmi	mèk
Jinghpaw			plung		(tèrèt)		šinglèt	melfi	(myi?) ²	myi?
Ao (Chungli dialect)			long				təmèli	pəz̄i	mi	təŋək
*PBodo			loʔng			-li	lai	brəi		m(ə)k
Mikir		lò	arlòng		ardí		adé	phlii	mè	mék
Lushai			lŭng		(rif)		láy	pà-li	měy	mìt
Kanauri			lung		li:g		le	pə	me	mig
Limbu		lha	lung		li:pma		lesopa	lisi	mi	mik
Magar		lo	lfung		li:scə		milet	buli	mfe	mi?
Chepang							le	play-jo?	hme?	mik
Burmese			lung ¹		lèi		(ša)	lèi	m̄	mycʔsi
*PLB		lâq	lóng			khlwih	(hlya)	liy ²	mi ²	myaktši
*P-Karen			'yungpā				phrè'	lwT	mik	
Tamang		lo-ma			lèi-ba		'le	'plih	me	'mi:
WTibetan	'dab-ma	(s-)la	r-lung		s-liy ¹		lce	bzi	me	mig
*STC Benedict	lap						m-lay,	b-liy	mey	mik/myak
Karlgren	djap/jâp			f'ien/t'ien			s-lay	sjad/si-	xwâr/	mjök/
*OC/MC							d'iat/	sjad/si-	xwâ:	mjuk
*OC Bodman-Baxter	l âp			th-, hl-, hn-, in, or -eng			dz'iat	ʔs(pl)yis	hmj:	mikw
				天			ʔyct	四	火	目

The usual Jinghpaw word for 'fire' is pəwə. The morpheme m̄ occurs in the first syllable of myiʔ-phrən 'lightning'.

	bird	leaf (1)	leaf (2)	fish	live	live	blood	salt	bone	word	snake	live
Lepcha(Dict)	fo	a-fo		nə	fā-nə	vi	vi	vóm	a-brat	šan	bū	byi
"(NCB)	fo:	afo		ngu:	fəngu	vi:	vi:	vo:m	abret	syong	bū:	bi:
Adi		sà		ongò	pilingò	iyi	í séwì		sərə	esing	tabwji	bi
Rawang		wā		ngà	phəngà	sí séwì			n̄rā	səng	bī	
Jinghpaw	ù	tépù		ngá	məngá	sày	cùm		tètət	səng	láp?ù	
Ao		hwa		ángò	phəngəngá	taí?				səng	pér	
*PBodo		sò		na?	b(ang)a				arəpi		-bau	
Mikir	sà-vaa	háa	sà-hngáa	nga	phəngò	aví			rù?	thng		pi
Lushai	pya	swa		nga	pángáa	thii				śing		pəc
Kanauri	pu	hebo		ngasi	nga	świ		yum	yet	sing		pi:ma
Limbu	gwā			bā	ngasi	yu:			mi-firus	sing		
Magar				ngá?	way?	way?			hrus	sing		
Chepang				ngá	ngá	θwəi			ayəu	θi?		péi
Burmese	[pyá 'bœ']	θwá		ngá ²	ngá	suy ²			aru?	sik		piy ²
*PLB		swa ²		(njáq)	ngát	swiq			(nakru)	səngq		phéq
*PKaren		swa,	tanga								pu-	pimpa, pin
Tamang		sā										
WTibetan	bya	so	nya	nga	lga		ʔyum		rus	śing	'bu	sbyin
*STC Benedict	pya,	s-wa	ngya	l-nga,	l-nga,	s-hwiy			rus	śing	buw	bij
	(b)wa			b-nga	b-nga							
Karlgren			ngio/ngiwo	ngo/	ngo/	xiwet/	ʔd̄jwən/		kwət/	śiən/		b'jad/b'ji-
*OC/MC			nguo	nguo	nguo	xiwet	ziwen		kuət	śiən		
*OC Bodman-Baxter			ngya	ngya	ngya	hwí?	ʔdyum		ʔk-rut	śing		byis
			魚	五	血	五	塩		骨	薪		界

Lepcha - Adi (2)

	Lep.	Adi		Lep.	Adi		Lep.	Adi
	t	t		th	t		d	d
flat	tam	atam	drink	t'ān	tīng	dig	du	du
	ta:m			thong			"	
spotted	tak-kā					a length	adañ	adong
	takkə						adang	
						together	dom	dumsu
							"	
	t	d		th	d		d	t
	(no examples)		elbow	ká-t'u	lagdu	steep	dóp	tap-
				kəthu				
	c	ch					zy	i
	(no examples)		(no examples)			flat	jóp	ajep
						(T. ljab)	zyəp	
	r	r				kind of rat	sūk-jāk	kejak
afraid	ro(-m)	lero				to split	jur	jer
	"						zyur	
cane	rū	taru					z	d
	rū:							
god	rūm	urom (ghost)				assemble	zum	dum
	rəm						"	
girdle	a-rek	mag-rek				be close to	zap	adap
	are:k						"	
horn	a-rón	arəng				eat	zo	do
	arə:ng						"	
odor	a-rí	arj				bright	zár	dor
	ari:						zər	
otter	sā-ryóm	siram				split	zat	dat
	səryəm						za:t	
pheasant	ta-ryok	fo:						
	"	pərik, pərik						
sunshine	so-rin	do-reng (sunshiny, clear)						
	"							
stripe	a-rí	rj-						
	ari:							

(s- and l- initials given below)

Lepcha - Adi (3)

	Lep.	Adi					Lep.	Adi
	k	k		kh			g	g
to cover	kyóm	kom		(no examples)		bent, crooked		
	kyom						gar	gir
				Lep.	Adi			
dry	kak	sankak		h	k	to bow	gāp	gip
	"						gap	
finger	aká	lakke	closed	hap	kap	lift	gár	gur, kur
	ake			"			go:r	
a ring	a-kyüp	lakkap	cry	hryóp	kap (Dafla khrab)			
	akyəp			hryəp				
side, direction	kón	-kon	entangle	hyol	ikul, ikin			
	kə:n			hyul				
				hil				
spiral	karkar	kelker	sew	hrap	omkap			
	"			hrap				
			star	sa-hór	takar			
				səhə:r				
			crab	tā-hí	take			
				təhi				
	k	g					g	k
adhere, stick	kráp	gap				lift	gár	kur, gur
	kráp						go:r	
circuit	a-kor	gurgong				bag	tā-gíp	so-kiap
	akur	(circle)					təgíp	
							təngkip	
embrace	kom, gom	gom						
	"							
to ladle	kuk	eguk (a ladle)						
	"							
wooden stalk	kuñ	a(n)gung, angong						
	kung							
	Q	Q		y	y			
divide,	ór	or	decay	ya	ya, yang			
distribute	or			ye				
to shoot	óp	ap	descend	yū(-t)	tayot			
	op			yū(-t)				
sweat (n)	so-'ól	il, ir	slide	yót	yut			
	sə'ə:l			yə:t				
			sword	pā-yuk	yok-sa			
				pəyuk				
			shade	so'yüm	mukyum			
				so'yüm				

Lepcha - Adi (4)

	Lep.	Adi		Lep.	Adi		Lep.	Adi
	m	m		n	n		ng	ng
blow	müt	mut-	ear	a-nyor	nyorung	a stick	añal	shingol (club)
	müt			anyur			angal	
body	mü(?)	amül, amur	milk	nyen	anyun	fish	ño	engo, ongo
	mü			nin			ngu:	
dream	món	im-mang	to smell	nóm	nam-	five	fã-ño	pilngo, ango
	mõ:ng			nõ:m			fõngu	
eye	amik	amik	omen,	nyo	nyo-			
	"		taboo	"				
fire	mi	ẽmẽ	two	nyāt	a-nyi			
	"			nyat				
foggy	muk	muksup	poison	a-nyin	a-nying			
			(aconite)	aning				
public	māt	amüt						
hair								
ripe	myān	min-						
	myan							
son-	myók	magbo						
in-law	myõ:k							
	f	sh ~ s		fl	l		l	l
breeze	fār	ashar,	graze,	flók	lok	a bow	sā-li	iyi, iye
	fār	eshar	barely	flók			səli	(Dafla illyi)
			touch					
deadly	fi	shi (die)	slip	flut lut		exchange	lyāk	lĭk
	fi:		from	"			lyək	
splinter	fiek	shek, shik		s	s, š	flash	lyóp	lip-lop
	flik		dry	són	san-		lyõ:p	
cut into	fañ			sõ:n				
lengths	"		wood	šañ	esing	four	fālĭ	appi
piece,	ta-fañ,	ashong		syang	(eshing)		fəli	(Dafla apl)
log	a-fañ		stench	mũñ-siñ	nāmsing,	return,	lót	-lat
					nāmshing	(give)	lõ:t	
						back		
						heaven,	tã-lyañ	taleng,
	f	i		s	Q	sky	təlyang	tayeng
chew	fóm	jam	three	sam	a-um	road	lóm	lam-be
	fõ:m			"			lõ:m	
to scoop	fok	juk						
	fuk					stone	lāñ	ẽling
	y	y ~ Q					lõng	
blood	ví	iyi, ui				seed	ali	ali
	vi:						"	
	l	y						
tongue	ali	ayo						
	"	(Dafla ailyi)						

Lepcha - Rawang (1)

	Lep.	RW		Lep	RW		Lep.	RW
	b	p		b	p		p	p
fill	blyān	běng (full)	bud,	bū	nampū (flower)	finish	pal	pal
	blyan	dəběng (fill)	blossom	bū			"	
incubate	bom	bīm (to lie)	pox	brít	mapit	heap	a-pūñ	póng
(eggs)	bum			brít			apəng	
name	a-bryañ	běng (<bl-)	bottom	a-bāñ	langpang	knee	tük-păt	pangpit
	abryang			abong			təkpat	
snake	bū	bĩ				leech	sūm-pat	təpăt
	bū						syəmpat	
putrid	byep	bíp						
	byap							
	d	d	d	t		t	t	
burst	dek	dek	(no examples)	big	tĩ	tè		
						tĩ:		
come	dí	dĩ			run,	tor	čəto:r	
	dĩ:				flee	tur		
dig	du:	dù						
	"							
wasp's	pūn-dañ	dàng (nest)						
nest	pəndəng							
above	tuk-dam	mədām						
	təkdam							
	Lep.	RW		Lep.	RW		Lep.	RW
	z	dz		z	ç		ç	ç
to live	zu					to hold,	tsam	cĩm
	zu:					seize	cam	
raw	azu		urinate	jĩ:mat		liquor	çi	nĩçt
	azu:			zi:				
alive	azum	adzĩm (raw)	urine	jĩt	cĩ	roof	açap	çĩp
				zit			acya:p	
	g	g		g	k		k	k
to notch	góp	gəp	collect	gom	dəkĩm	armpit	pəkĩp	kĩp (Daru)
	gõp						pəkĩp	
protect	gor	gā:r	a span	góm	kām	pillow	tük-kam	məkẽm
	gõ:r						təkcam	
stem,	a-glĩ	gĩ:	chin	gá	maká			
root				gẽ				
							ky	ç
						a ring	a-kyũp	ũrtəçap
							akyəp	

Lepcha - Rawang (2)

There are no examples of initial correspondences between Lepcha *p* and Rawang *b*, nor between Lep. *ph* and RW *p*, nor between Lep. *c* and RW *dz*, nor between Lep. *ch* and RW *c*. The following new stop correspondences do occur, but are sparse:

	Lep.	RW		Lep.	RW	
	t	d		th	t	
flat	tam	adām	sever	t'át	tót	
				thet		
			near	t'ól	tal	
				tho:l		
	k	g	(* kh >)	h	k	
mosquito	mūnkón	məgàng	bee	hū	ká	(both seem rather doubtful)
	məngko:ng			hə		
			hollow	kā-hór	dungkír	
				kəho:r		

[If we assume that *kh*- in Lepcha occurs only in Tibetan loans, then the hypothesized development in native words from **kh*- to *h*- may be valid.]

Correspondences with voiceless spirant initials

	f	š		s	š
blue	afiñ	māšing	kill	sót	sát
	afing			so:t	
charcoal	tūk-fyól	šir	.disposition	sak	sak (breath)
	təkfyo:l			"	
mortal,	fi	ši	cork,	šū	məsī
fatal	fi:		stopper	syu	angsi
conduit,	tūk-fül	šor	become	šoñ	
pipe	təfəl	(to bore)	dry	syo:ng	
ridicule	fá	dəšawā	dry	asón	sóng
	fa			aso:n	
green	a-fōñ	məšəng	be fat	šu	sū fat (adj.)
	afo:ng			syu	sú " (noun)
	s	š	rain	so	sī
wood	šan	səng		"	
	syang		three	sam	asim
				h	h
stench	mūñ-ših	pušəng	hollow	hoñ	hó:ng
	məngsing	angá		hong	
			to yawn	hóm	ahá:m
				ho:m	

Miscellaneous:

	v	w		φ	w		kr	r
blood	ví	səwī	to shoot	óp	wáp	to winnow	króp	rap
	vi:			op			kro:p	

(Compare Tib. k'rab, skrab)

Lepcha - Rawang (3)

Nasal and resonant initials:

	Lep.	RW		Lep.	RW
	m	m		l	l
to blow	mūt	mòt (Daru mūt)	bury	lap	lip
	mət			"	
eye	amik	mèk	to flash	lyóp	làp
	"			lyo:p	
ripe,	myān	min	heavy	alim (ali-m)	alī
cooked	myan			alim	
dream	móñ	ʔépma:ng	leaf	lóp	šalap
	mɔ:ng			lo:p	
fire	mí	təmu	stone	lāñ	lúng
	mí			long	
hair	myal	myil	to substitute	lám	dəlám
	"			ləm	
			to warm	lyam	līm
	n	n		"	
to knead	ne	anè	a bow	sā-li	təlī
	"		(archery)	səli	
day	sūk-nyí	ní	tongue	ali	pələ
	səknyi:			"	
two	nyāt	aní			
	nyat			hl	l
elder	anām	anām	to dry	hlóm	lām
brother	anəm			hlɔ:m	
	ng	ng		r	r
fish	ño	ngà	cane	rū	təri
	ngu:		(calamus)	rə	
five	fā-ño	pəngá	gather	rát	rát
	fəngu			rət	
			horn	rón	arəng
	v	v		rɔ:ng	
descend	yūt	yit	otter	sā-ryóm	sərám
	yət			səryo:m	
flow	yū	yī			
				hr	r
			gather	hráp	rīp
				hrəp	
			bone	ahrät	šerē
				ahret	

Lepcha - Jinghpaw (1)

	Lep.	JP	Lep.	JP		Lep.	JP
	p	ph	ph	ph		h	p [b]
bark (of tree)	a-pi	phyi?	(no examples)		abundant,	bá	pō
deaf	pón	ləphāng			to swell	bə:	
	pɔ:ng				to bellow	bu	nəpò
fence	tūk-pól	məphān			blossom	bor	nampān
	təkpo:l					"	
knee	tūk-pāt	ləphūt			load	bū	lítpò
	təkpat					bụ	
plump	pūm-pram-bo	phūm			muddy	bop	khūmpúp
	pəmprambu					bup	
					repeat,	bal	pāy
					again	ba:l	
					wear,	bū	pù
					carry	bụ	
	p	pʔ [p]	ph	pʔ [p]		h	pʔ [p]
come out,	plā	pʔū	(no examples)		bud	bū	pʔū
appear	plə					bụ	
interval	a-pról	láp rān (between)		burst		bu	kəpʔò
	apɔ:l					"	
straight	plón	pʔrēng, pʔyāng		snake		bū	ləpʔú
						bụ:	
					to whistle	bí	sumpʔī (n.)
						bi:	

	p	w				h	ph
bamboo	po	kʔáwá					
	"				bottom	a-bān	nəphāng
leech(1)	šūm-pat	wôt				abəng	
	səmpat				to fill	blyān	cəphring
leech(2)	fôt					blyan	phring (full)
	fə:t				erupt (of large pustules)	brut	a-phūt (measles)
	p	p [b]	ph	p [b]	(id. but of smaller ones) <td>brit</td> <td></td>	brit	
	(no examples)	(no examples)				brit	

Lepcha - Jinghpaw (2)

	Lep.	JP	Lep.	JP		Lep.	JP
	t	th	th	th		d	t [d]
above	ta	ləthá?	(no examples)	hearth	pun-dap*	táp	
	"				*(obsolete, superseded by /thɔ:p/ from Tib. t'ab)		
shrink (short)	tān	thūn					
	tan				length	adaŋ	tingtùng
	ta:n					adaŋ	
					lose	dot	tát
						dut	
					put	da	tá
						da:	
	t	tʔ [t]		th	tʔ [t]	d	tʔ [t]
fist	ká-tap	lətʔúp	to plant	t'yañ	tʔing	(no examples)	
	kə-tap			thyang			
			right,	at'áñ	tʔèng		
			correct	athəng			
	tv	čʔ [č]		th	t [d]		
dark	tyañ	čʔāng	weave	t'ók	tá?		
	tyang			tɔ:k			
	"			(Tib. t'ag)			
	t	t [d]		d	th		
egg	atí	ti	to dig	du	thù		
box	pátek	sətək					
	pətek						
	č	ch	ch		z	č [j]	
	(no examples)	(no examples of Lepcha ch-)		altogether	jam-lā	čòm	
				zyamla			
				a pair	zam	čùm	
mortar	tuk-tsam	thùm			"		
	təkcəm			thorn	ajū	čú	
	c	čʔ [č]					
	(no examples)		tickle(1)	jak	čúk		
	č	č [j]					
hold, seize	tuk-tsam	čùm		tickle(2)	yak		
	cam			"			
	tsu	čú		urine	jit	čit	
to prick	cu				zyit		
		z	čʔ [č]	"	z	š	
	arrange	jíp	səčʔfp	eat	zo	šá	
		zip					
	udder	jut	čʔú (breast)	fodder,	zót	šát	
		zyut		food	zo:t		
		z	ch				
		(no examples)					

Lepcha - Jinghpaw (3)

	Lep.	JP		Lep.	JP		Lep.	JP
	k	kh		h	kh		g	k [g]
astringent	a-krup	khùp		(*kh- > Lep. h)		to hide/grop	kòp	
	"		yawn	hóm	kəkhàm		grup	hə:m
				hə:m				
bitter	kri-m	khri (bile)	weep	hryóp	khràp			
	krim	məkhri (bitter)		hryə:p				
pickle	să-krî-t			hly	kʔ [k]			
	səkrit			(*khy- > hly)		g	kʔ [k]	
directly	kră-kră	khre	pod	ahlyap	kʔòp	branch	gryón	
	krə-krə			ahlyə:p			gryə:ng	ləkʔyíng
fall, drop	klo, glo					ladder	tă-grón	
	klu, glu			(*khy- > hly-)	čʔ[č]		tənggrə:ng	ləkʔəng
let fall	klet, glet	khrať	expel	hlyát	šəčʔút			
	klyat, glyat (fall)			hlyət				
parrot	krîñ-fo		hurry	hlyañ	čʔəng			
	krîng-fo	ù khriñg		hlyang				
pillow	tük-kam							
	tək-kam	-khúm						
	k			kʔ [k]				
to stick,	krap			kʔáp				
adhere	"							
bare	kün-krán-lă		akʔrin					
	kən-krən-la							
branch	a-kón		ləkʔúng					
	ako:ng							
join (1)	kóp		šəkʔáp					
	ko:p							
join (2)	klap							
	"							
	k (r) y			čʔ [č]				
a ring	a-kyüp		lăʔčʔóp					
	akyup							
suck dry	kryup		čʔùp					
	"							
	k	k [g]		ʔ*gh > h	k [g]		g	kh
theft	küt-mo	ləküt	star	să-hór	šəkān	chin	tă-gá	ngəkhá
	‘kətmu						təgə	
cover over	kap	káp	bazaar	hət	kát	a step	tün-gum	ləkhām (n)
	"			hə:t			təng-gum	ləkhām (vb)
drag, pull	krüt	kəròt						
	krə:t			(loans from Indic hāt)				
hill, ridge	kũñ	kòng	to shoot	ó	k [g]			
	kong			óp	káp			
			that	əp				
				o-re	wo, wóra			
				"				

Lepcha - Jinghpaw (4)

	Lep.	JP		Lep.	JP
	f	w		v	w
bird	fo	ù (*wù)	husband	avo	-wá
	fo:			avo:	
leech	fót	wòt		v	š (< *šw-)
	fo:t		before,	kür-voñ	šong
	(see sumpăt)		front	kərvə:ng	
tooth	afo	wā	enter	vón	šon
	"			və:n	
	f	ph		v	p
enemy	fyän	phyën	damp	vóm	pám
	fyän			və:m	
escape	flyañ	phrōng			
	flyang				
	f	čʔ [ts]		š	čʔ [ts]
husk,	fup	kəčʔəp (vb)	nest	a-šap	cʔíp
sheath	"			asyə:p	
			slough	a-sop	cʔòp
	v	v	(snakes)	asup	
chew	ye	məyá	louse	šák	cʔiq
	"			syə:k	
day	să-ʔyak	yáʔ			
	səkyak			š	š
descend	yũ	yúʔ	brush	pür-šit	məsit
	yü			pərsit	
female	tă-ʔyũ	yíʔ	be fat	šu	sāw (vb), sāv (n)
	təʔyü			syu	
			kill	sót	sát
				so:t	
			three	sam	məsüm
			"		
			a track	a-sur	məsòn
			"		
			vein	a-so	ləsá
			"		

Lepcha - Jinghpaw (5)

	Lep.	JP		Lep.	JP
	m	m		r	r
blow	müt	wüt (<*mw-?)	cane	rū	rī
	mət			ru	
dream	món	māng	terraced	ari	šari (overgrown)
	mə:ng		field	"	field)
eye	a-mik	myi?	fountainhead,	a-ram	rūm
	a-mik		spring	"	
fire	mí	(myi?)	otter	sá-ryóm	sərām
	mi	(in compounds)		səryo:m	
hair	myal	mūn	horn	a-rón	nrūŋ
	"	(same word family)		arə:ng	
ripe	a-myān	myīn	roll	rūl/rul/	tərin
	amyan				
wound	mó	məmá		l	l
	mə:		bury	lap	lup (sink down; grave)
	(Tib. loan)				
			heavy	alí-m	lī
	n	n		alim	
daughter-	nyóm	nām	leaf	lóp	láp
in-law	nyo:m			lo:p	
day	sūk-nyi	səni	road	lóm	lām
	sək-nyi			lo:m	
slow	nyól-bo	la?nyèn	seed	alí-	nólī
	'nyo:l-bu			ali	
smell	nóm	mənám	slice	líp	kólèp
	no:m			lip	
			eagle	kā-lyūn	kəlāng
	n̄	ng		kəlīng	
fish	ño	ngá	four	fā-lí	mólī
	ngu:			fəli	
five	faño	məngā			
	fəngu				
reside	ñan (?)	ngà			
	nga:n				

Lepcha (Rong) morphological processes (1)

(Dictionary spelling)

Reduplication

Type 1: Reduplication of initial consonant only

Type 3: Near identity with vowel change

kā-kyār-bo uneven, oblique
 kā-kyok-lā winding
 kā-klyal-lā long and thin
 kā-klyóp-lā flat: a-klyóp flat piece
 kūn- " " (and see type 2 below)
 kūp- " " " " "
 kā-gram-bo quick (gram 'hasten')
 tā-t'át-bo pale (t'át 'be pale')
 pā-plap-lā blunt
 pā-plyāk-lā round
 pā-flí-lā separately (flí 'separate')
 pā-byap-lā rotten (byap 'rotten')
 pā-bryu-lā puffed out (bryu 'large')
 yā-yūr-bo pale yellow (ūr 'brown',
 a'yór, pā-'ayór 'yellow')

lā-lyóm-lā bell-shaped
 lā-lyól-lā wide-mouthed
 fā-vap-lā shrunk (vap, fā-vap
 'shrunk, shrivelled')

kyār-rā kyēr-rā zigzag (kar, kyār 'twist')
 krūt-tā krót-ta jagged
 klup-pā klop-pā clumsy
 gar-rā gor-rā shilly-shally (gor 'spend
 time')
 ěh'al-lā ěh'ol-lā confusedly
 nyar-nā nyor-rā flabby
 t'an-nā t'yen-nā irregular
 dūn-nā dón-nā spotted
 fūk-kā fyūk-kā whizzing
 flyaŋ-nā flyuŋ-nā staggering, reeling
 mlyūk-kā mlyuk-kā indistinctly (of vision)
 yep-pā yap-pā gropingly, slowly
 yap-pā yop-pā staggering
 ryíl-lā ryól-lā lukewarm
 hyil-lā hyol-lā cracking (from dryness)
 hlūt-tā hlyót-tā hodge-podge

Type 2: C ũ C

kūr-kar-rā wriggling (kar 'twist')
 kūr-krán-lā bare, scanty
 kūm-krom-lā projecting (of teeth)
 kūm-gram-lā broking (gram 'break')
 kūn-gryaŋ-lā slender
 nūm-nyím purple (nyím 'purple')
 nūk-nók black, dirty (nók 'black')
 pūm-pam-lā short and stout
 pūt-pryūt-lā squeezing out
 pūm-plóm-bo long-faced
 fūn-fjū-bo clear (fjū 'clear, blue')
 pūn-brán-lā thinly spread (brán 'scatter')
 kūn-hón-lā open (hón 'spacious')
 rún-bryon-lā slack
 fūn-vaŋ-bo wide

Type 4: Identical reduplication

kāl-lā kāl-lā upside down
 kar-kar spiral (kar 'twist')
 kyak-kā kyak-kā sticky
 kyeŋ-ŋa kyeŋ-ŋa shrill
 kyón-kyón adhesive
 krul-lā krul-lā tall
 kre-kā kre-kā brittle
 kryóm kryóm together, concordantly
 gór-ra gór-rā up and down
 gryát-tā gryát tā trailing along
 glat-glat with breast thrust out
 ěin-ěin twinkling
 nyot-tā nyot-tā babbling
 t'il-lā t'il-lā successive
 a-pról a-pról by degrees
 sã-bár sã-bár panting

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LANGUAGE CONTACT BETWEEN RELATED LANGUAGES

Burmese influences upon Plains Chin

Theodore Stern

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1.0.

The Plains Chin of Western Burma comprise an ethnic and linguistic enclave within a dominant Burmese milieu.¹ In their accommodation to this role, Plains Chin (/ašou, sainbaun/) speakers have long been placed under the necessity of learning Burmese, a related Tibeto-Burman language which stands beyond the limits of mutual intelligibility.² It is the purpose of this paper to examine the manner in which bilingualism in a cognate secondary language has operated to bring about changes in the primary one.

For the country as a whole, the dominance of the ethnic Burmese³ gains expression not only in their numerical preponderance, comprising as they do almost eighty percent of the population, but in the circumstance that their language is spoken by some ninety percent of Burman nationals (Kyaw Thet: 166). The ascendant body in the urban centers, in the name of the new nation they control schools, newspapers, printing presses, radio stations, and other instruments of communication. While there has been notable recognition of the rights of minorities, the quest for national solidarity has seen Buddhism, Burmese culture, and the Burmese language become the standards of the Union.

Another, and longer-term, expression of Burmese paramountcy is given in the relationship of ecology to dialect-community, here given rough quantification by drawing upon the population figures and linguistic classification of the 1931 Census of India. There the Chin will be seen to have an average dialect-community, expressed by dividing total population by number of dialects, of approximately 7,600, on the same order as those of the Lolo-Muhso and Sak, but only half the size of those of other hill peoples, the Mro, Palaung-Wa, and Kachin. In the plateaus and plains, by contrast, Shan and Karen peoples display dialect-communities some ten times as great. In the plains themselves, the average Mon

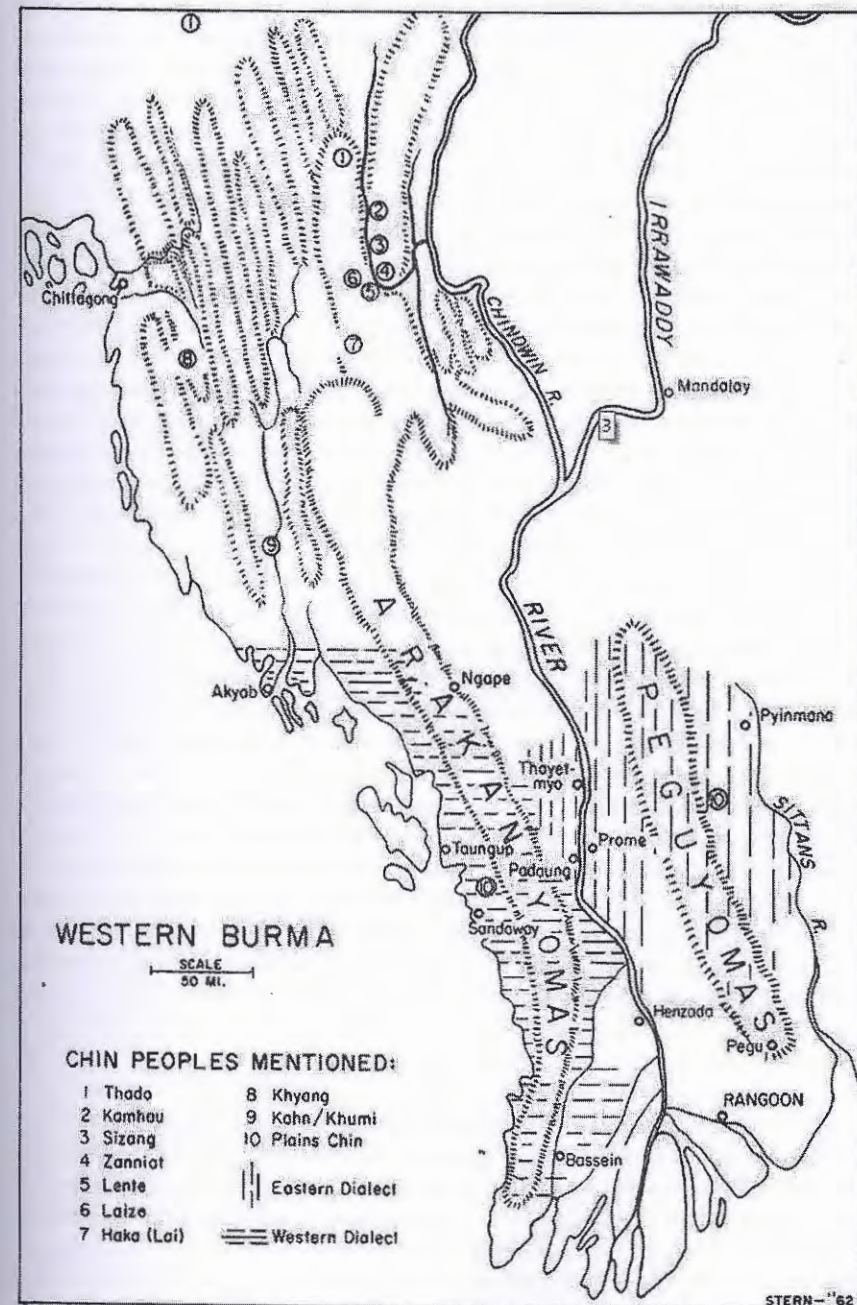
dialect-community has a magnitude almost forty-times as great, while the figure for the Burmese, even averaging in such minor dialects as Intha, is eighty times the size of the Chin. Life in the Irrawaddy Plains for many reasons has fostered intercommunication and in all probability the reduction of number of dialects.

This situation has a correlary. The minority problems which Burma faces today are not those, largely, between cultural equals. With the exception of the Mon, long-time foes but now largely absorbed, and the Shan, no other minority has a long literary tradition. (The Arakanese, being themselves of Burmese linguistic extraction, form an exception which is only apparent.) Hill status entails a stigma of ethnic distance, of geographical and cultural remoteness, and of resultant backwardness. Such past glory as hill peoples invoke is often phrased in terms of former residence in walled cities and of the loss of their birthright which befell them when their writings by mischance were devoured and lost forever. Consequently, for them there is no long literary tradition akin to that of the Dravidian south in India, upon which a contending linguistic claim might be posed. At the same time, language differences may become secondary to other cultural characteristics in setting apart the hill peoples as minorities.

Among the minorities, the Plains Chin form one of the numerous detribalized and somewhat declassé groups dwelling in intimate daily concourse with the Burmese. Unlike their congeners who dwell in the Chin Special Division in the hills to the north, they lack political distinctiveness. They do not come under the control of the Minister for Chin Affairs and are likely to be peripheral to such movements as the Chin Congress Party. The recent extremist demands, which followed the establishment within India of the Nagaland State (Gokhale), for a corresponding Chinland, to be carved out of India, Pakistan, and Burma (*Asian Recorder*: 4043), can have drawn few Plains Chin adherents. Such sense of ethnic identity as the Plains Chin may possess is more likely to find its focus in such alien institutions as the American Baptist Mission and towards its output of biblical translations and primers, printed in a script revised from that utilized for Pwo Karen, which in turn was adapted from the Burmese alphabet. Today, Plains Chin are likely to stress the fact that theirs is the only Chin language cast in a Burmese font, since the hill Chin all use instead a diversity of romanized scripts. The temper of the times is such that some hill Chin leaders, who scorn the claims of these plainmen to be true Chin, are nonetheless considering a revision of their own writing systems into Burmese-based alphabets.

1.1.

Contacts between Burmese and Chin are of long standing. Luce, indeed, has recently proposed (1959a: 26) that the two peoples may early have maintained amicable relations in the latter's homeland on the Chindwin, and that their contacts were only disrupted, perhaps in the sixteenth century, when the Chin were forced back into the hills by Shan expansion. In what are generally construed as warlike repercussions that swept the hills, the Plains Chin were driven out of the Chit-tagong Hill Tracts, where their closest congeners, the Khyang, still dwell (Bernot



and Bernot: cf. Loeffler, 1959: Bessaiget). Loeffler, who is authority for this view, estimates (1960: 556) the date of separation to lie between the seventeenth and nineteenth centuries. Leach (1960: 50f.; personal communication) prefers to see such events as the consequence of culture change, rather than an expression of migration. Plains Chin themselves, drawing to an uncertain extent upon written histories as well as their own traditions, speak of movements southward along the Arakan Yomas, debouching gradually upon the lower slopes to east and west. Of a total numbering somewhat over 40,000 listed in the Imperial Gazetteer of India as of 1901, the largest body, comprising some 28,000, lay between the crest of the Yomas and the Irrawaddy River to the east, concentrated about Padaung, opposite Prome, and in the vicinity of Thayetmyo, Henzada, and Kanaung, with a smaller group in Bassein. A second dialect extended principally east of the Irrawaddy, where some 8,000 had made their way to the Pegu Yomas. On the western slopes of the Arakan range, a movement, perhaps in the wake of the Burmese invasion of Arakan (1785), and certainly antedating the first Burmese War (1824), took settlers from Padaung by way of the Taungup Pass into the Sandoway District. Dacoities, rampant along the border between Burma and the British possessions, accelerated migration in the period just prior to the second Burmese War (1852): and by 1901 there were some 7,000 Plains Chin in Sandoway.

Whatever their total numbers, in the places where the Chin came into contact with the Burmese they found themselves in a position of numerical, as well as cultural, inferiority. Observed Lieutenant Trant of those he encountered along the Man River to the north when, in 1826, he passed over the Arakan Yomas by way of the An Pass, "The Khyéns nearest the plains are inoffensive, and have placed themselves under the Burmese government, and are liable to be called upon for their quota of men in case of war, and pay taxes..." (1828: 262). Those near the town of Ngape dwelt in small hamlets in the valley, where their paddy-fields lay. They may have taken part in the trade by which the hill Chin bartered iron ore, wild honey, dried fish, and cloth for salt, silver, food, and clothing in Arakan and Burma. (Trant, 1827: 428, 430, 437f.) The villages of the Sandoway Chin, apparently in common with those of their non-Chin neighbors, were included in land grants made by the kings of Arakan. Like the Burmese *myosa*, the proprietor then exercised judicial control and received taxes from those within his grant. (Fryer: 44).

1.2.

The relations of the tributary Chin with their Burmese neighbors were qualified by the distance which the latter tended to maintain. Ordinarily, the situation seems to have been that described by Samou U Aye, my principal linguistic informant. In his ancestral home in Padaung, where his family had held land at least from the days of his great-grandfather, within the eighteenth century, Chin villages were interspersed with those of the Burmese. For the Sandoway Chin, who likewise dwelt apart, ritual practices may have proved obstacles to assimilation, the maintenance of village ceremonies requiring the sacrifice of fowls, pigs, and buffalo

likely proving offensive to Burmese Buddhist neighbors. (Houghton, 1892: xii: cf. his reasons). Even today the distinction is maintained among the Chin themselves, and villages are designated as pagan or Buddhist.

The Plains Chin traditionally aligned themselves in patrilineages, with preferred marriage to mother's brother's daughter, the wife after marriage becoming a member of her husband's patrilineage, while continuing as well to honor her own ancestral spirits (cf. Houghton, 1892: xiv). As against the emphasis on hierarchy intimated in Burmese honorific terms of address – though doubtless less prominent in the villages – Plains Chin tend to be egalitarian, with some emphasis upon reciprocal dualities, as in village moieties of uncertain function and the ceremonial stress (Fryer: 43) upon inside and outside feasters. So long as they were preserved, these differences in alignment may well have conditioned the acculturation of the Plains Chin.

Undoubtedly the most conspicuous aspect of Chin culture for European observers was the pubertal tattooing upon the faces of their girls. Both Trant (1827: 432) and Houghton (1892: xvii) were told it was a measure to prevent their women from being carried off or raped by the Burmese. In Trant's time (433) the facial tattoo was already optional, and Houghton could also testify (1892: 49, sentence 104) to its partial abandonment. The latter could also instance (sentence 106) the marriage of a Buddhist girl of Arakanese extraction to a Chin youth: the girl, who lacked the lineage ancestors her Chin counterpart would have had, adopting those of her mother-in-law. The circumstance that, though Burmese far outnumbered the conquered Arakanese in Sandoway District (Imperial Gazetteer of India, I: 218-221), many of the linguistic influences upon Plains Chin seem to stem from Arakanese, may in part have arisen from the relative closeness in status between the two peoples.

That acculturation has been progressive is not to be denied. While fresh-water fish, say informants, retain Plains Chin names, they know salt-water fish only by their Burmese designations. On the plains, Chin farmers, to judge alike from ethnological and linguistic data, plow with buffalo in wet-rice agriculture and employ a host of utensils and tools associated with that technology: they build houses that in major details of construction resemble those of the Burmese: they carry on as traders among their own and surrounding peoples; and, if Buddhism has required an all-or-nothing surrender of village ceremonials, the humbler worship of nats (spirits and local godlings) has been more easily assimilated.⁴ Indeed, the observation of Lowis (Imperial Gazetteer of India, I: 294) for the Chin of the Prome District, that "those near the Burmese villages have adopted Burmese dress and dropped their own language," is expressive of a condition of Burmanization to be found elsewhere as well. Undoubtedly there have been many who in this manner passed progressively from the ranks of Chin to the general body of rural Burmese, in a fashion that Leach (1954) has already outlined for Kachin and Shan. Plains Chin must accordingly be taken to comprise a continuum, ranging from the acculturated residents of town and city through the lowland villagers, and out to the forest folk of the Yomas.

In the acculturation of the Plains Chin, it must be borne in mind that under British rule the distinctiveness of minorities was not only maintained, but often stressed, as witness, for example, the separate administrative status of the Frontier Areas. Within this setting, the American Baptist Union came to play a signal role, as missionaries came, fresh from their successes with the Karen, to work among the Chin. The Anglo-vernacular schools they established at Thayetmyo (*Imperial Gazetteer of India*, II: 6, 14) and Sandoway (I: 228), together with a number of smaller schools among the rural Chin, did much to give direction to the course of culture change, not least of all in providing an awareness of a common Chin identity.

The sweeping changes which all of Burma experienced under British rule, have paradoxically laid little direct stamp upon the Plains Chin language. Instead, they have been mediated by Burmese and the related Arakanese, the major languages of the region. Direct loans from English are relatively unimportant. In the school at Sandoway, Samou U Aye studied in Burmese through the fifth standard; and it was only at a later time when he was preparing to be a teacher that he took up English at Moulmein and Rangoon. The paucity of English bilinguals like him may, indeed, have been only partially responsible for the failure to draw extensively from English. It may well be that an existing practice of drawing from Burmese may have had continuing weight in dealing with cultural innovations, whatever their source.

That Burmese and European influences may find patterned expression is illustrated by the changes which this man and his family evince in the names they bear. Samou U Aye himself bears a title /samou/ which appears to be an extension on the model of Colloquial Burmese /saya/, while the honorific /?u/ is a direct loan. In referential speech he is /èi mya ?/, his personal name plus that of his father. Similarly, his grown son, following Plains Chin practice, is /chl? èi/. With the little grandsons, born since Burmese independence, there has been a dual departure. In their English names, the boys bear a common family name, being respectively Norman, Robin, and Freddy /chl? èi/, a nomenclature found among Anglo-Burmans and Sino-Burmans, but not common among the Burmese themselves. Their Burmese names follow Chin practice in retaining as last name the personal name of their father, to which in Burmese fashion are preposed the Burmese names: thus /khin maun chl? tin maun chl? maun maun chl?/. Of such an interplay of influences is Plains Chin today.

2.0.

In assessing the influences of Burmese upon Plains Chin, difficulties are posed in distinguishing those similarities attributable to genetic linkage from those which are the result of borrowing. It is arguable that Southern Chin languages, among them Plains Chin, may be conservative in some characteristics which place them closer to Burmese, and that in this respect Northern Chin languages, which lack them, may be divergent. Luce has shown (1959a: 27, with his figures converted

into percentages) that of a 700-word vocabulary, Northern and Central Chin languages, which among themselves shared between 79 and 90 percent in common, shared slightly less than 55 percent with Khumi and Plains Chin, two Southern Chin languages. An initial essay at glottochronological testing, using the revised 100-item list (Swadesh: 133-137; Hymes: 6) applied to Burmese, Plains Chin, and Kamhau, a Northern Chin language, yields a Burmese-Kamhau distance of the order of two millenia (on the Gleason nomograph), about twice the interval separating the two Chin languages, while that between Burmese and Plains Chin has an intermediate value.⁵

Other special resemblances which merit notice include morphological features. One, a negative verbal proclitic, is shared by Khumi and Plains Chin with Burmese. The possibility that it marks parallel borrowing by the two Chin languages is lessened by the sharing of other, analogous features by the two Chin languages alone (Loeffler, 1960: 549f.). Among Chin languages, Plains Chin is prominent in the wealth of numerical classifiers which it exhibits. While such classifiers are frequent in Central Chin Lai (Newland: 8, 31-33), they seem scantier than in Plains Chin, and in Lente, as well as in Northern Chin Sizang (Siyin) and Zo (Yo), they are both less in evidence and less obligatory. Although some numerical classifiers in Plains Chin appear to be loans, as a grammatical class they follow a characteristically Chin word order which stands in contrast to that reported for Burmese (Cornyn: 26-88; Haas).

Under the probability that Southern Chin is in some ways more proximate to Burmese than other segments of Chin, special caution must be observed in dealing with such data as loans in Plains Chin. To be considered a loan from Burmese, a Plains Chin item should fulfill two conditions: a) in phonological terms, it should be regularly derivable from its Burmese counterpart; b) it should lack cognates in other Chin languages (unless it can be shown that it has been borrowed there as well).

Weaker criteria may serve in the first instance to point to possible linguistic innovations. One lies in the statements of informants, the second in the products of acculturation. To arrive at the decision that the foot-powered lever pestle may be associated with a linguistic innovation is not difficult: in the villages of the hill Chin the ordinary hand-pestle is employed in hulling rice, while the lever-pestle is associated everywhere on the plains with paddy cultivation. It is not surprising, then, to discover that here among the Khyang (Bernot and Bernot: 19) the names for the device, as well as those of its component parts, follow faithfully the Burmese terms.

Useful as these criteria are when dealing with possible linguistic loans, they are essential in identifying such linguistic innovations as do not involve loans, for unless they assume special forms, such as periphrastic constructions, they cannot otherwise be isolated.

The innovations considered in the following sections stem from two sources. The first is the study of Houghton (1892), in his texts and lexicon. In the Chin-English section of the latter, Houghton customarily adduces comparative forms

from other languages, in these instances preceded by the notation, *cf.* When, in 198 entries, he cites only the Burmese cognate, that notation is omitted, suggesting that something more than comparison may be implied. It has been hypothesized that these items, comprising some 12 percent of the total vocabulary, were deemed by Houghton to constitute loans. When, along the lines to be developed immediately below, they are submitted to the minimal criteria for loans, the large majority are found to be sustained. A few items, which must either be rejected or reserved as doubtful, are approximately balanced by such entries as 'looking glass,' for which Houghton (68) gives no parallel form, but which evidently comprise loans.

To Houghton's material, Samou U Aye added texts dictated in Plains Chin with parallel Burmese translation, together with a large number of lexical forms, later regrouped according to Burmese-Plains Chin phonological equivalences. These items, within a total lexicon as yet untotaled, number 253; they sample, but doubtless do not exhaust, the acculturation vocabulary. Among them they include many of Houghton's entries.

2.1.

The regularity of derivation of loans from Burmese is subject to several qualifications. As the historical resumé indicates, contact between Chin and Burmese has taken place over several centuries, during which time both languages have undergone changes. Loeffler (1960: 553-556) has outlined what he believes to have been the major steps in change among those Southern Chin languages to which Plains Chin is most closely related. His calculus is largely in terms of language-contact, and perhaps underplays the possibility of parallel drift. Thus the fact that Plains Chin, when compared with Khyang, has replaced a syllable-final /-l/ with /-a/ is attributed to Mru influence after the separation of the two groups.

Secondly, Burmese itself has long been undergoing a series of major, and inter-related shifts. Pe Maung Tin (1922) has presented evidence from the transcription of Burmese by Europeans to indicate the nature of the shift, and to show that it had become marked about the beginning of the nineteenth century, while Firth cites the transcriptions of Carpini and Mantegazza in their *Alphabetum Barmanorum seu Regni Avenis* (1776) to indicate that many of the present features of Burmese pronunciation were already current by the end of the eighteenth century. Miller shows from a Chinese manuscript that some of the changes discussed by Pe Maung Tin were already present in the Burmese of the last half of the fifteenth century; while Luce (1959b: 53) cites one piece of evidence that would carry a detail of that change back two centuries earlier still. (For one early statement, see Duroiselle.)

Matters are rendered still more indeterminate by the circumstance that the older form of Burmese in the area inhabited by the Plains Chin developed divergently into two dialects, Burmese proper and Arakanese, both of which have influenced Plains Chin. In what follows, the modern dialects are termed respectively

Colloquial Burmese (CB) and Arakanese (Ar.) Because of the scantiness of my own materials in the latter, I have drawn upon the Marma (Chittagonian Arakanese) citations of Bernot and Bernot to derive phonological correspondences with Colloquial Burmese. In citing Arakanese forms, those from my materials are designated Ar., while those rephonemized from the Bernots are preceded by Mr.. The common form from which the two modern dialects stem is taken to be that given in the written form, thus designated Written Burmese (WB), to the graphemes of which have been assigned the phonetic values employed by Luce and his colleagues in the transcription of Old Burmese (OB). Although Luce has remarked (private conversation) the conservative character of Burmese orthography, which in large measure retains Old Burmese form, the WB cited here is at best an approximation. To be sure, the revision of spelling which has touched some Burmese words from time to time (Maung Hpay: 106), often in an effort to underscore a supposed etymological derivation from Pali, does not materially affect comparison. The Old Burmese forms cited have been kindly supplied by Luce.

2.2.0.

The shifts in Burmese and Arakanese may be somewhat impressionistically outlined as follows:

2.2.1.1. Initial consonant clusters: Burmese:

In the inscriptions of Pagan, as Pe Maung Tin has pointed out (1933: 31f.), /l/ and /y/ appear in variant spellings of the same word as the second member of initial consonant clusters beginning with a stop or nasal. Luce (1959b: 53) cites evidence to show that by the end of the thirteenth century /r/ may also have had the value of /y/ after a nasal (see also Duroiselle: 98-102). Chinese evidence from the end of the fifteenth century (Miller) provides evidence that /r/ at that time had one value when following a nasal and another in all other contexts. By about the beginning of the nineteenth century (Pe Maung Tin, 1922), the approximation of /r/ to /y/ was well advanced in all positions. The clusters /kr ky k^hr k^hy/ tended toward a fronted, coarticulated status, being realized as /t^h t^hy/. In so doing, however, they overlapped with a phonemic pair, the affricates /c c^h/, which were in turn displaced toward spirant values /s s^h/, and the phonemes which had previously occupied that position now became /θ/, though the Arakanese shift suggests that this may not have been the consequence simply of displacement. As part of the patterned shift, the voiced affricates /j j^h/ also gained their current value /z/. The /r ~ y/ equivalence in clusters was generalized to all occurrences of /r/.

2.2.1.2.

In Arakanese, /r/ retains its original value, both separately and in consonant clusters, with the exception of /r^h/, which divides evenly in the Marma examples

between /r^h/ and /š/, the latter phonologically equivalent to the CB value. Similarly, the clusters /kr ky k^hr k^hy/ retain their linear values, rather than becoming affricates; and the affricate series /c c^hj/ – no example of /j^h/ appears in the Marma – maintain their earlier values, instead of becoming alveolar spirants. Strikingly, however, the spirants which occupy that position have, as in Burmese, passed to a /θ/, although subject to no displacement. Thus, at least in the Marma sample, with a very few exceptions there appear no regular /s s^h z/.

2.2.2.1. Finals: Burmese:

The canonical form of the WB syllable includes three classes, ending respectively in vowel, in continuant, or in obstruent. The evidence for the rendition of finals in Burmese is somewhat less conclusive, either from Miller's material (owing to the meagre array of final nasals and the absence of final stops in Mandarin Chinese) or from the examples which Pe Maung Tin (1922) has been able to assemble. The long-range shift, however, seems to have been to the reduction of final continuants to final /-n/, with the exception of /-ŋ/ (see below), and of final obstruents to final /-ʔ/. The latter development, according to Firth (64), had already run its course by the late eighteenth century.

2.2.2.2.

The finals in Arakanese manifest today the same end-values as do the Burmese.

2.2.3.1. Vowels: Burmese:

To judge from conventional spelling, CB has differentiated simple vowels in open syllables from diphthongized values in closed syllables. Thus compare /-i -ein eiʔ, -o -aun -auʔ, -u -oun -ouʔ/. It is likely that these distinctions represent shifts, although a contradictory relationship seems implied by the defective set /ei (<iy) · · · iʔ/. Luce (private conversation) has expressed the view that the latter members of the set /-ou -ain -aiʔ/ may reflect either Thai (Nanchao) or Mon influences in Burmese. Particularly interesting is the development in the /a/ series, which has two nasal-ending values /-an -in/, the latter always graphemically /-aʔ/, one nasal value /-aŋ/ which was already passing in the fifteenth century (Miller) to its present, open value /-i/, and no less than three stopped values, /-aʔ/ with a final graphemic bilabial or dental stop or alveolar (now interdental) spirant, /-eʔ/ with a velar stop grapheme, and /-iʔ/ with a palatal affricate (now alveolar spirant) grapheme. (See Jones and Khin, especially table: 20-21).

2.2.3.2.

Arakanese vowels diverge somewhat from those in CB in the direction and contexts of diphthongizing. Thus compare /-i -in (<-in) -oin (<-im) -iʔ -oiʔ/ (both

<-it)/. The series /-o -aun -auʔ/ agrees conditionally with Burmese, judging from examples of the latter two from Sandoway Arakanese; but the first is in doubt, since no forms are attested in my scanty materials, and the Bernots do not distinguish /o/ and /au/ in either their CB or Marma materials. The third set has two values in each position /-u -ou -oun -uʔ -ouʔ/. The series from WB */iy/ is also defective in Marma, the only value attested being the first member /-i --- ---/. The set deriving from WB */uiw/ evinces a lowering but not a fronting or unrounding in the closed syllables, and has two values in the open position, thus /-u -ou -oin -oiʔ/. Finally, the /a/ set manifests great diversity. In the open position it has /-a/; but in the nasal-ending syllables it has /-ein (<-aŋ -am -an) -oin (<-an -aŋ) -e (<-aŋ) -an (<-aŋ)/; and in the stopped syllables /-oiʔ (<-ac) -oʔ (<-ad) -aʔ (<-ak) -eʔ (<-ap -at) -eiʔ (<-ac -ap) -iʔ (<-ak).

2.2.4.

The three phonemic systems, WB, CB, and Ar., share the following phonemes: /p p^h b m m^h t t^h d n n^h c c^h j ŋ ŋ^h k k^h g ŋ ŋ^hʔ l l^h w y h i e a u o/. They differ in the following dimensions: WB and CB share /s s^h z/, while only the first is in evidence in Marma, and there perhaps as a free variant. WB and Ar. share /r/. CB and Ar. share /θ š ei ai au ou/. Unique to WB are /m̄ iy ay uiw/ and length /·/, while Ar. alone has /oi/. Graphemically, as indicated in the preceding section, the spirant, affricate, and diphthong series are actualized differently in the three systems. CB (Cornyn: 7) has four tones: I (level) is unmarked, II (convex) /[^]/, III (abruptly falling) /'/, and IV (stopped) /-ʔ/. WB (see Cornyn and Musgrave, Tables II and III, for one solution) had symbols which are frequently taken as indicating Tones II and III (contra, Wolfenden: 197), and will be so taken here. Their distribution permits the inference that the other two tones may also have existed. For Arakanese, the Bernots seem to recognize a tonal system similar to CB; but Loeffler (1960: 521) insists that the Arakanese equivalent of CB Tone III has come today to approximate CB Tone I.

2.2.5.

Plains Chin (PC) phonemes include the following: /p p^h b m m^h t t^h d n n^h c c^h j ŋ k k^h g ŋ ŋ^hʔ s s^h z z^h š l l^h w y h f i e i e ε ai ou a u ou o au uu ouu/. To these are added length /·/ and two tones, Tone 1, contrastively higher, being unmarked, while Tone 2, a more falling tone, is rendered by /'/.

2.2.6.0.

Examples of phonological equivalents in WB-CB-Ar (or Mr) and PC follow. In most instances, loans are cited, but in a few cases forms which seem to be generically shared have been adduced, to facilitate discussion.

2.2.6.1.0.

Initial consonant clusters are treated in the following subsections.

2.2.6.1.1.

- WB *kr *k^hr equated with PC/kl k^hl/ :
 WB *krañ CB/ can/ PC/klan/ to intend.
 WB *krâ CB/ câ/ PC /kla/ to be long (of time).
 WB *krîy CB/ cêi/ Mr/krî/ PC /klei/ copper (Bu.), brass (PC).
 WB *krôñ CB/ câun/ PC/kloun/ a furrow.
 WB *akrôñ CB/ acâun/ PC/ akloun/ consequence, about.
 WB *k^hrâñ CB/ c^han/ PC/ ak^hlan/ fence, enclosure.

2.2.6.1.2.

- WB *kr *k^hr and PC/ c c^h/:
 WB *krâ CB/ ca/ Ar/kra/ /ca/ water lily.
 WB *krâm CB/ can/ PC/ cin/ to think.
 WB *krâm dâm CB/ cândân/ PC/ candan/ to be harsh.
 WB *s^hañ k^hrañ CB/ s^hin c^hin/ PC/ s^hen c^hen/ to ponder.

2.2.6.1.3.

- WB *ky(*k^hy) equated with PC/kl(k^hl)/:
 WB *kyôñ OB *klôñ CB/ câun/ PC/kloun/ to herd, tend cattle.
 WB *kyâm CB/ cân/ PC/klan/ oath

2.2.6.1.4.

- WB *ky *k^hy and PC /c c^h/:
 WB *añkyi CB/ einji/ Ar./ ankrî/ PC/ aunji/ coat, jacket.
 WB *kyôñ OB *klôñ CB/ câun/ PC/ coun/ monastery, school.
 WB *kyok — OB *klok — sañ pûñ CB/ cau? ðimbôun/ PC/ cau?simbun/ a slate.
 WB *kyok CB/ cau?/ PC/ cou?/ to kick.
 WB *kywâm kyañ CB/ cûn cin/ PC / con cin/ to be acquainted.
 WB *k^hriy kyâñ CB/ c^hei cîn/ Mr/k^hri — /PC/k^hlei can, c^hei can/ anklet; foot (Mr).
 WB *k^hyao CB/c^hi?/ PC/c^hè?/ to love.
 WB *k^hyum CB/c^hun/ PC/c^hun/ bush.
 WB *up k^hyup CB/u?c^hu?/ PC/u?chu?/ to govern.

In the four preceding classes, WB or Ar. are the more probable donors for the PC instances in 2.2.6.1.1 and 2.2.6.1.3., while those of 2.2.6.1.2. and 2.2.6.1.4 more probably derive from CB.

2.2.6.1.5

- WB *Cr and PC / Cl/:
 WB *proñ CB/pyaun/ PC/aploun/ bison.

- WB *proñ CB/pyaun/ PC/ploun/ to change.
 WB *prañ CB/pyei/ Ar/prei/ PC/ple/ country.
 WB *mruiw OB *mruiw? CB/myou/ Ar/mru?/ Mr/mròu/ PC/mlu/ town.
 WB *mrôñ CB/myâun/ PC/mloun/ ditch.

2.2.6.1.5.1. Compare other instances of non-clustered WB *r and PC/l/:

- WB *rak^huiñ CB/yak^hain/ PC/lak^houn/ Arakan.
 WB *arap — CB/ayà? yà? gà/ PC/ala? la? kà/ in several places.
 WB *ruñ CB/youn/ PC/lun, yun/ court, office.
 WB *rîy CB/yêi/ PC/lei/ to write.

2.2.6.1.6.

- WB *Cr and PC/Cy/:
 WB *prañ CB/pyin/ PC/pyàn/ to repair.

2.2.6.1.7.

- WB *Cy and PC/Cy/:
 WB *pya·suiw OB *pla·suiw CB/pyað ou/ Ar/paθu/ PC/pyas^hu/
 (a month name).
 WB *amyûiw OB *mlyuiw CB/myôu/ PC /myu/ kind, race.
 WB *pyûiw — OB *p^hyuiw — k^hâñ CB/pyou k^hin/ PC/pyu k^haun/
seed bed, nursery.
 WB *pyak CB/pye?/ PC/pya? /be damaged.

The PC instances in 2.2.6.1.5. and 2.2.6.1.7. point to a WB or Ar source, while that of 2.2.6.1.6. appears rather to be CB. In the two renditions each in PC of anklet (2.2.6.1.4.) and court office (2.2.6.1.5.1.) there is evidence of multiple borrowings.

Among the Southern Chin languages of the Chittagong Hill Tracts and vicinity, Loeffler (1960: 548) has identified a shift in both Khami and in Khyang, in which /kl k^hl/ becomes /kr k^hr/. He adds that in Plains Chin /Cr/ has become /Cl/, "yet this rule appears to hold only for words borrowed from Burmese." It seems unlikely, however, that this shift was affected by borrowing, for in this respect loans from Burmese do not seem to have led to a phonemic redistribution. Fryer (1875) recorded several PC words in /Cr/ which Houghton subsequently transcribed in /l/ or /y/, values they retain today: /bri, pri/ to finish (Fryer: 52, 54, 59, 62); /apri/ a bit, fragment (61); /mri/ four (58, 69); /pakri/ (a species of beetle) (70). The last two, at least, do not seem to be loans. Thus consider the equivalence of PC/m^hli/ ~ CB/lêi/ four with that of PC/m^hluu/ ~ CB/l^hei/ boat. Accordingly, Fryer's transcriptions may have preserved a fleeting record of the last stages of the Plains Chin /r>l/ shift.

2.2.6.1.8.

Another illustration of the changing equation between Chin and Burmese phonemic systems is provided by WB*s. What is probably an ancient equivalence is reflected in forms such as the following, in which Plains Chin stands with other Chin languages in posing an initial /t^h d/ for WB*s. It might be parenthetically noted that in the same series Nung (Barnard) poses a corresponding /ʃ/.

WB *sañ	CB/θan/ Mr/θein/ PC/t ^h i/ <u>iron</u> .
WB *swîy	CB/θwêi/ Mr/θwêi/ PC/at ^h i/ <u>blood</u> .
WB *sacpaŋ	CB/θi?pin/ PC/t ^h i/ <u>tree</u> .
WB *sûm	CB/θôun/ Mr/θûm PC/t ^h un/ <u>three</u> .
WB *asâŋ	CB/aθê/ PC/at ^h i/ <u>liver</u> .
WB *asî	CB/aθî/ Mr/aθî/ PC/at ^h ε/ <u>fruit</u> .
WB *siy	CB/θei/ Mr/θei/ PC/du/ <u>to die</u> .

The circumstance that WB*s > CB, Ar /θ/ makes it seem likely that the pattern for the following PC forms may have been taken over prior to that shift. However, as some of the more modern loans attest, the modern equivalence is generally retained: CB, Mr/θ/ ~ PC/s^hs/, CB/s/ ~ PC/s/.

WB *sâ	CB/θâ/ PC/sòu/ <u>son</u> .
WB *samî	CB/θamî/ Mr/θamî/ PC/s ^h ami/ <u>daughter</u> .
WB *asâ	CB/aθâ/ Mr/aθâ/ PC/as ^h òu/ <u>flesh</u> .
WB *saŋbo	OB *sâŋp ^h o CB/θimbô/ PC/saump ^h au/ <u>steamboat</u> .
WB *tosâlâŋ	CB/toð alin/ PC/taus ^h â?lan/ (a month name).
WB *asak	CB/aθe?/ PC/asâu ?/ <u>life, age</u> .
WB *siytta	CB/θi ?ta/ PC/ai ?ta/ <u>box</u> .
WB *su·pun	CB/θaboun/ PC/sabun/ <u>a rebel</u> .
WB *samtwe	CB/θandwe/ PC/s ^h ontou / <u>Sandoway</u> .
WB *satâŋ sa·	CB/θadînsa/ Ar/θadansa/ Ar/θadansa/ PC/s ^h adaunsou/ <u>newspaper</u> .

From a semantic standpoint, the replacement of the first three words at least might not have been predicted, and there are enough comparative data from Southern Chin (see e.g. Loeffler, 1960: 534; Bernot and Bernot: 30) to suggest that son may be a native PC form.

2.2.6.2.0.

Vowels are treated in the following subsections.

2.2.6.2.1.

WB*-j *-iN **iK	(N and K stand respectively for classes of nasals and stops).
WB *t ^h i	CB/t ^h i/ PC/t ^h i/ <u>umbrella</u> .
WB *ak ^h yiŋ	CB/ac ^h ein/ Mr/ak ^h yiŋ/ PC/ac ^h in/ a) time; b) weight.
WB *acîm	CB/asêin/ / PC/asin/ <u>green</u> .
WB *bîn	CB/bein/ PC/bèn/ <u>opium</u> .
WB *arip aroŋ	CB/ayeî?ayaun/ PC/ali?alon/ <u>status, position, token</u> .

2.2.6.2.2.

WB *-o *-oN *-oK:	
WB *natto	OB *natto CB/nadô/ Mr/ne ?tô/ PC/natau/ (a month name)
WB *to	OB *tô CB/to/ Mr/to/ PC/tau/ <u>jungle</u> (native form?).
WB *cô	OB cô CB/sozo/ PC/sauzau/ <u>early</u> .
WB *oŋ	CB/aun/ PC/oun/ <u>to pass</u> .
WB *toŋ	CB/taun/ Ar/taun/ PC/toun/ <u>south</u> .
WB *t ^h oŋ	CB/t ^h aun/ PC/t ^h oun/ a) <u>thousand</u> ; b) <u>prison</u> .
WB *coŋ	CB/saun/ PC/soun/ <u>writings (clsfr.)</u> .
WB *tapôŋ	CB/tabâun/ Mr/tabâun/ PC/taboun/ (a month name).
WB *môŋ	CB/mâun/ PC/moun/ <u>gong</u> .
WB *kok	CB/kau?/ PC/kòu?/ <u>paddy plant</u> .
WB *apok	CB/apau?/ PC/apòu?/ <u>hole</u> .
WB *anok	CB/anau?/ Ar/anau?/ PC/anou?/ <u>west</u> .
WB *mrok	CB/myau?/ Ar/mrau?/ PC/mlou?, myou?/ <u>north</u> .
WB *want ^h ok	CB/wundau?/ PC/wount ^h ou?/ (a government official).

2.2.6.2.3.

WB *-u *-uN *-uK	
WB *lù	CB/hlù/ PC/hlu/ <u>to be about to</u> .
WB *muc ^h uiw	CB/mou?s ^h òu/ PC/masu, mus ^h u/ <u>hunter</u> .
WB *puñ	CB/poun/ Mr/pun/ PC/pun/ <u>heap</u> .
WB *c ^h urñ	CB/soun/ Mr/c ^h um/ PC/asùn/ <u>mortar</u> (native form?).
WB *aluiw chûrñ	CB/alous ^h òun/ PC/alus ^h un/ <u>the most necessary</u> .
WB *ûn	CB/òun/ PC/un/ coconut (native form?).
WB *mûn	CB/moun/ PC/mun/ <u>to hate</u> .
WB *tanc ^h oŋm ^h ûn	CB/tazaunmòun/ Mr/tancembô/ PC/tazaunmùn/ (a month name).
WB *û· t ^h up	CB/ou?t ^h ou?/ PC/ù?t ^h ù?/ <u>hat</u> .
WB *mrùiw up	CB/myòu ou?/ PC/mlu u?/ <u>township officer</u> .
WB *ca· up	CB/sa ou?/ PC/sou u?/ <u>book</u> .
WB *m ^h ut	CB/m ^h ou?/ PC/m ^h ù?/ <u>to blow with the mouth, puff</u> (native form?).

2.2.6.2.4.

WB *-uiw *-uiN *-uiK	
WB *luiw	CB/lou/ PC/lu/ <u>to want</u> .
WB *tarâ· luiw	CB/tayâlou/ PC/talalu/ <u>plaintiff</u> .
WB *(mî·) p ^h uiw	CB/(mî)p ^h u PC/(mèi) p ^h u/ <u>kitchen</u> . (/mèi/native form).
WB *t ^h âmp ^h uiw	CB/t ^h âbôu PC/t ^h ânp ^h u/ <u>porter's yoke</u> .
WB *awat c ^h uiw	CB/awu? sou/ PC/awo? sou/ <u>clothing</u> .

WB *tapùiw t^hway CB/tabòudwe/ Mr/tabòute/ PC/ta^hba?tour (a month name).

WB *c^huiŋ CB/s^hain/ PC/s^hòun/ a shop.

WB *wùŋ CB/wain/ PC/wain/ a circle.

WB *cuik CB/sai?/ PC/sòu?/ to plant upright.

WB *tuik CB/tai?/ PC/tòu?/ a substantial building.

2.2.6.2.5.1. WB *-a (Compare *-aN *-aK in the two succeeding sub-sections.)

WB *ak^ha· CB/ak^ha/ PC/k^hou/ time.

WB *pa CB/pa/ PC/pou/ to accompany, have on one's person.

WB *câ· CB/ sa/ PC/sou/ a writing.

WB *ŋ^hâ· CB/ŋ^hâ/ PC/ŋ^hou/ to hire.

WB *samâ· OMon, OB *sma· CB/θamâ/ PC/samou/ (agentive); also (honorific - PC).

WB *kra· CB/ca/ PC /kla/ be long (of time).

WB *b^hurâ·/burâ· CB/p^hayâ/ Ar/p^harâ/ PC/p^halâ / a god, object of worship, pagoda (CB); pagoda (PC).

WB *sa·sana· CB/θaðana/ PC/sazana/ religious instruction, discipline, mission (CB); mission (PC).

Note also the following equivalents which, because of the wide occurrence of cognates in other Chin languages, cannot be held to be loans.

WB *t^ha CB/t^hà PC/t^hòu/ to arise, stand up.

WB *la CB/lâ/ PC/k^hlou/ moon.

WB *la· CB/la/ PC/lòu/ to come.

WB *ŋâ· CB/ŋâ/ PC/ŋou/ fish.

WB *ŋâ· CB/ŋâ/ PC/ŋ^hou/ five.

2.2.6.2.5.2. WB *-aN

WB *asam CB/aθan/ PC/as^ha / voice, sound.

WB *alam CB/alan/ PC/alan/ flag.

WB *sambara· CB/θambaya/ PC/s^hâmbala/ lime (fruit).

WB *yâm CB/yàn-/ PC/yàn-/ cartridge.

WB *riykan CB/yeigan/ PC/tuukan/ tank.

WB *kân OB *kan? CB/kân/ PC/kan, kâ·/ sulphur.

WB *praŋ CB/pyin/ PC/pyàn/ to repair.

WB *c^haŋ CB/s^hin/ Mr/can/ PC/san/ shelf, stage.

WB *laŋ CB/lin-/ Mr/lan-/ PC/lan-/ husband.

WB *kwaŋ CB/kwin/ PC/kwan, k^hwan/ a ring.

WB *p^hraŋ OB p^hwaŋ? CB/p^hwin/ PC/p^hwan/ to open.

WB *tanâŋla· CB/tanînla/ Ar/talânla/ PC/talanla/ Monday.

WB *arâŋ CB/ayîn/ PC/ayan, ayen/ principal (of money).

WB *maŋ CB/m^hin/ PC/m^hen/ ink.

WB *k^hut^haŋ CB/k^hadin/ PC/k^haden/ bedstead (CB); chair (PC).

WB *câŋ CB/šin/ PC/šen/ ships, etc. (clsfr.).

WB *payâŋ CB/payîn/ PC/palên/ amber.

WB *pulâŋ CB/palîn/ PC/palen/ bottle.

WB *c^harh CB/s^han/ PC/asaun/ kernel (rice). (native form?).

WB *c^hank^ha· CB/saga/ PC/saugau/ sieve, tray.

WB *waŋ CB/win/ PC/waun/ to enter.

WB *r^haŋ burayma CB šinbayinmâ/ PC/saunpalaun nu, sanpalaun nu/ Queen.

WB *pyùiw k^hâŋ CB/pyou k^hin/ PC/pyu k^haun/ nursery, seedbed.

WB *kansâŋ CB/kanzîn/ PC kôn saun/ bund.

WB *ca·râŋ CB/sayîn/ PC/salaun, salan/ list.

WB *kâŋ CB/kîn/ PC/kaun/ outpost.

WB *talâŋ CB/talîn/ PC/tàunlaun/ threshing floor.

WB *ca·saŋ kyôŋ CB/ saðinjan/ PC/ souzoucon, souzoucon/ monastic school.

WB *naîŋ CB/nan/ PC/noon/ to smell (intrans.). (native form?)

WB *a·mak^ham CB/amak^han/ PC/amak^hon/ baïl.

WB *lâm CB/lân/ PC/alon road (native form).

WB *m^han CB/m^han/ PC/m^hon/ to be correct.

WB *nân CB/nân/ PC/non/ palace.

2.2.6.2.5.3. WB*-aK

WB *kwak CB/kwe?/ PC/kwa?/ a ring.

WB *akwak CB/akwe?/ PC/akwa?/ ground.

WB *k^hwak CB/k^hwe?/ PC/k^hwa?/ one-thirty-second basket of paddy.

WB *-wak CB/-we?/ PC/-wa?/ half.

WB *p^hak CB/phe?/ Mr/p^ha?/ side; one of a pair (clsfr.).

WB *pyak CB/pye?/ PC/pya?/ to be damaged.

WB *tak CB/te?/ PC/ta?/ oar.

WB *(mî·) k^hwat CB/(mî)gwe?/ PC/(mei)k^hwa?/ lamp.

WB *arap-- CB/ayâ?yâ?gâ/ PC/ala?la?kâ/ in several places.

WB *siynat CB/θana?/ Mr/θeine?/ PC/šena?, s^heinâ?/ firearm.

WB *aprac CB/apyi?/ PC/aple?/ offence, crime.

WB *asak CB/aθe?/ PC/asâu?/ life, age.

WB *saksiy CB/θe?θei/ PC/s^hau?s^hei/ a witness.

WB *lap CB/la?/ PC/lo?/ vacant.

2.2.6.2.6.

A resumé of vowel equivalences as evinced in the foregoing (including possible generic forms) shows the following:

Written Burmese	Colloquial Burmese	Arakanese	Plains Chin
i	i	i	i
in	ein	in	en
im	ein	oin	in
it	ei?	i?, oi?	
ip	ei?		i?
iy	ei	i	
iyt	i?		
ay	e		
e	e		
a	a	a	a, ou

Written Burmese	Colloquial Burmese	Arakanese	Plains Chin
am̄	an	en, ein	an, aun, on
am	an	ein	an, on
an	an	ein, oin	an, aun, on
an̄	in	an	an en, aun, oun
ap	ei	i, e, oin	
ac	i?	oi? ei?	e?
ak	e?	a?, i?	a?, au?, o?
at	a?	e?	a?, au?, o?
ad	a?	o?	o?
ap	a?	e?, ei?	o?
u	u	u, ou	u
un̄, un	oun	un, oun	un
ut, up	ou?	u?, ou?	u?
uiw	ou	u, ou	u, ou
uiŋ	ain	oin	oūn, ain
uik	ai?	oi?	ou?
o	au	o/au?	au
on̄	aun	on	oun
ok	au?	o?	ou?, oū?, au?

Where multiple equivalents occur in PC for the same WB vowel and they cannot be justified in terms of complementary distribution, a difference in time of borrowing or of source must be examined. Of particular interest in this respect are the equivalences of WB *a *aN with PC/ ou on/. As remarked earlier, many of the open-vowel forms appear to be original to PC, as attested by cognates in other Chin languages, while among the latter such forms as /no·n/ to *smell* (intrans.) and /alon/ *road* seem to be of the same order. If this is so, it would seem to follow that loans showing the same equivalences should be earlier than those of the order PC/a aun an en/. On the other hand, such forms as /cau?simbun/ *slate*, /bèn/ *opium*, /awo?sou/ *clothing*, and /wain/ *circle* seem clearly enough to be relatively recent loans from CB.

A comparison of the transcriptions of Houghton with those of Samou U Aye made over sixty years later indicate that a number of loans have been reborrowed, while others have been modified through time, the later forms in both instances approximating more closely the CB pronunciation. These show, e.g. PC/ -un > -oun, u? > ou?, -aun > -an, -an > en/. (For the latter, see also the name by which our people are known to the Burmese. In the north, the branch which is found in the Chittagong Hill Tracts retains the name in WB /khyân/ and Ar form, /k^hyân/; Trant in 1826 rendered it in an intermediate pronunciation, Khyen; while today CB pronunciation is /o^hññ/.)

2.2.6.3. Tones:

Overall, tonal equivalences have not been maintained in loans. Phonologically, PC Tone 1 bears some resemblance to CB I, IV, Tone 2 to CB II, and III. However, when 98 loans in Plains Chin are examined, the following equations are found:

		CB				
		I	II	III	IV	
PC	1	21	30	14	13	
	2	10	7	3	0	

Some of the failure to equate may be susceptible to explanation. If Loeffler is correct in his observation (1960: 521) that in Arakanese CB Tones III and I are reduced to a single tone, phonologically the latter, some apparent divergencies are accounted for. However, as already noted, the Bernots record a separate Tone III for Marma.

2.2.6.4. Syllable-finals:

An impressive feature of the Burmese sound shift has been the reduction of final continuants to /-n/ and of final obstruents to /-ʔ/. Plains Chin, which Loeffler contends (1960: 556) lost terminal /-l/ late in its southward movement, has subsequently paralleled the syllable-final developments in Burmese. Houghton in 1892 distinguished PC final /-m -n -ŋ -t -k/,⁸ and in the speech of Samou U Aye, who as a boy was Houghton's contemporary, there are still audible two lightly articulated nasals /-ŋ/ and unreleased /-t̚ -k̚ -ʔ̚/, which become released upon and assimilated to a following stop.

The attitude of Samou U Aye toward these final contrasts is notable. Although his articulation was consistent under repetition, he seemed largely unaware of their existence and, when pressed, claimed that their discrimination was not essential to correct pronunciation. In brief, he reacted in each series like a naive speaker to an allophonic distinction in his own language. It is possible that the light articulation of the nasals and the unreleased character of the final stops provides one indication of their weakening. A younger relative of Samou U Aye, like him fluent in Plains Chin, Burmese, and English, had lost any audible contrast in her syllable-finals of each series.

The role of the Burmese and Plains Chin syllabaries in these shifts merits at least brief discussion. That for Plains Chin, while adhering closely to Burmese practice in the rendition of syllable-initial consonants and consonant-clusters, differs largely in the conventional values assigned to vowel-symbols and in the representation of tones and finals. Thus there is less likelihood that such interference (Weinreich, 1953) as occurs lies simply between the two graphemic systems. The Burmese script represents tones and syllable-finals in distinct notations, preserving in the latter their several former values. By contrast, the Plains Chin notation combines the two, employing six symbols in pairs to indicate two tone-contrasts each for syllables of the shape /-V -V_n -Vʔ/.

It is of interest that in a nation in which, under the system of monastic schools "almost every [male] Burman learned to read and write" (Furnivall: 122; see also the remarks of Trant, 1827: 209, 259), the conservative graphemic system of Written Burmese failed to stem a series of radical shifts in the phonology of the spoken language. On its part, the Plains Chin script, in underdifferentiating

contrasts still audible in final nasals and stops, is a contributing factor in their eventual merging. In neither instance does the written system appear to have played an effectively conservative role, such as Bright (24) has posited for literacy in India.

3.0.

The conditions of Burmese-Plains Chin contact are reflected in some measure by the 253 words and phrases which constitute the acculturation vocabulary of Samou U Aye's texts and notes. Of these no less than 90 percent comprise loanwords, in all but a few instances from Burmese, and another 7 percent comprise loanblends (5.5 percent) and loan translations (1.6 percent). By contrast, only 3 percent of the acculturation vocabulary exemplify the extension of old meanings in Plains Chin (2 percent) and newly-coined words (1.2 percent). If Casagrande is right (1954-55: 217f.), most of the response of Plains Chin speakers to innovation has been made in awareness of, and sensitivity to, the Burmese language, a condition that is consonant with the picture given earlier from non-linguistic data.

By way of comparison, the Sizang (Siyin) Chin of the Northern Chin Hills, who both in terms of ecological specialization and in the expression of recent history have tended to maintain distance from the Burmese (though they do number traders to the plains and are now increasingly aware of their place in the new nation) show a reversal of the Plains Chin ratios. Of some 2280 entries in Naylor's lexicon, the acculturation vocabulary is only half of that recorded by Houghton for Plains Chin, comprising something less than 6 percent of the total. Moreover, the 135 items reflect conditions of primary linguistic accommodation, inasmuch as no fewer than 79 percent comprise new formations or the extension of old meanings, and thus draw preponderantly upon the resources of the native language. The remaining 21 percent constitute loans.

3.1.0.

A few examples from each class of linguistic innovations in Plains Chin follow:

3.1.1. Extensions of old meanings:

/s^hàu? c/ spear; also bayonet.

/ⁿdo/ (numeral classifier for cutting, piercing instruments); extended to (num. clsr. for ships, automobiles, and planes). In CB, two classifiers denote these categories, respectively /le?/ and /sⁿ/.

3.1.2. Newly-coined words:

/k^hlen m^hun/ (Houghton) mirror, apparently from WB *krêi mun; later reinterpreted through the coinage of /k^hlou m^hù/ (Samou U Aye), lit. see spirit (i.e. reflection).

/mèi k^ha?/ matches, lit. strike-fire; cf. /k^hà?lùn/ flint-and-steel, lit. strike-rock.

/k^hòu li/ shoes, lit. tread on foot; cf. /k^hou p^houn/ sole, lit. float on foot.

/abòu nu l^hen/ (Queen Victoria), lit. great woman chief; maintained alongside the loanblend of similar meaning, /s^haun palaun nu/.

3.1.3.0. Loans:

Here only two entries will be noted out of this, the largest of all classes:

3.1.3.1. Metathesis.

/alweikadu/ easy; cf. WB *alwedaku.

3.1.3.2. Narrowing.

/-doun/ compare:

PC /k^hlaun dòun/ CB/ludâin/ each person.

but /k^hlaun gu?/ /ludâin/ every person.

3.1.4. Loanblends:

/am^hon k^hlaun l^hen/ (Houghton) assessor, lit. great truth person. cf. WB *m^han-be true.

/sabwe deŋ/ (Houghton) table, from WB *sâbwedan, CB/sabwêdin/; later reinterpreted as /eibou tan/ (Samou U Aye), replacing WB *sâ. eat by its PC equivalent.

/sessen galou/ (Houghton) military policeman, from CB/si?θi kala/; later becomes /se?s^hou/ (Samou U Aye) with the PC agentive /-s^hou/.

/t^halai samou/ doctor, (Houghton;: from Hindustani/davai/ medicine, paint, and ultimately from Arabic.) PC/samou/ practitioner, wise man, on pattern of CB/s^hei saya/.

/yàn sâu/ cartridge, from CB/yan/ gunpowder, PC/sâu/ long.

/s^hù?hèn/ reward money, from CB/su?/ reward, PC/hèn/ silver, money, on pattern of CB/su?ŋwei/.

/dâ?haun/ gasoline, from CB (and Pali)/da?/ spirit, element, PC/haun/ liquid, on the pattern of CB/da?s^hi/, lit. spirit oil.

3.1.5. Loan-translations:

k^hlou k^hou/ salary, after CB/làgà/.

/sou ni?/ Buddhist, lit. black writing, after CB/same/; similarly /sou bo?/ (Houghton) Christian (Protestant), lit. white writing (CB/sabyu/). Catholic in CB is /sani/, red writing, but the writer failed to secure a corresponding PC form.

/sou t^hou k^hlaun/ postman, lit. person who brings writings. Compare CB/sapòuđamâ/.

4.0.

Close correspondence in grammatical structure facilitate the passage of enclitics from Burmese to Plains Chin and the semantic equation of coincident morphemes of somewhat different meaning. Thus,

4.1. Loans:

/la/ (WB *ra, CB/yà/)

PC	cei	ka	pek	la	fiou?	
	I	(I)	give	must	(indic.)	<u>I must give.</u>
CB	cundò	pei	yà	de		
	/pli/	(WB *prî, CB/pî/).				
PC	yà?mèi	ma	ku	pli	yà	<u>When they had</u>
	They	(they)	(cross)	finish (subord.)	time	<u>crossed.</u>
CB	θudòu		kù	pî	dè	ak ^h a
	/mi/	(WB *mi, CB/mi/)				
PC	cei	ka	si	hò?	mi	yòu?
	I	(I)	go	(past unex-pectedly)	(indic.)	<u>I went without meaning to.</u>
CB	cundò	θwâ		mì	de	
	/p ^h u/	(WB *bû, CB/bû/)				
PC	òn	hò?	p ^h u	di?		
	live	(past tense)	formerly (Subord.)			<u>One who had formerly lived.</u>
CB	nei	k ^h è	bû	dè		
	/bou/	(WB *pa, CB/pa/)				
PC	sadi	tòu	bou			
	Take care		please			<u>Please take care!</u>
CB	θadi		t ^h a	ba		

/oun/ WB *oŋ, CB/aun/)

PC	sontou	mluwà	p ^h ou	oun	
	Sandoway	town-to	arrive	in order to	<u>In order to reach</u>

CB	θandwê	myòugou	yau?	aun	<u>Sandoway town.</u>
	/s ^h òu/	(WB *sùiw, CB/sòu/)			
PC	si?	n ^h aun	s ^h òu		
	go	apart (pl.)	(hort.)		<u>Let us part!</u>
CB	θwâ		jà	zòu	

/sei/ Houghton (1892: 28) gives the form /ⁿdeŋ sei/ let (him) be struck, in which the particle functions much as in the CB/θwâbazei/ let him go!

	/nèi/	(WB *n ^h àŋ, CB/nè/)			
PC	fi-	lòu	nèi		
	(neg.)	come	(neg. imper.)		<u>Don't come!</u>
CB	ma-	la	nè		

4.2. Replacement:

The earlier form of the comparative, PC/ t^hàu?kà/ is undergoing replacement by the loanblend / sa (<CB θa) nòu?/, as in

PC	ni	k ^h laun	tou?	k ^h laun	(t ^h àu ?kà) pou	yòu?
					(sa nòu?)	

This person that person (comp.) good (indic.)

This fellow is better than that fellow. With the replacement has come a change in word order to conform with the Burmese:

	PC	pou	t ^h àu?	kà	yòu?
but		sa nòu?	pou	yòu?	
		(comp.) good	(indic.)		<u>It is better.</u>
	CB	θaywi	kâun	de	

The superlative construction parallels the Burmese,

PC	apous ^h un	(/pou/	<u>good.</u>)	<u>Best.</u>
CB	akâunzòun	(/kâun/	<u>good</u>)	

Corresponding forms for Central and Northern Chin languages suggest that here as well the superlative particle has been replaced in Plains Chin by the Burmese morpheme, without otherwise altering the construction:

	Lente / at ^h a bik/	(/t ^h a/ good)	<u>Best.</u>
	Sizang / ap ^h a bèl/	(pha/ good)	

4.3.0. Extension of meaning:

What appears to mark an extension of meaning occurs for the enclitic / gù?/. Although there are a number of contexts in which morphemes of this shape appear, the present discussion is restricted to that which immediately follows the noun head. In this context, the enclitic ordinarily functions as an intensive, as in

PC	ni	nan	gù?	
	this	village	(intens.)	<u>This very village (nom.)</u>

CB di ywa (ha)
(di)

In some instances, it is said to be interposed for euphonic effect, as in

PC	na	sòu	gù?	wùu	yòu?	
	their	son (euph.)	(obj.)	call	(indic.)	[They] called
CB	θudòu	θa-	gou	k ^h ô-	de	<u>to their son.</u>

The identification with CB/kou/, a marker of objective relationship (Cornyn: 19), appears to carry PC/ gù?/ into new semantic areas, which it does not occupy in Houghton's grammar or examples. Thus:

PC	ni	k ^h laun	gù?	ayi	fiòu?	
	this	man	(obj.)	sell	(indic.)	<u>He sold this man.</u>
CB	i	lu-	gou	yaun	de	

cf. PC ni k^hlaun-fià ayi fiòu?
CB this man-to sell (indic.) He sold to this man.
i lu â yaun de

4.3.1.

Wolfenden (194f.) remarks a special relationship between Plains Chin and Burmese which can with equal plausibility be reckoned either one of those traits reflecting a special generic affinity between the two languages or as yet another mark of the extension of meaning of a Plains Chin construction. Speaking of the proclitic /a-/ which is affixed in Plains Chin to adjectives and substantives derived from verb roots, he observes,

"The derived forms with this prefix show how this language draws nearer to Burmese than its relatives further north, in that a- derivatives more frequently take a subjective (substantival) turn here, as against an objectival (adjectival) sense elsewhere, which is especially the case with Burmese." He thereupon contrasts some Plains Chin forms with corresponding forms from Thado, a Northern Chin language. Retranscribed, they are:

PC /as^hâu/ length (from /s^hâu/ be long); Th asaŋ, ašaŋ/
long, high, tall.
PC /as^hou/ thickness (from /s^hou/ be thick); Th ása, aša/ thick.

4.4.0.

It may be added that Burmese loans are frequently assimilated to Plains Chin grammatical patterning. Thus PC / sadi tàu?/ (from CB /θadi t^hâ/) takes the following paradigmatic forms:

PC	ka	sadi	tàu?	kòu?	<u>I take heed.</u>
		sadi	tòu		<u>Beware!; when (if) he takes heed.</u>
		sadi	"dòu	n ^h òu?	<u>He does not take heed.</u>

4.4.1.

Similarly, numeral classifiers borrowed from Burmese – those for writings, PC/ soun/(CB/saun/); pagodas, etc., PC/ s^hu/ (CB/s^hu/); yoke of animals, PC/šen/ (CB/šín/), to mention three – follow Plains Chin word order. As in CB (Haas), the numerical phrase follows the noun head; but within that phrase the numeral, or the last numeral in a sequence, is postposed to the classifier, rather than being prefixed to it, as it most commonly is in Burmese.⁹

PC	k ^h ùà?	ho?	CB ta-	k ^h we?	<u>One paddy measure</u>
	measure	one	one	measure	<u>(1/32nd of a basket).</u>
PC	ŋ ^h a	kun	ŋ ^h ou	CB s ^h è	ŋâ fi ^h i?
	ten	year	five	ten	five year

5.

This brief review has been limited to some of the more salient effects registered upon Plains Chin by Burmese contacts. Data are presently lacking to permit an assessment of interference patterns in the Burmese which Plains Chin bilinguals speak. Similarly, features in Burmese which may have been rejected, as well as developments in Plains Chin which may have enhanced linguistic distance from Burmese have not been discussed.

The necessity of speaking Burmese in daily intercourse with non-Chin may produce for bilinguals difficulty in preserving a distinctive, Plains Chin phonemic rendition of Burmese loanwords in Plains Chin context. Under the circumstances, the effect is no longer simply that of two parallel phonemic systems: there is in addition the coexistence (Fries and Pike) of the one within the other. The major trend evident in the Plains Chin pronunciation of such loans is toward current, Colloquial Burmese rendition. Given bilingualism, the current prestige of Burmese, and the numerical weight of loans already present, such a trend is likely in turn to alter the phonemic patterning of the environing Plains Chin itself. The reduction of syllable finals is a case in point.

Because multiple factors intersect in a given instance, predictability is far from simple. Although cultural innovations have often entailed linguistic loans, the phonemic patterning discussed in earlier sections raises the possibility that forms which already existed in Plains Chin may have been phonemically recast to approximate the then Burmese cognate. Again, while Burmese loans occur more frequently in formal texts than in the informal, much depends upon whether they deal with areas new to Chin culture. On the structural side, there is likewise indeterminacy, for while the comparative loanform from Burmese carries with it Burmese word order as well, borrowed numeral classifiers adhere instead to Plains Chin sequence. A more extensive study than this might well examine the degree to which substructures within a language are delimited by undergoing concomitant systemic change.

Notes

1. An earlier version of this paper was read at the thirteenth annual session of the Association for Asian Studies, held at Chicago, March 27-29, 1961. That version, as well as the present one, benefited from the criticism of William Bright. Subsequent comments from E. R. Leach and my colleagues, Raymond H. Gastil and Oliver M. Willard, can only have strengthened it. All deficiencies should, of course, be debited to the writer. The basic data were gathered during a tour as Fulbright Research Fellow in Burma, 1954-1955, and were reviewed at that time with Gordon H. Luce, whose generous scholarship, like those above, it is a pleasure to acknowledge.
2. Plains Chin (Khyang, Shō, Sainbaung is listed by both Grierson (LSI, vol. 1, ch. VI) and Shafer as a member of the Southern Chin. Both agree on its taxonomic distance from Burmese. Thus the larger group containing all Chin, Grierson's Kuki-Chin Group, equates with Shafer's Kukish Section, which for both stand on a par with the corresponding unit containing Burmese. The claim of non-intelligibility rests upon the statements of Plains Chin speakers.
3. It is customary to distinguish Burman nationals, who include the Plains Chin as well as other minorities, from the ethnic Burmese, the dominant entity within the country. (See e.g. Tinker: xi.)
4. It would be of interest to contrast the acculturation of the Khyang, who according to the Bernots (15) have undergone a process of 'Bengalization,' though they are also subject to Marma (Arakanese) influences.
5. Because of the monosyllabic character of many entries in the languages under comparison, the limitation of possibilities clouds decision in many instances. Two values were therefore determined, one accepting and the other rejecting suspicious pairs. The figures arrived at, employing Gleason's nomograph (88), were then:

Burmese-Kamhau	2200	+400	to	1800	+500	years.
		-300			-500	
		+300			+300	
Plains Chin-Kamhau	1300		to	1100		years.
		-300			-300	
		+400			+400	
Burmese-Plains Chin	1700		to	1500		years.
		-300			-300	

6. Though described as a proclitic, the preposed negative morpheme has three allomorphs /fi- n- Vq/. The nasal onglide, which assimilates to the following consonant, provides a possible cognate to Colloquial Burmese /ma-/ (Cornyn: 46., 47.). G. H. Luce informs me that a negative prefix /a-/ occurs infrequently in Old Burmese inscriptions and regularly in Maru.
7. See discussion under 2.2.3.2.
8. In his lexicon, syllable-final /-p/ occurs but once, in /lep-pyan/armadillo, where it seems to constitute an assimilation to the following stop.
9. The closest approximation in Burmese to the Plains Chin word order is for type 1 classifiers in multiples of ten (Haas: 194): /lu ayau? taya n^has^he/ one hundred and twenty people.

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INFLUENCE OF BURMESE LANGUAGE ON SOME OTHER LANGUAGES OF BURMA

(Writings systems and vocabulary)

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In this paper we shall try to show, through a few examples, some of the effects of highly developed cultures of Burma on the language—or writing—of others. We shall try to point out the difficulties the borrowers of alphabets or words had to face, and also what we can learn through those loans.

Beginning with the Mon influence on Burmese culture we shall study it only through the writing. In turn the Burmese culture—and also the Shan one— influenced others and the effects will be studied through the language of a minority group of Burma: the Singpho (or Kachin as the Burmese call them).

When they entered Burma, from the North-East, the Burmese invaders had no writing of their own, they were not a majority group, and they had first to struggle for life. But when they got military power and gradually spread their domination all over the country, they had to borrow from others writing and even vocabulary.

Among the rulers of the pre-Burmese Burma, the most important were the Mons and the Pyus. Both had a writing and a high level of civilization. What sort of cultural inheritance did Pyus leave to Burmans? History does not tell us but the part played by Mons from eleventh century¹ onwards is obvious. Through linguistic facts, one can trace the difficulties Burmese first "writers" had to face when they borrowed from the Mons an alphabet which was meant for indo-european languages and which had been adapted by Mons to their own needs.

Burmese is a tonal language: there were no tonal marks in nagari script borrowed from Mons, and this was the first difficulty. In Burmese, the tones were clearly and systematically indicated only at the beginning of twentieth century, eight centuries after the well known Kubyaukgyi (also called "Myazedi") inscription had been written.

In their first attempts for marking the tones, Burmese used sanskrit letters: the "a", which was already used in Mon for the glottal stop, was subscribed to the last letter of the syllable for indicating tone I² (now pronounced high, sharp, with a weak closure of the glottis) and the visarga, written after the syllable, was supposed to indicate tone number 3 (now high, falling, with a stress at the beginning of the syllable)³. There was no mark for the second tone (now low, level); but those marks were not used regularly and the system was often dropped; on the other hand, in sanskrit there are long and short vowels and different signs for them; in Burmese, no need of two signs for one vowel since vocalic length is irrelevant, but the long vowel sign was used for another purpose: for "a", "i", "u", the use of short vowel indicates tone one, the long vowel means tone two, and two dots after the syllable (the visarga) means tone three; for "e", "ui", tone two is supposed to be inherent to the sign of the vowel, so that it is necessary to mark tone three (two dots after the syllable) and tone one (one dot under the last sign of the syllable); for "è" (or "ai")⁴ and for "o", tone three is supposed to be inherent to the sign, tone one is marked with a subscribed dot, tone two is different for each vowel: "è" (ai) is written "ay" and "o" bears a supplementary mark above the sign. This triple system is now well established though not very simple. It is shown underneath:

	tone I	tone II	tone III
For vowels written: "a, i, u"	-(a) ⁵ -i -u	-ā -ī -ū	-ā: -ī: -ū:
"e, ui"	-e -ui	-e -ui	-e: -ui:
"è, o"	-è -o	-ay -ō	-è -o

Problems of tones were not the only ones Burmese had to face for writing accurately their language: they had to add a subscribed "h" under the nasals for differentiating two kinds of nasal consonants, while there is only one kind in sanskrit.

When Burmese transmitted a writing system to the Shans of Burma, again it was not a proper one for a Thai language and the last difficulties were solved very late: in 1955, there was a reform of Shan orthography and only then were the tones clearly indicated (four marks for five tones, the fifth being the only one left unmarked); from this date, too, the vowels in close syllable were more accurately transcribed, for instance, the use of mark vocalic length was applied to the same sign for differentiating two different vowels, "u" is /u/, "ū" is /o/⁶.

When in turn the missionaries adapted the Burmese system to the Karen languages, they tried to answer the specific problems of Karen: though not a majority group in Burma, they played the same part as Mon and Burmese did before and gave writing systems: romanisation, not only to Karen but also to many minority groups of Burma.

Karen alphabet was invented (or adapted from the Burmese one) by the missionary Jonathan Wade in 1832. It was meant for Sgaw Karen and was answering completely the needs of the language; the tones are clearly marked in it; even before 1832, there were a few attempts to use Burmese alphabet in Sgaw Karen, but they were not systematical. It was also attempted to give Pwo Karen language a transcription fit for its nasal vowels and specific tonal system. But the Sgaw is the only one to have an alphabet regularly used for handbooks, dictionaries and so on...

Other ethnic groups of Burma, such as Chin, Kachin (Singpho)⁷ Maru, Kadu, Ganan are writing their language in a romanisation established by missionaries; unfortunately tones are not indicated in these romanisations. Two handbooks, written at the end of the last century by British officers on Chin language are marking tones.⁸

The problem of oral communication between two groups, one being more powerful than the other, is different; the smaller group borrows what it needs: things or words; the new words are adapted by the borrowers more naturally, since these words are used daily; the adaptation needs not to be systematic (at least in appearance): words are adopted one after the other, according to the needs; two points seem to me to throw some light on the history of the lender's language: what kind of vocabulary is borrowed and when might tell us the exchanges and relations between these two groups: the loan-words, if borrowed long ago might have kept, to some extent, archaic features which have disappeared from the lender's language.

As an illustration of the above statement, materials from Burmese and Singpho languages will be compared. Reading Singpho vocabulary in dictionaries, or listening to Singpho speakers we can notice that some words bear resemblance with Burmese ones, some are totally identical, though Singpho language is different from Burmese, far from being akin to it as Arakanese, Tavoyan or Intha; in those three, all words bear a great resemblance with Burmese and they are, in fact, archaic dialects of Burmese language as a whole, the modern dialect being nowadays Burmese.

In Singpho vocabulary loan-words from Burmese, and also Shan have been collected; they are contrasting with other Singpho terms⁹ and we shall examine which kind of vocabulary they belong to and which form of Burmese they look like to, using for the sake of comparison the above mentioned Burmese dialects.¹⁰

We used notes and records collected from Maran Roaja, a Singpho (Maran group) student of Rangoon University who was coming from Myitkyina in 1958. We used also Hertz's Handbook (1954, reprint of 1917 edition)¹¹, and Hanson's Handbook and Dictionary¹². According to Hertz, he uses an orthographic system which is a romanisation prepared by Deputy Commissioner E.C.S. George and Bhamo's missionaries, accepted afterwards by local government. Tones are not marked in it, same as in Hanson's works. Though we had recorded the tones when we worked with Maran Roaja, we dropped their marks here since there are none in the other materials.

We shall deal first with loan-words which appear to be old borrowings through comparison with Burmese dialects, that is to say words which bear resemblance with archaic dialects rather than with modern Burmese. We notice that many of these loan-words have a Singpho synonymous¹³ and that most of them are terms of daily life, material civilisation, for instance:

	(Singpho)	(Burmese Dialects)
"provisions"	fa phak lu ja	
	jari/jarik	arch.dial. /cəreʔ/, mod.bur. /səyeʔ/
"capital"	fətu	
	ʔəraŋ	arch.dial.,shan /ʔə'raŋ/, m.b. /ʔə'yin/
"cup, bowl" (bamboo)	lətək	
(earth, china)	wan	shan : id
	kək	arch.dial /kuəʔ/, m.b. /kuəʔ/ (both written <i>kwak</i>)
"to stoop, bow the head"	təgup	
	gum	marma /'kuŋ/ ['koum], m.b. /'kon/
"to be contracted,		kyip, kip
shrunk"	cum	mar. /cuŋ' / [coum'], m.b. /con' /
"grain, seed"	nsi nli	
	si	north.mar. /ci' /, other arak.d. /tsi' /
		Akyab arak. /si' /, m.b. /se' /
"to transmit"	f(ə) lai	
	ʔəp	arak. /ʔaʔ/ [ʔaεʔ], m.b. /ʔaʔ/ (written <i>ap</i>)
"to lie down"	kələn	
	yup	/ʔeʔ/ [wiʔ] [ʔəy']
"to calculate"	shən	
	thi	arak.tav. /twəʔ/, m.b. /tuεʔ/ (both written <i>twak</i>)
	tak	

Other terms are belonging to religious or social life vocabulary, such as:

	(Singpho)	(Burmese Dialects)
"god"	kərai kəshaŋ	
	phra	arak. /'phra/, m.b. /phə'ya/
"festival"	mənaʊ mənaʊ (Singpho traditional festival)	
	poi	arch.dial. /'pwe/, m.b. /'pue/ id.in Shan
"interpreter"	ga kələ ai wa	
	cagəbyan wa ¹⁴	north.mar. /cə'Ka Praŋ/ [cə'gabreŋ] m.b. /Sə'Ka Pyan/ [zəgəbyā]
race, kind"	bə	
	myu	intha /ʔə'myu/, m.b. /ʔə'myo/
"be convenient"	shut ¹⁵	
	təŋ	arak. /taŋ' / [təŋ'], m.b. /tiŋ' /
"chief"	du duwa məŋ (but māŋsa "prince", cf. <i>infra</i>)	arak. /'məŋ/ ['məŋ], ['māŋ], m.b. /'min/

The above quoted lists require a few comments:

məŋ shows the Arakanese pronunciation of a + n; the realization of this ʔəraŋ back "a" is more or less opened, and in ʔəraŋ, dāŋga show other dāŋga realizations of the same; both can be found in Arakanese and Tavoyan dialects. Again, if we consider :

kək "bowl", tak "to calculate", in those two words the same variation shows. The final k of the Singpho terms is written in the Burmese and Shan corresponding ones, but these terms were not pronounced by Maran Roaja : they have been found in Hertz' Dictionary.

si "grain", different from modern standard Burmese /se' / is also-most probably-an archaism preserved by other dialects, which have only three degrees of vocalic aperture, while there are four in modern Burmese.

myu "race" differs from m.b. /'myo/ for the same reason.

poi "festival" is akin to Burmese /'pue/, no doubt; the status of w is never clearly distinct from u, and cannot be apposed to it inside one dialect: there is one phoneme, realised as [u] when it is the nucleus of the syllable, and as [w] when it is before the vocalic nucleus. Even in modern Burmese these two realisations show. The i of poi is nearer from the vowel of archaic dialects than from the vowel of modern Burmese.

jari, jarik, cagəbyan wa have palatal corresponding with alveolar sibilant of modern Burmese; in an archaic form of Arakanese¹⁶ can be found three palatal plosives : /c/, /ch/, /j/ corresponding to m.b. /s/, /sh/, /z/ and the alveolar sibilant /s/ corresponding to m.b. /θ/; in another Arakanese dialect¹⁷ /θ/ corresponds to m.b. /θ/ and /ts/. /dz/, /ths/, to m.b. /s/, /z/, /sh/. In Akyab, capital of Arakan, on the North-Western coast of Burma, there is an emphatic /s/; Intha dialect has only one phoneme : an indistinct /s/ [s] or [sh] corresponding to three m.b. phonemes: /s/ /sh/, /θ/. Singpho has no interdental /θ/ but has palatal plosive /c/ and sibilant /s/. It seems that there have been an evolution in dialects of Burmese from /c/ to /ts/ and then /s/ and, if it is so, that would mean that /si/ is a more recent loan-word than /cagə-/ (from cagəbyan), or, on the contrary, that si/nsi is an old Singpho word, cagə- having been borrowed afterwards, though before the evolution of Burmese /c/ to /s/; because of the meaning of the latter, and because si has a synonymous nsi, with a Singpho form, I would rather prefer the second hypothesis.

ʔəraŋ, "capital", phra, "god" remind us that /r/ is coexisting with /y/ in archaic Burmese dialects while in m.b. both have melted into /y/; this change might not be very old : the Burmese king Alaungphaya was known to foreigners as Alompra, in his life time (beginning of eighteenth century), modern Pyi was Prome and so on.

There are many other terms which are obviously borrowed from Burmese or Shan, but which have no Singpho synonymous (we are still referring to borrowings

from ancient Burmese); most of them belong to "daily life words" category. For instance :

	<i>singpho</i>	<i>arch. dial</i>	<i>m. b.</i>
"pig"	wəʔ	/waʔ/ [wəʔ], [waʔ]	/Uεʔ/
"dog"	kui'	arak. /'khui/	/'khue/
"bateau"	li	arak. /if/	ie
"cart"	leŋ	arak. /leŋ/ [ˈlœŋ]	/'iε/
"bench, stool"	puŋ khum	arak. /khun/ [khoum]	/khoN/
"bottle"	namtau	shan <i>id.</i>	
"bread"	khaumun	shan <i>id.</i>	/moN'/
"trousers"	kunkhu	shan khun	
"silk"	lai	shan <i>id.</i>	
"drug, medecine"	ʔətsi, tsi	north.mar. /'chi/ south.mar. /'tshi/	/'she/
"medecine man"	ʔətsi səra	south.mar. /'tshi Tshəra/	/'sheshəya/
"carpenter"	laksəma	north.m., shan /laʔSə'ma/ south.mar. /laʔθə'ma/	/lεʔθə'ma/
"key"	tsə	north.mar. */so'/' ¹⁸	/θə'/
"brick"	ʔawut, wut	arch.dial.shan, /ʔuʔ/	/ʔəʔ/
"engine"	cak	north.mar. /caʔ/	/sεʔ/

Some loan-words deal with finance, trade:

"bazar"	kat	shan <i>id.</i>	
"benefit"	ʔacu	intha, /ʔə'kyu/	/ʔə'co
"interest"	ʔatu		/ʔə'to/

with administration:

"clerk, secretary"	cəre	north.mar. /cə're/	/sə'ye/
"steal, stamp"	təzik	arak. /taN Tshiʔ/ [təndzoiʔ]	/təSheʔ/
"court of justice"	ruŋ	XVII ^o c. burm. "room" [ˈroum] (?)	/'yoN/
"position, business"	ʔəkhaŋ	arch.dial. /ʔə'khaŋ/	/'khiN/
"govern"	ʔəup kham	arak. /ʔuʔ/ [ʔouʔ]	/ʔəʔ/ (written up)
"prince"	maŋsa	arch.dial. /'maN'Sa/, /'maN'θa' /'miN'θa/	
"palace"	khə	shan <i>id.</i>	

with "abstractions":

"color"	ʔarəŋ	arak. /ʔəron/	/ʔəyoN/
"life"	ʔasak	arch.dial. /ʔəsaʔ/, /ʔəθaʔ/	/ʔəθεʔ/, written asak
"to die"	si	arch.dial. /si/, /θi/	/θe/
"hell"	ŋərai	arak. /'ŋre/, /ŋə're/	/ŋə'ye/
"habit"	ʔagyaŋ	arch.dial. /ʔə'kyaN/	/ʔəciN'/
"costums"	thuŋ jaŋ	north.mar. /'thuN CaN/ [ˈthouŋjaŋ] /'thoN SaN/ arak. /'thuNTsaN/ [ˈthouŋzaŋ]	

The phoneme /r/ is used in many Singpho words. In Burmese itself it was still in use at the beginning of eighteenth century; it disappeared first, from the very beginning of words, while the middle position (in a polysyllabic word) seemed to maintain it; phra, pra (/ph(ə)ra/), serée (/shə're/) are terms used in the narratives

of European visitors to Burma; this provides us with very vague datations for the melting of /r/ and /y/ into one /y/.

As for "court of justice", ruŋ it had been pronounced yuŋ very early in Arakan, though all Arakanese dialects maintain /r/ everywhere, in any position; it seems this word received an exceptional treatment in Arakanese, while the Singpho pronunciation is similar to the general archaic pronunciation.

The discrepancies, concerning the pronunciation of the /c/ which appeared already in the previous list of words show here too. The present list suggests several kinds of relations between Singpho and their powerful neighbours (Shans and Burmese): trade and business, altogether close contact and the feeling of a deep difference between Singphos' organisation and the Burmese one, or between their chiefs and the Shan or Burmese princes, palaces, administration, words which are treated as untranslatable in Singpho terms, as "strangers"; this close contact was often (in fact) a kind of feudal link which obliged Singpho to deal with Shan or Burmese administration and to know how to call men and things.

Two words are surprising:

kui' "dog" could it be possibly a loan-word? It could be an old Singpho word which happened to be similar to the Burmese one, but we notice that the term is pretty different in Chin language, for example : uy, and in Maru lə'kha, though both,¹⁹ in their own way, bear resemblance with Burmese. Even if not borrowed, the Singpho term for "dog" is the nearest form from the Burmese. wutaun "peacock" (burm. /ʔu'Təŋ/), not included in the list since there is no archaic dialectal form to be compared with. The peacock was the emblem of royalty in Burma, and the term could be included in the administrative vocabulary; it is obviously a loan-word from the time of Burmese kingdom.

Another kind of words, identical or almost identical to Burmese ones, have probably been borrowed very recently, since they bear resemblance with modern Burmese. They belong to administrative or military vocabulary; some are dealing with measures, finance and so on... This is a list of them (list which is not an exhaustive one):

	<i>Singpho</i>	<i>modern Burm.</i>
"government"	ʔasoya	/ʔə'soya'/
"school"	jəŋ	/'cəN/
"to petition"	ʔək	/ʔəʔ/
"to request"		
"flag"	ʔalan	/ʔəlaN/
"to make enquiry"	soŋ	/soN/
"leave, permit"	ʔakhwiŋ	/ʔəkhuiN'/
"to read"	phat	/phaʔ/
"to make apparent"	phə	/phə/
"to reveal"		
"prison"	thəŋ	/thəN/
"dacoit"	dəmya	/dəmya'/
"to imprison"	hləŋ	/ləN/

<i>(Army and war)</i>		
"gun"	sənat	ʰənaʔ/
"canon"	ʔamyauk	/ʔəmyəʔ/
"to win"	ʔəŋ	/ʔəN/
"to kill"	sat	/θaʔ/
"army"	tap	/taʔ/
"soldier"	luksuk	shan id.
<i>(Measures)</i>		
"cubit"	təŋ	/təN/
"fathom"	ləlam	/ləlaN/
<i>(Finance, trade)</i>		
"benefit, gain"	myat	/ʔəmyaʔ/
"to partake"	gam	/kaN/
"to add"	pəŋ	/pəN/
"remnant"	can	/ʔəcaN/
<i>(Entertainments)</i>		
"to bet"	ləŋ	/ləN/
"to dance"	ga	/kaʔ/
	(but manau manau for Singpho dance)	
<i>(Ornaments)</i>		
"pearl"	pŋle	/pəʼle/
"necklace"	pədi	/pəʼTi/ [pədi]
"to decorate"	mən	/moN/
<i>(Abstractions)</i>		
"to be happy"	pyə	/pyə/
"luck, fate"	gam	/kaN/
"to bear, endure"	kham	/khaN/
"to reach, succeed"	khap	/khaʔ/
"to be easy"	lwe	/lue/

There is obviously a connection between the categories of loanwords and the situation of the Kachin (or Singpho) group : a minority group, in a country where Burmese language is the official one, spoken by a large majority.

In this paper were shown only a few examples of the linguistic response from a minority facing the difficulty of dealing with a majority. Perhaps there is something more to learn, from this response, than the history of the majority's language; perhaps this response might include wider or more general information.

As for us we restrain to a linguistic view point and would like to stress, at the end of this paper, the interdependence between the studies of *all* the languages of a country, whatever might be the situation of their speakers. The last examples quoted below, have been once more borrowed to Intha, Tavoyan and Arakanese the archaic dialects of Burmese, and at the same time we shall make reference to Singpho, as an archaic stage of Tibeto-Burmese general evolution.

Singpho has prefixes, Burmese has still a few dissyllables whose first syllable is very much like a prefix; if we compare with arch. dialects corresponding terms such Burmese words as :

	<i>mod. Burm.</i>	<i>arch. dial.</i>
"cooked rice"	/thəʼmiN/	inthaʼ\meN/

		north.mar. /həʼmar/
"paddy"	/SəʼPa/	tav /ba/
		intha /pa/
"snail"	/khəyüʼ/	intha /fu/
"word, speech"	/SəʼKa/	intha /ka/
		singpho ²⁰ ga
"bitter cucumber" (<i>momordica</i>)	/θəphuʔ/ ²¹	Tav/phwaʔ/(it is written <i>saphwat</i> in bur)

we notice that the archaic dialects have been affected by a greater evolution than the modern Burmese: they have dropped their prefix while modern Burmese has not.

In Singpho, archaic Tibeto-Burmese language, a very large number of words has prefix, while in Burmese there are only a few ones, and this makes still more puzzling the examples quoted above; Singpho has also numerous pairs of words, apparently synonymous, one word with prefix and one without. These Facts, among others, arouse the question of the nature, function and history of prefixes in Tibeto-Burmese; there is a prefix problem that the comparison between dialects of a same language, and between languages of a same family might help to study. That is the kind of linguistic problems between majority-minority groups we tried to have a glimpse of.

Notes

1. They surely played a part sooner but historical data are scanty before eleventh century.
2. According to Burmese classification.
3. We suppose there were already tones at that time.
4. The transcription used in *Epigraphia birmanica* is "ai",
5. "a" is an inherent vowel in nagari and scripts derived from it.
6. Jean Perrin, "La Réforme de l'orthographe shane, *Bulletin de l'Ecole française d'Extrême-Orient*, 1958, XLIX, 1, 259-268.
7. The Kachins call themselves, according to the phonetics of their different dialects, Singpho on the border of Assam, Chingpaw in the Center and East of Kachin State.
8. Bernard Houghton, *Essay on the Language of the Southern Chins and its affinities*, Rangoon, Sup. Gov. Printing, 1892. 131 p. and G.E. Fryer, "On the Khyeng People of the Sandoway District of Arakan, *Journal of the Royal Asiatic Society of Bengal*, 1875, 44(1)39-82.
9. Though the phonological study of Singpho (Maran group) could not be achieved, and the necessary checking could not be done, due to the situation of Kachin State, it is possible to guess, through the form of words (presence of prefix, of final consonant, in particular) whether words are Singpho or not, and if not whether they can be compared with Burmese or Shan corresponding term.
10. Arch. dial. will indicate a form common to all of them, Arak. will refer to Arakanese spoken on both sides of the Burma-Bangladesh border, Marma will refer to Bangladesh Arakanese, sometimes the more archaic marma will be called northern marma and opposed to southern one, less archaic, Tav. accounts for Tavoyan.
11. H.F. Hertz, *A Practical Handbook of the Kachin or Chingpaw language*, Rangoon, 1954, VI + 153 pp.

12. O. Hanson, *Dictionary of the Kachin Language*, Rangoon, American Baptist Mission Press, 1906, 31 + 751 pp.; *A Handbook of the Kachin or Jinghpaw Language* *ibid.*, 1917, 19 + 258 pp.
13. Singpho term and loan-word both in use when the dictionaries were written.
14. Cagəbyan wa is compounded of a non-Burmese element: wa, an old loan-word cagə from arch.dial. /cə'Ka/ [cə'ga] and a modern -byan, m.b. [-byä]; cagə (*versus* Singpho ga) not used alone, has survived in the modern borrowing from the Burmese compound [zəgəbyä].
15. According to Maran Roaja, shut is no more in use in Singpho.
16. Manna of the Northern, or Mong Circle of Chittagong Hill Tracts, Bangladesh.
17. Marma of Southern or Bohmong Circle of Chittagong Hill Tracts, (next to Burma-Bangladesh border, and the Hills of Burmese Arakan).
18. Reconstructed form.
19. Both are Tibeto-Burmese languages of Burma.
20. Exceptionally the Singpho word has no prefix and the Burmese one has still its prefix.
21. Called also by a loan-word from Mon : m.burm. /khə'Ue/, tav. /'khue/.



A TENTATIVE LIST OF MON LOAN WORDS IN BURMESE

Hla Pe

Source: *Journal of the Burma Research Society* 50, 1, 1967, 71-94.

This article is a sequel to 'Some Adapted Pali Loan Words in Burmese'¹ and a supplement to 'Verbal Pearls from the Burmese Oyster: the rise of Neologism in Burmese'.²

The purpose is to put on record in one place the Mon loans – some certain and others doubtful – that can be traced so far, and to make some comments. The article has many inadequacies, and is no more than a beginning. It is hoped that this material may yield more fruitful results in the hand of a more competent scholar.

The task of collecting Mon loans is beset with pitfalls. It is more formidable than that of collecting adapted Pali loan words. Pali is a dead language; it has been studied extensively by Burmese scholars since it is the language of the Buddhism that is interwoven into the fabric of the Burman's life – his thought, speech and actions; and he has a better knowledge of it, at least of its vocabulary, than any other language, except perhaps English. Mon on the other hand is a living language, which has itself absorbed words from many foreign language, – e.g. Thai, Malay, Persian, Portuguese, English, Pali and Sanskrit. Unlike Pali, it has no special significance in the life of the Burman; and probably after the 13th century, it has become just a language of the people who have lived side by side with him up to the present time.

1. Political relationship

The Mon and the Burmese peoples have been co-inhabitants of Burma for more than 1,000 years. All the available evidence indicates that when the Burmese entered central Burma in the 8th or 9th century A.D.,³ the Mon had already reached a high level of civilization, and had a kingdom of their own with its capital at Thaton in Lower Burma – though their residence was not confined to that part of the country.⁴ They witnessed the emergence of the organized State of the newcomers with its capital at Pagan in Upper Burma in the 10th century. They also felt the repercussions of this new rising power in the 11th century when their

domain was invaded by the Burmese.⁵ This attack started the political struggle between the two neighbouring States culminating in 1757,⁶ with the Burmese gaining the domination of the whole of Burma. Since then the use of the Mon language began to recede, and at present the bulk of the Mon speaking population in Burma is found chiefly around three cities, all in Lower Burma – Pegu, Thaton and Moulmein.

2. Cultural relationship

In contrast to these political events conducted by the leaders, the cultural relationship between the two peoples has been much closer and happier. The Mon, as already stated, had a high level of civilization; they had an organized State; they were *Theravāda* Buddhists; and they possessed a literature with a script of their own. The Burmese were apt pupils. They wasted no time in emulating the Mon. They assimilated Mon culture, set up a State, embraced Buddhism and reduced their language to writing in the 11th century by adapting the Mon script.⁷ Like their mentors they put up hundreds of inscriptions, chiefly dedicatory nature, all over Burma. By the 15th century they could lay claim to having a highly developed form of literature on palm-leaf. Since that time, it may safely be assumed that the borrowing of cultural commodities has been mutual between the two neighbours.

3. Social relationship

Both Burmese and Mon chronicles have dwelt mainly on the political aspect of the relationship between the two peoples. They are silent on the other aspects of human behaviour. Linguistic evidence however tells us that the cultural and social relationships between them have been considerably closer and more cordial than has hitherto been realized. The evidence is the large body of idiomatic expressions and compound words common to both languages and the many loan words taken by each language from the other.

4. Idiomatic expressions and compound words.

The occurrence in both languages of identical or closely similar idiomatic expressions and compound words may be attributed to one of the following causes.

1. Fortuitous accident.
2. Derivation from a common source e.g.
 - (a) Mon ဂိုင်ပတိသန္တိ take conception – Burmese ပဋိသန္ဓေယူ conception take, conceive < Pali *patisandhim gāhāti* conception take, conceive.
 - (b) Mon စရဲချင် glory(of)city - Burmese ငြည့်တန်းဆာ city's ornament, a courtesan < Pali *nagara sobhini* city adornment, a courtesan.

3. Literal translation from one language to the other e.g.
 - (a) Idiomatic expressions⁸
 - (i) Mon ကိုဝ် – Burmese ငေး to give
ကိုဝ်စ – ဝေးစား give eat, give in marriage.
|| ဖြဟတ – အားပေး strength give, encourage.
|| ပိုန – ဘုန်း || merit give, eat (said of monks).
|| သတ – သတိ || attention give, caution.
|| အခေါင် – အခွင့် || permission give, give permission.
 - (ii) Mon စိတ် – Burmese စိတ် < Pali *citta* mind, heart, disposition.
စိတ်ကွဲ – စိတ်ပူ mind is hot, be distressed in mind.
|| ကြီး || – || ထ mind rises, be angry.
|| ဝိ – || နာ mind is hurt, have feelings wounded, be offended
|| ဂိုင် – || ရှည် mind is long, be patient
|| ရှေ့ – || တို mind is short, be short tempered
 - (b) Compound words
Mon ဂြုတ်ကိုက် intestine pig–Burmese ဝက်အူ pig intestine, a screw
ကကတင်ကိုက် fish tongue dog-ငါးခွေးလျှာ fish dog tongue, the *Bachirus* turbot
ဆက်ပါင် join mouth – နှတ်ဆက် mouth join, greet
ယဲလိတ်ကွတ် ailment fire in active–မီးရပ်ရေဂါ fire inactive ailment, menstrual ailment

In the absence of histories or historical dictionaries of either language, it is often difficult to know which was the imitator and which was being imitated. This difficulty also presents itself when one comes to consider loan words.

5. Loan words

5. 1. Collecting

The sources from which the list of loan words was compiled include the following works:

1. *A Vocabulary, English and Peguan*, E. O. Stevens, Rangoon, 1896.
2. *Grammatical Notes and Vocabulary of the Peguan Language*, J.M. Haswell, ed. E. O. Stevens, Rangoon, 1901.

3. *A Mon English Dictionary*, R. Halliday, Bangkok, 1922.
4. *A Manual of Mon Language*-for those who know Burmese (in Burmese), U Wa-yama, Rangoon, 1957.
5. *A Dictionary of Modern Spoken Mon*, H.L. Shorto, London, 1962.
6. G.H. Luce's articles in various learned journals.
7. My own random notes.

5.2. Checking

The words and their meanings were checked by consulting the following works.

1. *Burmah, Its People and Natural Productions*, F. Mason, Rangoon, 1860.
2. *List of Trees, Shrubs etc. in Burma*, J.H. Luce, ed. A. Rodger, Rangoon, 1922.
3. *A Burmese - English Dictionary*, A. Judson, ed. F.H. Eveleth, Rangoon, 1922.
4. *A Burmese - English Dictionary*, i, J.A. Stewart and C.W. Dunn, and subsequent parts, ii, iii and iv, London, 1941, 1950, 1955 and 1963.

5.3. Dating

The date of the earliest occurrence of a loan word could be of great interest to a scholar. However, Burmese literature has not been thoroughly studied from either the literary or the linguistic angle; nor have many works of Burmese literature been printed with indexes. From my knowledge of what I have studied, and from the Dictionary slips (about 500,000 or more in number), I have given the earliest century in which the word has been found.

5.4. Criteria used in determining a loan word

There are two main types of loan words: those taken direct from Mon and those taken through the Mon from other languages. In the process of sifting both types, one or more of the criteria stated below are used as a sieve, but the sieve itself may be full of gaps.

5.4.1. Linguistic

1. Un-Burmese characteristics
 - (a) The presence in the spelling of consonants such as ဂဝါဝါဝါဝါဝါဝါဝါ and all the cerebrals (pronounced in Burmese as aveolars).⁹
 - (b) The endings $\text{၁}^{\text{၀}}\text{၁}^{\text{၀}}\text{-uik}$, $\text{၁}^{\text{၀}}\text{၁}^{\text{၀}}\text{-uin}$ and $\text{၁}^{\text{၀}}\text{၁}^{\text{၀}}\text{-in}$, which according to Professor G.H. Luce, seem to have come in during the Nanchao period¹⁰.
2. Polysyllabic words which cannot be analysed into meaningful monosyllables.

3. Monosyllabic words whose cognates cannot be traced in the few dictionaries or grammars of the Tibeto - Burman languages, that have been consulted.
4. The existence of a counter-part in Burmese.

5.4.2. Historical

1. The occurrence of the word in Old Mon Inscriptions.
2. Pali and Sanskrit words that were borrowed into Mon before the Mon culture was on the wane.
3. Foreign words from an oversea-country that came through the Mon State of Lower Burma.

5.4.3. Cultural

Terms connected with one of the aspects or objects taken to be Mon in origin

- (a) Architecture
- (b) Custom-Buddhist as well as non-Buddhist
- (c) Vocations and professions
- (d) Water craft
- (e) Weapons, implements and domestic objects
- (f) Items of food.

5.4.4. Geographical

1. Fauna and flora and
2. Physical features and phenomena found in Lower Burma.

Words under the three categories given below have been excluded from the list.

1. Names of places in Lower Burma. These deserve a separate article.
2. Words with the ဘ prefix, which look like Burmese. Many of these need further investigation.
3. Most verbs. It is dangerous to include them without an adequate knowledge of their histories.

5.5. Arrangement

5.5.1. Divisions and sub-divisions

The loan words are listed under 11 heads, each subdivided where necessary. These are : Physical features and phenomena, Vegetation, Minerals, Peoples, Government, Life, Culture, Faith, Animals, Miscellaneous and Verbs. This method of presentation is preferred to that of giving all the words in alphabetical order, although it has certain drawbacks. There are also many advantages: one of these is

that it may enable us to ascertain the comparative ratio of words that each sphere of Mon culture has contributed to Burmese.

The subdivisions are many. As with other subdivisions there are borderline cases e.g. ချင် *dross* under 'Minerals' might equally well have been put under 'Miscellaneous', and သိန္နဲဆား *rock salt* under 'Minerals' might have been put under 'Medicine'. The two chief considerations in assigning a word to a subdivision are convenience, and its closer association of idea with that particular subdivision.

5.5.2. Arrangement

Under each division or subdivision the loan words are given in Burmese alphabetical order. The arrangement of each entry is in two sections: the first section contains the loan word in Burmese script, transliteration¹¹ and pronunciation in Burmese; and the second has the Mon word in Mon script, transliteration, reading pronunciation,¹² spoken pronunciation¹³ in brackets, and meaning or meanings. Between the first and the second sections, the symbol < stands for 'from', and the symbols > < indicate uncertainty as regards the borrower and the borrowed, or the loan having a common parentage—Sanskrit, Pali etc., — in which case the parentage is given in square brackets. The numerical figures followed by 'C' at the end of each entry denote the earliest century during which the word is found to occur in Burmese writings.

The writer is fully aware that there is a wide gap in our knowledge of the dating of the pronunciations of both the reading and the spoken Mon. We do not yet know at what point or points of time these pronunciations came into current use.

6 List of loan words

Note: M. M. = Middle Mon; O.B. = Old Burmese; O. M. = Old Mon

This list was read by my colleague H. L. Shorto, and has been much improved by many of his valuable suggestions. However the writer alone is responsible for the list as presented below.

I Physical features

1. Land

၂၉၄ UMAN^၁ *ú-, ù-, òuŋ miŋ, - hmiŋ* < ၂၉၄ *umang* (?) a cave, tunnel. [P. *ummaga*; O. M. *umañ, ummañ, umāñ*]. 16C.

ကမူ KAMŪ *kamu* < မှတ် MUH *muh* (*muh*) end of a cape, fringe. 19C.

ချောက် KHYOK *jau?* < ခရော် KHAROK *kharok* (*harok*) a valley between hills. 15C.

ဂနိုင် GANUIN^၁ *ganaiŋ* < ဂိုင် GNIN^၁ *kenoin* (*nòin*) jungle. 15C.

စုံ CUM^၁ *souŋ* a forest < ဝိမ္ဗိယံ ZUIM *cem* (*cəm*) a marsh. 15C.

စုံ (တော) ပြား CUM (TO) PRĀ: *souŋ* (*tə*) *b̄ya* a forest < ဝိမ္ဗိယံ ZUIM PRĀ *cem prā* (*cəm prā*) the marshy wood 15C.

ယာ YĀ *ya* a cultivated spot of ground < ယာ YĀ *ye* (*yə̀a*) a forest clearing. 15C.

ရဂုံ RAGUM^၁ *yə̀gouŋ* < လဂုံ LAGUIM *lekəm* (?) a pleasant grove. 15C.

2. Water

အင် AN^၁ *iŋ* < အင် AN^၁ *ang* (*əŋ*) a natural pond, lake. [O. B. *añ*] 13C.

အော် ဝိ, ဝ < ခြောဝ O *āo* (*ao*) a basin, small bog. 19C.

ခနောင် KHANON^၁ *khānaŋ* < ခနောင် KHANAN^၁ *khanong* (*kə̀nəŋ*) a whirlpool. 15C.

တမ် TAMAM^၁ *təmaŋ* < တမ် TMIN *tamän*, ကမ် KAMUIN *kañan* (*kə̀mən*) an embankment, dike. [O. M. *timbin, tbin*]. 16C.

ဒီ DI^၁ *di* < ဒီ DI^၁ *ti* (*tī*) a tidal wave, bore. 16C.

ဝဲ WAI^၁ *wə̀* < ဝဲ WAI *woa* (*wə̀a*) an eddy, whirlpool. 16C.

သောင် SON^၁ *θouŋ* < သိုင် SĀN^၁ *sə̀ng* (*sə̀ŋ*) a sandbank. 15C.

3. Wind

မုတ်သုံ MUTSUM^၁ *mou?θouŋ* monsoon < မုသုံ MUSUM^၁ *musum* (?) season. [Arabic *mawsin*, Malay *musim* season]. 18C.

II Vegetation

1. Bulb

ကမုလူ KAMPALŪ *kaj̄bəlu* > < ကမူ KAMMARŪ *kə̀mmarū* (*kə̀mmə̀rao*) crinum bulbs. 19C.

ကျေး KYWE: *čwe* < ကွဲ KLAI *kloa* (*kloa*) the wild yam. [cf. T'ai *klūay* banana]. 19C.

ဝ WA *wá* < ဝက် BUK *bauk* (*bə̀k*) the Arum Campanulatum. 19C.

2. Cereals

ဂုံ GYUM^၁ *jouŋ* < ဂုံ GYUN^၁ *kyung* (*cə̀ŋ*) wheat. [Bengali *gam*] 18C.

ဆပ် CHAP *sha?* > < ဆပ် CHAP *čhə̀p* (*chə̀p*) a kind of millet; panicum. 18C.

ပခြင်း PRON^၁ *pyaŋ* > < ပိုင် PLĀN^၁ *plə̀ng* (*plə̀ŋ*) a variety of millet, maize. 13C.

မုယော MUYO *mə̀yə̀* > < မုယော MUYO *muyə̀* (?) barley. [O. B. *muyaw*]. 13C.

3. Flower-tree

အနန်း: ANAN: *ənaŋ* < အနင် ANĀN *anain* (*ənaŋ*) *Faraea fragrans* (Roxb.). 19C.
 ခရား: KHARĀ: *khə̀yà*, ခရေ KHARE *khə̀ye*, ချယား: KHYAYĀ: *chə̀yà* <ကေသ် KES, ကေဟ် KEH *kēh* (*kih*) *Mimusops Elengi*. [P. *kesaro*]. 13C.
 စံကား: CAMKĀ: *sə̀gə* > < စမ္မာ CAMNĀ *camngā* (*compa*) the champac. [Skt *campaka*]. 13C.
 သဇင် SAJAN *ḍəziŋ* < ကဇင် KAJAN ဝဇင် GAJAN *kéceang* (*hə́ceŋ*) the fragment *Bolbophyllum*, a very common orchid. 18C.
 ဘာနီး: SĀNU: *θāno* < အန ANHU *anu* (*əhnu?*) the mesua. [O. B. *sanuw, sanuw*; O. M. *kajnu*] 13C.

4. Fruit-tree

ကင်ပလင်း: KANPALAN *kinbəliŋ* < ကလင် KALĀN *kalain* (*kəlain*) the antidesma. 19C.
 ကင်ပွန်း: KANPWAN: *kinbun* < ကပေါင် KAPOW *kapo* (*kəpo*) the soap acacia creeper. 13C.
 ကဒွတ် KADWAT *kədu*, ဒဒွတ် SADWAT *ḍədu* <ကဒေါတ် KADOT *katot*, ဒဒတ် KHADAT *khatòt* (*hatòt*) a kind of fig, *Ficus Hispida*. [O.B. *si' twof*]. 13C.
 ခဲ KHAWAI *khə̀wə* < ခေဝ် KHAWOY *khawoa* (*hə̀woa*) a species of luffa. 16C.
 စပျစ် CAPYAC *zə̀byi?*, သပြေ SAPRAK *ḍə̀bye?* > < ဇပျတ် ZABYET *cépyət* (?) a grape. 18C.
 စုံပလုံ CWAMPALWAN, စွန်ပလုံ — လုံ CWANPALWAN-LWAM *sunpəlun* < စုံပလုံ CAMPALAM *cə̀mpələm* (*compələm*) the date palm or fruit. 16C.
 ဇာတိပုံလ် JĀTIPPHUIL *zə̀dei?pho* > < ဇာဒိပုံ JĀDIPHUIW *čə̀pithä* (?) nutmeg. [P. *jātiphala*]. 19C.
 တညင်း: TANĀNĀN: *tə̀nyin* > < ဂနင် GANEN *keneang* (*hə̀neŋ*) the Inga tree. 19C.
 တလည်း: TALAÑÑ: *tə̀lə* > < ဒလန် DALAN *telòn* (*halòn*) a pomegranate. [Cf. Skt *dālima*]. 13C.
 ဒူးရင်း: DŪ: RAN: *dūyin* < ဒူးရင် DŪREN *tūrən* (*tūrən*) the durian, *Durio zabethinus*, D.C. [Malay *duren, durian*]. 19C.
 ဓနိ DHANI *də̀ni* < ကွ် KNI *kə̀nə?* the nipa palm. 18C.
 နာနတ် NĀNAT *nanə?*, *na? na?* < အက္ခေတ် ANNĀT *annāt* (*ənat*) pine-apple. [Malay *nanas*]. 19C.
 ပိန် PINNAI *pẽiŋnə* < ပွဲ PNAH *panah*, ပနဟ် PANAH *panəh* (*pə̀nəh*) the jack-or bread-fruit. [P. *panasa*]. 18C.
 မင်းကွတ် MAÑ: KWAT *miŋgu?* < မင်ဂုတ် MAŃGUT *meangkut* (*mə̀aŋkùt*) the mangosteen. [Malay *manggusta-stan*]. 19C.

မန်ကျည်း: MANKYAÑÑ: *mə̀ji* < မင်ဂုန် MAŃGLAN *meangklòxn*, (*mə̀aŋklòn*) the tamarind. [O.M. *maŋglañ*, O. B. *maŋklañ*]. 13C.
 မရန်း: MARAN:, မရမ်း: MARAM: *mə̀yən* < မြင် MRĀN *mrān* (*pə̀raŋ*) the marian. [Cf. T' ai (*má*) *proaŋ*]. 19C.
 ယင်ကမ်း: YAŃKAM:, ရင်ကမ်း: RAŃKAM: *yiŋgəŋ* < လင် LAKAM *lekəm* (*təkəm*) *zælacca wallichiana*. 16C.
 လိမ္မော် LIMMŌ *leiŋməhmə* < လမ် LAMAO *lemao*, လိမ် LIMAO *limao* (*limao*) the orange. [Portuguese *limão*]. 18C.
 (သစ်)တို (SAC)TUI (*θi?*) *to* < တိုဝ် တို TUIW *tä* (*tə*) the wild mangosteen. 16C.
 သပြေ SĀPRU *ḍə̀byu'* < ခပြေ KHĀPRU *khə̀prau* (*hə̀prəo?*) the water dillieria. 18C.

5. Nut-tree

သစ်ချ SACKHYA *θi?cha'* < သတ်ချ SATKHYA *sətcha* (*sət cha?*) the Malay chestnut. 19C.

6. Seeds

ဂုံညင်း: GUMNĀNĀN: *gouŋ* 'nyin - 'hnyin < ဂနအေ GANE' *keno'* (*hə̀nə?*) *Entada scandens* Benth. 19C.
 ဇီယာ JĪYĀ *ziya* > < ဇီယျာ JĪYYA *čiyā* (*ciya*) cumin [Skt *jīra*, P. *jīraka*]. 19C.

7. Trees (including creepers and plants)

အကျော် AKYŌ, အကြော် AKRŌ *əco* < အဂ္ဂ AGLOA *aklea* (*kləa*) *agalloch* or *lignum aloes*. [Skt *aguru*, P. *akalu, agalu*]. 18C.
 အင် AN *in* < အင် AN *ang* (*əŋ*) *Dipterocarpus tuberculatus* Roxb.? 13C.
 အင်ကြင်း ANKRAÑ: *injiŋ* < အင်ရေင် ANREN *angreang* (*əŋ rəŋ*) *Pentacme suavis*, A. DC. (*Dipterocarpaceae*), [O.B. *ankreang*]. 13C.
 ကညင် KANĀNĀN *kə̀nyin* < ကယင် GAYĀN *keyain* (*hə̀yāŋ*) *Dipterocarpus tubinatus*, Goertn. f. [cf. T' ai *khāyaan D. alatus*]. 16C.
 ခုယ် KHACWAY *khə̀zwe* < ကဲ KACAI *khə̀cə* (*hə̀cə*) a species of laurus producing hardwood.?C.
 ဆူးလေ CHŪ: LE *shule* > < ဆူးလေ CHULE *chūlé* (?) a thistle, bramble. 16C.
 တယော် TAYŌ, ဝာရေင် TARŌ *tə̀yo* < (ဇက်) တယော် (JUK) TAYAW (*cauk*) *tə̀yo* (*kə̀yo*) a species of linden-bloom (creeper). 18C.
 ပူးကိုင်း: PWE: KUIÑ: *pwe* 'gaiŋ < ပူးကိုင်း PWE KUIÑ *pwe kain* (*kə̀we kaiŋ*) senna 19C.
 ဗန်ဗူး: BAN. BWE:, ဘန်ဘူး: BHAN. BHWE; *baŋ* 'bwe < ခဲ KHABUY *khə̀pui* (*hə̀pui*) *Careya Aborea*, Roxb. 13C.
 မဲ MAI *mə* < မဲ MAI *mai* (*mài*) the indigo plant. 16C.

ယမနေ YAMANE *yəmāne* < ရခံမနေဝ် RĀMMANEW *rēmmanē* (?) clogwood. [c.f. Skt *ramanī* aloe indica]. 18C.
လမု LAMU, *ləmu* < လမု LAMU *lemu* (*kəmù?*) the sour sonnerata. 19C.

8. Vegetables

ကညတ် KANŃWAT, *kənyu?* < နေဝတ် NOT *not* (*nót*) Asparagus Racemosus. 19C.
ကဒတ် KADAT, *kəda?* < ကဒိတ် KADĀT *katat* (*kətāt*) a species of yam. 19C.
ကြက်သွန် KRAKSWAN, *ce?θuy* < ကသိုန် KASUIN *kasān* (*kəsən*) an onion. [cf. P. *lasuna* garlic; O. B. *kaswan*]. 13C.
ငြုတ် NĀRUT, ငရုတ် NĀRUT *ŋəyou?* < မရေက် MAREK, မငြက် MREK *mṛòit* (*pə̀òik*) chilli, the red pepper plant. [Skt, P. *marica* black pepper]. 13C.
စမြိတ် CAMRIT, *səmyei?* < ဇီမောက် JĪMNOT *ćimnot* (*cinòt*) a species of anethum. 18C.
ပဲ PIA, *pe* > < ဝဲ BAY *boa* (*boa*) the pea or bean, leguminous plant. 15C. မုံလာ MUMLĀ, မုန်လာ MUNLĀ *mouŋla* > < မူလာ MŪLĀ *mūlā* (?) radish [cf. P. *mūlaka* root, bulb, radish]. 18C.

III Minerals

အဖြိုက် APHRUIK, အဖြိုက် ABHRUIK *əphyai?* > < အဖိုက် APHLUIK *aphlak* (?) talc, zinc ore. [Skt *abhraka*]. 19C.
ချော် KHYŌ, *cho* > < ချော် KHYAW *čhò* (?) dross. 19C.
ဂဝ် GAWAM, *gəwuy* < ဝါန် WĀN *wān* (*wàn*) dressed laterite. [M.M. *hwān*]. 19C.
စိန် CIN, *seiŋ* > < စိန် CIN *cin* (*cin*) diamond. [O.M. *ciñ*]. 15C.
တေ TE, *te* > < တေ TE *tē* (?) brass. 19C.
ဘောင် (ငွေ) BHŌ (NWE), *bo* (*ŋwe*) pure silver < ဝဲ BAW *bò* (*bò*) pure metal. 15C.
မဟူရာ MAHŪRĀ, *məhuya* < (တ) မဟူရာ (TMA') MAHŪRĀ (*tmo'*) *mahūra* (*pəhūra*) agate. 18C.
မြ MRA *mya'* > < မြ MRA *mre*(*pə̀rè?*) an emerald. [Skt *marakata*; Sinhalese *marā*]. 16C.
မှတ် (ကျောက်) MHAT (KYOK), *hma?* *cau?* > < မှတ် MHAT *hmot* (?) touchstone. 19C.
သလဲ SALWAI, *θèlwe* < လဲ LHUY *hlai* (*hləe*) copper. [O.M. *sluy*]. 13C.
သိန္နော (ဆာ) SINDHO (CHĀ:), *θeiŋdò* (*šha*) > < (စိုစိုဝ်) သိန္နံ (BUIW) SINDHAO (*bū*) *sintheo* (?) rock-salt. [Skt *śaindhava*]. 18C.
သွတ် SWAT, *θu?* < ခြောက် SROT *sot* (*sot*) zinc. 18C.

IV People

ကပုလဲ KAPPALĪ *ka?pəli* > < ကပုလီ KAPPARĪ *kāpparē* (*kappəli*) a negro. [Arabic *kāfir*]. 19C.
ကရင် KARAŃ, ကုရင် KURAN *kəyiŋ* < ကရေင် KAREŃ *kareŋ* (*kəreŋ*) Karen. 15C.
ကုလား KULĀ:, *kəla* an Indian < ဂလာ GALĀ *kelē* (*həlèa*) a native of any country west of Burma. [O.B. *kūlā*, *kulā*]. 12C.
တရုတ် TARUP, တရုတ် TARUT, တရုတ် TARUK *tə you?*, *tərou?*, *təlou?* < ကြက် KRUK *krak* (*krək*) Chinese. [O.M. *Truk* Mongol; O.B. *Taruk*]. 13C.
ပသိ PASĪ, *pəθi* (ဂလာ)ပသိ (GALĀ) PASĪ (*kele*) *pasi* (*pase*) a Mohammedan Indian. [Name of a kingdom in north Sumatra]. 18C.
ပုဏ္ဏား PUNŃĀ: *pouŋŋa* < ဗမ္မာ: BAMNAH *pəmneh* (*pə̀nèh*) a Brahman, a Brahman at Indio-Chinese court to carry out Brahmanical rites and ceremonies. [Skt *brahmana*, O.M. *burinah*, *burinahh* O.B. *pumna*, *pumna*]. 13C.
ဗမာ BAMĀ, *bəma*, မြန်မာ MRANMĀ *myəma* < ဗမာ BAMĀ *peme* (*hə̀nèa*) a Burman, Burmese. [O.M. *mirmā*, M.M. *bamā*]. 19C/13C.
ဗရင်ဂျီ BARAŃGYĪ, ဘရင်ဂျီ BHARAŃGYĪ, ဘုရင်ဂျီ BHURAŃGYĪ *bəyiŋgi* < ဗရန်ဂျော် BRENGYEW *preŋkyi* (*prèŋcè*) Roman Catholic, Portuguese. [Persian *firinjī*, Arabic *firanji* a Frank]. 18C.
ရောမ ROMA *yəma* < ရဝ်မ RAWMA *ròma* (?) Roman. [Italian *roma*]. 19C.

V Government

1. Administration

ကင်း KAN:, *kiŋ* < ကင် KAN *kəŋ* (*keŋ*) a guard-house, village defence post. 15C.
ခရိုင် KHARUIN *khəyiŋ* the ring which holds the spokes of an umbrella, different areas under one jurisdiction, a district < ခယိုင် KHAYUIN *khayāŋ* (*hə̀yāŋ*) a post, mast. 12C.
တပ် TAP, *ta?* < ဒပ် DAP *tòp* (*tòp*) a fence, camp - a division (of an army) or a squadron (of a fleet). [M.M. *dap*]. 13C.
တံဆိပ် TAMCHIP, *dəzei?* > < တဆိပ် TACHIP *tachip* (*kəchip*) a seal, signature. [O.B. *tanchip*]. 13C.
ဒမြ DAMRA, ဒမြ DHAMRA *dəmyā* < ဒမူ DAMLA *temle*, DHAMLA *themle* (*hə̀lè?*) a robber. 18C.
နိင် NUIŃŃAM, *naiŋŋaŋ* < (ရ) နိင် (RAH) NIGUIM (*reh*) *nikēm* (*reh* *nikəm*) a country, kingdom, empire. (P. *nigama* a market town]. 13C.
သက်သေ SAKSE, *θə?θe* > < သက်သိ SASKI *saksēi* (*sksəe*) a witness, evidence. [Skt *sākshi*]. 13C.
သပုန် SŪPUN, *ðəbouŋ* a rebel, rebellion < သပုန် SAPUN *sapoun* (*hə̀pən*) rebellion, meeting. [See also XI verbs under ပုန် PUN]. 16C.

2. Officials

အမတ် AMAT *ama?* > < အမတ် AMĀT *amat* (*əmāt*) a king's minister, Privy Councillor. [Skt *āmātya*; O.B. *amatyā*, *amat*; O.M. *amāt*]. 14C.

ကတော် KATŌ, *gədo* the wife of a man with a status < ကလဝ် KALAW *kalo* (?) a wife. [O.M. *KINDAR*, *KANDAR*]. 16C.

စော်ဘွား CÔBHWĀ:, *səbwa* < စံဖာ CAOPHĀ *čāophā* (?) a hereditary prince, used of the Shan princes. [Shan *səu phā*]. 16C.

ဒါဗညား DOBAÑÑĀ : *dəbəñya* < ဒံဗညာ DAOBAÑÑĀ *teo penyē* (*tēa pəñèa*) a noble man, person of rank. 18C.

ဗညား BAÑÑĀ:, *bənya* < ဗညာ BAÑÑĀ *penyē* (*pəñèa*) title prefixed to names of royalty and high nobility. 16C.

3. Regalia

အလံ ALĀM, *əlan* < အလံ ALĀM, အလေမ် ALEM *alēm* (*əlēm*) a standard, flag, ensign. [Malay *alam*, Arabic *'alam*]. 16C.

အောင်းမူး ON : MWE:, *aunmwe* < အိုင်မဲ့ ĀNMHUY *òng hmui* (?) a yak's tail fan. [M.M. *an muy*]. 15C.

ကမ္ဘု(ထီး) KAMBU (THĪ :), *kañbu'*, *kybu'* (*'thi*) white (umbrella) < ကူ KMU *kamau* (*kamao?*) white. [M.M. *kambu*]. 16C.

(ညောင်) စောင်း (ÑÑON) COÑ:, (*nyaun*) *žaun* < ဇင် JĀN *čang* (*còn*) a bedstead (usu. used by royalty). [O.M. *joñ*]. 15C.

ရာဇမတ် RĀJAMAT *yazəma?* < ရာဇာ ဓွတ် RĀJĀDHMĀT *rēcē themat* (?), ရဲဒွတ် RĀYJMĀT *rai cémāt* (?) a lattice on both sides of a road along which the king is to pass. 18C.

ဝေါ WO, *wə* < ဝဝ် WAW *wə* (*wə*) a palanquin, litter. [O.M. *lwar*]. 16C.

သန်လျက် SANLYAK, သံလျက် SAMLYAK *əanlye?* သွပ် SNĀK *hnait* (*hnaik*) a two edged sword or dagger [O.M. *snak*, *snek*, *snik*]. 16C.

သံလျင် SAMLYAN:, *əan' lyin* < သရင် SARENG *sareang* (*hərean*) a palanquin, swing cradle. [O.B. *SANRYAN*, *SANLYAN*]. 12C.

သလွန် SALWAN, *əəun* a throne < သျင် SLUÑ *salung* (*hləŋ*) to be high, exalted. [cf O.M. *sumluñ*]. 15C.

4. Royalty

မောင်မ MON : MA, *maunma* > < မံင်မ (သို့) MĀNMA (SMIN) *mòngma* (*hmoin*) (*moŋ ma?*) a royal concubine. [O.B. *moñma*]. 12C.

ရာဇဝင် RĀJAWAN *yazəwin* < ရာဇဝင် RĀJĀWAN *rēcēweang* (*rəcəwəəŋ*) a chronicle of kings, history. [*rājavamsa*]. 16C.

ရာဇသံ RĀJASAM *yazəəŋ* < ရာဇသံ RĀJĀSĀN *rēcēsan* (?) a royal edict, king's letter. [cf. SKt *rājajñā*]. 16C.

VI Life

1. Ailments

အင်(ပျဉ်) AN (PYAÑ), *in* (*byin*) rash < (ယဲ)အင် (YAI) AN (*yoa ang* (*yòəŋ*) rapture in children. 19C.

ကတုတ် KATWAT, *kaŋu?* < ကတုတ် KATOT *katot* (*kətot*) a wart. 19C.

ခူ KHU, *khu* < ခူ KHŪ *khu* (*khao*) whitlow. 18C.

ငန်း: NĀN: *ŋaŋ* a venomous influence < ငှာန် NĀN *ngān* (*ŋàn*). 15C.

ဒုလာ DULĀ *dula* < (ယဲ)ဒုလာ (YAI) DŪLĀ (*yoa tūlā* (?) rheumatism. 19C.

မုတ္တ(ကိုတ်) MUTTA (KIT), *mou?tá* (*kei?*) hernia, rupture < (ယဲ)မုတ္တ(ကိုတ်) (YAI) MUTTA KRIT (*yoa muttakrit* (?) stricture of urethra. [Skt *mūrtakricchra* stranguary]. 18C.

မြင်းသရိုတ် MRAN: SARUIK, *'myiŋθəyai?* < (ယဲ) မင်သရိုတ် (YAI) MAÑSARUIT (*yoa meang sarāt* (*yòə mèanħərət*) haemorrhoids, piles. 18C.

သလိတ် SALIT, သလိပ် SALIP, သလိသ် SALIS *θəlei?* > < သလေတ် SALEH, သုတ် SLEH *hle* (*hle*) phlegm. [Skt *śleshman*]. 15C.

2. Clothes, woven material

ကတူပီ KATTĪPĀ, *gədiba* < ခတေပ: KHATEPAH *khatəpah*, ဂတေပ: GATEPAH *ketəpah* (*hətpəh*) velvet. [Arabic *qaṭīfa*]. 16C.

ကောဇာ KŌJO, *kəzə* < ကောဇ် KOJAO *kaóce*, ဂါဇ် KHOJAO *khaoce* (*khaočsa*) carpet. [P. *kojava*]. 15C.

ခါသာ KHĀSĀ *khəθa* < ခါသာ KHĀSĀ *khāsā* (?) a kind of muslim. 15C.

ဇင် JAN, *ziŋ* > < ဇန့် JEN *čōn* (?) drill. [Eng. *jean*]. 19C.

ဇာ JĀ, *za* laces embroidery < ဇာ JĀ *čē*, ဒဇာ DAJĀ, *tečē* (*cà*) netting, lattice, lace, embroidery. [P. *jāla* a net]. 16C.

ဒုကုတ် DUKUT *dúgou?* < ဒကုတ် DAKUIP *teküp* (*həkəp*) the outer garment of a monk. 17C.

ပိတ် PIT, *pei?* < ပိတ် PIK *poik* (*poik*) cotton cloth. 16C.

ပုဝါ PUWĀ, ပဝါ PAWĀ *pəwa* < ပဝါ PAWĀ *pawā* (*pəwa*) a handkerchief, towel, shawl. [cf P. *pavara* a cloak]. 19C.

ပေါင်းပိတ် PON:PI, မောင်းဘိ BONBHĪ, ဘောင်းဘိ BHON:BHI *'baunbi* < ပံင်မိ PĀNMĪ *pòngmei* (*pəŋmœ*) pantaloons, trousers. 18C.

သင်းပိုင် SAN:PUIN, စိဗိုင် SĀPUIN *sapāng* (*həpəŋ*) the nether garment of a monk. [O.M. *sirpuñ*] 18C.

3. Custom

မဲ MAI, *mè* < မဲ MĀY *mai* (*mài*) anything used in casting lots, lottery. 19C.
လေလံ LELAM, လေလန် LELAN *lelan* < လေလာန် LELĀN *lèlān* (*lelan*) an auction. [Portuguese *leilao*]. 18C.

4. Drinks

အရက် ARAK, *əye?* < အရက် ARAK *areak* (*əreək*) spirits, alcohol: [Arabic *arak*; Malay *arak*]. 16C.
 သေ SE, *θe* < သီ SĪ *sei* (*səe?*) distilled spirits. 13C.

5. Drugs

ဘင်း BHAN̄:, *b̄iŋ* < ဘင် BHAN̄ *pheang* (*phèaŋ*) hemp, ganja. [Skt, P. *bhaṅga*]. 18C.
 ဘိန်း BHIN̄:, *b̄eiŋ* < ဘိန် BHIN̄ *phin* (*phin*) opium. 18C.
 လှော်လှော် LHÔJĀ, *hlɔza* < လက်ချာ LAKKHYĀ *leak čhā* (?) a fermental preparation of rice. 18C.

6. Food

အမဲ AMAI, *ʼəme*, မဲ MAI *m̄e* < အမဲ AMĀY *amai* (*əməi*), မဲ MĀY *mai* (*mài*) viands. 16C.
 ခဲလံ — ခဲတံ (ကျည်တောက်) KHAILAM-KHAITAM (KYAÑÑ TOK), *khe laŋ-khedaŋ* (*cidau?*) < ခဲလံ KHALĀM *khalām* (*həlam*) glutinous rice cooked in joints of bamboo. 19C.
 ခေါပျဉ် KHOPYAÑ, *khopyiŋ* < ခပင် KHAPEN̄ *khapeang* (*həpeaŋ*) a preparation made of glutinous rice and flavoured with sesamum. 19C.
 စားနပ် CĀ:NAP, *səna?* < စ ငါး (*kəna?*) food. 16C.
 တင်လဲ TANLAI, *tiŋle* < တင်လဲ TANLĀY *tanglai* (*təŋlài*) molasses, treacle. [O.M. *taŋglāy*]. 15C.
 ယို YUI, *yo* < ယိုဟ် YUIH *yüh* (*yəh*) fruits preserved in sugar, jam. 19C. ရက်တက် RAKTAK, *ye?te?* < ညိုတက် ၵAKTAK *dait tak* (*daik tek*) buttermilk mixed with water. [P. *takka* buttermilk]. 15C.
 သကာ SAKĀ, *ðaga* < သကဝ် SAKAW, သွဝ် SKAW *sakò* (*kə*) coarse sugar, jaggery. [M.M. *skaw*]. 16C.
 သကြာ SAKRĀ:, *ðaja* < သကြာ SAGRĀ *sakrē* (*həkrēa*) sugar. [Malay *sakar*, Arab *sukkar*, Skt *śārkarā*]. 18C.
 သာဂူ SĀGŪ, *θagu* < သာဂူ SĀGŪ *sākū* (*sakū*) sago. [Malay *sagu*]. 19C.

7. Implements

ကညစ် KAN̄ÑAC, *kənyi?* < ကွဟ် KNEH *kaneh* (*neh*) a stylus. [M.M. *kneh*]. 16C.
 ကတ်ကြော KATKRE :, *ka?çi* < ကတ်ကြာ KATKRĀY *kòtkrai*, ခတ်ကြော KHATKREW *khotkrè* (*kòtkrai*) scissors. 15C.
 ကိုက် KUIK, ဂိုက် GUIK *gai?* < ကိုက် KUIK *käk* (*kak*) a carpenter's shave, spoke, shave. 20C.

ကျင်တယ် KYAÑTWAY *ciŋtwe* < တင်တဲ TAN̄TAI *tangtoa* (*təŋtoa*) a carpenter's square. 19C.
 ချား KHYĀ:, *čha* < ချာ KHYĀ *čhā* (*cha*) swift of loom. 15C.
 စုတ် CUT, *sou?* < စုတ် CUK *cauk* (*cək*) artist paintbrush, a sharp tattooing iron, brush. 16C.
 တံစည်း TAMCAÑÑ:, *dəzi* an adze < ဒဲး DAJAY *tecoa*, စဲး DHAJAY *thecoa* (*həcòa*) a carpenter. 15C.
 ထယ် THAY *the* < ထော့ THOY *thoa* (*thoa*) plough. [cf. T ai *tháy*]. 19C.
 ဓနက် DHANAK *dəne?* < ဒနက် DANAK *teneak* (*həneək*) a snare. 19C.
 ဓမင် DHAMAN̄:, *dəmiŋ* < ဓမင် DHAMAN̄ *themeang*, ဓမင် KHAMAN̄ *khameang* (*həməaŋ*) a fishing-trap. 19C.
 ပတ္တ PATTĀ *pa?ta* < ပါတ္တ PĀTTĀ *pāttā* (*patta*) a hinge. 19C.
 ပါပက်တူး POKTŪ:, *pau?tu* > < စံက်တူ ၵAKTŪ *bàktū* (*bəktao*) a mattock, hoe. [O.B. *poktū*]. 13C.
 မောင်း MON̄:, *məuŋ* < မံင် MĀN̄ *mòŋ* (*mòŋ*) a lever, 15C.
 ယက်ကန်း YAKKAN̄:, *ye?kaŋ* a loom < ယာတ်ကာန် YĀTKĀN̄ *yātkān* (*yātkan*) cloth, linen. 16C.
 (လှန်)ပူ (LWAN)PŪ, (*luŋ*)*bu* < ခူ KHAPŪ *khapu* (*həpao*) a gimlet, auger. 19C.

8. Medicine

ကိုကမံ KUMKAMAM, *kouŋkəmaŋ* > ကိုကမမ် KUMKAMAM *kumkamēn* (*kum kəmèŋ*) saffron [Skt, P. *kunkuma*]. 18C.
 စိန် CĪN, *seiŋ* < စိန် CĪN *cin* (*cin*) arsenic. 18C.
 နှာ NHĀ, *hna* > နှတ် NUH *nuh* (*nùh*) drug snuff. 18C.
 ပရုတ် PARUT. ပရုပ် PARUP *pəyou?* < ပရုတ် PARUT *paròt* (*pərət*) camphor. 18C.

9. Ornaments

ချူ KHYŪ, *chu* < ခြွယ် KHREY *khareo* (*hərea*) a jingle, small bell. 13C.
 ပုလဲ PULAI, *pəle* < ပဲ BLAI *plóa* (*plóa*) a pearl. [O. B. *pulay*; O.M. *bley*]. 13C.

10. Requisites

ကော် KŌ, *kə* < ကဝ် KAW *kò* (*kə*) glue, paste. 16C.
 ကော်ပတ် KŌPAT, *kəba?* ကပ်ဗတ် KAWBĀT *kopat* (*kəpat*) sand-paper. 18C.
 ချိပ် KHYIP, *chei?* < ကြော့ KREK *kròit* (*kròik*) lac. 16C.
 ဆပ်ယူ CHAPPYĀ *sha?pya* ဆာပ်ယူ CHĀPPYĀ *chāppyā* (*chappya*) soap. 18C.
 ဗန် (ချည်) BAN (KHYAÑÑ), *baŋ* (*ji*) < (ဇုန်) ပါန် (JUK) PĀN (*cauk*) *pān* (*cək pan*) jute (string). 19C.

မင် MAÑ, မှင် MHAÑ *hmiŋ* < (၎)မှင် (ṬAK) MHAÑ (*dait*) *hmang* (*hmen*) ink. 16C.

မဲ (နယ်) MAI (NAY), *mɛ(ne)* < မဲ MĀY *mai* (*mài*) indigo. 15C.

ဝဲ WAI, *wɛ* < ဝဲ WĀY *wai* (*wài*) manure. 15C.

11. Transport

ကတ္တူ KATTU, *kaʔtú*, ကတ္တူ KATTŪ *kaʔtu* < ကတ်တူ KĀTTŪ *kāttū* (*kattao*) a junk. 16C.

ကမကော် KAMAKŌ, *kəmako* name of a State boat < ကမင်ကရ် KAMAÑKAR *kamangkò* (?) a mythical fish, sea monster. [Mon *ka* Skt, P. *makara*]. 19C.

ကုံးပတ် KUM: PAT, ကုန်းပတ် KUN: PAT *kouŋbaʔ* < ခုံမတ် KHUMMĀT *khummat* (?) the deck of a ship. 19C.

ကူရုပ် KŪRWAP, *kuyuʔ*, *kuruʔ* name of a State boat < ခရော် KHAROK *kharok* (*hərok*) a pitcher, cup, vessel. 18C.

ကူးတို KŪ: TUI, *gədó* < ဂဒိအ် GADUI' *ketú*, ဂဒေံ GADO' *ketu'* (*hətəʔ*) a ferry. 15C.

စုတ် (ဖား) CWAT (PHĀ:), *suʔpha* < စောတ် COT *cot* (*cot*) a sledge. 19C.

လောကပင်း JALAKAPAN̄:, *zəlagəbiŋ*, စာလာကပင် CĀLĀKAPAN̄ *salakəbiŋ* < လောကင် JALĀ KBAÑ *čeləkabang* (?) a dhoney or trough shaped canoe with an outrigger. 17C.

တုန်ကင်း TUNKAN̄:, *touŋkiŋ* < တုင်ကန် TUN̄KEN *tun̄kən* (*təŋken*) a cargo boat. [cf. Malay *torgkang*]. 19C.

ဖောင် PHON̄, ဘောင် BHON̄ *phauŋ* < ဖံင် PHAN̄ *phong* (*phəŋ*) a raft. [M.M. *phàn*]. 16C.

လောင်း LOÑ:, *lauŋ* a race boat < ဂျင် GLUN̄ *Klung* (*kləŋ*) a boat. [O.M. *dluñ*]. 16C.

လှော်ကား LHŌKĀ:, *hlóga* > < လှိုဂါ LHAOGĀ *hlāokē* (?) a State boat. [O.B. *lkawkā*]. 13C.

သမ္မဗန် SAMBĀN, *θaŋbaŋ* < သံပါန် SĀMPAN *sāmpan* (*sampan*) a flat-bottomed boat with projecting incurved timbers at stern, sampan. [Chinese *sambaan*]. 18C.

12. Utensils

အင် AN̄, *iŋ* > < အင် AN̄ *ang* (*əŋ*) a bowl. 16C.

ကတော KATO., *gədó* < ကဒေံ KADA' *kato'* (*hətòʔ*) a funnel. 16C.

ကတုတ် KATUT, ကဒုတ် KADUT *gədouʔ* < (လဲ) ဂဒုက် (LE') GADUK (*li ketouʔ*?) a strickle. 20C.

ကပ် KAP, *kaʔ* < ကပ် KAP *kòp* (*kəp*) a mat of woven split bamboo. 18C.

(ကျ) ကပိုင်(KYŪ) KAPUIÑ, (*cu*)*gəbaiŋ* > ခဖော် KHAPHEW *khaphē* (?) a coarse mat made of reeds. 19C.

ကရား KARĀ:, *kháya* < ကာ KĀ *kā* (*ka*) any vessel with a spout. [O.B. *karā*]. 13C.

ကြုတ် KRUT, *couʔ* < ကြောတ် KROT *krot* (*krot*) any cylindrical box with a cover, casket. [O.B. *krwac*; M.M. *krof*]. 13C.

ခမောက် KHAMOK, *khəmauʔ* < ခမိက် KHAMĀK *khamok* (*həmok*) a native hat. 18C.

ခုံ KHUM̄, *khouŋ* > < ခင် KHUN̄ *khung* (*khəŋ*) a stool, block bench. 16C.

(ပရင်း) ချောင် (PON̄:) KHYON̄, (*pauiŋ*) *jauiŋ* < ခရင် KHARUN̄, *kharung*, ဂရင် GARUN̄ *kerung* (*həzəŋ*) a cooking-pot with cover and perforated bottom, steamer. 18C.

ချိုင် KHYUIN̄., *jaiŋ'* < ခြိုင် KHRUIN̄ *khraŋ* (*khraŋ*) a cage. 16C.

ခက် KHWAk *khweʔ* > < ခက် KHWAk *khwak* (*khwek*) a cup. 13C.

စက္ကူ CAKKŪ, *seʔku* < စက္ကူ CĀKKHO *čakkhao* (*čəkkhao*) paper. 19C.

စည် CAN̄N̄, *si* > < စဝေံ CEW *ci* (*ce*) a cask. 19C.

စရည်း CARAN̄N̄:, *səyi* < ဇရီ JARĪ *čeri* (*həri*) a large jar. 15C.

စလောင်း CALON̄:, *səlauŋ* the cover of a cooking pot < စလင် CALAN̄ *calòŋ* (?) a pinnacle. [O.B. *calon̄*; O.M. *clon̄*]. 13C.

ဇန်း JWAN̄:, *zəŋ* < ဇန် JAN *còn* (*còn*) a spoon. 18C.

(ရေ) တကောင်း (RE) TAKON̄:, (*ve*) *dəgauiŋ* < (၎) ထင် (ṬĀK) THGAN̄ (*dait*) *thakòŋ* (*daik* *həkòŋ*) water pot with long neck, carafe. 16C.

တလား TALĀ:, *təla* < ကလာ KALĀ *kalā* (*kəla*) a container with a lid, box, chest, tin, coffin. [O.B. *talā*]. 13C.

ပန်းကန် PAN:KAN, ပုကန် PUKAN *pəgaŋ* < ပင်္ဂါန် PANĀN *pangān* (*pəŋan*) a plate, bowl, cup, dish. [Malay *pinggan*]. 18C.

ပရပိုက် PARAPUIK, ပုရပိုက် PURAPUIK *pərabaiʔ* < ဗပိုတ် BAPUIT *pepāt*, ခပိုတ် KHAPUIT *khapāt*, ထပိုတ် THAPUIT *thapāt* (*həpət*) a book consisting of a continuous folded sheet. 13C.

ပလင်း PALAN̄:, ပုလင်း PULAN̄: *pəlɪŋ* < ပလင် PALAN̄ *palang* (*pələŋ*) a bottle [M. M. *paran̄*]. 19C.

ပုတ် PUT, *pouʔ* < ပုက် PUK *pauk* (*pak*) a square or telescope basket. 15C.

ပြောင်း PRON̄: *pəuiŋ* < ပိုင် PLAN̄ *plòŋ* (*pləŋ*) a tube. 18C.

ဖုံ PHUM̄, *phouŋ* a cushion < ဖန် PHUN *phun* (*phun*) a bed, mattress. 19C.

(အိုး) ဗုတ် (UI:) BUT, (*ò*) *bouʔ* < ဗောတ် BOT *pot* (*pòt*) a small pot. 18C.

ဘန် BHINAP, *phənaʔ* < ခန် KHANAP *khənap*, ဂန် GANAP *kenap*, ဒန် DANAP *tenap* (*hənəp*) sandal, shoe, boot. 18C.

ယောက် YOK, *yauʔ* < ယက် YĀK *yòk* (*yòk*) a ladle, cooking spoon. 15C.

ရမထာ (ကိမြ) RAMATHĀ (KRIM) *yəmatha* (*ceiŋ*) < (စဝ်) ရမတာ BAW RAMMATĀ (*bò*) *rommatā* (*bo...*) a large species of rattan cane. 19C.

ရဟတ် RAHAT, *yəhaʔ* < ဟတ် HAT *hət* (*hət*) spinning wheel, cotton gin, windlass of well. 15C.

(ရေ) သနပ် (RE) SANUP, (ye) *θanou?* < သွပ် (ဌ်) SNUK (DAK) *sanauk (dait)* (*hnsk daik*) a bathing garment. 16C.
 သပေါ့ (ဖျ) SABO. (PHYĀ) *ṭabó (phyā)* < (ဒကပ်) သွအံ (DAKAW) SBA' (*tekò*) *SABO' (həbo?)* a mat made of rushes sewn together. 16C.
 သော့ SO. *θs>* < သအံ SA! *so' (so?)* a lock, key. [Chinese *suoo* lock]. 18C.

13. Weapons and armour

အမြောက် AMROK, *amyau?* < အမိုက် AMLĀK *amlòk (pəlòk)* a cannon, big gun. 16C.
 (သံ) ချပ် (SAM) KHYAP, (*θaŋ*) *ja?* > ခြပ် KHRAP *khrop (?)* mail armour, coat of mail. 15C.
 မြတပူအမမြောက်သေနတ် MRATAPŪ AMROK SENAT, *myádəbu amyau? θəna?* < မြတုူ အမိုက်သေနတ် MRATBŪ AMLĀK SENĀT *mretabū... (?)* artillery. [See အမြောက် above and သေနတ် below]. 18C.
 မိုန်း MHIN:, *hmeiŋ* < မိင် MIN *moin (moiŋ)* a harpoon. 18C.
 သေနတ် SENAT, *θəna?* < သေဏတ် SENĀT, သေနတ် SENĀT *sənāt (sənat)* a gun, musket. 18C.

VII Culture

1. Architectural terms

အင်္ဂတေ ANGATE, အင်္ဂတေ ANKATE, အင်းကတေ AN :KATE *ingəde* plaster, mortar, stucco < အင်ဂဒို ANGADUIW *angketü (eŋ həts)* a coating of plaster over bricks. [O. B. *ankatiy*; O.M. *aŋgadiw*, M.M. *ankade*]. 12C.
 ကနား KANNĀ :, *kəna* < ကဏာ KANĀ, က္ကာ KNĀ *kanā (kəna)* a shed, pavillion. [O.B. *kanā*; M.M. *kanā*]. 13C.
 ကပဋိ KAPRAÑ, *gəbyiŋ* < ကမုင် KAMHEÑ *kameang (kəmeaŋ)* an open space or platform in front of house. 19C.
 (အုတ်) ငြပ် (UT) KRWAP, (*ou?*) *cu?* < ကြပ် (တိ) KROP (TI) *krop (tei) (krop tse?)* a tile. 18C.
 ခါးပန်း KHĀ: PAN: *khəaŋ* > < ခာန် KHABĀN *khapān (həpàn)* a board band round the house level with the floor. 18C.
 စမုတ် CAMUT, *səmu?* < စမုက် CAMUK *éimauk (?)* hall of audience. 18C.
 စရပ် CARAP, ဇရပ် JARAP *zəya?* < ဇြပ် JRAP *sòp (sòp)* a rest house (often used for religious purposes). [O.B. *carap*; O.M. *jrāp*]. 13C.
 တင်းကုပ် TAN:KUP, *tingou?* > < တင်ဂုက် TAŃGŪK *tangkauk (?)* a shed, shelter for cattle. 16C.

တန်ဆောင်: TANCHON:, *dəəauŋ* a four-cornered edifice with a graduated roof < တာန်ဆောင် THĀNCHON *thanchònŋ (?)* apartments in the palace. [O.B. *tanchon*]. 13C.
 (ရေ) တံလျောက် (RE) TAMLYOK, (ye) *dəyau?* > < (ဌာက်) တရိုက် (DĀK) TARĀK (*dait*) *taròk (kəɔk)* a trough placed under the eaves of a roof. 19C.
 တဲ TAI, *tə* > < တဲ TĀY *tai (tai)* a temporary abode, tent, booth, hut. 15C.
 တိုက် TUIK, *tai?* < တိုက် TUIK *tāk (tak)* a brick or stone building. 13C.
 ထောင် THON, *thaŋ* < ထိုင် THĀN *thong (thoŋ)* a jail, prison. 18C.
 နန်း NAN:, *nəŋ* < နန် NAN *non (nòn)* a royal palace. [O.B. *nan*]. 14C.
 ပနက် PANAK, *pəne?* < ကွက် KNAK *knak (nek)* a short stake driven into the ground as tent-pin or to mark the site of a building. [O.M. *tnak*]. 18C.
 ပေါင်း PON:, *pəuŋ* an arched roof over a boat, carriage or palanquin < ပံင် PĀN *pòŋ (pəŋ)* an arch. [M.M. *pàn*]. 15C.
 ပြ PRA, *pyá* a tower on a city wall < ပြ PRA *pra (pra?)* a tower. 15C.
 ပြတင်း PRATAN:, ပြတင်း PRŪTAN: *bədiŋ* < ဗတင် BATAN *petang*, ဗတင် KHATAN *khatang (həteŋ)* a window. 18C.
 ပုံ PHUI, *pho* < ပုံ PHAO *phao (phao)* a fire-place, kiln. [O.B. *phuiw.*] 13C.
 မြတိုက် BRAITUIK, *bʸedai?* one of the administrative buildings attached to the palace < တိုက်ဗဲ TUIK BLĀY *tāk plai (tak plài)* bachelors chamber. 17C.
 မုက် MUK, မုတ် MUT *mou?* an arched passage into a pagoda > < မုက် MUK *mauk (mèk)* the face, the front, the mouth, face, entrance. [O.M. *muk* porch; cf. P. *mukha*]. 15C.
 ရုံ RUM, *youŋ* > < ရုံ RUN *rung, (rəŋ)* a shed, booth. 19C.
 ရုံး RUM:, *yəuŋ* > < ရွင် RUN *rung*, ရွိုင် RUIÑ *rəŋ* (*rəŋ*) a court-house. 18C.
 ဝင်း WAN:, *wiŋ* < ဝင် WAN *weang (wəaŋ)* an enclosure, compound, fence. 18C.
 သရုတ် SARWAT, *θəyu?* < ဩဓတ် SROT *sot (sot)* mortar. 13C.

2. Festivities

ပွဲ PWAI, *pwe* < ပွဲ POY *poa (poa)* a feast, festival, public entertainment. 15C.
 လက်ပန်း LAKPAN:, *le?paŋ* > < လက်ဗန် LAKBAN *leak pòn (lèak pòn)* wrestling. 15C.
 လက်ဝှေ့ LAKWHE., *le?phwé* > < လက်ပွဲ *leak plau (lèak plə)* boxing, fighting with fists. 16C.
 သဘင် SABHAN, *θəbiŋ* < သဘင် SABHAN *sapheang (kəphəaŋ)* a feast, festival. [O.M. *sabhan*; cf. Skt *sabhā* an assembly, congregation]. 12C.

3. Musical instruments

ခရာ KHARĀ, *khaya* < ခရာ KHARĀ, ခြ KHRĀ *kharā* (*hara*) a trumpet, bugle. [M.M. *karhā*]. 13C.

စောင်း CON:, *ṣauṅ* < စင် CĀN *čòng* (*cəŋ*) a harp. [Persian *cang*]. 16C.

တယော TAYO, *tàyo* < ဒြဝ် DRAW *krò* (*krò*) a violin. 18C.

ထပိုး THAPUI:, တံပိုး TAMPUI: *tàbo*, *dàbo* < ဒပိ DAPUIW *tepä*, ခပိ KHAPUIW *khapä* (*hapò*) a trumpet, animal horn fitted with reed and sounding note of fixed pitch. [O.B. *tapuiw*; O.M. *tapiw*]. 12C.

နံ NHAI, *hne* < သဏောံ SAṆOY *sanoa* (*hənoa*) an oboe. [Skt *sāneyī*, Persian *surmāya*]. 15C.

ပတ် PAT, *pa?* a drum < ပတ် BĀT *pāt* (*pāt*) melodic percussion instrument. [Skt *vādyā* musical instrument]. 12C.

ပတ္တလာ: PATTALĀ:, *pa?təla* < ပတ်လာ BĀT TALĀ *pāt talā* (*pāt kəla*) a xylophone. 18C.

ပတ်ဝိုင်း PAT WUIN: *pa?wain* < ပတ်ဝိုင်း BĀT WUIN *pat wāing* (*pāt wəŋ*) the drum-circle. 19C.

ဗာဂျာ BĀGYĀ, *baja* > ဗာဂျာ BĀGYĀ *pācā* (*pàcà*) a mouth organ. 20C.

ဗုံ BUM, ပုံ PUM *bouŋ* < ဖမ် PHAM, ဖုံ PHAM *phom* (*phəm*) a drum. [O.M. *pham*]. 15C.

(မိ) ကျောင်း (MI)KYON:, (*mi*)*jaun* < ကျပ် KYĀM *kyām* (*cam*) type of stickzither or vina in form of crocodile. 16C.

မောင်း MON:, *məun* < မိုင် MĀN *mòng* (*mòŋ*) a gong. 15C.

4. Professions, vocations

ကုဟာ KUHĀ, *kūha*, ကုဟာ KŪHĀ *kuha*, ကဝါ KAWĀ *kəwa*, ခဝါ KHAWĀ *khəwa* < ဂဟာ GAHĀ *kehā*, ခဝါ KHAWĀ *khawā* (*həwa*) a washer-man. 13C.

ဆတ္တာ (သည့်) CHATTĀ (SAÑÑ), *sha? ta* (*ðe*) < ဆတ္တာ CHATTĀ *čhòttā* (?) a barber. 16C.

တံငါ TAMNGĀ, *təŋa* < တမ္မာ TAMNGĀ *tamngā* (*təŋa*) a fisherman. 15C.

ပန်းချီ PAN:KYĪ, *bəji* < ပါန်ခီ PĀNKHĪ *pankhī* (*pankhī*) a painter of pictures, an artist. [O.B. *pankhī*]. 13C.

ပန်းရန် PAN:RAN, *pəŋaŋ* < (အစာ) ပရန် (ACĀ) PARAN (*acā*) *parəm* (*əca pəron*) a mason. [O.B. *pu-pūran*]. 13C.

သမား SAMĀ:, *ðəma*, *ðəma* < သမာ SAMĀ *samā* (*həma*) a skilled person, craftsman. 13C.

5. Time, measurements and number

အဝက် AWAK, *əwe?* < အဝေါက် AWOK *awòk* (?) 1/8 of a viss. 18C.

ကိန်း KIN:, *keiŋ* < ကိန် KUIN *kān* (*kən*) a number, in arithmetic or numerological index.] Shan *kih* an arithmetical number used in astrological calculation]. 15C.

ဂရီ GARUL, *gəyó* < ဂရီအ် GARUI' *keru'* (*həre?*) tally-stick. 18C.

နာရီ NĀRĪ *nayī* < နာဒီ *nādī* (*nādī*) hour, clock, watch. [Skt *nādi* period of twenty-four minutes; O.M. *nādi*]. 13C.

ပေ PE, *pe* > < ပေ PE *pe* (*pe*) a foot, footrule. [Portuguese *pé*]. 19C.

မိုက် MUIK, *mai?* > < မိတ် MIH *mih* (*mih*) a third of a cubit, about 6½ inches. [cf. Skt *mushti*, P. *muṭṭhi* the fist, a particular kind of measurement]. 13C.

သံတောင် SAMTON *saŋdaun* > < (ဟတ်) သံတိုင် (HAT) SĀM DĀN (*hòt sam-tong* (*hət?*)) a standard cubit=19½ inches, as opposed to normal cubit = 18 inches. [P. *hatta*]. 15C.

VIII Faith

1. Buddhism

ကထိန် KATHIN, *kətheiŋ* < ကထိန် KATHUIN *kathän*, ဂထိန် GATHUIN *kethän* (*kəthon*) the eight of the lunar months, a robe, a robe made in a single day [P. *kathina* the cotton cloth annually supplied by the laity to the *bhikkhu* for the purpose of making robes]. 16C.

ကျက်သရေ KYAKSARE, *ce?θəye* < ကျ်ဒြီ KYĀKSRI, ကျ်သီ KYĀKSI *kyait seī* (*caik səe*) honour, glory, good name. [Skt *śrī*, P. *siī*; O.M. *kyāk śrī*]. 13C.

ကျိက် KYUIK, *cai?*, ကျောက် KYOK *cau?* (in names of pagodas) < ကျ် KYĀK *kyait* (*caik*) any object of worship, a pagoda. [O.M. *kyāk*, *kyek*]. 16C.

2. Non-Buddhism

အင်း AN:, *iŋ* < အင် AN *ang* (*eŋ*) table, tabulation, magic square. [Cf. Shan *añ*, P. *anka*]. 15C.

အပင်း APAN:, *əpiŋ* > < အပင် APAN *apang* (*əpeŋ*) a foreign substance inserted into body by magical means. 18C.

ခေါ KHO, *khə* < ခေါ KHAW *khō* (*khə*) a small cup in which offerings to the spirits are placed. [O. M. *khal* bowl]. 19C.

နက်သန် NAKSAN, *ne? θaŋ* < လက်သန် LAKSAN *leaksòn* (*lèaksən*) symptom, sign, characteristic, a lucky mark, favourable sign. [Skt *lakṣana*; O.M. *lakṣan*]. 15C.

ဗလိ (နတ်စာကျေး) BALI (NATCĀKYWE:), *bəli* (*na?sa?cəwe*) < ဗလိ BALI *peli* (*həli?*) to make offerings to the *deva*. [Skt, P. *bali*]. 15C.

ပိန္နဲ (ဆရာ) BINDHO (CHARĀ), *beinḍo* (*shəya*) >> ပိန္နဲ BINDO *pintū* (*pintz*) a magician, astrologer. [cf. Skt *vaidya* skilled in the art of healing, a physician]. 16C.

ဘုတ် BHUT, *phou*? >> ဘုတ် BHUT *phut* (*phūt*) malevolent spirit of dead person. [Skt, P. *bhūta*]. 15C.

မော် MHŌ, *hmə* a certain magical influence, black magic, a conjurer or black magic practitioner < မှ် MĤAW *mhō* (*hmə*) a conjurer.

ဟူးရား HŪ:RĀ:, *huyā* >> ဟူးရာ HŪRĀ *hurā* (*hura*) an astrologer. [Skt *horā* horoscope, astrology; O. M. *hurā*?]. 14C.

IX Animals

1. Air

ကြိုးကြာ KRUI: KRĀ, *joja* < ကြဲ KREY *kreo* (*krea*) sarus crane. 13C.

ငန်း ṆAN:, *ṅaṅ* < အဟန် AHĀN *ahān* (*aḥan*) a goose. 19C.

သိမ်း SIM:, 'θeiŋ < အသီ ASIM *asəm* (*ašem*) a kind of hawk, falcon. 15C.

2. Land

ကတိတ်: KATUI:, *kədo* < ကိတ် GADUIW *ketū* (*hətz*) musk, civet. 16C.

(ကုလား) အုတ် (KULĀ:) UT (*kəla*) *ou*? >> အုတ် UT *ut* (*ut*) a camel. [Skt *uṣhtra*, P. *oṭṭha*; O.M. *ot*]. 18C.

ကျား: KYĀ:, *čə* >> က KLA *kla* (*kla?*) a tiger. [O.M. *kla*, *kla*]. 15C.

ကျင်း: KYUIN: *čaiŋ* < အဂြင် AGRAN *akrean* (*əkrəŋ*) locust. 19C.

ခါချဉ် KHĀKHYAN, *khajin* < အချ် AKHYAO *achao* (*achao*, *khəchio*) a species of red ants. 19C.

ဆင် CHAN, *shin* >> စိင် CİN *coin* (*coin*) an elephant. [O.M. *cin*, *cīn*]. 12C.

တယ်လူး: TAYLŪ:, *te'lu* < အလု ALU, *alu* (*əlu?*), လု LU *lu* (*lū?*) a buffalo, having one horn bent down. 19C.

ဒရယ် DARAY, *dəye*, *dərə* < ဒြဲ DRAY, ငြဲ GRĀY *krai* (*krài*) the hog deer, axis porcinus. [O.M. *drāy*]. 15C.

ပုတတ် PUTAT, *pəda?* < ခတတ် KHATAT *khatət* (*hətət*) the sand lizard. 16C.

ပြောင် PRON, *pyaŋ* < ပြင် PRAN *prang* (*preŋ*) the wild ox, bison. 16C.

ဖုတ် PHWAT, *phu?* < ဖကောတ် PHAKOT *phakot* (*həkot*) the varan, monitor lizard. 16C.

ပွဲ BUI. *bó* >> ဗအံ BA' *po'*, လဗအံ LABA' *lepo'* (*pò?*) the hump of a bull. 19C.

မြည်း MRAÑÑ:, *m̄yi*, *m̄ye* >> မဲ MAY *mai* (?) an ass. 13C.

လား LA :, *la* >> လှာ LHĀ *lā* (*la*) a mule, donkey. 19C.

သမင် SAMAN, *θamiŋ* < မင် MAÑ *meang* (*mèaŋ*) the brow-antlered deer, *Rucervus*. [O.M. *ramañ*]. 15C.

သိုး SUI:, 'θo >> သိုဝ် SUIW *sā* (*sə*) a sheep. 16C.

3. Water

အကြေး AKRE :, *əcè*, *əcì* >> ခစေဟ် KHACEH *khačeh* (*həceh*) the scales of a fish. 19C.

ကကတစ် KAKATAC, *kágədi?* < ကခတေတ် KA KHATET *ka khatēt* (*ka? hətət*) the large perch. 19C.

ကကလောင် KAKALON, *kákəlaŋ* < ကက KA KLAO *ka klao* (*ka?klao*) the pointed tailed goby. 19C.

ကခုရန် KAKHŪRAN, *kákhuyaŋ* < ကခုရင် KA KHŪRAN *ka khūrang* (?) the king fish. 19C.

ကဏ္ဍကမာ KAÑUKAMĀ *kənikəma* < ကဏ္ဍကမာ KAÑU KAMA *kanu kamā* (*kənao? kəma*) an oyster. [O.M. *KINLO*' *KBAL* mother-of-pearl]. 18C.

ကနကုတ် KANAKUT, *kənəgou?* < ကကုတ် KHAKUK *the kauk* (*həkāk*) a kind of water serpent. 19C.

ကဘီလူး KA BHĪ LŪ:, *ká bəlu* < ကဖလုဟ် KA PHALUH *ka phaluh* (*ka?*) the large mullet. 19C.

ကသပေါင်း KASAPON:, *ká θəbaŋ* < ကခမိင် KA KHABAN *ka hapòŋ* (*ka? həpòŋ*) the cock-up. 19C.

ကသဘိုး CASABHUI:, *ká θəbo* < ကကူဗို KA IBIUM *ka ipəm* (*ka?i?pəm*) the goby. 19C.

ခရု KHARU, *khəyú* < ကဏ္ဍ KAÑU *kanu* (*kənao?*) a shell, mollusk. 16C.

ခရုကမာ KHARU KAMĀ, *khəyu kəma* [see under ကဏ္ဍကမာ KAÑU KAMA above].

ခရုသင်း KHARUSAN:, *khəyú ðiŋ* < ကဏ္ဍသင် KAÑU SAN *kanu sang* (*kənao? seŋ*) a conch shell. [cf. *SAN*, P. *sañkha* a conch]. 16C.

ကဏန်း GAÑAN:, *gəṅaŋ* < ခတံ KHATĀM *khatām*, ဂတံ GATĀM *ketām* (*hətām*) a crab. 19C.

ငါးကြင်း NGA:KRAÑ: *nə jiŋ* < ကကြင် KA KRAÑ *ka kraŋ* (*ka? kreŋ*) the morton barbel. 16C.

ငါးကြင်းစောက် NGĀ: KRAÑ: COK, *nəjiŋzau?* < ကကြင်ခေါ KA KRAÑKHO *ka khrangkhao* (*ka?kreŋkhao*) the black-banded systemus. 19C.

ငါးခူ NGĀ:KHŪ, *nəkhu* < ကဟကအံ KA HAKA' *ka hakó* (*ka?həkó?*) the torpedo 18C.

ငါးပန်း NGĀ:PANŌ, *nəpəno* < ကပဏင့် KA PAṆAḤ *ka panòh* (*ka?pənoh*) the small snake-head. 19C.

ငါးပုတ္တား NGĀ:PUNŃĀ:, *nəpouṇṇa* < ကပန်း KA PANAH *ka panah* (?) the mango fish. 19C.

ငါးလင်ပန်း NGĀ: LANPAN:, *ṇəliṇṇa* < ကပန် KA PAN *ka-pòn* (*kəpən*) an eel. 19C.

ငါးသလောက် NGĀ SALOK, *ṇəθəlau?* < က သလံက် KA SALĀK *ka salòk* (*ka? səlak*) the Rangoon shad, the hilsa. 19C.

(မိ) ကျောင်း (MI) KYOŃ: (*mī*)*jaun* < ကျံ KYĀM *kyām* (*cam*) a crocodile, alligator. 16C.

X Miscellaneous

အနံ ANAM, *ənaŋ* < အနံ ANĀM *anēm* (*ənèm*) breadth. 13C.

ဥဒဟို (ရ်) UDAHUI (R) *údəho* < ဥဒဟိုရ် UDĀHUIR *utāhü* (?) an example, instance. [P. *udāharāṇa*]. 15C.

ဥသို USSUM, အုပ်စုံ UPCUM *ou³ souŋ* < အိုတ်သို UIT SUIM *üt sām* (*vt svm*) all together. [cf. P. *ussana*]. 15C.

စာရင်း CĀRAN:, *səyīŋ* < စာရင် CARAN *čarang* (*kəreŋ*) account, tabulation, list. 15C.

စရိတ် CARIT, *zəyei²* < သရိတ် SARET *saret* (*həreṭ*) expense, expenditure. 18C.

ညည်း ṆŃANŃŃ:, *ṇyi*, ညဲ ṆŃAI *ṇnye* a term of address by a woman to another woman 'you' < ညး ṆŃAH *nyeh* (*ṇeh*) people, they, others; he, she, they. 15C.

ထက်ဝယ် THAKWAY, *thə²wε* < ထင်ဝါ THAWĀY *thawai* (*həwai*) the lap, cross-legged posture. [O.B. *thawāy*; O.M. *thawāy*]. 13C.

ဘယ် BHAY, ဝယ် PAY *bε* < ပါ PĀY *pai* (*pai*) left (side). 15C.

လက်ထက် LAKTHAK, *lε²thε²* < အထက် ATHAK *athak* (*əthək*), လက်ထက် LAK THAK *leak theak* (*lεk thεk*) life time. [M.M. *lak thak*]. 13C.

XI Verbs

ပွီး ပီး: *ù* < ပွီး ပီး *ū* (*u*) to polish, burnish gold. 15C.

ကတော့ KATO., *gəbó* < ကလံ KALA' *kalo'* (*kəlo?*) to pay one's respect. [O.M. *kindo'*, *kindo'*]. 15C.

ကြုံး KRUM: *èouŋ* < ကြုံး KRUM *kräm* (*krəm*) to shout, roar, boast. 15C.
(ဆေး) ကြော (CHE:) KRO, (*šhe*) *èə* < ကြော KRAO *krāo* (*krāo*) to rinse, wash, wash oneself. [O.M. *krow*]. 16C.

ဆော် CHŌ, *shə* > < ချံ KHIAO *chao* (*chao*) to solder. 16C.

တန် TAN, *taŋ* to be unworthy, worthless > တန် TAN *tòn* (*ton*) to be cheap. 15C.

တော့ TO., *tó* to toss < တော့ TE' *tè'* (*teh*) to kick, as a cane ball. 19C.

ထော့ THWE, *thwe* < ထော့ THWE *the* (*the*) to throw, pitch. 19C

ပုန် (ကန်) PUN (KAN) *pouŋ* (*kaŋ*) > ပုန် PUN *paun* (*pən*) to rebel. 13C.

ပူဇော် PŪJŌ, *puzə* < ပူဇော် PŪJAO *pāūceə* (*paočea*) to make ceremonial offering to monks. [Skt, P. *pūjā*; O.B. *pūcao*, *pūjao*]. 12C.

မန်း MAN: *məŋ* > < မန် mon (*mòn*) to infuse healing virtues. into (water, medicine) by the recitation of mantras. [Skt *mantra*]. 15C.

လောင်း LOŃ: *ləuŋ* > < လိုင် LĀŃ *lòŋ* (*lòŋ*) to stake, wager. 15C.

7. Some linguistic features of the loans

The loan words in the list are of two forms: literal and adapted.

1. The literal form is adopted by transliterating the word from the written language – Burmese ဝိ < Mon ဝီ, Burmese ဝဲ < Mon ဝဲ။
2. The adopted form is acquired (a) (comparatively rarely) by transcribing the sound of spoken Mon e.g. (ငါး) ခူ < (က) ဟကအံ၊ ငန်း < အဟာန်း; and (b) by transcribing the Mon reading pronunciation to suit the Burmese phonetic sound classes and phonological patterns—ဒေါဗညား < ဒိဗညာ၊ အနန်း < အနာင်၊ အင်း < အင်။

7.1. The literal form

There is hardly any comment to make on this form. Burmese has few problems in transliterating the Mon word since, as has already been stated, it has borrowed the Mon script.

7.2. The adapted form

The adapted form however presents many problems, which concern certain changes – consonantal, vocalic and tonal – in the loan word. The salient features of these changes, drawn from a comparison of some 200 examples from the list, are set out below.

7. 2. 1. Consonantal changes

7. 2. 1.1. INITIAL CONSONANT

Burmese Consonant	Mon		
	Monosyllabic word	Polysyllabic word	
		initial	final
ka	ga	kha, ga, da	ga, ña
kya		ta	
kra			ca, ra
kha	ka		
ña	ha		ga
ca	ja	ja, sa	kha, ja, ya
cha	ca		
ñña			na, ya
ña			ta
ta		ka, tha, a	da, la
tha	da	da	
dha		ka, da, na	
na		la	ña
nha	saña		
pa	ba, ÷a	kha, ba, ÷a	pha, ba, ÷a
ba	pa, pha	kha	ma
bha	pa, ba, ÷a	kha, pa	ma
ya		la	
ra		la, ÷a	÷a
la		ka	ra
lya			na, ra
sa		ka, ma, ga, a	

7. 2. 1.2. BURMESE MEDIAL CONSONANT

Burmese subscript $\bar{\text{c}}$ Mon subscript $\bar{\text{c}}$ or $\bar{\text{z}}$
 Burmese subscript $\bar{\text{c}}$ Mon subscript $\bar{\text{z}}$

7. 2. 2. Vocalic and tonal changes

The patterns of these changes—some regular and others seemingly irregular—are given in series below.

The arrangement of the vowels in each series is in alphabetical order. Each entry starts with the loan syllable, followed by the conventional sign < and finally by its corresponding Mon syllable or syllables. The numeral in brackets indicates the number of words occurring in this type of syllable. No numeral is given where there is only a single occurrence.

	Series
I. a	
1. a	< uk
2. ak (2)	āt, ok
3. ac (4)	at, ek, et, eh
4. aṅ (15)	aṅ (9), eṅ (3), ān, in, en
5. aṅ: (19)	aṅ (12), eṅ (4), ān, an, e'
6. aṅ	ao
7. aṅṅ	ew
8. aṅṅ: (6)	an (2), ay, aḥ, āy, c̄
9. at (6)	āt (5), at
10. an (2)	aṅ, ān
11. an: (5)	ān (2), am, ān, ān
12. ap	a
13. ay (6)	āy (3), ay (2), oy (See also 'ai')
14. aṁ (9)	ām (3), ān (3), aṁ, in, cuṁ
15. ā (3)	aw, ah, uh
16. ā: (3)	aḥ (2), a
II. i	
1. it (3)	< ik, is, et
2. in	uin
3. in: (2)	in, uin
4. ip	ek
5. im:	iṁ
6. î	ew
III. u	
1. uṭ	< uip
2. ut (9)	uk (6), ek, ot., wat
3. up (2)	uk (2)
4. uṁ (8)	uim (3), uṁ (3), aṁ, uṁ or uin
5. uṁ: (2)	uim, uṁ or uin
6. ū (4)	uh, a', eh, o
7. ū:	uh
IV. e	
1. e (3)	< ī, ew, uw
2. e: (3)	ay, āy or ew, eh
V. ai	
ai (10)	< ā'y (5), oy (3), ay, aḥ
VI. o	
1. o (8)	< aq (4), aw (3), o (See also 'ô' below)
2. ok (7)	ok (6), āk
3. oṅ (7)	oṅ (4), uṅ, eṅ, ao
4. oṅ: (17)	oṅ (15), ān, uṅ
5. o (5)	o (4), e
6. ô (12)	aw (5), ao (4), o (2), ah. (See also 'o' above)
VII. ui	
1. ui (3)	< uiw (2), ao. (See also 'ui:' below)

2.	uik (4)	uit (2), āk, ih
3.	uiñ	ew
4.	uiñ	añ
5.	ui. (3) ui', uih, a'	
6.	ui:	(5) uiw (3), u, uim (See also 'ui' above)
VIII. w		
1.	wat (8)	< ot (7), ut
2.	wan (2)	uiñ, uin
3.	wan: (2)	an, ew
4.	we (2)	ew
5.	we.	uy
6.	we: (3)	uy (2), ai

Some of the changes attributable to linguistic causes require further study before an explanation can be given. However, certain reasons may be suggested for other changes. These are mainly orthographic and partly alphabetic.

1. Alphabetic

Mon has two more letters of the alphabet – ㉞ and ㉟¹⁴

2. Orthographic

Burmese has discarded many traits of its old orthography which is much closer to the Mon, while Mon still retains most of its orthographic features. The chief differences are the following.

(a) Finals

Burmese set of finals: က၊ ငါ၊ စ၊ ဥ၊ ည၊ တ၊ န၊ ဝ၊ မ၊ ယ။

Mon set of finals: က၊ ငါ၊ —၊ —၊ —၊ တ၊ န၊ ဝ၊ မ၊ ယ၊ လ၊ ဝ၊ ဟ၊ အ။

(b) Combinations

The possible combinations of these finals (i) with initial consonants (single, double or treble) and (ii) with initial consonant + vowel symbol or symbols. (See J. A. Stewart's *Manual of Colloquial Burmese*, 1955, 7–8 and R. Halliday's *Mon – English Dictionary*, X – XI).

(c) Vowel signs

Two vowel symbols are represented differently

Burmese ၈ — ၉ = Mon ˊ

Burmese — ၁၃ = Mon —:

(d) Subscript

Besides subscript *y* (၂) and *r* (၂), which also occur in Burmese, Mon retains subscript *l* (၂) which has been written as *y* or *r* in Burmese since the 14th century.¹⁵

Notes

1. Journal of the Burma Research Society (hereafter abbreviated to *JBRS*), Fiftieth Anniversary Publications, No. 1, 1960, 71–99.
2. *La tradition et le développement économique dans l'Asie du Sud-Est*, Bruxelles 1962, 191–200.
3. See G.H. Luce's 'Economic Life of the Early Burman', *JBRS*, XXX, 1, 285.
4. *Ibid*, Note 21, 305.
5. G.H. Luce's 'The Career of Htilaing Min (Kyanzittha)', *Journal of the Royal Asiatic Society*, 1 & 2, 1960, 58.
6. G.E. Harvey: *History of Burma*, 1925, 234.
7. G.H. Luce: *JBRS*, XXX, 1, 305.
8. See Halliday's *Mon-English Dictionary* under these words as well as e.g. ၇၊ ၉ဝ်၊ စ၊ ၉ဝ်၊ ဒဂ်၊ ဒဂ်၊ ဒး၊ ဖျေဝ် and လး။
9. See under 'Identification of loan words' *JBRS*, 1960, 96–97.
10. G.H. Luce: *JBRS*, XXX, 1, 304.
11. The transliteration follows the system devised by C. O. Blagden and Chas. Duroiselle, see *Epigraphia Birmanica*, 1, i, 6–12.
12. The reading pronunciations are from Halliday's *Mon-English Dictionary*.
13. Most of the renderings in phonetic script are from H.L. Shorto's *A Dictionary of Modern Spoken Mon*, and the rest were supplied by Mr. Shorto himself.
14. The letter ㉟ does not occur in the list of loan words.
15. As a rule, the subscript *l* in combination with the initial consonants *k*, *kh* has become *y*, and with *p*, *ph*, *m* has become *r*.

PHONOLOGICAL CONVERGENCE BETWEEN LANGUAGES IN CONTACT

Mon-Khmer structural borrowing in Burmese

David Bradley

Source: *Proceedings of the Sixth Annual Meeting of the Berkeley Linguistic Society*, 1980, 259-67.

This paper enumerates and discusses a number of historical changes in the phonology of Burmese, a Tibeto-Burman (TB) language, which have resulted in convergence towards genetically unrelated Mon, a Mon-Khmer (MK) language.

Areal linguistics as exemplified in the work of Emeneau on South Asia and Henderson on Southeast Asia has shown that adjacent languages tend to have similar characteristics. It is also possible to observe such similarities between two specific languages, as Gumperz and Weinreich have done. What I shall attempt is to trace the development of such similarities, in a case where both written records and previous historical linguistic work permit.

History

Burmese is now the TB language with by far the largest number of speakers, perhaps twenty million. Most other TB languages are spoken by groups with anything from a few hundred to a couple of million members; of these, only Tibetan, Newari, Manipuri, and Tripuri have been used as the language of a large traditional state. Thus, Burmese has been the most successful TB language in 'acquiring' speakers.

The phonological history of the Lolo-Burmese subgroup of Proto-TB, which includes Burmese, has been clarified in excellent comparative linguistic work, by Benedict and Shafer at Berkeley in the late 1930's and later; and more recently by Burling, Matisoff, and his students. Burmese itself is extensively attested since 1112 AD in inscriptions.

The history of the people who spoke Proto-Burmese is less clear. It seems they became the politically dominant group in Upper Burma, near Mandalay, about the

tenth century AD. For many centuries after that they were in conflict with a series of Mon kingdoms in Lower Burma, which were eventually conquered. What is eminently clear is that Lower Burma, where the capital Rangoon is located, was mainly populated by speakers of Mon only a few centuries ago.

There is a continuing process of 'Burmanization' of the Mons in Burma, which has been going on for nearly a millenium, and is still continuing. At present in the Mon State around Moulmein in southeastern Burma most Mons are bilingual in Burmese and Mon, and many people who speak only Burmese are aware of their Mon genetic background. For example, my esteemed Burmese teacher Hla Pe, professor of Burmese at the University of London, is an ethnic Mon but does not speak Mon.

Well-known historically-documented borrowings from Mon include the Burmese orthography; Burmese was probably first written by Mon monks, who also brought their Theravada variety of Buddhism. Much of the vocabulary of Buddhism was borrowed from Pali via Mon into Burmese. Other Mon lexical material has also been identified in Burmese - see Hla Pe 1967.

Since so many speakers of Burmese have a Mon background (including large numbers who now have no awareness of it) it is hardly suprising that the structure of Burmese phonology has also been affected. I will give a number of examples in which it appears that Burmese has diverged from closely-related Lolo-Burmese languages in the direction of unrelated Mon.

Suprasegmentals

Prosodies or suprasegmentals are often labelled as 'tone' or 'register' or 'stress' or 'length' when the parameters involved in the opposition include realizations associated with all of these: fundamental frequency (pitch), phonation (voice quality), intensity (loudness), and duration. Burmese has usually been described as a tone language, as have most other TB languages, but in fact if a case must be made for one contrastive parameter, a better case can be made for register in Burmese. In this respect it has become more like Mon, which like most MK languages uses a register contrast. Conversely, languages such as Lahu and Lisu, closely related to Burmese, have proliferated pitch/contour tone contrasts (Bradley 1977), and most TB languages are tonal. The following chart shows the realizations of the 'tones' of Burmese; the first column gives the traditional Burmese term for each category.²

	<i>phonation</i>	<i>pitch</i>	<i>contour</i>	<i>duration</i>	<i>intensity</i>
'creaky'	tight or creaky	fairly high	slight fall	shorter	fairly high
'even'	normal	fairly low	level or, slight fall	longer	low
'heavy'	slack or breathy	inter-mediate	sharp fall	longest	very high
(with different vowel nucleus possibilities, and a final stop)					
'killed'	normal or tight	very high	slight fall	very short	high

Fundamental frequency is not a reliable cue to the 'tones' of Burmese; speakers vary between higher and lower pitched 'creaky' in certain environments. Also, the 'heavy', which is usually described as 'high falling tone', is often lower than the 'even' which is often called the 'low tone'. Worse, most 'tones' in fact have similar contours.

Maran has proposed an analysis which attributes the prosodic opposition to abstract final segments which themselves have no realization, but which condition the various differences noted above. This analysis has little diachronic and no synchronic support.

The analysis which seems to correspond to native intuitions as reflected in the traditional names, and which is consistently reflected in the realization, is the register analysis: a three-way opposition of creaky, normal, and breathy voice quality.³ In most MK languages, there is a two-way register opposition, as in Mon; thus both Mon and Burmese use register contrastively.⁴

In the Arakanese dialect of Burmese there are secondary vowel developments which are typical of a register language, but not of a tonal one; these further arguments for the register analysis are presented below.

Vowel-system convergence

There are three main ways in which Burmese vowels have changed from the typical TB pattern in the direction of a more MK-like one. The overall result is a larger inventory of monophthongs; several diphthongs which are frequently found in MK languages but rarely in TB languages; and a Burmese vowel nucleus borrowed from Mon, never regularly found in the Proto-TB component of the Burmese lexicon.

The typical TB vowel inventory includes five monophthongs, viz. /i e a o u/; Burmese has monophthongized two further Proto-TB diphthongs, *ay and *aw, to produce a seven vowel system with /ɛ / and /ɔ / in oral nonstopped syllables with the register opposition, and has further developed a /ɔ / in pretonic syllables as described below in the section on word structure. Thus the Burmese inventory approaches the typical MK symmetrical nine-vowel system, lacking only /i/.

Several nasal and stop-final nuclei represented in the Burmese orthography by monophthongs and final consonants have become diphthongs in most dialects of Burmese (though the details of which combinations result in which diphthong differ from dialect to dialect; see Bradley 1979c). Though these final consonant oppositions are now completely neutralized, some features are reflected in the resulting diphthong. Specifically, in most dialects,

*im/in/ip/it	/ei/	with nasalization or final stop
*um/un/up/ut	/ou/	with nasalization or final stop
*oŋ/ok	/au/	with nasalization or final stop

Further, combinations reconstructed and written with a medial w have in several cases monophthongized to increase the inventory of nasal and stop-final vowel

nuclei; the result is seven nasalized vowel nuclei, and eight stop-final vowel nuclei; again, a more MK-like system.

One of these nuclei is /ai/, nasalized or stop-final. Words with this nucleus never have regularly-corresponding cognates outside Burmish, the subgroup of Lolo-Burmese closest to Burmese. Most lexical items with this nucleus are Mon or other loanwords: some usually attributed to Shan/Thai, others to Pali, and a few unclear. There are a couple of Proto-TB etyma which have shifted into this category, rather than the regular /au/, from *u:ŋ or *u:k.

Interaction of vowels and suprasegmentals

MK languages - and register languages generally (Gregerson 1976) - show vowel height differences which relate to the register system. As noted above, so does at least one dialect of Burmese: Arakanese.

In Arakanese all vowels have higher allophones when in a breathy ('heavy tone') syllable. Moreover, what is /e/ in Burmese has split in Arakanese between /i/ mainly in breathy syllables and /e/, which corresponds also to Burmese /ɛ/, in other syllable types. Burmese contact with Arakanese as the 'standard' language has complicated this picture, and there is considerable stylistic variation in Arakanese.

Nevertheless, here is another strong argument for the register analysis. In tone languages (with a few exceptions) there is little correlation between tongue height and pitch height⁵ but more frequently correlations instead between features of adjacent consonants and pitch height/contour. But Gregerson, Glover, and others have demonstrated a regular relationship, based on tongue root position, in register languages in all areas of the world.

Consonants

Again, Burmese has undergone a number of developments in its inventory of consonants which result in a more MK-like system.

Most TB languages, including most other Lolo-Burmese languages,⁶ have an opposition between alveolar fricatives and affricates, e.g. /s/ and /ts/, versus palatal or alveopalatal fricatives and affricates, e.g. /ʃ/ and /tʃ/. Burmese has collapsed *s and *ʃ to |s|, now pronounced /θ/; and has collapsed *ts and *tʃ to |c|, now pronounced /s/. Apart from a few northern MK languages, it is typical of MK not to contrast alveolar as opposed to alveopalatal fricatives or affricates; thus again Burmese has become more Mon-like.

One typologically unusual property of MK languages, including Mon, is that they may have palatal stop or nasal in syllable-final position. This is not usual in TB languages, but in the Burmese orthography, final palatal stop and nasal are written. Whether they had the value of final palatals when the orthography was devised is unclear; on the whole they developed from *i with a *velar or less frequently *alveolar final, so it seems phonetically reasonable that they may have.

Now, however, like other *finals, the position contrast has been neutralized and is reflected only in vowel nucleus differences.

Word structure

Henderson 1951 points out the essentially similar word structure, (C^o)C(C)V(C)^s, of various unrelated Southeast Asian languages: Thai, Khmer, and so on. That is, words may have a first 'minor syllable' or 'pretonic syllable' with schwa vowel and no suprasegmental opposition (tone, register, or otherwise). The consonant and cluster possibilities are often limited in the 'minor syllable', and of course there is no vowel opposition.

Mon, like nearly all MK languages, has this word structure. For Proto-TB, Wolfenden and others have reconstructed morphological prefixes, but most of these prefixes seem to have been fused into the initial consonants by the Proto-Lolo-Burmese stage (Bradley 1979b). Only a few such as the *ʔ^a - kinship term prefix have survived; but in most Lolo-Burmese languages they have become full syllables with a tone. So Lolo-Burmese languages other than Burmese have mainly one-syllable monomorphemic words.

Burmese has instead reduced a large number of full syllables to 'minor syllables', resulting in another parallelism with MK, in the basic word structure.

The most frequent minor-syllable words in Burmese contain a grammatical functor which has a full-syllable cognate elsewhere in TB. Examples include:

m ^a -	'negative' (preceding verbs)
ʔ ^a -	'adverbializer/nominalizer (preceding verbs)
t ^a -	'one' (preceding numeral classifiers)
ɰ ^a -	'two' (preceding numeral classifiers)
khun ^a -	'seven' (preceding numeral classifiers; derived from 'two')

as well as the kinship term prefix ʔ^a-, which occurs mainly with terms for relatives of the same or a younger generation. Thus the very frequent classifier phrase (numeral plus classifier), a part of the noun phrase, will most frequently show this MK-like word structure; as will all negated or derived forms of verbs.

There are also very many Burmese nouns which have had their first syllables reduced. In most cases the original, unreduced first syllable is recoverable from external or internal evidence. In some cases, etymology provides evidence for the full form; in a few cases, inscriptions provide earlier forms that are now spelled with the reduced form. In numerous instances, dialect and standard forms differ: either the dialect reflects the full first syllable and the standard reduces it, or vice versa. There are also examples in which the modern spelling still reflects the former full syllable, but pronunciation always has the reduced form. Many examples show a synchronically transparent or even productive process of reduction. Of course, there are also cases of loanwords, from languages that also have 'minor syllable' forms or to reflect borrowed short vowels. Finally, there is a small residue of unexplained cases, which may either be loans, or may have unclear etymologies.

It is not always clear what the conditioning factor is in the reduction of some two-syllable nouns and the non-reduction of others; perhaps the more closely-bound, unanalyzable noun compounds are more likely to undergo reduction. There are semantic factors involved, for example the frequent reduction of certain body part words (leɰ 'arm/hand', chi 'foot/leg', na 'ear', and so on) which categorize major regions of the body - these also happen to occur frequently in two-syllable compounds, so both semantic and morphophonemic processes may be involved.

Less frequently, as in the case of the kinship term prefix, the 'minor syllable' has a very good etymology. For example, 'ant' is reconstructed as Proto-Lolo-Burmese *p-rwak; the prefix occurs in the Burmese form p^a rweɰ. Similarly 'flute' can be reconstructed as *p-lwe¹ (the superscript numeral is a reconstructed tone category); the Burmese cognate is p^a lwe. Examples of this type are very few.

Even rarer are examples of verbs which have a 'minor syllable' g^azà 'to play' is one of the few; in this case the first syllable has probably been reduced from the full verb ká 'to dance', so etymology provides evidence as to the full form.

The following noun examples show the various types of reduced first-syllable possibilities enumerated above. They are far from exhaustively listed; these two-syllable nouns are a very frequent phenomenon in the Burmese lexicon. Many other instances of each type could be given.

- etymology supports full first syllable
θ^a mɛɰ 'son-in-law' from *ya² 'son/child' plus *C-mak son-in-law
s^a bà 'paddy' from *ca¹ 'food' plus MK root for 'rice'⁷
- inscriptions support full first syllable (as well as etymology)
ʔ^ako 'elder brother' inscriptional form |ac kuiw|, from *wik ko¹
ɰ^amá 'younger sister' inscriptional form |nham ma|, from *s-nam¹
- dialect and standard forms disagree (in these cases, spelling also usually gives the full form)
sh^abī 'head hair', Arakanese shébā, spelling |cham paɰ| (the dialect supports the spelling and reconstruction *cam¹)
lei^a pya 'butterfly', Arakanese l^a pra
(standard, spelling, and etymology *lip all support the full form)
- spelling retains the etymologically-expected unreduced form
n^alōũ 'heart'; etymon for 'heart' is *s-nik; spelled |nhac| ph^a na^a 'sandals'; spelling |phi nap| not supported by etymology
- semiproductive or productive examples
cà 'tiger'; c^a θ^a i^a 'leopard'
(also various other animal names: 'fish', 'cow', and so on)
nà 'ear'; n^a kwī 'earring'
(also various other body parts: 'arm/hand', 'foot/leg', etc.)
dà 'knife'; d^aʔù 'knife tip'

A number of other examples of this type occur, such as parts plants with θ^a - from θ^a i^a 'tree', free form θ^a i^a pī. In such case the spelling also reflects the unreduced form.

6. loanwords

p^hlāu 'Palaung' (name of a MK group in Upper Burma)

k^h là 'Indian'

(this word can be recursively reduced, as in k^h l^h thāi 'chair' the Indian sitting device, containing the verb thāi 'sit')

7. unanalyzable (etymology unavailable or unclear)

b^hzei 'axe' spelled pu chin

d^hye 'antelope' spelled da ray

There are also a number of words for tools, parts of a boat, and so on which contain the 'minor syllable' t_a- or d_a-, written as if pronounced t_a, spelled tam.

In addition to the analyzable adverbs with the prefix t_a-, there are a number of adverbs with the numeral 'one' t_a-, usually in a reduplicated four-syllable word. Moreover, there are several other less easily derivable adverbs, such as the following:

g^hné 'today' - the second syllable is 'day'

g^hyú 'carefully'

One possible source for these two is a reduced form of the topic particle k_a, which may have become word-initial when the demonstrative t_a was lost, reducing these two words to the more frequent two-syllable type.

It should not be claimed that all instances can be explained in terms of reduction, as noted above; but on the whole, it seems that Burmese has rearranged its word structure, a relatively basic part of the phonology, from one-syllable towards the Mon (and MK) 'minor syllable' plus main syllable pattern; and that the main mechanism of this restructuring has been reduction of first syllables, including some morphological functors, in two-syllable bimorphemic compounds.

Conclusion

I have tried to show several areas of Burmese phonology which have changed during the recent history of Burmese in the direction of Mon, at a time when Burmese was in contact with Mon. Specifically, it seems that many speakers of Mon were 'becoming' speakers of Burmese.

The most basic area of change seems to be the reanalysis of the main suprasegmental contrast as register rather than tone in Burmese.

Vowel and consonant systems have also become more similar to a Mon-like structure.

The basic pattern of 'minor syllable' plus full syllable has become established in Burmese, though various evidence shows that this has been a recent, gradual, and partially nonsystematic process. Basically, some closely-bound two-syllable noun compounds have had their first syllable reduced.

Finally, it should be noted that the convergence I have documented has not been to an identical phonological system with Mon, but rather to a typologically more MK-like pattern for Burmese.

Notes

1. I am glad to acknowledge comments by Matisoff, Diffloth, Haas and Thurgood at the meeting; and also by Benedict and Gregerson. This is not to blame them for any remaining inadequacies, which are of course my responsibility. I use * before reconstructed forms, and vertical lines to enclose transliterated Burmese.
2. These observations are derived from instrumental work with two speakers from Mandalay, one male and one female. I used F-J fundamental frequency meter, electroglottograph, and intensity meter, recording the results on a mingograf; also narrow-band spectrograms from a Voiceprint sound spectrograph.
3. Mary Haas pointed out that duration is similarly consistent and could also be considered to be the contrastive suprasegmental; intensity similarly differentiates; but three-way stress or length distinctions are rare.
4. Most MK languages, as Gerard Diffloth pointed out, are thought to have developed register from *voiceless versus *voiced initial consonant features preserved in voice quality, but lost in the initial segments. By the time Mon and Burmese came into contact, it seems reasonable that Mon had already developed the voice quality feature, though of course the orthography represents it in the initials.
5. W. S-Y Wang has given some Chinese dialect examples; there is also an example in Lahu, where *uk has /o/ as its reflex in the low stopped tone, but /u/ with high rising tone.
6. Lahu is an exception, but the merger in Lahu, like its nine vowel system, may perhaps be an instance of convergence between Lahu and Shan, which also lacks this contrast, and has a nine vowel system.
7. This MK etymology was provided by Diffloth.

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NISSAYA BURMESE

A case of systematic adaptation to a
foreign grammar and syntax*John Okell*Source: *Lingua* 15, 1965, 186-227.

It is recorded in the Burmese chronicles that king Anorahta 'placed the thirty sets of the Piṭaka' – the Theravada Buddhist scriptures which he had brought into his kingdom – 'in a shrine studded all over with precious stones, and had the noble Order of monks give instruction in them.' This event is said to have taken place in the second half of the eleventh century A.D. Instruction in the Piṭaka and in Pali, the language in which they are written, is still given today and has had profound effects on the language and literature of the Burmese. The purpose of this paper is to draw attention to one of these effects in the field of language, namely 'nissaya Burmese'. Besides being a linguistic curiosity in itself, nissaya Burmese, it is suggested, may well have an importance for the analysis of Burmese grammar that has not been properly seen in perspective. Early Western grammars (e.g. Judson¹) and Lonsdale²) were dominated by nissaya-influenced Burmese and accepted most of it without question, while recent studies (e.g. Stewart,³) Cornyn,⁴) Minn Latt⁵) have perhaps tended to underrate it.

Nissaya are works in which each word or phrase of a Pali text is followed immediately by its Burmese translation⁶) (example in Appendix 1). They have been known in Burma since at least the mid-15th century,⁷) i.e. a little before the bulk of non-inscriptional Burmese literature begins. Since then nissaya have been composed in considerable numbers and are still written today. In addition to whole works written in this way, there are many short passages of nissaya in both classical and modern texts.

From the grammatical point of view, the interest of nissaya is in the fact that they were intended not only to give the reader the meaning of the Pali text but also to enable him to construe its grammar. For the student, nissaya 'could be a kind of grammar or manual as well as a dictionary. He can grasp syntactical construction of the language as he scans the lines and learns the meaning of a Pali word or phrase'.⁸) Clearly, the word-by-word arrangement alone imposes a close structural correspondence with Pali; but, more than this, a system was established whereby

certain particles – and in Burmese it is the suffixed particles that bear the main burden of grammatical and syntactic relations – were conventionally employed to represent such features as number, case, tense and mood (illustrated in Appendix 1). Their position at the end of the word makes them curiously parallel to tense- and case-endings. As a result, the nissaya writers were able to represent, with remarkable accuracy, the inflections and syntax of Pali, an Indo-European language, in unrelated Burmese, which belongs to the Sino-Tibetan family and is largely monosyllabic.⁹⁾ The strength and widespread acceptance of the system can be gauged from the fact that the same grammatical conventions have been preserved unchanged for more than four centuries: there is nothing to distinguish a nissaya rendering of 1491 from one of 1910 (examples in Appendices 2 and 3).

The major part of this paper consists of an analysis of these conventions. Cornyn once suggested,¹⁰⁾ as one of the possibilities of an investigation of the Burmese Jātaka Commentaries, ‘the information to be gained from the attempt to reflect Pali syntactic features in a language of different structure.’ He did himself point out some of these features in passing, and the attempt is made here to take up his suggestion and carry the analysis further.

It is hoped that the analysis may (1) hold some interest of its own as an example of a language of one type deliberately and systematically adapted to the structure and syntax of another. It should also be possible (2) to use it for comparison when examining other Burmese prose styles and phraseology. (3) The implications of nissaya Burmese for grammatical study become apparent when one considers particle usages and sentence structures, evidently generated within nissaya, which have as it were escaped into other kinds of Burmese. Pali, as the language of the Piṭaka, has always been held in such esteem that escapes were easily made. While nissaya Burmese can be analysed entirely, and most satisfactorily, in terms of Pali grammar, it will readily be appreciated that other kinds of Burmese, which are not completely in the nissaya style but have drawn on its conventions to some extent, will require, at the worst, two separate grammars: one for the Pali and one for the Burmese; and both may be in operation within the same sentence. This ‘split personality’ of Burmese grammar and syntax may well underlie much of the elusiveness of its analysis, particularly at a time when grammarians are making efforts to avoid ‘translational’ pitfalls. It was in fact the tiresome persistence with which such suspect features resisted various analytical approaches that prompted the observations made in this paper.

The extent to which nissaya usages have permeated non-nissaya Burmese is not easily delimited. Much of Burmese prose written before the 20th century consists of translations, adaptations and compilations from Pali texts. Some of these works, as one would expect, are very close to nissaya – notably the five-volume translation of the 550 Jātaka by the Nyaunggan Sayadaw (c. 1800),¹¹⁾ which – with the exception of only one or two particles throughout – reads exactly like a nissaya with the Pali text omitted (example in Appendix 4). Others, such as the well-known translation of eight of the ten Jātaka of the Mahā Nipāta by U Obhāsa (1782–1787)¹²⁾ adhere less closely to the original Pali, but their grammar, apart from the omission of certain particles, is still readily analysable in Pali terms (example in Appendix 5).

Original Burmese prose, not based on Pali texts, differs from nissaya Burmese to a greater or lesser extent according to the author and his subject. Up to about the 20th century the pressure on writers to model their prose on Pali was strong: stylistic traditions had been established since the beginning by translated works, and students were expected to reproduce exactly what they had been taught. Pali was regarded as the model of correctness in language, so that the closer to Pali one’s Burmese was the purer it seemed to be. Burmese grammars were based on nissaya Burmese, and ordinary speech was disregarded by scholars. Nissaya ‘framed the style of the Burmese language. The Burmese sentence thus becomes exactly like the Pali sentence’.¹³⁾ The conventions of nissaya, however, did not overrule Burmese idiom completely, and in the course of time what were presumably changes in the spoken language affected the use of particles in the written prose. It is interesting to see, for example, how U Kala,¹⁴⁾ writing between 1714 and 1733, writes in a style much closer to nissaya in the early parts of his chronicle when his source materials may have been in a similar style if not actually in Pali, than in the later parts which are probably more original. However, much of the apparent difference arises from the fairly regular replacement of particles by others of similar function or from their omission (examples in Appendix 6). It is a simple matter in most of his sentences to reproduce nissaya Burmese merely by the substitution or the insertion of particles: thus the structure of the sentence is still largely modelled on Pali, and his use of particles, both the old ones that persisted and the new ones that were introduced, still reflects nissaya usage. The same characteristics are to be seen in much other written Burmese prose, including books, magazines and newspapers of the present day.

For some purposes it is convenient to draw a line dividing particles and usages appropriate to ‘written Burmese’ from those of ‘spoken Burmese’, and it is tempting to think that the influence of Pali grammar stops on the written side of the line, where stylistic traditions maintain nissaya-like features, while the natural spoken language has developed independently without being subjected to these alien pressures. However, the dividing line is not always very clear. Stewart¹⁵⁾ expressed his belief that the difference between the two forms of Burmese is ‘usually exaggerated’. Cornyn¹⁶⁾ found it ‘necessary to make a sharp and arbitrary distinction between his [informant’s] colloquial speech and his knowledge of the literary language’; and Minn Latt¹⁷⁾ while wishing to concentrate on ‘Modern Burmese’ and to ‘exclude, as strictly as possible, Classical Burmese’ – which he regards as ‘a language no longer spoken, or at least highly removed from the language of modern times’ – nevertheless admits that ‘the high style [of Modern Burmese]... merges sometimes with Classical Burmese,’ and that at the present stage of development ‘users of the language are apt to mix even the comparatively distinct forms of Modern and Classical Burmese in their less natural moments’.

The fact is, of course, that although one wants to avoid teaching students to talk in unnaturally bookish terms or to use archaisms that still find a place in written prose, it is impossible to put all usages neatly on one side or the other of

a dividing line: rather, there is a broad band of overlap, so that one finds almost a gradual shading off from the extreme nissaya style down to highly colloquial forms of speech and slang. Styles often thought of as 'written Burmese' may be heard spoken in formal contexts such as speeches and lectures, and news broadcasts are delivered in a style closer to the nissaya end of the scale than much written material never intended to be read aloud. There is in fact a widespread feeling among Burmese speakers that styles associated with the written language are 'correct', and that the further one moves towards the colloquial styles the more debased and slangy one's language becomes. Consequently, on formal occasions, and also when speakers are asked about their language, when they are speaking into a microphone or know they are talking to a linguist – i.e. 'in their less natural moments' – they may often make use of more bookish forms than usual.

It is possible, then, that just as some of the features of Pali grammar, carefully reproduced in nissaya Burmese, are to be found in non-nissaya texts, both translated and original, so they may have trickled here and there even into everyday spoken Burmese – the way for this being made easier by the high prestige of Pali and the belief in the correctness of written usage, both extended over a long period of Burmese history. An assessment of the extent to which this development may have taken place is not attempted here: that would require not only an analysis of nissaya Burmese such as is given here in outline, but also, for comparison, an analysis of the grammar of a Burmese that had definitely never been exposed, directly or indirectly, to Pali influence; and no such Burmese exists. Looking for an out-of-the-way dialect is unlikely to help since nearly every village has its monastery with a collection of Pali texts; and going back in history is also ruled out as no Burmese is recorded from the time before Anorahta brought back the Pitaka to Pagan.

Two points that can be made, however, are: first, that in analysing the grammar even of spoken Burmese it may prove both desirable and defensible sometimes to admit certain categories – e.g. subject, object, accusative, locative, future, causative – and at other times to deny them. They may be logically quite permissible as the reproduction in speech, unconsciously or otherwise, of Pali patterns long established in styles at the written end of the scale, but may well have no place in patterns deriving from pre-Pali Burmese. It is interesting to note too, that when the Pali categories are similar to English ones, 'translational' grammar would be more appropriate than an exotic analysis. Secondly, the existence of nissaya Burmese and the likelihood that some of its features have penetrated fairly deep into the language, underlines the importance of grammatical study of languages closely related to Burmese, such as Kachin. If, as one hopes, they have not been subject to such powerful external pressure, many features in their grammars should match those of Burmese, and thus highlight the structure of the pre-Pali language. On a graph with these languages as one axis and nissaya as the other, we may look forward to plotting with greater precision the elusive figures of Burmese grammar.

Background

In order to appreciate how some features of nissaya Burmese may have found their way into spoken Burmese it is perhaps worth recalling, first, something of the prestige of Pali among the Burmese, and secondly some of the ways in which the ordinary Burman can come into contact with Pali-influenced Burmese.

Pali studies are not just a single thread running through the history of Burmese language and literature: on the contrary, they colour the whole fabric. Burmese was first written at the beginning of the 12th century, and from then until the middle of the 15th it was written only in the restricted form of inscriptions on stone recording the dedication of property to the religion. No major work in Burmese dating from before 1455 is extant today, and none is certainly known to have been committed to writing before that date. During these three and a half centuries, however, the study of Pali texts was flourishing.¹⁸⁾ Numbers of commentaries in Pali on matters in the Piṭaka and allied subjects were written, of which many were grammars.¹⁹⁾ One of these was the *Saddanīti*, dated 1154, which was examined at the time by those from the island of Ceylon (Sīhala) 'who knew grammar well', who said to themselves "'in the subject of grammar there is no book like this in the island of Sīhala, even the detailed analysis as contained in this book we did not know", they spoke highly in various ways'.²⁰⁾ In the same source²¹⁾ are stories illustrating the great interest in and knowledge of Pali grammar displayed by the inhabitants of the then capital of Burma – including even 'the wretched young woman who guards the fields and goods'.

Pali was thus the language of books and learning for a long time while Burmese was apparently written only for records of religious deeds. Although, in the language of these early inscriptions, the use of particles does not seem (on the basis of a cursory examination) to have been closely adapted to Pali patterns, the influence of Pali is discernible not surprisingly – in various phrases and expressions. When Burmese came to be used alone on palm-leaf it was mainly for verse where grammatical patterns are frequently modified to suit the verse-form. It is worth noting in passing that much of this verse was written on themes from Pali works, sometimes with parts of the Pali text quoted at the head of each section, and in some cases this was given a nissaya translation.²²⁾ Among such prose works as there were, translations and adaptations from Pali had an important place – e.g., in the early period, *Pārāyana Vatthu* (1511), those parts of the *Yazawin-gyaw* (1520) which are not in nissaya, *Maṇikuṇḍala Vatthu* (1629), and *Dhammapada Vatthu* (1680). Before any known Burmese work was composed, however, there were nissaya: nineteen are included in a list of books dedicated to a monastery in 1442.²³⁾ There is also a nineteenth century record of nissaya composed still earlier, in about 1300.²⁴⁾ There can be no certainty that there were not earlier works in Burmese alone, but as it stands the scant evidence would suggest that, apart from inscriptions, Burmese prose was actually first written in nissaya form.

In addition to the influential position of Pali and Pali writings in Burmese literature, there were suggestions of a continuous line of descent from classical times:

'After the 334, 569 kings from Mahāsammata at the beginning of the world up to Siddhattha Kummāra who became Buddha, there arose in our country of Burma the great states of Tagaung, Thindwè, Thayekhittaya, Pagan, Myinzaing, Pinya, Ava and Konbaung'.²⁵) The Burmese kings were believed to 'have their origin in the Sun dynasty of the Sakiyan line',²⁶) more recently, 'adding the continuous line of kings, from the Buddha-to-be Siddhattha Kummāra up to King Thibaw (second to enjoy the palace in the royal city of Ratanapurā [i.e. Mandalay: he reigned 1878–1885]), brings the number to 335, 876 – a dynasty of Sakiyan kings descended from the Solar race, an unbroken succession of umbrella-bearing sovereigns'.²⁷)

There have been many Pali loan-words in Burmese since the time of the earliest records, and it was inevitable, against this background, that when, in the 18th century, Burmese and its literature came to be considered subjects fit for scholars, it should have been treated as an extension of Pali studies. It has even been argued²⁸) that Burmese is related to Pali. Earlier scholars did not go quite so far,²⁹) but they derived large numbers of Burmese words from Pali without hesitation: for example

tui [sign of nominal plural in nissaya Burmese] is a corruption of *bahu* [Pali = 'many']: delete *ba*; at *hu* make *u* into *ui*'; make *h* into *t* or *dh* and join it to *ui*'. The result is *tui*' or *dhui*'.

mha [sign of ablative case in nissaya Burmese] is a corruption of *smā* [one of the Pali ablative inflections]: make *smā* into *mha*. The result is *mha*.³⁰)

These are only two examples from what must be several hundred such derivations in the same work. Many others are offered by Mahā Zeyyathinkhaya and Kyaw Aung San Hta Sayadaw II. The tradition has still not died out and is not confined to scholars.

From the grammatical aspect too, Burmese was naturally not expected to differ from Pali. By the 18th century, when grammars with Burmese examples were first written, the language had had three centuries to shape itself in the Pali mould. Two early native grammars give their examples in nissaya, there being no difficulty in illustrating all their points in both Pali and Burmese.³¹) These may well have been what Lonsdale meant when he complained³²) that native grammarians 'not content with merely borrowing the grammatical nomenclature of the Pāli language, also attempted to assimilate the grammatical principles of uninflected Burmese to those of inflected Pāli, so that they produced, not Burmese grammars, but modified Pāli grammars in Burmese dress'. He found their attempts 'futile' and blamed 'the servile veneration in which they held the Pāli language'. Needless to say, the existence of these grammars and of Pali-influenced Burmese made it much easier for the early Western grammarians, including Lonsdale himself, to treat Burmese grammar on traditional classical lines. On the other hand, later studies,³³) in their deliberate concentration on 'colloquial' Burmese, have perhaps been too shy of admitting categories that often bear a suspicious resemblance to English ones.

Perhaps the above few instances will serve as a reminder of what it means to say that Pali is a prestige language among the Burmese, and how it has affected their thinking about language. In this atmosphere it was not difficult for the usage of Burmese to be influenced by the grammar of Pali, assisted by numerous nissaya with their conventional renderings preserved unchanged for so long.

Even so, it may be felt, it is a long way from the artificial linguistic conventions of monkish scholars to the everyday speech of the layman. In fact, nissaya Burmese is not the exclusive preserve of the learned. We may discount the stories of the popularity of Pali grammar at Pagan. There is the cumulative effect of centuries of traditional monastery education³⁴) through which nearly all male Burmans were directly exposed to nissaya for at least a few years in their lives. Here the children were first taught the alphabet and then made to repeat aloud nissaya texts of religious works and learn them by heart.³⁵) If nissaya Burmese were thus held up as the best Burmese in the schools for many generations, this alone might have been enough to establish some new speech habits; but Pali-influenced Burmese continued to be disseminated in the secular schools which were founded in the time of the British government in the 19th century. This was not through nissaya but through readers³⁶) mainly written in a style closely resembling that of U Obhāsa's Jātaka translation.³⁷) Some of the pieces are actually Jātaka retold. After leaving school, the Burman today keeps in touch with a language descended from nissaya-influenced Burmese through broadcast news, newspapers, journals and books – 'the classical texts that are one's daily reading matter';³⁸) through parts of the popular dramatic shows, and through the enthusiastically attended sermons delivered by monks well trained in Pali.

So through reading, schooling, entertainment and preaching, the Burman has for several centuries been encouraged to regard as correct the Pali grammar of nissaya Burmese and similar styles. It would hardly be surprising if he sometimes echoed it in his speech, above all when he is consciously on his best linguistic behaviour.

Analysis

Text and scope

The analysis which follows is based on the first volume of a nissaya, made in the second half of the 18th century by Shin Guṇalaṅkāra, of the Mahā-ummagga Jātaka (No. 546).³⁹) A Jātaka provides a wider range of grammatical and syntactic features, and is simpler to follow, than some of the more famous nissaya which consist of disquisitions and commentary rather than narrative and dialogue. This particular Jātaka has further the advantage that two passages from it are included in Andersen's *Pāli Reader*⁴⁰) which has been of the greatest help – where his text is the same as Shin Guṇalaṅkāra's – in parsing the Pali. The outlines of the analysis were in fact based on the material in these two passages before the rest of the text was examined for modifications and features not found in those few pages.

The first aim of the analysis is to demonstrate the way in which Burmese was adapted to represent the grammar and syntax of Pali. The coverage is therefore not exhaustive. Features in the Pali which appeared to have regular and consistent renderings in Burmese are listed with their Burmese equivalents and exemplified. Locutions that occur infrequently are omitted, and certain items (e.g. Pali Perfect and Conditional tenses) were not found in the text at all. These, however, on account of their rarity, are less likely to have acquired regular conventional equivalents in Burmese and they are consequently of little importance for the present purpose. Even among constantly recurring features, variations in the Burmese renderings are found. These are also recorded here and though no frequency count was made there is usually not much difficulty in deciding which Burmese form is the regular equivalent of the Pali. It may be taken therefore that renderings listed as 'variant' or 'occasional' are in the minority. There are also occasions when, for one reason or another, the regular or simple rendering of the Pali is not employed: the purpose of the nissaya being to help the reader understand the Pali text, it is inevitable that sometimes a strictly literal translation or the mechanical reproduction of the Pali grammar and syntax would not further this purpose. A number of these 'irregularities', with examples of other kinds of inexact translation, are exemplified in the analysis. In general, however, it is remarkable how successful the system is in conveying the meaning of the Pali and at the same time revealing the grammar and syntax of each sentence, and how rarely the translator has to use a variant form or make an exception.

Sections *I* to *IV* of the analysis are concerned with Nouns, Verbs, Adjectives and Adverbs (of one type) respectively. Pronouns, having no special grammatical status in nissaya, are not relevant here in themselves; but as they have regular nissaya equivalents these are briefly listed in Section *V*, together with certain points of interest arising from them. Sections *VI* and *VII* illustrate types of Predication and Subordinate Clauses. Indeclinables, in Section *VIII*, are again of no direct grammatical importance, but as many of them occur with great frequency they play a prominent part in forming the distinctive quality of nissaya Burmese and similar styles, and so it seemed worth giving briefly their Burmese equivalents. The conventions of nissaya also extend to a number of common compounds occurring in Pali, but these are omitted here as they would have required many more pages and are anyway of small grammatical interest. Irregularities, mentioned above, are in Section *IX*, and the final Section (*X*) illustrates the occurrence in the text of certain Burmese verb-particles which appear to stand outside the Pali-Burmese system.

Transliteration, abbreviations, etc.

As the text under consideration is a written text, examples are quoted in a direct transliteration of the Burmese script, rather than in a phonemic transcription as if the text had been read aloud. However, since this method of romanizing Burmese has not been widely used of recent years, key words are also shown, as a guide, in transcription. In defence of the transliteration adopted here (essentially the same

as that described by Duroiselle,⁴¹) it may further be pointed out that (1) precisely the same system applied to Pali written in Burmese script results in a romanization used by Pali scholars; (2) the identity of Pali words and names used in the Burmese is made clear – as it would not be by phonemic transcription, on account of peculiarities of pronunciation; and (3) the script – and therefore the transliteration – can distinguish homophones: e.g. /hcin/ may be spelt *khyañ* 'wish', *khyañ* 'acid', *khrañ* 'mosquito', or **khrañ*.

Transliterated, the Burmese alphabet is as follows:

ka kha ga gha ña, ca cha ja jha ña, ta tha da dha ña, ta tha da dha na, pa pha ba bha ma, ya ra la wa sa ha la a. Vowels: *a ā ī ū e ai o ō ui.*

No consonant is *syllable-final* ('killed' with *asat*) unless separated from the following letter. Separation may be effected by a tone-mark, space, bracket, asterisk or hyphen. Double consonants, however, are not separated (e.g. *assatuir*, *Udumbara*), and 'big ña' is written *ñña*. Niggahīta (Burmese *se''se''tañ*) is shown by *ñ*. Hyphens are also used to separate vowels in different syllables (e.g. *ma-ō-ap*), and sometimes to single out the particle being illustrated.

Tones marked in the script with one dot are shown here by ' and those marked with two by'' (e.g. *am'*, *taññ''*).

The *abbreviated forms* of *rwe'* and *nhuik* are ignored, the words being written out in full; and *ī* represents the special sign pronounced /i./.

Brackets. It is common nissaya practice to omit a Burmese word where the meaning of the Pali is taken to be obvious, but the particle showing its grammatical function remains – e.g. Pali *hutvā*: Burmese *rwe'* (for *phrac-rwe'*). Where this was difficult to avoid in the selection of examples, the missing word has been restored between brackets: *{phrac}rwe'*.

Names are sometimes abbreviated in the examples to save space: e.g. U. for Udumbaradevī.

Square brackets mark off certain Burmese verb-particles apparently unconnected with the representation of the Pali – see Section *X*.

Phonemic transcription is shown between oblique strokes. The system used is the revised form of Cornyn's, with the difference that grammatical voicing is not shown, and initial glottal stop /q/ is omitted throughout.

Abbreviations: B. – Burmese; P. – Pali; pl. – plural; neg. – negative; N – noun; V – verb.

D. – Duroiselle, Grammar:⁴²) quoted by page and section thus: D. 1*1. References to D. are made for a brief description of the uses of a Pali word or form.

A. – Andersen. Acknowledgement is made to A. when a rough indication of the meaning of a Pali word has been extracted from his Glossary.

References. Italicized figures refer to Sections of this analysis (e.g. *II: 4.1*) and *n*, *v*, and *x* stand for note, variant, and exception respectively; figures in the examples (e.g. 121.20) refer to page and line of Shin Guṇalaṅkāra's nissaya (vol. I). They are followed by the Pali and its Burmese rendering, in that order.

I. Nouns

1. Number: singular unmarked; plural B. *N-tui* /*tou*/
2. Case:
- 2.1. Nominative (D. 301*594):
- 2.1.1. B. *N-saññ* /*thi*/
- | | | | |
|------|--------|------------|------------------|
| e.g. | 123.2 | dhītā | samī"saññ |
| pl. | 124.23 | mātāpitaro | ami-abhatui'saññ |
- 2.1.2. Less often *N-kā* /*ka*:/ – with which compare P. *pana VIII: 2*.
- | | | | |
|------|--------|-------|-----------|
| e.g. | 124.10 | ahañ | ñākā" |
| | 40.3 | ratho | rathā"kā" |
- 2.1.v Occasionally *N-saññ-kā*"
- | | | | |
|------|--------|--------------|--------------------|
| e.g. | 101.25 | ayañca pañhā | ī prassanāsaññ-kā" |
|------|--------|--------------|--------------------|
- 2.1.3. May also be rendered as an Accusative (B. *N-kui*) with verbs in the Passive II: 4.8.
- 2.2. Vocative (D. 515*602): unmarked – but cf. P. *ambho, bho* = B. *ui-N VIII: 12*.
- | | | | |
|------|--------|--------|---------------|
| e.g. | 122.4 | tāta | moñ-ñay |
| | 122.10 | devī | rhañ mibhurā" |
| | 124.9 | bhadde | abhay |
| | 124.10 | sāmi | arhañ |
| | 129.7 | amma | ami |
| pl. | 106.2 | tāta | amoñ-tui' |
- 2.3. Accusative (D. 306*598) two forms distinguished –
- 2.3.1. B. *N-kui* /*kou*/ for the object of a verb
- | | | | |
|------|------|---------|----------------|
| e.g. | 29.7 | mukhañ | myak-nhākui |
| pl. | 30.5 | akkhīni | myak-citui'kui |
- 2.3.2. B. *N-sui* /*thou*/ for motion towards
- | | | | |
|------|--------|-----------|---------------|
| e.g. | 122.19 | garañ | im-sui' |
| pl. | 145.19 | phalakāni | pyañ-tui'sui' |
- 2.3.x Exception: P. *tañ divasam* 'on that day' and similar phrases (D. 307*598) are regularly translated as if they were in the Locative (B. *N-nhuik*) – see Irregularities IX: 5.
- 2.4. Genitive (D. 301*595): B. *N-ī* /*i*./
- | | | | |
|------|--------|-------------|---------------|
| e.g. | 123.18 | purisassa | yok-kyā"ī |
| pl. | 131.1 | mātāpitunam | ami-abhatui'ī |
- 2.5. Dative (D. 304*597): B. *N-ā* /*a*:/
- | | | | |
|------|--------|--------------|-----------------------|
| e.g. | 146.18 | bharyāya | mayā"ā" |
| pl. | 122.20 | sahāyakānari | achwekhañ-pwan"tui'ā" |
- 2.6. Ablative (D. 310*600): two forms distinguished –
- 2.6.1. B. *N-mha* /*hma*./ meaning 'from'
- | | | | |
|------|--------|----------------|--------------------------|
| e.g. | 130.19 | araññato | tomha |
| | 136.9 | rukkhato | sac-pañ-mha |
| pl. | 105.13 | ubhoñi passehi | nañ-pā"nhac-bhak-tui'mha |
- 2.6.2. B. *N-thak* /*hte*?/ meaning 'than'
- | | | | |
|------|-------|---------|-------------|
| e.g. | 65.23 | pituto | abhathak |
| pl. | 63.11 | puttehi | sā"tui'thak |
- 2.7. Instrumentive (D. 308*599): two forms distinguished –
- 2.7.1. B. *N-phran* /*hpyin*./ or *V-saphran* /*hpyin*./, *thahpyin*./ usual form
- | | | | |
|------|--------|---------|----------------------|
| e.g. | 126.12 | pātiyā | khwak-phrañ' |
| pl. | 142.17 | pannehi | hañ"rwak-tui'phrañ' |
| | 36.4 | bhayena | krok-saphrañ' |
| | 36.5 | kopena | amyak-thwak-saphrañ' |

- 2.7.2. B. *N-nhañ* /*hnin*./ meaning 'with' before P. *saddhim, saha* = B. *takwa* /*takwa*./ 'together (with)', and words of comparison such P. *sameti* = B. *ññi* 'match, tally', P. *sadiso* = B. *tū* 'compare'
- | | | | |
|------|--------|-----------------------|------------------------------------|
| e.g. | 89.2 | raññā saddhim | mañ"nhañ'takwa |
| pl. | 133.5 | sahāyikāhi saddhim | khañ-pwan"matui'nhan'takwa |
| | 144.24 | udakena saha | renhañ'takwa |
| | 18.3 | rathena saha | rathā"nhan'takwa |
| | 38.20 | vacanena sameti | cakā"nhañ'ññi[kra]ī |
| | 16.21 | diṭṭhasuvinena sameti | mrañ-mak-so im-mak-nhañ'ññiññwat-ī |
| | 66.11 | bodhisattena sadiso | bhurā"loñ"nhan' tūso sū |
| | 154.24 | tayā sadisā | sañ mañ"krī"nhañ' tūkun-saññ |
- 2.7.3. May also be rendered as a Nominative (B. *N-saññ*) with verbs in the Passive II: 4.8.nl
- 2.8. Locative (D. 312*601): two forms distinguished –
- 2.8.1. B. *N-nhuik* /*hnai*?/ meaning 'at, in'
- | | | | |
|------|--------|--------|-----------------|
| e.g. | 123.19 | gehe | im-nhuik |
| pl. | 7.17 | kulesu | amyui"tui'nhuik |
- 2.8.2. *N-twañ* /*twiñ*/ meaning 'among' (hence always plural)
- | | | | |
|------|--------|--------------------|-------------------------------|
| e.g. | 111.1 | tāsu dvīsu gāthāsu | thuiñhac-gāthātui'twañ |
| | 140.17 | tesu | thui sukhamin-ñā"yok-tui'twañ |
- 2.8.3. Rendered as Nominative (B. *N-saññ*), or as Accusative (B. *N-kui*), in Locative Absolute VII: 4.3.n.

II. Verbs

1. Number: singular unmarked; plural B. *V-kun* /*koun*/
2. Negation: B. *ma-V* (but *ma-V-lañ*' for 2nd person Imperatives 4.5)
3. Person: Differences between 1st, 2nd and 3rd person inflection in verbs are not normally shown in B.
- | | | | | |
|------|--------|----------|--------------|--------------------|
| e.g. | 21.3 | dadāmi | pe"ī | '(I) give' |
| | 84.23 | asi | phrac-ī | '(thou) art' |
| | 125.28 | karoti | pru-ī | '(he) does' |
| | 150.10 | lajjāma | rhak-kun-ī | '(we) are ashamed' |
| | 31.10 | jānātha | si-kun-ī(lo) | '(do you) know?' |
| | 102.8 | bhavanti | phrac-kun-ī | '(they) are' |
- 3.n Occasionally, however, when the verb is in the 1st person and the subject is not expressed in the Pali, the Burmese supplies it. The words supplied are bracketed in the following examples.
- | | | | | |
|------|--------|------------|------------------|-------------------|
| e.g. | 100.14 | na jānāmi | (ñā) masi | '(I) do not know' |
| | 120.22 | apucchimha | (ñātui) me"kun-ī | '(We) asked' |
4. Tense, Mood, Voice
- 4.1. Present (D. 320*611): B. *V-i* /*i*./
- | | | | |
|------|--------|-----------|--------------|
| e.g. | 124.6 | pucchati | me"ī |
| pl. | 130.12 | bhuñjanti | cā"kun-ī |
| neg. | 124.13 | natthi | marhi |
| pl. | 125.10 | na-enti | malāpran-kun |
- 4.1.v Rarely B. *V-sataññ* /*thati*./
- | | | | |
|------|--------|------------|----------------------------|
| e.g. | 158.22 | karomi | pru-sataññ" |
| | 75.5 | atimaññati | mathī mai'mrañ pru-sataññ" |
- 4.2. Aorist (D. 321*612, ii): B. *V-i* /*i*./

- e.g. 121.17 vicāresi cīrañ-í
 pl. 136.27 karim̐su prukun-í
 neg. 143.25 na-adāsi mape"
 pl. 16.2 na passir̐su mamrañ-kun
 4.2.v Rarely B. *V-sataññ* /thati:/
 e.g. 66.26 akāsi pr[u]le]sataññ"
 4.2.n Note: P. Aorist is also used for negative imperatives, which Burmese renders accordingly: II: 4.5.1.n.
 4.3. Future (D. 321*613): *V-am'* or *V-am' sataññ* /an., an.thati:/
 e.g. 122.5 ānemi choñ-am'
 pl. 12.11 karissāma prukun-am'
 124.22 harissāmi choñ[pe]am'sataññ"
 pl. 10.27 bhavissanti phrac[lat]kun-am'sataññ"
 neg. 10.18 na nibbattissati maphrac-am'sataññ"
 pl. 12.4 na kilamissāma mapañ-pan"kun-am'sataññ"
 (No examples of neg. *ma-V-am'* were found.)
 4.4. Questions (D. 331*625, ii-xiv): nearly all questions in the text are asked in the Present or Future tense.
 4.4.1. Questions answerable by 'Yes' or 'No'
 4.4.1.1. Present tense: B. *V-ilo* or *V-salo* /i.ilo.; thalo:/
 e.g. 129.17 atthi rhi-ilo
 31.10 jānātha sikun-ilo
 30.26 hoti phrac-salo
 125.4 kasati lay-thwan[le]salo
 4.4.1.2. Future tense: B. *V-am'lo* or *V-am'salo* (*am'saññ-lo*) /an.lo.; an.tha(thi)lo:/
 e.g. 135.16 khādissasi cā'am'lo
 30.10 thassatha taññ-kun-am'lo
 125.17 essati lā-am'salo
 129.2 pivissasi sok[pā]am'saññ-lo
 4.4.2. Open questions
 4.4.2.1. Present tense: B. *V-sanaññ* /thani:/
 e.g. 124.28 karoti pr[u]le]sanaññ"
 134.2 gacchasi swā"sanaññ"
 4.4.2.2. Future tense: B. *V-am'naññ* /an.ni:/
 e.g. 124.20 harissasi choñ-am'naññ"
 139.26 jānāma sikun-am'naññ"
 4.4.2.3. Aorist tense – only one example found:
 31.27 ganhī yūsanaññ"
 4.5. Imperative (D. 323*616): two forms distinguished –
 4.5.1. B. *V-lo'* /lo./ for 2nd person imperatives
 e.g. 127.3 ācikkha krā"lo'
 140.8 āhara choñ-lo'
 122.17 karohi pr[u]le]lo'
 pl. 30.16 ganhatha yūkun-lo'
 4.5.1.n Note: Negative 2nd person Imperatives in the text commonly use P. Aorist instead of the Imperative, and take the form *ma-V-lañ'*.
 e.g. 23.17 mā akāsi maprulañ'
 pl. 104.2 mā cintayittha makrañ-lañ'kun } (sic)
 51.23 mā cintayittha makrañ-kun-lañ' }
 4.5.2. B. *V-cesataññ* /sei-thati:/ for 3rd person imperatives
 e.g. 10.10 hotu phrac-cesataññ"
 pl. 67.9 hontu phrac-cekun-sataññ"
 neg. 72.14 mā hotu maphrac-cesataññ"

- pl. 93.15 mā vinassantu mapyak-cekun-sataññ"
 4.6. Optative (D. 322*614): B. *V-rā-i*, neg. *ma-V-rā /ya/*
 e.g. 43.9 jāneyya sirā-í
 neg. 122.8 na ruceyya manhac-sak-rā
 pl. No examples found
 4.6.n Note: The Pali also uses the Optative form for commands and in conditional clauses, and these are rendered in the Burmese according to the appropriate conventions.
 e.g. 130.1 āroceyyasi krā"[khre]lo' (Imperative II: 4.5.1)
 123.19 bhaveyyam phrac-am' (Conditional VII: 6.3)
 4.7. Causative (D. 306*598, iv): B. *V-ce-* /sei/
 e.g. 138.21 kāresi pruce-í (Aorist)
 140.14 pesissāma prucekun-am' (Future)
 122.1 jānāpehi sicelo' (Imperative)
 164.22 thapeyya taññ-cerā-í (Optative)
 100.18 uggañhāpitā sañ-ce-ap-kun-í (Passive)
 123.20 sañhāpeturū taññ-cekhrañ"ñhā (Infinitive)
 138.18 nisīdāpetvā nece-rwe' (Gerund)
 4.7.n Note: An apparent violation of the convention, by using the aspirated form of a Burmese verb instead of the 'Causative' of the unaspirated form (when such a pair exists), is explained occasionally by a note.
 e.g. 131.28 pātesi khyā-í (kyace-ísōlaññ"ñhū)
 131.26 nāsesi phyak[bhi]sanaññ"
 (pyak-ce[bhi]sanaññ"sōlaññ"ñhū)
 and cf. 130.27 bhojetvā kywe"pri"rwe' (cā"cepri"rwe"ñhūrwe" sōlaññ" chui)
 4.8. Passive: This occurs infrequently in the text, apart from the Past Participle considered below (5.3.2), for which B. *ap /a?* is often used, but not always – apparently as a sign of the Passive. The only other Passive form found is at 30.20: *kaḍḍhiyamāno*, a Passive Present Participle, which is rendered (without *ap*) as *ñan-lat-sō*.
 4.8.n1 Note: Burmese evidently could not be made to produce a satisfactory passive construction, so that where the Pali has (so to speak) 'the duck was killed by the farmer', Burmese turns it to 'the farmer killed the duck'. In such cases therefore, the Pali Instrumentive case (D. 328*620, vi) has to be rendered by the Burmese 'Nominative', and P. Nominative by B. 'Accusative'.⁴³⁾
 e.g. 139.20 P. tena... bhariyā ānītā 'a wife is brought by him' B. thui M. saññ... mayā"kuī choñ-ap-í 'M. has brought a wife' 93.3 P. te pañho cintito 'is the problem solved by you?' B. sañ-saññ prassanākuī krañ-ap-í(1o) 'have you solved the problem?'
 4.8.n2 However, certain Past Participles in Pali are not felt, apparently, to have a 'genuinely' passive sense: for example, P. *gata* 'is gone', *jāta* 'is become', and many others. Here P. Nominative is retained in the Burmese. (These words seem not to take B. *ap*, but the converse is not always true: e.g. 91.14 P. *dittham* 'seen', 149.20 *pucchita* 'asked', both rendered without *ap*.)
 e.g. 132.25 sā (Nom.)... āgatā thui A. saññ (Nom.)... lā-í 144.11 ekakolāhalañ (Nom.) jātarū... asañ-saññ (Nom.) phrac-í
 4.8.n3 When the P. Past Participle is used in the Locative Absolute construction, the subject (in P. Locative case) may be rendered either by B. 'Accusative' as in *n1* above, or by B. 'Nominative' as in *n2*.
 e.g. 175.13 pañhe kathite prassanākuī (Acc.) phresaññ rhisō 156.15 yase pariñhe caññ"cim-khyam"sāsaññ (Nom.) yut-sō

5. Other parts of the verb –
- 5.1. Infinitive: B. *V-am'soñhā* or *V-khran'ñhā* – see VII: 1.
- 5.2. Gerund: B. *V-rwe'* (occasional variants *V-pri'rwe'*, *V-sokron'*) – VII: 2.
- 5.3. Participles: These are used in a variety of ways, some of which overlap (in B.) with other constructions. They are therefore placed in the appropriate sections as indicated below.
- 5.3.1. Present Participle:
- | | |
|--------------------------------|-----------------------------------|
| V-so | under Adjectives III: 1.2 and 2.2 |
| V-saññ rhisō | under Sub. Clauses VII: 4 |
| V-saññ phrac-rwe' (infrequent) | under Sub. Clauses VII: 3 |
| V-lyak | under Sub. Clauses VII: 5 |
| V(lat)sō (infrequent) | under Sub. Clauses VII: 4v |
- 5.3.1n Note: No distinction is made in the Burmese between the 'active' and 'reflective' forms of the P. Present Participle (D. 140*357; 184*447) – examples at III: 1.2, VII: 4.1, VII: 5, etc.
- 5.3.2. Past Participle: B. *ap*, for the Passive (?), being optional, is shown in brackets.
- | | |
|-----------------------|-----------------------------------|
| V-(ap)so | under Adjectives III: 1.3 and 2.3 |
| V-saññ rhisō | under Sub. Clauses VII: 4 |
| V-(ap)saññ phrac-rwe' | under Sub. Clauses VII: 3 |
| V-(ap)ī | under Predication VI: 1.3 |
| V-(ap)prī | under Predication VI: 1.3 |
- 5.3.3. Future Passive Participle (= Gerundive): B. *V-rā* or *V-ap*. This is mostly found as a Predicate and is therefore exemplified in that section (VI: 1.4).

III. Adjectives

(D. 316*604) – including Participles used as Adjectives. Plural *kun* as for Verbs.

1. B. *V-so* /tho:/ when qualifying a Noun
- 1.1. Adjective –
- | | | | |
|------|--------|--------|--------------|
| e.g. | 108.8 | aḍḍham | krway-waso |
| pl. | 103.10 | pāpāni | yut-mākun-so |
- 1.2. Present Participle –
- | | | | |
|------|-------|------------|-----------------|
| e.g. | 11.11 | kīlantassa | kacā"so |
| | 60.24 | caramānam | kyak-cā"so |
| pl. | 15.28 | nikkhantā | thwak[le]kun-so |
- 1.3. Past Participle (with and without B. *ap*: see Passive II: 4.8) –
- | | | | |
|------|--------|-------------|-------------------|
| e.g. | 122.14 | abhirucitam | kruik-nhac-sak-so |
| | 134.28 | nisinnam | neso |
| | 85.2 | gatassa | swā"so |
| | 128.8 | vuttam | chui-ap-so |
| | 138.28 | pahitam | sa-ap-so |
| | 9.4 | dinno | pe"ap-so |
| pl. | 163.26 | phutṭhā | twe"ap-kun-so |
2. B. *V-so-N* /tho:/ when used substantially (D. 327*619, iii): i.e. B. translates *V-so* as for 1 and supplies an appropriate N. Plural *tui'* as for Nouns.
- 2.1. Adjective –
- | | | | |
|------|------|-------------|--------------------|
| e.g. | 9.4 | puññavatā | bhun"rhiso sūsaññ |
| pl. | 8.20 | ābādhikānam | anā rhiso sūtui"ā" |
- 2.2. Present Participle
- | | | | |
|------|--------|------------|---------------|
| e.g. | 171.26 | palāyantam | pre"so sā"kui |
|------|--------|------------|---------------|

- | | | | |
|------|-------------------|------------|----------------------|
| pl. | 40.10 | āgacchante | lāso sūtui'kui |
| 2.3. | Past Participle – | | |
| e.g. | 31.8 | ṭhitā | taññ-so min"masaññ |
| pl. | 122.7 | ānītā | choñ-ap-so min"makui |
| | 125.11 | gatānam | swā"so sūtui'ī |
3. Numeral Adjectives (D. ch. VIII): Although in Pali numeral adjectives are used in much the same way as other adjectives, they require special treatment in nissaya since counting in Burmese entails the use of 'classifiers' or 'numeratives' (see Hla Pe,⁴⁴) Stewart *Manual*, 21, Cornyn *Outline*, 26). The standard nissaya rendering for numeral adjectives qualifying Nouns is: Number-appropriate Numerative-*so*. As with other adjectives, plural is shown by B. *kun*.
- | | | | | |
|------|--------|---------|---------------|--------------|
| e.g. | 52.23 | ekañ | tacañ"so | 1 (rope) |
| | 122.13 | ekañ | tayok-so | 1 (bride) |
| | 12.10 | ekañ | takhuso | 1 (hall) |
| | 87.10 | dve | nhac-ū"kun-so | 2 (enemies) |
| | 4.11 | catūsu | le"pā"kun-so | 4 (corners) |
| | 100.9 | pañcahi | nā"yok-kun-so | 5 (wise men) |
- 3.v Variants: Sometimes Noun-Number-Numerative – the form current in ordinary modern spoken Burmese. This occurs in the rendering of a Pali 'numeral compound' (D. 256*548) – i.e. when the number is not translated separately from the noun; also when an inflected numeral adjective and its noun are taken together without a break in the translation; and (without the Noun) for days, months, years.
- | | | | |
|------|-------|-------------------|-----------------------------------|
| e.g. | 87.19 | pañcapañḍito | sukhamin nā"yok-tui' (variant) |
| but | 87.6 | pañcapañḍito | nā"yok-so sukhamin-tui' (regular) |
| | 15.25 | catūhi dvārehi | tañ-khā"le"myak-nhātui'phrañ' |
| | | | (with N) |
| | 77.17 | sattāham | khunac-rak-kui (days) |
| | 7.19 | dasamāsaccayena | chay-la lwan-saphrañ' (months) |
| | 15.17 | sattavassaccayena | khunac-nhac lwan-saphrañ' (years) |
- The word for 'thousand' (B. *thoñ*) is used both 'regularly' and in the variant form above – again the form current in ordinary spoken Burmese today.
- | | | | |
|------|--------|-------------------|----------------------------------|
| e.g. | 132.27 | kahāpaṇa sahasena | tathoñ-so asaprāñhañ' (regular) |
| | 120.25 | gavañ sahasam | nui"ññhac-nwā"tathoñ-tui'-phrañ' |
| | | | (variant) |
- 3.n1 Note: Like other adjectives, numeral adjectives are used substantively:
- | | | | |
|------|--------|--------------|---------------------------------|
| e.g. | 102.12 | tayo | sum"yok-kun-so sukhamin-tui'kui |
| | 12.21 | sahasam | tathoñ-so asaprākui |
| | 82.7 | satasahasena | tasin"so uccāphrañ' |
- 3.n2 Finally, it is perhaps worth noting that the numerative B. *koñ* for animals, commonly used in spoken Burmese today, does not seem to have been adopted for nissaya.
- | | | | | |
|------|-------|------|---------|----------|
| e.g. | 60.24 | ekañ | takhuso | 1 (mule) |
| | 83.6 | ekañ | takhuso | 1 (goat) |
| | 18.17 | eko | takhuso | 1 (kite) |
4. Adjectives are also used as Predicates and in Subordinate Clauses, which B. renders accordingly: see VI and VII: 3.

IV. Adverbs

These are from P. Adjectives in the Accusative (D. 240*532d):

	B. <i>V-cwā</i> / <i>swa</i> /	
e.g.	13.2	sādhukam koñ'cwā
	32.11	ciram krāmrañ'cwā
	5.10	sukham khyam"sācwā
	1.8	sīgham lyañ-cwā

Other Adverbs (not rendered B. *V-cwā*) are listed under Pronouns (Pronominal Adverbs *V*: 2) and Indeclinables etc. (VIII).

V. Pronouns

These are declined in nissaya in the same way as Nouns. Their use in Pali is described in D. ch. IX, and 317*605–9. Pali forms are given here in Nominative singular masculine.

1. Regular nissaya equivalents –
 - 1.1. First person: P. *aham* = B. *nā* /*nga*/ 'I' – e.g. 1.1, 144.15. Occasional variants from junior or inferior speakers – 57.17, 26.9.
 - 1.2. Second person: P. *tvaṃ* = B. *sañ* /*thin*/ 'thou' – e.g. 32.1, 140.2. Occasional variants from junior or inferior speakers, inserting title or rank, and then sometimes omitting *sañ* – 139.22, 59.4, 127.21, 122.15.
 - 1.3. P. *so* = B. *thui* /*htou*/ 'this, that, he, she, it' – e.g. in 1*n*1.
 - 1.4. P. *eso* = B. *thui* or *ī* /*htou*, *i*/ 'this' – 6.12, 67.8, 61.9, 36.27.
 - 1.5. P. *ayaṃ* = B. *ī* /*i*/ 'this' – e.g. 88.6, 22.9, 124.4.
 - 1.6. P. *asu*, *asuko* = B. *ī-maññ-so* /*i-myi-tho*:/ 'such and such' – 22.22, 142.6.
 - 1.7.1. P. *yo* = B. *akrañ* /*acin*/ 'who, he who' – 166.23, 150.26, 124.13.
 - 1.7.2. P. *yo koci* = B. *amhat marhiso* /*ahma?* mahyi.tho:/ (lit. 'not having a mark' hence 'undistinguished, indefinite') 'whoever, whosoever, anyone' – e.g. 8.20, 17.14, 9.19.
 - 1.8. P. *ko* = B. *abhay* /*abe*/ 'who? which?' – e.g. 22.19, 34.15; see 1*n*4 and 5.
 - 1.9. P. *koci* = B. *tacum ta* (numerative) *so* /*tasoun ta(-)* tho:/ 'anyone, someone or other' – e.g. 129.16, 151.22, 122.11.
 - 1*n*1. Notes: Pronouns are used in Pali both adjectivally (P. *so puriso* 'that man') and substantivally (P. *so* 'he'). Their equivalents in nissaya Burmese, however, do not stand alone (except *nā* and *sañ*, and occasionally P. *ayaṃ* Nom. = B. *ī-saññ-kā* as at 121.11, 153.18); so Burmese reproduces the substantival use by supplying an appropriate noun (cf. substantival use of adjectives and participles III: 2).
- | | | | | |
|------|--------|---------|---------------------|---------------------|
| e.g. | 48.21 | so rājā | thui mañ"saññ | 'that king' |
| | 137.23 | so | thui sūsaññ | 'that (person)' |
| | 122.18 | so | thui bhurā"loñ"saññ | 'that (Bodhisatta)' |
- 1*n*2. Explanatory words are sometimes added in the Burmese apparently to avoid ambiguity about the reference of certain pronouns. The extra words are bracketed in the examples below.
- | | | | | |
|------|-------|---------------------|------------------------------|-------------------------------------|
| e.g. | 59.24 | tāya saññāya | thui (kraññ"so) amhat-phrañ' | 'by that signal (of giving a look)' |
| | 9.9 | tasmim khañe | thui (lim"so) khañanhuik | 'at that moment (of anointing)' |
| | 133.2 | atha thui (A. lāso) | akhānhuik | 'at that time (of A.'s coming)' |

- | | | | | |
|--|-------|------|------------------------------|--|
| | 129.4 | atha | thui (sui' rok-so) akhānhuik | 'at that time (when he arrived in that way)' |
|--|-------|------|------------------------------|--|
- 1*n*3. Relative clauses (D. 300*592) receive no special treatment as a whole: each word is rendered just as it stands in the Pali.
- | | | | | | | |
|------|--------|------|------------------|------|-----------------|---------|
| e.g. | 127.11 | Yena | dadāmi | tena | vadāmi. | |
| | | B. | Akrañ lak-phrañ' | pe"ī | thui lak-phrañ' | chui-ī. |
- 'I direct you by the hand with which I give to you.'
- 1*n*4. For the forms P. *ko* (meaning 'who?') and *kim* (idiomatically – D. 240*532b – meaning 'how now?' etc.) of the interrogative pronoun, Burmese has the alternative forms *asū* and *asui* –
- | | | | | |
|------|--------|-----|-----------|---|
| e.g. | 146.19 | ko | asū-naññ | '(instead of <i>abhay sū-naññ</i>) 'who?' |
| | 126.20 | kim | asui-naññ | '(instead of <i>abhay sui-naññ</i>) 'how now?' |
- 1*n*5. In the Pali text the word *nāma* (lit. 'name') is sometimes used idiomatically after Interrogative Pronouns. This is rendered in nissaya Burmese as *maññ-so* /*myi-tho*:/ (lit. 'named'), and this phrase is also used sometimes in the Burmese even when P. *nāma* is not in the original. One is reminded of *maññ* used as an interrogative in some (usually written) styles of Burmese prose.
- | | | | | |
|------|-------|-------------------|-----------------------------|-------------------|
| e.g. | 36.27 | kim nāma saddo | abhay maññ-so asaṃ-naññ | 'what sound?' |
| | 80.17 | ko nāma | abhay maññ-so sūsaññ | 'what person?' |
| | 96.14 | ko | abhay maññ-so sūsaññ | 'what person?' |
| | 16.8 | katara vaḍḍhakinā | abhay maññ-so lak-samā"naññ | 'what carpenter?' |
2. Pronominal Adverbs etc.: The numerous 'adverbial derivatives from pronominal bases' (D. 137*344–352; 239*530–532) are rendered in various idiomatic ways in nissaya, evidently with the intention of bringing out the meaning rather than of indicating grammatical forms. The base from which the word is derived, however, is usually indicated by B. *thui*, *ī*, *akrañ*, etc., as appropriate, and case-derivations are sometimes shown. Among the commonest are –
 - 2.1. P. *-tha* (D. 137*346; 240*531d)
- | | | | | |
|------|--------|--------|------------------|---|
| e.g. | 125.28 | atha | thui akhānhuik | 'at that time, thereupon' |
| | | | | – frequently thus (or abbreviated to <i>nhuik</i>) |
| | 137.6 | tattha | thui arhe'tū | 'in the same way as before' |
| | 126.18 | tattha | thui yāgunhuik | 'in that gruel' |
| | 125.8 | yattha | akrañ arap-sui' | 'to the place which' |
| | 155.22 | yattha | akrañ arap-nhuik | 'in the place where' |
- 2.2. P. *-dā* (D. 137*345; 240*531e)
- | | | | | |
|------|--------|--------------------------|-------------------------------|--|
| e.g. | 122.25 | tadā | thui akhānhuik | 'at that time' |
| | 6.11 | idāni | yakhu akhānhuik | 'at the present time' † |
| | 87.8 | kadāci | tarañ tachac-so akhānhuik | 'at any time' † |
| | 119.22 | kadāci | tarañ tachac-mhyaso akhānhuik | 'at any time' † |
| | 81.14 | kudaci tarañ tachac-mhya | 'in any way' | († followed by negative verb = 'never, in no way') |
- 2.3. Ablative case (D. 240*531c)
- | | | | |
|------|--------|-------------------|-----------|
| e.g. | 31.27 | kasmā abhay-kroñ' | 'why?' |
| | 127.26 | yasmā akrañ-kroñ' | 'because' |

- 2.4. 127.26 *tasmā thui-kroñ'* 'therefore'
Ablative case (D. 240*532)
e.g. 29.24 *kuto abhay arap-mha* 'from what place?'
121.14 *tato thui akhāmha* 'from that time'
139.5 *tato thui ne'mha* 'from that day'
147.2 *tato thui bhañ-twañ'mha* 'from that cess-pool'

VI. Predication

Apart from predication with finite verbs, which is not specially illustrated here, a predicate may be 'direct' or with parts of P. *hoti* 'is' as under.

1. 'Direct', i.e. the predicate in P. is simply a noun, adjective or participle standing alone ('with the verb *hoti* understood' D. 299*590).
- 1.1. Nouns: B. *N-taññ'* /ti:/
e.g. 30.7 *ayañ yakkhinī = B. ī min'masaññ bhilū'mataññ'*
'This woman (is) an ogress.'
89.13 *eso pañho gañṭhipañho = B. ī prassanāsaññ khaikhak-so*
prassanātaññ'
'This problem (is) a difficult problem.'
- 1.2. Adjectives: B. *V-i* /i./
e.g. 126.18 *sittāni mahantāni = B. thamañ'lun'tui'saññ myā'kun-i*
'The rice grains are many.'
123.2 *dhītā abhirupā dassanīyā*
B. *samī'saññ alwan acañ lha-i, rhukhyañ-bhway rhi-i*
'Their daughter was extremely beautiful. She was a delight to look at.'
- 1.3. Past Participles: B. *V-i* /i./ or (? less often) *V-prī* /pyi/ - B. *ap*
(II: 4.8) is sometimes used.
e.g. 144.11 *jātañ phrac-i*
132.25 *āgatā lā-i*
47.21 *chinnam̐ prat-i*
128.16 *vuttam̐ chui-ap-i*
16.14 *katā prū-ap-i*
52.16 *ñāto si-ap-i*
121.21 *jāto phrac-prī*
128.25 *niṭṭhito prī'prī*
144.10 *palāto pre'[le]prī*
129.9 *dinnā pe'ap-prī*
93.4 *cintito krañ-ap-prī*
91.27 *diṭṭho mrañ-ap-prī(lo)*
neg. 16.11 *na katā mapru-ap*
126.22 *na laddham mara-ap*
91.27 *nadiṭṭho mamrañ-ap[se']*
Negative without *ap* not found.
- 1.4. Future Passive Participle (or 'Gerundive') (D. 329*622): B. *V-rā-i* or *V-ap-i*
/ya-i., aṭi./
e.g. 10.20 *bhavitabbañ phrac-rā-i (= 16.7, 17.20)*
24.15 *veditabbañ sirā-i*
99.2 *kattabbo prū-ap-i*

- 27.2 *daṭṭhabbo mhat-ap-i*
2. Predication with P. *hoti* 'is' and its parts, and with *jāta* 'become': Like 'direct' predication this form appears in the P. text with nouns, adjectives and past participles (not found with future passive participle).
- 2.1. Nouns: B. *N-saññ phrac-* /thi hpyi?/ (the 'inflection' of *phrac* varies according to tense etc.)
e.g. 32.1 *tvañ yakkhinī jātā* 'You are an ogress.'
B. *sañ-saññ bhilū'masaññ phrac-i*
58.22 *ayañ pañho bhavissati* 'This will be a problem.'
B. *isaññ prassanāsaññ phrac[lat]aṃ'sataññ'*
- 2.2. Adjectives: B. *V-saññ phrac-* /thi hpyi?/
e.g. 46.8 *naṅguttañ tanukañ hoti* 'The tail is small.'
B. *mri'thū'saññ ṇay-saññ {phrac}i*
44.11 *mūlañ bhāriyañ hoti* 'The lower part is heavy.'
B. *arañ'saññ le'saññ phrac-i*
- 2.3. Past Participles: B. *V-saññ phrac-* /thi hpyi?/ - B. *ap* (II: 4.8) does occur in this construction (e.g. at 50.6) but seems to be rare.
e.g. 84.23 *tvañ nippanno ahosi* 'You were lying down.'
B. *{sañ}saññ ip-saññ phrac-i*
88.1 *Senako nisinno ahosi* 'Senaka was seated.'
B. *Sin'saññ nesaññ {phrac}i*

VII. Subordinate clauses

As there is some overlapping among certain of the nissaya renderings for the different methods of subordination in Pali, examples in these cases are listed under the Burmese version instead of the Pali original.

1. Infinitive (D. 324*617): B. *V-am'soñhā* or *V-khrañ'ñhā* /an.tho:hnga, hcin'hnga/
e.g. 121.23 *kātuñ prū-am'soñhā*
131.24 *pacituñ khyak-am'soñhā*
13.20 *kātuñ prukhrañ'ñhā*
12.16 *pasārituñ khañ'khrañ'ñhā*
- 1.n Note: Compounds with P. *atthāya* (D. 241*532: construed as Dative, translated 'for the sake of, for the purpose of') are also rendered B. *V-am'soñhā* -
e.g. 145.19 *nhānatthāya re khyui'am'soñhā*
20.24 *gocarathāya kyoñ'cā'am'soñhā*
- 1.nv There are occasional variants:
e.g. 142.11 *gahaṇatthāya yūcim'soñhā* (i.e. *yūce-am'soñhā*)
134.19 *paṭiḡhātanatthāya han'tā'pay-luisoñhā*
- 1.nv Exception: meaning 'for the advantage of' *atthāya* is rendered differently
e.g. 129.12 *dhītu atthāya sami'i akyui'ñhā*
2. Gerund (D. 325*618): B. *V-rwe'* /ywei./
e.g. 19.15 *ñatvā sirwe'*
122.14 *parīyesitvā rhārwe'*
- occasionally B. *V-prī'rwe'* /pyi:ywei./
e.g. 138.6 *ñatvā siprī'rwe'*

- 5.14 vatvā chuiprī'rwe'
 2.v2 – occasionally B. *V-sokron* /'tho:caun./
 e.g. 137.25 katvā prusokron'
 137.27 modāya wam'mrok-sokron'
- 2.n1 Notes: Gerunds with negative prefix P. *a-* (D. 326*618, iv) are occasionally rendered regularly –
 e.g. 37.18 ajānitvā masirwe'
 91.24 adisvā mamrañ-sokron'
 – but more often in the form B. *ma-V-mūrwe* /'maVmu-ywei./
 e.g. 126.8 adhovitvā mache'mūrwe'
 126.15 athapetvā mathā'mūrwe'
- 2.n2 Gerund with P. *-va* (normally = B. *lhyañ*) is occasionally rendered regularly –
 e.g. 35.13 sutvāva krā'rwe'lhyañ
 21.17 disvāva mrañ-rwe'lhyañ
 – but perhaps more often conventionally as B. *V-kataññ* 'kalhyañ /'kate:ka.hlyin/ – cf. D. 326*618, ii: 'may be translated "as soon as".'
 e.g. 61.22 sutvāva krā'kataññ'kalhyañ
 123.17 disvāva mrañ-kataññ'kalhyañ
- 2.n3 Some alternative renderings for the Gerund are found in the Nyaunggan Sayadaw's nissaya-like translation of the 550 Jataka. In addition to the forms illustrated above he has the following. (references to page and line of vol. iv; Pali original from Fausbøll v, 39–47.)⁴⁵
 2.n3.1 B. *V-lhyañ* /'hlyin/
 e.g. 581.10 (ñatvā) silhyañ
 585.7 (sutvā) krā'lhyañ
- 2.n3.2 B. *V-prī* 'lhyañ /'pyi:hlyin/
 e.g. 583.15 (āruhya) tak-prī'lhyañ
 579.15 (pavisitvā) wañ-prī'lhyañ
- 2.n3.3 B. *V-saphrañ* /'thahpyin./
 e.g. 578.25 (patvā) rok-saphrañ'
 578.27 (ācikkhitvā) krā'saphrañ'
3. B. *V-saññ phrac-rwe* /'thi hpyi?ywei./ represents two locutions in P.:
 3.1. P. adjective with *hutvā* (lit. 'being, becoming' adj.). *Hutvā*, as the Gerund of *hoti*, is regularly rendered B. *phrac-rwe*, and expressions of the form adjective-*hutvā* are then treated in the same way as main clause predication with *hoti* (VI: 2).
 e.g. 35.15 paṭibandhacittā hutvā tap-so cit rhisaññ {phrac}rwe'
 109.22 ninnā hutvā khyuiñ'wham"kun-saññ
 {phrac}rwe'
- 3.2. Adjectives and participles standing alone (D. 299*590: 'with *hoti* understood').
 3.2.1. Adjectives – e.g. 35.6 sampannavatthālānkārā
 praññ'cuñ-so wat-cā'tan-chā rhisaññ phrac-rwe'
 89.26 anekacittā
 mataññ-kraññ-so cit rhikun-saññ phrac-rwe'
- 3.2.2. Present Participles –
 e.g. 37.25 jānanto sisaññ phrac-rwe'
 29.26 karontiyo prukun-saññ phrac-rwe'
- 3.2.2n Note: Present Participles with the negative prefix P. *a-* are often rendered this way –

- e.g. 37.12 ajānanto masisaññ phrac-rwe'
 21.5 apassanto mamrañ-saññ phrac-rwe'
- 3.2.3. Past Participles –
 e.g. 90.13 thitā taññ-saññ phrac-rwe'
 168.8 vutto mhāluik-ap-saññ phrac-rwe'
- 3.2v Variant: the regular nissaya form for P. compounds in *-kāma* ('being desirous of') is B. *V-luisaññ phrac-rwe*, and this is occasionally used for Present Participles where the sense is appropriate.
 e.g. 09.3 kāronto pruluisaññ phrac-rwe'
 127.5 ācikkhantī krā'[pe]luisaññ phrac-rwe'
4. B. *V-saññ rhisō* /'thi hyi.tho/ regular for P. Locative Absolute (D. 315*603); also used for P. Present Participle standing alone, and infrequently for the Past Participle standing in the same position.
 4.1. Present Participle –
 e.g. 28.16 karontī prusaññ rhisō
 8.28 jāyamāno bhwā" saññ rhisō
 pl. 11.23 dhāvanta pre" kun-saññ rhisō
- 4.2. Past Participle (infrequent) –
 e.g. 19.13 bhīto krok-saññ rhisō
 33.9 paṭipanno swā" [le]saññ rhisō
- 4.3. Locative Absolute –
 60.6 vutte chuisaññ rhisō
 116.20 vutte chui-ap-saññ rhisō (*ap*: see II: 4.8)
 90.21 akathente machuisaññ rhisō
- 4.3n Note: Where the P. Locative Absolute has a 'subject' (both being in the Locative case) B. renders it, if with a Past Participle, as either 'Accusative' or 'Nominative' (II: 4.8n); if with a Present Participle as 'Nominative' –
 e.g. 125.23 uduke ente = B. resaññ lāsaññ rhisō
 'If the water comes'
 93.4 mayi acintente = B. nāsaññ makrañ-saññ rhisō
 'If I were not to solve it'
- 4.v1 Variant: B. *V-(lat)sō* /'(la?)tho/ is perhaps most conveniently listed as a variant of *V-saññ rhisō*. It is used infrequently for the Present Participle standing alone, and for the Past Participle in Locative Absolute.
 4.v1.1 Present Participle –
 e.g. 39.26 nikkhanto thwak-lat-sō
 39.9 āvajjanto kraññ'lat-sō
 pl. 59.7 gacchantā swā"[le]kun-sō
- 4.v1.2 Past Participle in Locative Absolute –
 e.g. 20.20 vasse patite mui" saññ kyalat-sō
 156.15 yase parihīne caññ" cim-khyam" sāsaññ yut-sō
 155.2 atthe jāte aluisaññ phrac-lat-sō
- 4.v2 B. *V-sōlaññ* – P. Gerund or Participle with *pi*: see VIII: 3.
5. B. *V-lyak* /'lyer?/ – represents the P. Present Participle standing alone (perhaps its commonest rendering in this position) and is rarely used for other forms.
 e.g. 139.8 vasanto nelyak
 30.23 rodamānā ñuilyak
 pl. 137.9 kaḍḍhantā ñañ-kun-lyak

6. Conditional Clauses (D. 330*623, v; 322*613, iii; 323*614, vi; 299*590): These appear in the text with P. *ce*, *sace*, *noce*, or *yadi* = B. *akay-rwe* /ake-ywei/ 'if', followed by the Present or Future Tense, or infrequently by the Optative, Imperative, a Past Participle, or an Adjective. All these are rendered in the same way in the Burmese: *V-saññ phrac-am*, or rather less commonly, *V-am*.
- 6.1. Present Tense –
- | | | | |
|------|--------|--------------------------|--|
| e.g. | 63.28 | sace upakarako hoti | akay-rwe' kye"jū"prutat-saññ phrac-am' |
| | 53.19 | sace vadati | akay-rwe' chuisaññ phrac-am' |
| | 140.24 | sace gaṅhāti | akay-rwe' yū-am' |
| | 58.18 | sace natthi | akay-rwe' marhi-am' |
| | 153.27 | ce paṇḍitā no bhavissati | akay-rwe' paññārhisaññ maphrac-am' |
- 6.2. Future Tense –
- | | | | |
|------|--------|----------------------------|-------------------------------------|
| e.g. | 123.6 | sace... paṇḍitā bhavissati | akay-rwe'... paññārhisaññ phrac-am' |
| | 125.18 | sace essati | akay-rwe' lāsaññ phrac-am' |
| | 126.8 | sace... dassati | akay-rwe'... pe"[lat]arñ' |
| | 125.18 | noce essati | akay-rwe' malāsaññ phrac-am' |
- 6.3. Other forms –
- | | | | |
|------|--------|----------------------------|--|
| e.g. | Opt.: | 87.22 yadi nasakkupeyyātha | akay-rwe' mata-nhuin-kun-saññ phrac-am' |
| | Impt.: | 46.28 noce pesentu | akay-rwe' mapui'chaklākun-saññ phrac-am' |
| | P'ple: | 91.28 yadi nadiṭṭho | akay-rwe' mamrañ-saññ phrac-am' |
| | Adj.: | 132.6 sace... nasundaram | akay-rwe'... makañ"saññ phrac-am' |
- 6.n Note: Between the conditional clause and the main verb there is sometimes the phrase P. *evam sati* (D. 315*603, iii) 'it being so'. *Sati* is a Locative Absolute and is rendered as such (VII: 4.3), and *evam* is rendered regularly as *īsui'* (VIII: 8), but the phrase is always given an explanation in B.
- | | | | |
|------|--------|-----------|---|
| e.g. | 140.24 | evam sati | īsui' yūsaññ rhisō (that it is taken) |
| | 53.20 | evam sati | īsui' chuisaññ rhisō (that he says so) |
| | 123.13 | evam satī | īsui' lañ marhisaññ rhisō (that she has no husband) |
7. P. compounds in *-kāle*: B. *V-so akhānhuik* /tho: ahka-hnai?/ 'at the time of, when'.
- | | | | |
|------|--------|--------------|------------------------------------|
| e.g. | 141.11 | āgatakāle | lāso akhānhuik |
| | 87.20 | pātārāsakāle | thamañ"narñ-nak-cā cā"so akhānhuik |

VIII. Indeclinables, conjunctions, adverbs, etc.

(D. 243*538; 330*623f; 239*529–32)

1. P. *eva* = B. *lhyañ* /hlyin/ 'just, even, only' (A.) e.g. 121.17, 35.14, 125.17, 123.6, 21.17, 131.23.
- 1.v1 Variants: occasionally B. *pañ-lhyañ* or *sālhyañ* /pin-hlyin, tha-hlyin/ e.g. 137.4, 16.7.
- 1.v2 Following a verb at the end of a sentence: B. *V-saññ-sālhyañ-taññ* /thi-tha-hlyin-ti/ e.g. 129.25, 143.7.

2. P. *pana* = B. *ka* /ka:/ 'but; now! well! then!' (A.) e.g. 150.21, 22.7, 134.16, 122.25, 137.15.
3. P. *api* = B. *laññ* /li:, le:/ 'and, also; very, even, although; but; perhaps,' etc. (A.) e.g. 130.23, 135.2, 137.14.
- 3.v Sometimes B. *V-sōlaññ* /tho-li:, tho-le:/, usually with a Gerund or Participle – cf. D. 326*618, iii, 327*619, v: 'may be translated by "although".'
- | | | | |
|-------|--------------|--------------------------|---------------|
| 0.8 | ñatvāpi | sisōlaññ | (Gerund) |
| 3.18 | carantopi | kyañ'sōlaññ | (Pres, P'ple) |
| 33.4 | paṭikkhitopi | pay-sōlaññ | (Past P'ple) |
| 108.1 | rukkhesupi | sac-pañ-tui'nhuik-sōlaññ | (Noun) |
4. P. *ca*
- 4.1. Singly = B. *laññ* /li:, le:/ 'and, also' (A.) e.g. 150.28, 153.17.
- 4.2. Correlatively = B. *laññ"koñ* /li:kaun:, lakaun:/ 'both... and...' (A.) e.g. 127.7, 131.9.
5. P. *yadi*, *sace*, *noce*, *ce* = B. *akay-rwe* /ake-ywei/ 'if' – see VII: 7.
6. P. *viya*, *iva*, *yathā* = B. *N-kai'sui'*, *V-sakai'sui'* / (tha)ke.thou./ 'like, as if, as it were' (A.) e.g. 160.3, 107.23, 28.12, 110.4 and 19.
7. P. *kira* usually = B. *V-satat* /thata?/ 'indeed, really, probably, namely, you know, you see, we hear, it is said' (A.) e.g. 32.23, 117.21, 150.15.
8. P. *iti* 'thus, in this manner' (A.), also used in a variety of ways to mark the end of a piece of reported speech etc.
- 8.1. Taken alone = B. *īsui'* e.g. 121.24 and passim. /i-thou./
- 8.2. Taken together with preceding words = B. *hu* or *hūrwe* /hu., hu-ywei?/ e.g. 129.13, 20.21, 44.13.
9. P. *evam* = B. *īsui'* /i-thou./ 'thus, in this way' (A.) e.g. 122.17, 127.18, 128.8. Sometimes expanded (cf. V: 1.n1):
- | | | | | |
|------|-------|------|------------------------------------|---------------------------------|
| e.g. | 50.15 | evam | īsui' yok-kyā" sā"bhwa" khrañ"saññ | 'thus (that men bear children)' |
|------|-------|------|------------------------------------|---------------------------------|
- 9.v As an affirmative answer to a question, 'yes', translated idiomatically in different ways –
- | | | | | |
|------|--------|----------|------------------------|-------------------------------------|
| e.g. | 124.18 | evam | īsui' chui-tuiñ" hut-í | 'It is true thus as you have said.' |
| | 125.5 | evam āma | ō hut-í | 'Indeed, it is true.' |
10. P. *puna* = B. *tabhan* /tahpan/ 'back, again, once more' (A.) e.g. 36.5, 87.17, 164.10.
- 11.1. P. *hi* = B. *sañ'cwa* /thin. swa./ preceded by an explanatory clause, 'for, since, indeed verily' (A.) e.g. 119.3, 46.5.
- 11.2. P. *hi saccam* = B. *mhan-í* preceded by an explanatory clause; *saccam* 'truly, indeed, verily, justly, by rights' (A.) e.g. 148.10, 2.3.

- 12.1. P. *ambho* = B. *ui* /ou/ followed by an appropriate noun; vocative particle (A.) e.g. 30.25, 60.27, 139.14.
 12.2. P. *bho*, *bhonto* = B. *ui(N)* (as preceding 12.1) /ou/; vocative particle (A.) e.g. 49.24, 87.5.
 13. P. *saddhim*, *saha* = B. *takwa* /takwa./ 'together (with)' – see I: 2.72.

IX. Irregularities

These are departures from a strict and systematic rendering of the Pali text as it stands.

- There are a few translator's notes, such as those given above in connection with the Causative (II: 4.7.n) or –
 154.12 *nok-sui* 'chut-rwe' *samban-mha upamā upameyya thaṅsaññi*
 'The point of the simile is not clear unless one construes backwards.'
- Occasionally there are explanatory additions of a commentarial nature (bracketed in the following examples) –
 e.g. 1.11 *Jetavane* = B. (*Jetawan mañ'i uyyāñ-nhuik choksokroñ*) *Jetawan* (*amaññ rhiso kyoñ"krī"*) *nhuik*
 'At (the great monastery named) *Jetavana* (because it was built in the park of Lord *Jetavana*)'
 75.3 *Vedehañ* = B. (*Videha-tuiñ"kuī acui"rasokroñ*) *Vedeha* (*amaññ rhiso*)
 '(Named) *Vedeha* (on account of his being ruler of the country of *Videha*)'
- Certain pronouns, it was noted above (V: 1.n2), are translated with their antecedents stated again or with qualifying phrases to identify their references. Similar treatment is found with the phrase *evaṃ sati* (VII: 6.n), with *hi* (*saccam*), and sometimes *evaṃ* (VIII: 11 and 9). In addition to these, words for 'other' (P. *añña*, *itara*, *apara*) are often treated in a comparable way. The simple rendering does occur –
 e.g. 51.28 *aññañ tapā"so*
 pl. 149.2 *aññesañ tapā"kun-so*
 51.1 *aparasmīñ divase tapā"so ne'nhuik*
 – but often, especially with *itara*, the reference of the word is clarified, by (1) direct identification, (2) explicit exception, or (3) both: e.g. –
 (1) 130.26 *itarā* *Amaradevī* (i.e. not *Mahosadhā*)
 (2) 5.27 *añño* *ñātui'sukhamin-le"yok-tui'mha tapā"so*
 'another, apart from us four wise men'
 (3) 37.21 *itarañ* *Dighapitṭhi-mha tapā"so Gotakāla-kui*
 'the other, *Gotakāla*, excluding *Dighapitṭhi*'
- Irregular renderings are sometimes made in order to bring out the meaning:
 e.g. 137.20 *hasamānā* (strictly = B. *ray-lyak* 'laughing' – Pres. P'ple) B. *ray-khrañ"iakron"kā* 'the reason for my laughter (was)'
 15.25 *jānātha* (strictly = B. *sikun-lo'* 'know!' – Imperative) B. *si-on prukun-lo'* 'act so as to know!'
 66.6 *na akāsi* (strictly = B. *mapru* 'did not do' – Aorist neg.) B. *prusaññ mahut* 'it was not that he did it (to slight his father)'

- In other cases of irregularity it seems either that Burmese idiom slipped through inadvertently or that a strictly conventional rendering would have resulted in incomprehensible or misleading Burmese.
 e.g. 145.12 *gatā* (strictly = B. *luik-ī* or *luik-prī* – Past P'ple) B. *luik-añ'* (Future 'I shall follow')
 18.15 *ekadivasañ* (Strictly = B. *tane'so ne' kui* – Accusative) B. *tane'so ne'nhuik* (Ablative) '(on) one day' (and so passim)
 100.15 *kiñ jānanti* (strictly = B. *abhay sikun-sanaññ* – Present) B. *abhay sikun-añ'naññ'* (Future) 'How could they know?'

X. Burmese verb particles outside the system

A number of verb particles appear in nissaya Burmese without having any apparent correlation with Pali grammatical or syntactic features. Their use is no doubt regulated by the situational context in the narrative or by stylistic considerations, but their precise function has never been very clear and most of them present serious problems to the analyst. For this reason no indication of their function is attempted here. It seemed worth listing them, from the point of view of Burmese grammatical study, in order to single them out from particles which have definitely been equated with Pali features. Many of them are discussed by Anna J. Allott,⁴⁶ and references are given below to other published studies. They are all referred to here as 'particles' without discrimination. S – Stewart's *Manual*, C – Cornyn's *Outline*, ML – Minn Latt's Second report, J – Judson; references are to paragraphs, not pages.⁴⁷

The particles are grouped arbitrarily into two: those which seem to be grammatically unimportant in Burmese and those which do not. No examples of the first group are quoted here. Most of them occur in examples given in the preceding Sections, where they have been enclosed in square brackets.

- Honorific: B. *V-tō mū* /to-mu/ S61 'performs royal or holy V' – used when the subject of the verb is a royal or sacred being.
 1.2. Emphatic? euphonic?
 1.2.1. *V-le* /lei/ S61, C72, 92, ML16, J112, 118
 1.2.2. *V-pe* /pei/ S61, ML16, J112, 118
 P.2.3. *V-khye* /hcei/ S61, 68, J112, 118
 1.2.4. *V-lat* /laʔ/ J118; especially common in *V-lat-sō VII: 4.v1*.
 1.2.n. Note: there are also isolated occurrences of B. *V-lhaññ'* (169.16), *V-bhi* (100.21), *V-tum* (100.5), *V-tha* (112.26f.) /hle., bi., tou, hta./
- Other particles:
 2.1. *V-khai* /hke./ S61, 68, C89, ML14.
 e.g. 63.5 *jātañ* *phrac-khai'i*
 52.18 *bhijji* *kyui"khai'i*
 2.1.n. This particle is often used when translating P. verbs with the prefix *ā-* 'to, at, towards, near to, until, as far as, away, all round' (D. 222*516) –
 e.g. 12.6 *āharatha* *choñ-khai'kun-lo'*
 21.24 *ānetvā* *choñ-khai'rwe'*
 136.19 *ācikkhitvā* *krā"khai'rwe'*

- but not regularly –
- e.g. 126.13 āharitvā choñ-rwe'
136.11 ānetvā choñ[khye]rwe'
45.20 ācikkhi krā"[pe]i
- 2.2. *V-ra /ya./* S64, C103, ML15
- e.g. 5.11^a sayittha ip[tō mū]rapā-í(10) 'did you sleep?'
130.10 pacāmi khyak-ra-am'naññ" '(how much) should I cook?'
138.3 gamissasi swā"ra-am'sataññ" 'you will have to go'
- 2.2.n Note: *ra* occurs much more frequently in the text with B. -am' than with other tenses: often, as in the second example above, with P. Present rendered (irregularly) as B. Future (cf. D. 320*611, v: 'The present is sometimes used with a future signification.').
- 2.3. *V-kra /ca./* S54, C88, ML14
- e.g. 87.11 jātā phrac-krakun-í
87.12 caranti swā"krakun-í
- 2.3.n Note: Though often described in grammars of Burmese as a particle indicating plurality, *kra* in nissaya does not displace the regular sign of the plural B. *kun*. It even occurs in the B. rendering of a singular P. verb:
- e.g. 38.20 sameti ññīkra-í
'(one statement) tallies (with the other)'
77.14 na sameti maññīkra
'(a person of good luck) is not compatible (with one of ill luck)'
- 2.4. *V-ū" /u., oun:/* S54, C91, ML16
- e.g. 150.22 pucchissāmi me"ū"am'
164.21 uddharitvā (chañ"raimha) thut-ū"rwe'
122.12 mā vadetha machuilañ"ū" (B. singular for P. polite pl.)
- 2.5. *V-se" /thei:/* S54, C101, ML16
- e.g. 104.15 daharo ñay-se"í
17.14 na hoti maphrac-se"
- 2.6. *V-to' /to./* S54, C93, ML16 – only two examples found:
20.2 ānema choñ-ra-kun-to'am'(10)
58.9 ānema choñ-ra-kun-am'to'(10)
- 2.7. *V-luik /lai?/* S61, C90, ML14
- e.g. 136.2 khipi pac-khyaluik-í
42.27 pesayimsu celuik-kun-í (often with this and similar verbs)
- 2.8. *V-pā /pa/* S54, C92, ML16
- e.g. 1.7 likkhissāmi re"pā-am' (translator to reader)
81.11 saddahāmi yuñ-pā-í (Mahosadhā to king)
30.11 thassāma taññ-krapākun-am' (litigant to arbitrator)

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Appendix 1

Example of nissaya translation (A.D. c. 1750–1800).⁴⁸

The translation is given here as it appears in the text. i.e. *Pali* word(s) followed by Burmese; in the lower line are references to sections of the analysis and English glosses.

Tato thui akhā mha paññhāya ca rwe' *Bodhisatassa* bhurā"loñ" í
V: 2.4 that time Abl. VII: 2 begin Ger. I: 2.4 Lord-to-be Gen.
yaso caññ"cim khyam"sā saññ mahā myā" saññ ahosi {phrac}
I: 2.1 luxury wealth Nom. VI: 2.2 great Pred. Adj. II: 4.2 was
í. *Tam sabbam* thui aluñ"cuñ" so caññ"cim khyam"sā kui
Aor. III: 2.1 that entire Adj. luxury wealth Acc.
Udumbaradevīyeva Udumbaradevī saññ lhyañ vicāresi cīrañ í.
I: 2.1, VIII: 1 Queen U. Nom. just II: 4.2 managed Aor.
'From that time onwards, the Bodhisaita lived in great wealth and luxury; and it was Queen Udumbara who looked after it all.'

Appendix 2

Example of early nissaya translation (1491).⁴⁹

Rammā nhaluñ"mwe"lyōbhway rhiso *Kapilavā* Kapila (amaññ rhiso)
III: 1 delightful I: 2.6 from the country
praññ-mha aho nikkhamitvā thwak-prī"rwe' *Tathāgato* mrat-cwā
(called) K. VII: 2.v1 having gone out I: 2.1 the excellent
bhurā"saññ padhānañ kammaññan"kuñ padahitvāna luñ"la
Lord I: 2.3.1 meditation V: 2.11, X: 2.4 having made
pru-ū"rwe' dukkarakāriyam dukkarācariyākuñ katvā
effort I: 2.3.1 austerity VII: 2.11, X: 1.1, X: 3.4
prutōmū-ū"rwe' *Ajapālarukkhamūlasmim* A. (amaññ rhiso) ññōñ-pañ
having done I: 2.8 by the Bodhi tree (called)
añ"nhuik nisīditvā netōmūprī"we' *Tathāgato* mrat-cwā
Ajapāla VII: 2.v1, X: 1.1 sitting I: 2.1 the excellent
bhurā"saññ tattha thui (ññōñ-pañ-rañ"ñhuik pivāsam
Lord V: 2.1 there (at the foot of the Bodhi tree) I: 2.3.1
nuñ"chwam"kuñ paggayha kharñ-tōmūprī"rwe' *Nerañjaram*
milk-rice VII: 2.v1, X: 1.1 having taken I: 2.3.2
Nerañjarā (mrac)sui' upeti kap-tōmū-í.
to (the river) N. II: 4.2, X: 1.1 approached.

'The Buddha, after going out of the lovely country of Kapila, exerted himself in meditation and practised austerity; then, sitting at the foot of the Bodhi tree called *Ajapāla*, the Buddha there took the milk-rice and proceeded to the river *Nerañjara*.'

Appendix 3

Example of recent nissaya translation (1910).⁵⁰

Kyī" sai Le"thap Mahā Therena (kye"jū"tōrhañ) ashyañ Kyī" sai Le"thap
I: 2.7.2 With the venerable K. abbot

Charātō bhurā'krī'nhan' *saddhim* takwa *Wā'lay gāma vihare*
 (who deserves our gratitude) *VIII: 13* together *I: 2.8*
 Wā'lay-rwā kyoñ'nhuik *vasantassa* sītañ' suñ'netōmūso
 in the monastery of W. village *III: 1.2, X: 1.1* residing
Sīrimālā Therassa ashyān *Sīrimālā Mahā Ther(mrat)ī santikehi*
I: 2.4 the (venerable and) reverend monk S's *I: 2.6*
 atharñ-tōtui'mha *laddhopadesena* ra-ap-so naññ'padesa-phrañ' from the presences
I: 2.7.1, III: 1.3 with instruction received
samañ aññī aññwat *catukaṇḍehi* le"puiñ"le"kaṇḍatui'phrañ' *cf. I: 2.7.2*
 in accordance *I: 2.7* with four sections
mañḍitvā tan'chā chañ-rwe' *racito* cīrañ-ap-so *Kabyā Sārattha Saṅgaho*
VII: 2.11 embellishing *III: 1.3* composed *I: 2.1*
 K.S.S. kyañ'saññ *ekasahassa dvisata dvesattati Sakkarāje* Sakkarāj the book
 K.S.S. *III: 1* (called)
 1272-taññ' (hūso) *vasse* nhac-nhuik. . . *sunīḥhito* koñ'cwā cīrañ S. 1272
 [= A.D. 1910] *I: 2.8* in the year. . . *VI: 1.3* is well finished.
 oñ-mrañ pī'ci'pepī.

'The book *Kabyā Sārattha Saṅgruih*, composed with the embellishment of four sections, in accordance with instruction received at the feet of the venerable *Kyithē Laydat Sayadaw*, who deserves our gratitude, and the venerable monk the Reverend *Sīrimālā*, who resides in the monastery of the village of *Walè*, was brought to a successful conclusion in the year 1910.'

Appendix 4

Example of Burmese translation from Pali (c. 1800).⁵¹

This translation is not a nissaya, but written in nissaya style. For comparison, the Pali text from Andersen's *Reader* (p. 1) is shown in the lower line.

Lwan-leprī'so akhā Bārāṇasī-praññ-nhuik Brahmadat maññ-so mañ'saññ *Atīte* (*I: 2.8* †) *Bārāṇasīyam* (*I: 2.8*) *Brahmadatte* (*I: 2.8.3*)
 mañ'prusaññ rhisō Himavantā arap-nhuik bhurā'lon'saññ *rajjam*
kārente (*VII: 4.3*) *Himavantapadese* (*I: 2.8*) *Bodhisatto* (*I: 2.1*)
 myok amyui'nhuik phrac-rwe' chañ-pron-ā'kui choñ-nuiñ *kapiyoniyam* (*I: 2.8*) *nibbattitvā* (*VII: 2.11*) *nāgabalo* (*VII: 3.1*)
 saññ acwam'nhan'praññ'cum-"saññ kī"so kuiy rhisaññ tañ'tay-
 khrañ'thāmasampanno (*ibid*) *mahāsarīro* (*ibid*) *sobhaggapatto*
 acusui'rok-saññ phrac-rwe' mrac-kwe'phrac-so tonerānhuik
 (*ibid*) *hutvā* (*ibid*) *Gangānivattane* (*III: 1*) *araññāyatane* (*I: 2.8*)
 ne-ī.
vāsam kappesi (*II: 4.2*).

[† strictly: ... akhānhuik]

'Once upon a time, when King Brahmadata was king in Benares, the Bodhisatta came into being as a monkey. He grew up to have the strength of an elephant, to be possessed of bodily might, powerfully built, and endowed with grace; and he lived in a place in the forest on a bend in the river.'

Appendix 5

Example of Burmese free translation from Pali (1784).⁵²

The translation is not a nissaya, nor written in strict nissaya style. This passage corresponds to that from the nissaya quoted in Appendix 1. *o* before a section reference marks departure from nissaya convention.

Isui' (*VIII: 9*) Mahosadhā sukhamin-saññ (*I: 2.1*)... bhun"krak-sare caññ'cim uccā akhraiñ-araiñ (*oI: 2.1*) tui'tak pran'pwā'myā'mrat-saññ (*VI: 2*) phrac-í (*II: 4.2*). Thui M. sukhamin (*oI: 2.4*) im-nhuik (*I: 2.8*) im-thoñ-mhu paccaññ'uccātui'kui (*I: 2.3*) thin'sin'maññ'sū im-rhañ (*oI: 2.1*) marhise'saññ phrac-rwe' (*VII: 3*) Udumbaradevī mibhurā'saññsālhyāñ (*I: 2.1, VIII: 1.v1*) kraññ'rhu webhan cīmañ khwaikhram'saphrañ' (*VII: 2.n3.3*) up-khyup coñ-ma-ra-í (*II: 4.2*).

'In this way, the wise man Mahosadhā increased greatly in power, glory, wealth, luxury and following. As there was not yet a mistress of the household, in that Mahosadhā's house, who could supervise his household possessions and wealth, it was Queen Udumbara who had to assist in the management, taking care of things, and making decisions, arrangements, and apportionments.'

Appendix 6

Examples of nissaya particles commonly replaced or omitted in original Burmese prose (between 1714 and 1733).⁵³

For Pali	nissaya	omitted	replaced	by
Nom.	N-saññ	217.9	216.11	N-ka /ka./
Acc.	N-kui	216.24		
Gen.	N-í	216.32		
Dat.	N-ā"		215.2	N-kui /kou/
Abl.	N-mha		216.14	N-ka /ka./
Abl.	N-mha		217.22	N-kasaññ /ka. thi/
Instr.	N-phrañ'		218.1	N-nhañ' /hnin./
Loc.	N-nhuik	216.2	216.11	N-twañ /twin/
pl. (N)	N-tui'	216.19	217.24	N-myā' /mya:/
Pres., Aor.	V-í		216.2	V-saññ /thi/
Future	V-añ'		216.14	V-maññ /myi/
Imp'tive	V-lo'		216.21	V-to' /to./
pl. (V)	V-kun	217.9		
Adj.	V-so		216.5	V-saññ' /thi./

Other obvious differences are

V-lhyañ (217.2) for nissaya *V-saññ rhisō* or *akay-rwe'V-am'*

V-nuiñ (216.12) for nissaya *V-am'soñhā tat-nuiñ*

N-nhañ' (216.22) for nissaya *N-nhañ'takwa*;

and among the pronouns:

yañ'' (217.28) for nissaya *thui*

pasui' (216.34) for nissaya *abhay-sui'* or *asui'*.

There are also usages not matched in the nissaya – e.g. *V-mha* (217.5) and *N-kron'* (217.24).

Notes

1. The Rev. A. Judson, *Grammar of the Burmese language*, Rangoon, 1888, new ed., 1951.
2. A. W. Lonsdale, *Burmese grammar*, Rangoon, 1899.
3. J. A. Stewart, *Manual of colloquial Burmese*, London, 1955.
4. W. S. Cornyn, Outline of Burmese grammar (*Language Dissertation*, 38), Baltimore, 1944.
5. Minn Latt, 'Reports on studies in Burmese Grammar', *Archiv Orientalní*, first report, XXX, 1962; second report, XXXI, 1963; third report XXXII, 1964.
6. In some nissaya the Burmese incorporates material, literary or explanatory, additional to the Pali text. Tin Lwin (see n. 8 below) classifies four types of nissaya: verbatim, free, ornate, and translation with short notes. It is the ordinary verbatim type, with minimal additions, which is relevant for this paper.
7. See Mabel Haynes Bode, *The Pali literature of Burma* (Royal Asiatic Society publication), London, 1909, 101.
8. See Tin Lwin, *A study of Pali-Burmese nissaya* (M A. thesis, London), 1961, 39; extracts were published in *JBRIS*, 46, 1963.
9. This also appears to be true, *mutatis mutandis*, for *trāai*, the Mon equivalent of nissaya: see C. Duroiselle, 'Talaing nissaya', *JBRIS*, 3, 1913, 113.
10. See W. S. Cornyn, 'A Burmese Jātaka commentary', *Language*, 20, 1953, 358.
11. Nyaunggan Sayadaw, *Eka* (*Duka*, etc.) *Nipāt Jāt Vatthu*, Mandalay-Rangoon, 1925–1928.
12. U Obhāsa, *Jātaka Vatthu* [published separately], Rangoon, 1906–1922.
13. U Pe Maung Tin, Editorial Note, *JBRIS*, 6, 1916, 79.
14. U Kala, *Mahayazawindawgyi*, I–III, Rangoon, 1925–1960.
15. Op. cit., xi.
16. *Outline*, 5.
17. Op. cit., first report, 53.
18. See Bode, op. cit., for an account of the history of Pali studies in Burma.
19. See Mabel Haynes Bode, 'Early Pali grammarians in Burma', *Journal of the Pali Text Society*, 1908.
20. U Paññāsāmi, *Sāsanavaṃsa* (1861), translated by B.C. Law, London, 1952, 81.
21. 85ff.
22. E.g. Shin Mahā Raṭṭhasāra's *Kogan Pyo* (1526), ed. Daw Khin Saw, Rangoon, 1959; and, for nissaya, Shin Silavaṃsa's *Paramidawgan Pyo* (1491), Rangoon, 1914. Cf. Tin Lwin, op. cit., 105ff.
23. See Bode, *The Pali literature of Burma*, 101.
24. See U Wun, 'Mran-mā-nuiñ-nan rhe'khet bhāsāpran samuiñ-khyup', *JBRIS*, 45, 1962, 131.
25. See Mahā Zeyyathinkhayā, *Vohāralinatthadīpanī* (1830), Mandalay, 1899, 6.

26. See *Hman-nan Yazawin*, I–III, by a committee of authors (1829), Mandalay, 1907–1921, beginning of Part Three, where further details are given.
27. See publisher's preface to Banya Dala, *Rājādhirāj Are'tōpuñ*, Mandalay, 1922.
28. See U Shwe Zan Aung, 'Philological study of the Burmese language', *JBRIS*, 6, 1916, 57 and 144.
29. E.g. Mahā Zeyyathinkhayā, op. cit., 7; cf. 259, 268; Kyaw Aung San Hta Sayadaw II, *Vohāratthapakāsani* (c. 1800), Rangoon, 1933, 6.
30. From Okpo Sayadaw, *Wibhāt 7-sway sañkheta hmat-phway*, Rangoon, 1900, 29 and 32.
31. See Taungdwin Sayadaw, *Saddābyūhā* (?1750), 2nd imp., Rangoon, 1882; and Kyaw Aung San Hta Sayadaw I, *Kawilakkhaṇa Mran-mā Saddā* (1748), Rangoon, 1962.
32. Op. cit., iii.
33. Since J. A. Stewart's *Introduction to colloquial Burmese*, London, 1936.
34. See U Kaung, 'Survey of the history of education in Burma', *JBRIS*, 46, 2, 1963.
35. *Supra*, 29.
36. E.g. *Mran-mā phat-cā* (*Doñ'tan-chip*), by Saya Lin, 1913; revised edition by Saya Lin and Maung Shwe Kyu, 1929–1932. Another set of readers was prepared by U Pe Maung Tin for Longmans in 1931–1932. U Wun composed a set of 'Supplementary Readers' (*Apui Mran-mā phat-cā*), published in 1938, which were evidently intended as a move away from the classical style of the early readers: 'They are written only in the style found in contemporary newspapers, journals and magazines' (preface to vol. 1), but U Pe Maung Tin's readers were reprinted unchanged in 1949–1952.
37. See n. 12.
38. Minn Latt, first report, 53.
39. Shin Guṇalaṅkāra, *Mahosadhā Jātaka Aṭṭhakathā Pāṭh Nissaya*, I–III, Rangoon, 1928.
40. D. Andersen, *Pāli Reader* with notes and glossary, London, 4th ed., 1935. His Nos. 29 and 30 = nissaya 121.14–139.10 and 29.3–32.14 (for nissaya numbering see p. 198 below).
41. See C. Duroiselle, 'Literal transliteration of the Burmese alphabet', *JBRIS*, 6, 1916.
42. C. Duroiselle, *Practical grammar of the Pāli language*, Rangoon, 3rd ed., 1921.
43. This point is discussed by the Taungdwin Sayadaw, op. cit., sections 115–128.
44. Hla Pe, 'A re-examination of Burmese classifiers', *IPLS*, 2.
45. V. Fausbøll, *The Jataka*, London, 1877–1896.
46. In her paper 'Categories for the description of the verbal syntagma in Burmese', *IPLS*, 2.
47. For bibliographical details of these works see notes 1, 3, 4 and 5.
48. From Shin Guṇalaṅkāra, op. cit., I, 121, lines 14ff.
49. From Shin Silavaṃsa, op. cit., 7.
50. From Saya Lun, *Kabyā Sārattha Saṅgruñ* (1910), Rangoon, 1955, 381.
51. From Nyaunggan Sayadaw, op. cit., II, 224.
52. From U Obhāsa op. cit. (*Mahosadhā*), 131.
53. From U Kala, op. cit., III; references are to page and line.

NORTH-EAST INDIA AS A LINGUISTIC AREA*

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1. Introduction

1.1. Language situation in the northeastern part of India

The northeastern part of India comprises the seven sister states of Assam, Meghalaya, Manipur, Nagaland, Tripura, Mizoram and Arunachal Pradesh. According to the 1971 census there are about 220 languages spoken in these states, belonging mainly to three language families, namely Indo-European, Sino-Tibetan and Austric. Indo-European is represented by Asamiya, Sino-Tibetan is represented by the Tibeto-Burman languages of Boro, Karbi, Garo, Mising, Rabha, Dimasa, Kachari, Tiwa, Deuri etc, and Tai represented by a few dialects of Tai-Ahom, Tai-Phake, Tai-Khamyang, Tai-Turung, Tai-Aiton and Tai-Khamti.

The sole representative of the Austric family is Khasi (Kakati 1941:32) and it is the major language spoken in the state of Meghalaya in which such minor languages as Asamiya and Garo are spoken.

Tibeto-Burman Meitei is the official language of Manipur, where Tangkhul-Naga of the same group is also spoken. Different Tibeto-Burman languages like Ao, Angami, Sema, Lotha, Konyak, Dzemi, etc. are spoken in Nagaland. Asamiya is also used in certain parts of Nagaland.

Tibeto-Burman Kak-borak, sometimes also called Tripuri, and Bangla are the main languages of Tripura.

Mizo and Hmar of the Tibeto Burman group are the major languages spoken in Mizoram.

In Arunachal Pradesh all the major languages spoken belong to the Tibeto-Burman group, namely, Hrusso, Tane, Nisi, Adi, Abor, Nocte, Apatani, Misimi, Galong, etc.

It is interesting to note here that Asamiya has been serving almost as a *lingua franca* among many speech communities mentioned for the last couple of centuries. It is being used for inter-language and also for inter-dialect communication between the various speech groups. In some cases the creation of pidgins has also been noticed. For example, the various mutually unintelligible Naga dialects use

the Naga pidgin in Nagaland, where the source language is Asamiya. In Arunachal Pradesh it has been observed that a similar situation prevails where Arunachalese, a pidgin where the source language is Asamiya, is being used like the Naga pidgin for both inter-language and inter-dialect communication.

The Tibeto Burman tribes came through Burma and entered the hills and valleys of Assam in about 1000 B.C. They gradually encroached upon the Austric settlers who have been settling here since 2000 to 2500 B.C. and forced most of them to take refuge in mountainous homes. That was how the Khasis thrived in their mountainous homes high on the hills of Meghalaya.

Like any other Aryan language, Asamiya had its roots in the Apabhramsa dialects developed from Magadhi Prakrit of the eastern group of Sanskritic languages. The Kamarupa variety of the Apabhramsa dialects made its way into Assam and eventually Asamiya was created. That Asamiya came into existence in Assam at a very early date can be gauged from a reference by Xuan-Zang, a Chinese traveller who visited Assam in 643 A.D. The copper plate inscriptions of the rulers of Kamarupa or Assam from the 5th through 13 century A.D. (written in Sanskrit) and the stone inscriptions at Umachal dating back to the 5th century A.D. confirm such an observation.

Early in the 13th century, a section of the Mao branch of the Tai race entered Assam under the leadership of Chao-lung Shu-ka-pha and conquered it and ruled till the British annexed erstwhile Assam in 1826. These people came to be known as Ahoms and their language Ahom or more properly Tai-Ahom. Dr. B.K. Kakati suggests that the name Assam pronounced /OxOm/ has its roots with the Ahoms who were so called, /OxOmO/ meaning unequaled by the vanquished local people. For several centuries the Ahom language continued as their mother tongue in which works on various subjects such as history,² astrology, religion and politics were produced. Many of these works are still preserved by certain families. But gradually the Ahoms converged with the local OxO-mias (the Assamese) and there was almost a total shift of language from Ahom to Assamese. Today the Tai-Ahom language is used only by the Mawsams, Mawhungs and Maw-plangs (Deodhai Mawhun and Bailung), the three priestly Ahom classes, for religious purposes only.³ The shift of Ahom to Asamiya undoubtedly had a remarkable impact on the Asamiya language structure.

Large-scale diffusion of linguistic innovations has been taking place between Asamiya, the Sino-Tibetan languages, and Khasi in this area for a very long time, which has resulted in many common linguistic features binding all these languages in a common thread even though they are not related genetically. This is a direct result of linguistic innovations originating in one language spreading to neighboring varieties through the medium of bilingual speakers. The common structural features shared by these languages of this area are not found in any language in the rest of the country. Xuan-Zang observed as early as in 643 A.D. that the languages spoken here differed from that of mid-India.

1.2 Language profile of India

Barring the northeast, India is inhabited by a large population who speak languages belonging to three major families: **Indo-Aryan** (a sub-family of Indo-European)

represented by Hindi, Marathi, Bangla, Oriya, Gujarati, Maithili, etc.; **Dravidian**: Tamil, Telegu, Malayalam, Kannada, etc.; and **Munda**: Sora, Santhali, Malto, Kharia, etc. Co-existence over time has resulted in large-scale diffusion of linguistic features across genetic boundaries resulting in an Indo-Aryanization of Dravidian languages (Sridhar 1975) and Dravidianization of Indo-Aryan languages (Gumperz and Wilson 1971, Nadkarni 1975, Pandit 1972). Significant borrowings of linguistic features from Munda into the other two families and vice-versa are also evident (Burrow 1955).

2. Common linguistic characteristics of the languages of northeast India

In the following sections I describe the salient linguistic features which are peculiar to this area and distinguish it from the greater Indian linguistic area.

2.1 Phonological features

(a) As Emeneau has observed, 'Most of the languages of India, of no matter which major family, have a set of retroflexes, in contrast with dentals. The retroflexes include stops, nasals, fricatives, laterals, trills and flaps. This is an essentially Dravidian feature which has crept into all Indo-Aryan and Munda languages marked by Barushaski in Kashmir'.⁴ In other words, it forms a solid bloc characterized by this phonological feature. However, the northeastern part of India is totally out of this bloc because not a single language, irrespective of family, has contrasts between dental and retroflex sounds, a unique feature of the languages here is a total absence of any retroflex sounds. Instead the languages here have a whole series of dental or alveolar sounds which include oral and nasal stops, fricatives, laterals, approximants, flaps and trills.⁵ This absence of retroflex sounds and the presence of alveolar or dental sounds are features typical of the northeast Indian languages.

(b) Another striking phonological feature shared by all the languages of the northeast, is the use of velar nasal /ŋ/. Extensive use of this sound at all positions in a word is seen in all the languages of the North-East,⁶ and the way /ŋ/ is pronounced here clearly marks this area different from the rest of the mainland. It is interesting to observe that in all the languages of northeastern India /ŋ/ is always pronounced singly and in the rest of the country speakers of any language attach a homorganic sound /g/ immediately after /ŋ/, and it is pronounced simultaneously. Thus /ŋ/ is realised as /ŋg/. For example, certain important place names of the North-East like Rangiya, Pengeri, Dhing, are pronounced by speakers here as /ronɣia/, /peŋgeri/ and /dhiŋ/, respectively, but contrary to this any language speaker from the mainland will pronounce them as /ronɡia/, /peŋgeri/ and /dhiŋɡ/ etc. This is a common hurdle faced by all language speakers learning any language belonging to the mainland and vice-versa. Moreover, there is a limitation of occurrences of /ŋ/ in a majority of Indian languages. This is a distinct Sino-Tibetan feature creeping into all the languages of this area because it is observed that for almost any Sino-Tibetan language in South-East Asia /ŋ/ is a very common sound.

(c) The palatal sounds of underlying Sanskrit have attained different sound values in different Indo-Aryan varieties. For instance, in Bangla they have become palatal affricates, in Marathi they have become dento-palatal affricates, but in Asamiya these sounds were lost due to the impact of neighboring languages, where the alveolars or the dentals are the most dominant.

Regarding the fricatives, one can postulate that /s, z, h/ occur in all languages irrespective of any family in the northeast. However in Asamiya only an extra fricative /xʳ/ is noticed.

2.2 Grammatical features

(a) Personal deictics or markers: The use of personal markers in regard to the use of various kinship terms in reference to the age and rank of both the speaker and listener, is a feature which separates the northeastern languages of India from all other languages in the rest of the country. However, a few languages belonging to the Munda group in Central India, particularly Santhali, have somewhat similar systems. G.A. Grierson in modern *Indo-Aryan Vernaculars* (p.75) has mentioned this aspect, particularly in Boro and a few other Tibeto-Burman languages. According to Dr. Banikanta Kakati, this is an Austric feature which has influenced all the other languages of this area. This seems possible because the distant Munda language of Santhali may have preserved this system, while the others might have lost it due to the Indo-Aryan and Dravidian impact where no traces of such a system are seen.

The following examples from Asamiya, Khasi (Austric) and a few Tibeto-Burman languages show such use of personal markers.

Asamiya (Indo-Aryan)	Khasi (Austric)	Meitei	Boro	Mising
/tumar deuta ra/ (your+father+marker)		/nOm gin opa/ (your+marker+father)		/no KKou ani/ (my+marker+mother)
	/la zoŋ phupa/ (your+marker +father)		/naŋ ni aəa/ (your+marker +father)	

The differences between Asamiya and a majority of Tibeto-Burman languages and Khasi as shown above are that in Asamiya the marker is attached after the noun, but in the rest it occurs before the noun. However, it is worth mentioning here that in a few Tibeto-Burman languages, like Garo and Rabha, such markers are attached after the noun as in Asamiya.

GARO:	RABHA:
phag + gi + pa	ba + p ^h a + bra
my + father + marker	my + father + marker

(b) Negativization process: The process of negation of verbs in Asamiya is another feature which clearly demarcates it from the rest of the sister new

Indo-Aryan languages and other Dravidian languages. In Asamiya /n/ is attached to the verb followed by a vowel which is the exact copy of the vowel of the first syllable of the verb, as in:

- (i) /na lage/ 'do not want' (1st, 2nd, 3rd, person)
- (ii) /ni likhu/ 'will not write' (1st person)
- (iii) /nukutu/ 'will not nibble' (1st person)
- (iv) /nEIEkhE/ 'does not write' (3rd person)
- (v) /nOKOrO/ 'do not do' (2nd person)

Where the various negative markers are (i) /na/, (ii) /ni/, (iii) /nu/, (iv) /nE/ and (v) /nO/

A similar system is also observed in Tai-Ahom where the negative marker is /m/ and it is prefixed to various verbs, as in the verbs /kin/ in Tai-Ahom which means 'to eat', and /mikin/ which means 'not eat'.

Khasi also has a more or less similar system where the negative marker is /em/. Whenever it is prefixed to a verb negativisation occurs, as in:

- /bam/ 'to eat' (1st person) - /embam/ 'will not eat'
- /let/ 'to go' (1st person) - /emlet/ 'will not go'
- /dOn/ 'to have' (1st person) - /emdOn/ 'dont'have'

This feature of prefixing the negative marker seems to be an influence from Khasi, but it has undergone a slight change in its use as is observed in the examples from Asamiya and Ahom. Even Rabhamese, a variety of Rabha spoken in West Assam bordering the Khasi hills, is reported to have a similar system.

(c) The use of plural suffixes in all the languages spoken in the northeast is another feature which marks them as different from a majority of Pan-Indian languages. In Asamiya, for instance, all the bound forms such as /hot/, /bur/, /bilak/, /mokha/, /zak/, /Xokol/, etc. denote plurality and are suffixed to a noun or a pronoun. Boro and Garo have /bur/, /bilak/, /mokha/ etc. as plural markers.

Many Tibeto-Burman languages such as Rabha, Tiwa, Mising, Karbi, etc., use a variety of such types of plural markers. In Khasi also a plural system is observed, as in /icŋ/ 'house', but /sikitien/ 'houses', where the plural marker /sikit/ is prefixed. In Tai-Ahom, the plural markers are /nam/, /khOn/, /cheo/ etc., as in /konnam/ 'man many', /lucho/ 'many horse', etc.

(d) The derivation of nouns from verbs through suffixation is a common feature in all the languages of this area. For example, the verb /kha/ in Asamiya meaning 'to eat' changes to the noun /kha On/ meaning 'good eating'. Almost all verbs can be transformed to nouns by the addition of the suffix /On/ in the language. In Garo the suffixes /ani/, /gipa/ and /gimin/ attach to a verb to change it to a noun, as in the verb /dak/ 'do' which changes to the noun /dakani/ 'being done', /dakgipa/ 'one who does' and /dakgimin/ 'already done', respectively.

(e) The extensive use of classifiers in all the languages in this area is another feature which is a peculiarity of the northeast. However, in certain Indian languages,

limited use of a few classifiers are noticed. Among the new Indo-Aryan languages, the most notable being Bangla, Oriya, Maithili and Marathi, a few classifiers are used. Similarly, other languages like Santhali, Kurukh, and Malto of the Munda family make limited use of classifiers. But almost all the languages of the north-east (Asamiya, Khasi or any other Sino-Tibetan language) use a huge number of classifiers. For almost everything or every shape these languages use a different classifier. The following lists of classifiers from Asamiya, Boro and Garo prove the point.

Asamiya

/ZOn/	for males (adult)
/Zoni/	for females (women as well as animals)
/gOraki	for man and woman (honorific)
/tu/	for inanimate objects or male of animals and men (impolite)
/ta/	for numbers.
/ti/	for inanimate objects or infants.
/khOn/	for flat, square or rectangular, big or small, long or short objects.
/khOni/	for objects like rivers and mountains etc.
/pat/	for things which are flat, thin, wide or narrow etc.
/SOta/	for solid objects
/kosa/	for mass nouns
/motha/	for bundles of objects
/muthi/	for smaller bundles of objects
/tar/	for broom-like objects
/gOs/	for wick-like objects
/khila/	for leaf-like things, papers, etc.

Boro

/sa/	with human beings
/ma/	with all types of living things
/thui/	with fruits, currency, teeth, stones etc.
/gOŋ/	for leaf-like objects.
/phaŋ/	for trees, saplings etc.
/doi/	for eggs
/thote/	for posts, bamboo etc.
/suba/	for bamboo groves
/thuba/	for bamoo groves, shrubs etc.
/nOŋ/	for abstract objects.
/goŋ/	for horns, wooden objects, houses, weapons
/doŋ/	for hair rope etc.
/dan/	for garlands etc.
/mutha/	for betel leaf, paddy
/athi/	for firewood
/dor/	for fish, nuts etc.
/bar/	for flowers and plants
/dan/	for days of the month
/san/	for days
/kha/	for human beings

Garo

/sak/	for people of all sorts, even gods and ghosts
/may/	for animals
/ge/	for all objects of daily use and also for fingers
/kiŋ/	for thin flat things
/pat/	for paper
/miŋ/	for words, stories, songs, etc.
/roŋ/	for round objects
/poŋ/	for hollow cylindrical objects
/diŋ/	for rope-like things
/te/	for houses, rice pots, cups and other hollow objects
/goŋ/	for bank notes
/paŋ/	for plants and trees
/baŋ/	for parts of a whole
/dOt/	for things that stick out from the ground
/nOK/	for households
/jaK/	for leaves and pages of books
/gar/	for bunches of things
/paK/	for half of anything etc.

Moreover, the combination of classifiers with a noun and a numeral in constructing phrases and sentences is a distinct Sino-Tibetan feature shared by many languages such as Chinese, Japanese, Korean, Vietnamese, Burmese and Thai,⁸ which has crept into India through the Sino-Tibetan languages of the north-east and has influenced Asamiya and Khasi the most. The Magadhan group of languages, like Bangla, Oriya, Maithili etc. and a few other new Indo-Aryan languages like Marathi, some Dravidian languages like Kolami, Parji, etc. and Santhali and Malto of the Munda family spoken in central India, have also been influenced to some extent. The point to be noted here is that all the languages of the Northeast make extensive use of this system and the frequency of such use is at a comparatively higher level than the languages of the mainland as mentioned above. M.B. Emeneau in his study on the Indian linguistic area has observed that Marathi has a meager suggestion of such a system with one classifier (dzan) 'person' and (dzani) feminine, and the word order in such a construction is fixed as 'numeral + classifier + noun'. Kolami and Parji classify persons only when they are a numerated by the numeral six and over. The Kurukh system is similar to the Magadhan languages of Bangla, Oriya, Maithili, etc. The classifiers are used with the borrowed Indo-Aryan numerals as well as the Dravidian numerals from two to four. Malto, which has borrowed from the Magadhan group, has a fixed order of numeral + classifier + noun. In certain dialects of Telegu and Kannada limited use of this system is noted where the numerals from eight to ten are followed by a classifier /mandi/ when persons are enumerated (For detail see Emeneau, p. 649). The use of this unique system gets more limited in languages as we move away from the Northeast. The maximum use of this system among the languages of the mainland is observed in the Magadhan group bordering the various languages of the North-East. The use gets more and more limited as we go southward. This is

a case of neighbourhood effect of this innovation which has its epicentre at the Northeast. In Sino-Tibetan languages, Asamiya, and Khasi, the use of this system is most frequent in comparison to any other in India. This is a distinct Sino-Tibetan feature which has engulfed Asamiya and Khasi totally. The following examples from different languages of this area show the validity of this statement. Mary R. Haas has rightly commented that the use of classifiers in Thai is a matter that must be treated not only as a part of the grammar of the language but also as part of its lexicography. The same holds true for each and every language of this area.

- (i) Numeral + classifier + Noun: This combination is used by Asamiya, Rajbongshi, Khasi, Konyak, Kakborak (Tripuri), Nocte, Mizo, Rangkhil, Karbi, Tiwa, etc.
- (ii) Noun + numeral + classifier: Asamiya, Bishnupriya Manipuri, Kachari, Rabhamese, Dimasa, Boro, etc.
- (iii) Noun + classifier + numeral: Garo, Nocte, Mizo, Hmar, Rabha, Tiwa, Apatani, Dimasa, Khasi, Mising, Kak Borak, Boro, Nishi, Ahom, Karbi, etc.
- (iv) Classifier + numeral + noun: Boro-Kachari, Tiwa, Nocte, Apatani, Tagin, Misimi, etc.

The classifiers are also combined with all types of nouns and numerals occurring in these languages.

Apart from such constructions, the use of a classifier along with the noun is very basic with all the languages of this area, as in Asamiya /kitap khon/ (book + classifier), /suli kusa/ (hair + classifier), etc.

Finally, it can be said that the use of classifiers is not a pan-Indian phenomenon but essentially a Sino-Tibetan feature and has spread to many other languages through the neighbourhood effect. The following examples from Ahom, Asamiya, Boro, and Kakborak show a few combinations of noun, numeral and classifier operating in these languages.

Tai-Ahom

- maw kham + saŋ + luk (maw-vessel, kham-gold Saŋ-two- LuK-classifier)
 phanum + phuŋ + luŋ (pha-cloth, num-cotton, phuŋ-classifier, luŋ-one)
 ma + tu + luŋ (ma-horse, tu-classifier, luŋ-one).
 laN + mak + luŋ - (lan-jackfruit, mak-classifier, luŋ-one)

Asamiya

- E + zon + manuh (E - one, zon - classifier, manuh - man)
 du + khon + kitap (du - two, KhOn-classifier, kitap - book)
 Phul + E + ta (phul - flower, E-numeral, ta = classifier)
 pat + doh + khila (pat - leaf, doh - ten, khila - classifier)

Boro

- mansi + sa + noi (mansi-man, Sa-classifier, noi - Two)
 gan + se + kitap. (gan- one, se-classifier, kitap-book)
 moi + der + nase (moi-one, der-classifier, nase- elephant)

KokBorak (Tripuri)

bu + phaŋ + sa (bu-cow, phaŋ-classifier, sa-one)

dukhai + duk + tuŋsa (dukhai-one, duk-classifier, tuŋsa-rope)

2.3 Lexical features

(a) For the present study I did a pilot survey of fifty words, essentially a part of the basic vocabularies of Khasi (Austric), Asamiya (Indo-Aryan), Boro, Garo, Rabha, Mishing, Karbi, Tiwa and Angami (all Tibeto-Burman). The loanword percentage is calculated by dividing the items of acculturation by the total number of items on the list and multiplying it by one hundred. The list included various items such as common domesticated and wild animals, kinship terms, items of daily use, parts of a house, paddy-field, types of dress, names of rivers and places, and bodily functions and body parts.

The list was prepared from such various published works as (i) Kakati (1941), (ii) Grierson (1933), (iii) Medhi (reprinted 1988), (iv) Bhattacharya (1977), Goswami (1991), Balwan (1982), Wolfenden (1929), and Terang (1974). Lexical sources of each item in the list were taken from the above mentioned works as well as from dictionaries and other relevant materials available in the various languages. The following table shows the loanword percentages and the Austric, Indo-Aryan or Tibeto Burman influence.

	<i>Austric</i>		<i>Indo-Aryan</i>		<i>Tibeto-Burman</i>	
	<i>Total Items (50)</i>	<i>%</i>	<i>Total Items (50)</i>	<i>%</i>	<i>Total Items (50)</i>	<i>%</i>
Asamiya	14	28%			24	48%
Khasi			15	30%	17	34%
Boro	13	26%	26	52%		
Garo	20	40%	24	48%		
Rabha	18	36%	24	48%		
Mising	6	12%	28	56%		
Tiwa	11	22%	26	52%		
Karbi	23	46%	24	48%		
Angami	5	10%	9	18%		

It is interesting to observe from the table above that all the Tibeto-Burman languages (except Angami in Nagaland) spoken in the Brahmaputra valley show a uniformly similar percentage score and the rate of Asamiya (Indo-Aryan) influence is more in comparison to Khasi (Austric)⁹ and Angami (Tibeto-Burman). This may be attributed to the fact that Asamiya and the Tibeto-Burman languages, barring Angami, are directly exposed to each other and the process of diffusion was rapid and extensive. Since Angami and Khasi are slightly, isolated therefore the rate of influence be it Indo-Aryan,

Tibeto-Burma or Austric, is relatively less in comparison to the other languages. Another important factor to be considered is that a majority of the population of the different Tibeto-Burman groups in the Brahmaputra valley adopted Hinduism, and as a result the process of Aryanization was accelerated, which is not true in the case of Khasi or Angami. From the table it is clear that all the language families have influenced each other and the more the languages are exposed to one another the higher is the rate of influence. However, this minor study on lexical acculturation were to be taken up in an extensive way where all the Tibeto-Burman languages, Khasi and Asamiya are taken into account in a much broader canvas, I am sure it would throw more light on such an important linguistic aspect.

(b) Another interesting lexical phenomenon is the commonality of place and river names of all the languages spoken in the northeast, which is not shared by any languages in the entire Indian sub-continent. In the derivation of such names many Sino-Tibetan and Austric features have distinctly crept into, as in:

- (i) The Boro word 'di' for water is noticed in innumerable river names in the northeast, as in dihiŋ, diborU, dibonŋ, digaru, dikhou, dikreŋ, disaŋ, digboi (boi meaning 'flow of water' in Asamiya).
- (ii) The Tai-Ahom influence is also evident in such names, where the Tai-Ahom equivalent for water is nam. The mighty Brahmaputra is nam-ti-lao, other such names are nam-daŋ, nam-zin, nam-khun, nam-saŋ, nam-khe, nam-shao, nam-rup, nam-ti, nam-phuk, nam-sai, nam-choom etc.
- (iii) The Khasi equivalent for river is /um/ and occurs in many names found in these parts, as in umtru, umsuŋ, umiam, umraŋsu, umpliŋ, um-Khrah etc.
- (iv) -ti- is a typical Tai-Ahom classifier which has crept into all the languages in the northeast. In Ahom it is particularly used with place names which eventually became names of many important places in the northeast, such as tiphuk, tipam, tiru, tirap, tifai, tiŋkhoŋ, tiŋ rai, tiOk, tiho, etc.

3. Conclusion

The preceding cross-language evidence indicates that such common structural features of all the languages spoken in the northeastern part of India together separate this area from the rest of the Indian sub-continent as such features are not to be found in most of the languages in the country. This I feel is enough evidence to term northeast India as a separate linguistic area where socio-cultural and linguistic diffusion between the different language families has been going on for centuries.

However, in my opinion a more detailed typological investigation of individual language cases will definitely throw more light on such shared cross-linguistic features of the languages of this area.

Notes

- * This paper was read at the 27th International Conference on Sino-Tibetan Languages and Linguistics in Paris, October 12-16, 1994.
2. The word for history in Asamiya is 'buranji' which has been borrowed from Ahom.
 3. A few Tai dialects are reported to be in use in East-Assam in the Dibrugarh district. However heavy carry-over from Asamiya is evident. These Tai dialects are Tai-Khamti, Tai-Phake, Tai-Aitong, Tai-Khamyang and Tai-Turung. Except for Tai-Ahom, all these dialects have maintained their own linguistic status.
 4. See Emeneau (1954 a)
 5. For more details see Grierson, *Indian Antiquary* (supplement, 1933, October, P-156).
 6. In Asamiya it has some limitation on its occurrence as it never occurs word-initially.
 7. The voiceless velar fricative /x/ is a distinct characteristic of Asamiya which is not to be found in any language in the entire country. It is similar to the velar sound in German, of Europe. It may be an Indo-European feature which has been preserved by Asamiya. It is a very important phoneme in the language.
 8. Lanyon Orgill has observed that classifiers are at once the most important characteristic features of the Thai language.
 9. However, in Karbi the Austric influence is the maximum in comparison to the other languages in the Brahmaputra valley, as it is directly exposed to Khasi.

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INDO-ARYAN AND TIBETO-BURMAN CONTACT

As seen through Nepali and Newari verb tenses

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1. Introduction¹

Nepali refers to the official language of Nepal and to the other Eastern Pahari dialects spoken through Nepal and eastward. It is a North Indian language, belonging to the Indo-Aryan branch of Indo-European. The Newari language is a Tibeto-Burman group of substantially similar dialects spoken primarily in the Kathmandu Valley, but also in towns and villages elsewhere in Nepal. Writing and publication in both languages uses the Devanagari syllabary. The written, taught, formal style of Nepali is almost standardized, is in part considered by some to be artificial or pundit speech, and differs more or less sharply from native speakers' colloquial depending on education, caste-clan group, and geographical region. Modern written or literary Newari is to a large extent a creation of this century and is basically derived from a writer's spoken language although standardization has set in. Prior to this an archaic, classical Newari was used for religious literary texts. It is a prestige dialect of Kathmandu, on which writers are basing their standardization, that is described in this paper.

The comparison to be made here between the two languages does not imply that their similarities are due only to their contact with one another. For one thing, Nepali has been in centuries-long contact with other Tibeto-Burman languages during its eastward spread through the Himalayas and is a second language for large numbers of Tibeto-Burman speakers. For another, Newari speakers repeatedly absorbed immigrant groups from North India that originally spoke Indo-Aryan languages. In addition both languages share areal features which are doubtless of greater antiquity than the present millennium or more and are of broader geographical extent than North India and the Himalayas. There are thus many similarities which cannot be unambiguously identified as the product solely

of Nepali-Newari contact, and even many of those that might appear to be so identifiable would require description of neighboring languages for substantiation.

Out of the mass of morphological, syntactic, and other parallels, as well as of direct mutual borrowing of forms, evidenced between the two languages, this paper will restrict itself to the less obvious congruences in the verb and related syntactic behavior. More importantly, it will try to show how the semantic study of language contact reveals underlying similarities in grammar that differences in form would tend to obscure. In any event, Nepali and Newari do not exhibit the spectacular relationship, reportedly found elsewhere in South Asia, of being virtually one code with two expression systems.

First, those tense forms that will be discussed are introduced and briefly described for the two languages. Next, various semantic and other categories will be proposed and exemplified in a characterization of the Newari tense system. After that, the Nepali system will be presented in comparison with the Newari one including discussion of varieties of Nepali and some peculiarities of the Nepali ergative construction illuminated by a Tibeto-Burman model.

Many of the finer details and considerations have been omitted in the discussion of the Newari and Nepali tense systems, and the reader should not look for more than the broad outlines. A more comprehensive study of the Newari system is in preparation. The label "tense" is used only as a very traditional cover term for what will be described. Time is only one element of "tense" as used here, and often a minor one.

2 The verb tense forms to be compared²

2.1. The Nepali forms

Where there are person-number distinctions in Nepali verbs, only third person singular forms will be used at this point to exemplify categories in Nepali. Other persons are discussed under evidentials and the ergative below. Items are cited in their shape and use in a formal style, and differing spoken usages are given where pertinent later. The verb tenses to be considered here will first be exemplified with the stem *gar-* 'do' and then identified. The glosses given here and elsewhere are, of course, primarily for translation identification, their more precise semantics being a subject of this paper. Translation is also resorted to in order to help the reader of English map the Newari and Nepali systems into a familiar grid, in place of an etic grid of semantic description, which linguistic science has only begun to develop.

- | | | |
|-------------------------|-------------------------|-------------------------------|
| (1) <i>Perfective</i> | (a) <i>gar-yo</i> | 'did' |
| | (b) <i>gar-eko</i> | 'done' |
| | (c) <i>gar-eko cha</i> | 'has done' |
| | (d) <i>ga-eko thiyo</i> | 'had done, did' |
| (2) <i>Imperfective</i> | (a) <i>gar-ne</i> | 'doing' |
| | (b) <i>gar-cha</i> | 'does, will do' |
| | (c) <i>gar-thyo</i> | 'used to do, would have done' |
| | (d) <i>gar-la</i> | 'will/might do' |

- (1) *Perfective*. (a) *-y-* the finite past (perfective) tense suffix + *-o* third person singular suffix after *-y-*. (b) *-e* perfective participle suffix + *ko-* the broad genitive/adjectivalizing/nominalizing suffix. (c) *-eko*, see (b), + *ch-* present stative stem of existential-locative 'to be' + *-a* third person singular suffix after *ch-*. (d) *-eko*, see (b), + *th (i)-* past stative stem, corresponding to *ch-*, + *-yo*, see (a).
- (2) *Imperfective*. (a) *-ne* imperfective participle suffix.
 (b) *-cha*, see (1c). (c) *-thyo* bound form of *thiyo* (1d).
 (d) *-la* future suffix, with third person singular marked by absence of a personal suffix.

2.2. The Newari forms

The Newari verb endings to be considered here are, exemplified with the stem *yat-* 'do', as follows:

- (a) *yat-o* 'did'
- (b) *ya-v* 'does/do, used to do, did'
- (c) *yan-a* '(I/we) do, used to do, did'
- (d) *ya-i* 'will/might do'
- (e) *ya-e* '(I/we) will do'
- (f) *ya.v'-gu, yan-a-gu, ya-i-gu, ya-e-gu* 'having done, doing, going to do etc.'

The Newari verb endings are thus *-o*, *-v'*, *-a*, *-i*, and *-e*. (These letter symbols will be used without hyphen in the next section to identify the tenses in the semantic formulas.) These tenses do not distinguish number nor, as explained below, person. The adjectivalizing/nominalizing suffix *-gu* is added to *-o*, *-a*, *-i*, and *-e*, but not to *-v'*. Thus, *yat-o* + *-gu*, yields *ya. v'-gu* 'having done' (i. e., the latter is not from **ya-v' + -gu*). A kind of perfect is formed with *du*, the locative-existential 'be': *ya. v'-gu du* 'has / had done', *yan-a-gu du* '(I / we) have / had done'.

3. Semantic and other features of the Newari tense endings

3.1. Introduction

The definitions of the "tenses" will be given more in the form of descriptions. A stricter statement in logical form is still in the process of being worked out, especially since it also requires the preliminary formulation of a descriptive theory including, for example, presuppositions, illocutionaries, and felicity conditions. The present paper is not the proper context for defending the framework of description adopted. The approach to definition at this point in the analysis will be that of seeking a core meaning for each tense. That is, the tense *form* is taken as the starting point, and, where possible, a single definition will be attempted. The definition gives the components that can be factored out of the range of usages of the given form and that oppose it to the other forms. Then some of these various

usages will be described. The ultimate goal would be an autonomous statement of the semantic system of tenses, linked by rules to the formal expression system. On the evidence some of the usages to be described seem to be good candidates for becoming separate categories of the semantic system.

For the description, the agentive/ergative "subject" of transitive verbs will not be distinguished from the subject of intransitives since transitivity does not affect the interaction of subject with verb endings. A detailed discussion would have to cover the semantic interactions of subject and object with one another and with the verb and tense meanings. The question of subject, object, etc. as categories only of surface grammar will be glossed over for simplicity. Thus, x will be used as a variable corresponding to subject noun phrase (referent), and F will represent the state or action of the main verb phrase without the verb tense endings. That is, F represents an action that x performs or undergoes or a state that x is in.

The proposition $F(x)$, with predicate F and argument x , is itself the argument of complex higher predicates, and the tenses expressed by $-v'$, $-o$, $-a$, etc. are among them. The phonological letter symbol of each tense ending will be used, without hyphen, to represent the particular complex of (higher) predicates that this tense incorporates. For example, $wo-n'ya-v'$ she/he does/used to do (it) (wo third person singular pronoun, $-n'$ agentive suffix, $yat-$ 'do', $-v'$ characterizing tense suffix) is one realization of $v'(F(x))$, where x is wo and F is $yat-$. These notational conventions are adopted to simplify the definitions and descriptions of the tenses.

We start with the evidential categories in the Newari system. Given a statement, in a definition, that the speaker s asserts that $F(x)$ (or some other proposition), this statement should be understood to have the following felicity condition. The condition is that s know that $F(x)$ and thus that s have had one or more experiences that have caused s to know that $F(x)$. In describing the evidential components of $-o$, $-v'$, $-a$, $-i$, and $-e$, four subtypes of experience are specially singled out: (a) s observes at least part of the action or state $F(x)$ to occur or exist; (b) s observes circumstantial evidence that $F(x)$; (c) s is told that $F(x)$; (d) s is x and intentionally performs the action $F(x)$.

To account for the location of $S(x)$ in relation to the time/event of speaking at which s asserts, reports, questions, etc. $F(x)$ is presupposed to carry with it a time variable $Time F(x)$ at which it is or can be located. This time variable derives from a variable time located. (This time variable derives from a variable time predicate taking $F(x)$ as its argument.) Since the tenses include aspect and other characteristics, they have their own time variables, $Time o$, $Time v'$, $Time a$, etc. These are not necessarily coterminous with $Time F(x)$ for the propositions $o(F(x))$, $v'(F(x))$, $a(F(x))$, etc.

Each tense definition will be introduced by translations of its more neutral usages, i. e. usages elicited with no more than minimal contextual cues, whether verbal or nonverbal.

3.2. $o(F(x))$

For $o(F(x))$ translations might be 'x did F ' or 'x fell to doing F ' where F is an action performed by x . States can be translated 'x became F ', 'x turned out to be F ', 'x has become/turned out to be F ', 'x is F '. (This last, 'x is F ', is discussed

in 4.1 below in a comparison with Nepali $-yo$.) Thus, a part of a core meaning definition we would say that an action or state $F(x)$ comes to be at least once. For a given occurrence $o(F(x))$, i. e. in an utterance, $Time F(x)$ and $Time o$ are classes of times (or occasions) with at least one member each. This is as in English, where 'x did F ' or 'x became F ', for instance, do not specify how many times the event took place.

To describe $o(F(x))$ somewhat more formally, we say that the speaker s asserts that $F(x)$ comes to be at least once, or in other words s asserts that *become* ($F(x)$) at $Time o$. The conditions are that $Time o$ is before the time of speaking and that the evidence of s for making the assertion is at least one experience of s of observing at least part of $F(x)$.

Some comments on this are in order: First, the assertion *become* ($F(x)$) would include the assertion of $F(x)$, where $Time F(x)$ is after $Time o$ without any intervening time. Next, the above definition of $o(F(x))$ is a unitary one devised to match a single tense *form*. That is, it assumes that there is one category in the semantic system matching one unit in the formal system rather than several semantic categories matching several homonymous formal units (see 3.1 above). Then, although the time of speaking follow $Time o$, it may or may not be included in $Time F(x)$ or in the time of a resultant state or action, and one regular use of $o(F(x))$ includes present-time reference.

3.3. *The evidential felicity condition and the inchoative*

The evidential felicity condition, it must be stressed, only says that at least one of the experiences of s must be one of observation; it does not imply that the experience of observation is the only one that s must have. For example, $o(F(x))$ may be used where a proper translation might be 'x became F ' and s did not observe *become* ($F(x)$) but only $F(x)$. Here s may have known by observation or otherwise that x was not F , i. e. *not* ($F(x)$), before the $Time o$ of *become* ($F(x)$). However, there are situations to which $o(F(x))$ is applied where the translation 'x (has) turned out to be F ' or 'x is / was F ' is appropriate, for example trying on a shoe and finding that it is too small. Here s may reasonably assume that $F(x)$, rather than *not* ($F(x)$), held before $Time o$ and continued to hold through $Time o$ and the $Time F(x)$ actually referred to, i. e. the shoe did not suddenly shrink upon being tried on. Obviously, the import of *become* ($F(x)$) must be worked out more carefully as a component of $o(F(x))$.

To do this, a three-valued truth dimension can be set up for Newari assertions (it could also be seen as two linked binary dimensions): (a) $F(x)$ is established by evidence, (b) *not* ($F(x)$) is established by evidence, (c) the status of $F(x)$ is not (yet) established by evidence. Then *became* ($F(x)$) might be better rendered as ' $F(x)$ comes to be established by evidence' or ' $F(x)$ comes to be true or proven'. Thus an assertion *become* ($F(x)$) (i. e., $o(F(x))$) requires no necessary presupposition that *not* ($F(x)$) just before $Time o$, nor a condition that s know any such thing, and none has been included under the conditions in the definition. Since the

inchoative label "*become* ($F(x)$)" has been used with such a presupposition in describing other languages, it might, for the sake of the metalanguage, have been better to pick some other label for this component in Newari.

3.4. $v'(F(x))$

In the case of $v'(F(x))$, where F is an action performed by x , translations might be ' x does F ' or ' x used to do F ', and where F is a state, ' x is F ', ' x becomes F ', ' x used to be F ', ' x used to become F '. $v'(F(x))$ can also refer to a single past-time event, as well as repeated past-time events, and overlaps in such cases with $o(F(x))$. However, it does not require direct observation as an evidential condition, which $o(F(x))$ does require.

A definition of $v'(F(x))$ might be as follows. The speaker depicts x as characterized by $F(x)$. To put it differently, s says (not "asserts") that x is such that $F(x)$. This formulation depends on the fact that in a question $v'(F(x))$ is not ordinarily answered by *kho-v'* 'yes / it is so/it is true' or *mo-khu* 'no / etc.' (from *khot-* 'be / become so'), unlike the other tenses. As a question, $v'(F(x))$ is ordinarily answered by a repetition of the verb of the question, in the same tense, in the affirmative or negative.

The conditions are as follows. $F(x)$ occurs at least once. (Note that this falls under conditions in contrast to the case of $o(F(x))$, where it is asserted.) The *Time* v' , during which $F(x)$ characterizes x , begins before the time of speaking, i. e. *Time* v' may end before the speech event begins, or it may include the latter. *Time* v' includes all *Time* $F(x)$ referred to by the given utterance of $v'(F(x))$. The evidence of s is at least one experience of observing that $F(x)$ and / or of observing circumstantial evidence that $F(x)$ and/or of being told that $F(x)$. This disjunction can be removed by a formulation which says that there is at least one experience of s which is other than the intentional performance by s himself of the $F(x)$ referred to by the utterance, intentional performance being the fourth type of evidence mentioned in 3.1 above for making a statement.

Some clarification is needed for this formulation of the experience required in evidence. Evidential experience is presented for the Newari tenses as a dimension with four values (a) observation, (b) hearsay, (c) circumstantial evidence, (d) intention. For $v'(F(x))$ a minimum of one experience from (a), (b), or (c), a disjunction, has been rephrased as a unitary statement of a minimum of one experience from non- (d). The reason is more than a theoretical demand for the economy of unitary definition. To help explain this, $a(F(x))$ is described next.

3.5. $a(F(x))$

In the simple declarative the subject x of $a(F(x))$ is first person, and translations might be 'I (or 'we') did F ', 'I used to do F '. Thus, the speaker s asserts that $F(x)$ occurs at least once, and the conditions are: $s = x$; $F(x)$ is an action; x performs this

$F(x)$ intentionally; *Time* a of this intention includes all *Time* $F(x)$; at least one such *Time* $F(x)$ occurs before the time of speaking; the evidence for the assertion is at least one experience of s which is this intentional performance of $F(x)$ (i. e., $F(s)$). It could be argued that only s can claim the internal experience of intentional $F(x)$ and that therefore $s = x$ follows naturally and is superfluously stated above as a condition. In any event, it should be noted that $s = x$ is given as a condition rather than as part of the assertion since $-a$ is evidential and not a first-person verb ending; it may occur with any person such as, for example, second person in the interrogative and third person in the quotative. A fuller statement would thus account for how speaker s can be second or third person.

Since $F(x)$ must be an intentional action here, states, as well as actions defined as involuntary (i. e., where x undergoes F), occur with $v'(F(x))$ or $o(F(x))$ even when the subject is first person. Actions defined as unmarked for either intentional or involuntary occur freely with any evidential category for first person, information about intention being supplied by the category of the tense.

Actions defined as intentional when in the simple declarative with first person subject occur expectedly then with $a(F(x))$. When these conditions are met but $v'(F(x))$ or $o(F(x))$, occurs instead of $a(F(x))$, the speaker s indicates hearsay or observation as evidence for his report of his own actions. This has several uses. Thus, s may not remember doing F and has found out about it in some other way. Or s splits himself into two personae, speaking from the point of view of someone else or reporting his actions in a dream. There is a general effect of talking about oneself in the third person, although the first-person pronoun is used. When s employs this usage even though he also has the evidential experience of his own intentional performance (i. e., even though a $F(x)$ would not be infelicitous), there is an impression of flippancy, annoyance, distance, or failure to accept responsibility for one's actions in the face of one's interlocutor, an impolite usage towards one's seniors. This then is one more justification for a unitary statement of the evidential condition for $v'(F(x))$ as at least one experience of nonintention, since that is what s communicates when speaking in the first person with $v'(F(x))$. The additional evidence of an intentional experience is not excluded as a possibility by this evidential condition for $v'(F(x))$: it is simply not mentioned.

3.6. $e(F(x))$ and $i(F(x))$

These two tense forms will not be described in as much detail as the previous three. Typical translations of $e(F(x))$ are in the first person: 'I (or 'we') will/shall do F ', 'I would do F '. Thus, $e(F(x))$ is in the same evidential category with $a(F(x))$. It involves actions as opposed to states; the actions are defined as intentional or unmarked as opposed to those defined as unintentional; $s = x$; $F(x)$ will occur at least once. In contrast to $a(F(x))$, $e(F(x))$ has a different time reference: *Time* $F(x)$ is future, but the evidence of s for making the prediction (assertion?) is present intention of s .

The use of $i(F(x))$ in the first person declarative when $e(F(x))$ would also seem appropriate gives similar effects to those described in the preceding section.

i ($F(x)$) falls in the same evidential category with *o* ($F(x)$), and possibly *v'* ($F(x)$), in that the evidence of the speaker *s* that is required as a condition is other than intention of *s*. Time reference is in some sense future. $F(x)$ will occur at least once.

There are more reasons than for *o*($F(x)$) to believe that *i*($F(x)$) is best considered not one form, but several homonymous forms. These reasons will not be gone into here in detail. They consist of such things as differing ways of forming the negative, selective combination with *-gu*, and informant reactions of actual ambiguity. The last, ambiguity, is distinguished from simple generality or vagueness of reference. Like ambiguity, generality must often be rendered by more than one translation, but, unlike ambiguity, such multiple renderings derive from greater fineness of the target language on the meaning in question compared to the source language. In any event, the following breakdown of *i* ($F(x)$) into several homonymous forms is tentative.

(a) One sense expressed by *i*($F(x)$) can be translated 'x will (do/be/become) F ' or 'x is to/was to F '. As the independent clause of a conditional construction, it may be rendered 'x would F '. (b) Another sense translates at 'x may/might F '. (c) A kind of present-time usage of *i*($F(x)$) can be translated by a similar use of the English future with *will* to express a repeated or habitual occurrence, e. g. 'on a warm summer's night he *will* often drop by after supper'. A core meaning can be offered for (a), (b), and (c) that involves and evidential in the form of a conditional statement: 'if *y* observes *x* at time *i*, *y* will observe $F(x)$ '.

3.7. The tense forms with '-gu'

The suffix *-gu* is added to the tense endings *-o*, *-a*, *-i*, and *-e*, but not to *-v'*. Thus, *wo-n'ya. v'-gu* 'he (she) having done (it)' corresponds to *wo-n'yat-o* 'he did (it)' (*wo* third person singular pronoun, *-n'* agentive suffix, *yat-* 'do'); *ji-n'yan-a-gu* 'I doing / having done' to *ji-n'yan-a* 'I do / did' (*ji* first person singular); *wo-n'ya-i-gu* 'he doing' to *wo-n'ya-i* 'he will do' *ji-n'ya e-gu* 'I doing' to *ji-n'ya-e* 'I will do'. The *-gu* form adjectivalizes a verb phrase, rendering the equivalent of a relative clause: *ji-n'yan-a-gu jya* '(the) work that I do/did' from *ji-n'yajyan-a* 'I do/did (the) work'. This can further be nominalized to *ji-n'yan-a-gu* 'what I do/did; the fact of my doing (it)'. Similarly, *wo-n'ya. v'-gu* 'what he did; the fact of his having done (it)'. Relativized usage such as 'the work that he did' or 'what he did' does not assert in itself that he did it but rather presupposes the truth of his having done it, and this holds for the *-gu* forms.

Furthermore, *-gu* clauses regularly occur as complete sentences and do not become assertions of the action itself thereby, but remain presuppositions. Take, for example, the following conversational sequence. *A: wo-n'yat-o* 'he did (it)'. *B: gu-boloe ya. v'-gu?* when did (he) do (it)?'. *A: mhigo ya. v'-gu* '(he) did (it) yesterday'. The action having been asserted once in the first statement, the last statement need not reassert it. Knowledge already shared by the interlocutors is also stated in a *-gu* sentence. The above question, *gu-boloe ya. v'-gu*, presupposes

that he did it and asks when. Such questions can also occur without *-gu*, e. g. *gu-boloe yat-o?* They are then both assertions and questions: 'he did it; now, when did he do it?'. Such a form is understandably avoided when speaking to persons that one owes respect.

Although *-v'* does not have a separate *-gu* form, the function of the latter is served in other ways. When *-v'* has the same time and event reference as *-o*, it corresponds to the *v'-gu* (from *-o + -gu*) of *-o*. This *-gu* neutralizes the evidential condition of direct observation required for *-o*, a condition which *-v'* does not have. When *-v'* refer to the habitual (or interative), it corresponds to the *-i-gu* of *-i* in the latter's reference to habitual action.

Form with *-gu* also form a perfect with *du*, the *-v'* form of *dot-* existential 'be': *ji-n'yan-a-gu du* 'I have/had done (it)', *wo-n'ya. v'-gu du* 'he has/had done (it)'. Although *wo n'yat-o* 'he did (it)', as an *-o* form, can also cover reference to the result of the action as 'he has done (it)', the *-gu du* form asserts the result as well. Thus *wo wol -o* 'he came/has come/had come', but *wo wo. v' -gu du* 'he came/ etc. and is/was here'.

4. A comparison of the Nepali and Newari tense systems

The formal or official style of Nepali is presented unless specified otherwise. For grammatical characterization of the Nepali tense forms, refer to 2.1 above. For fuller description of the semantic categories, see under the appropriate Newari form in the preceding section on the meanings of Newari tense endings.

4.1. Time and aspect categories

A chart at the end of this subsection summarizes comparison with aspect in broad outline.

The Nepali *-yo* form is equivalent to Newari *-o* in time reference and aspect. (Newari *-a* is compared separately below.) Thus, Nepali *us le gar-yo* (*us* oblique of *u* third person singular pronoun, *-le* agentive suffix, *gar-* 'do') and Newari *wo-n'yat-o* are both 'he did/has done (it)'. Both are perfective in aspect and depending on the nature of the verb and the context, may be inchoative. That is, the action began and finished coming into being and may also be completed, or the state finished coming to be and may or may not still exist at present. This also allows for a kind of inchoative or inceptive of ongoing action, depending on the proper context: 'fell to doing/has fallen to doing/is doing'.

In both languages, the inchoative of state may be either 'came/has come to be' or 'came/has come to be true, turned/has turned out to be so'. Thus, for example, Nepali *thik bha-yo* (*thik* 'O. K.', *bha-* perfective stem 'be') and Newari *thik jul-o* (*thik* 'O. K.', *jul-* the equational or class-membership 'be') can both translate as '(it) became/has become O. K. (not having been so before)', i. e. an actual change of state, or '(it) turned/has turned out to be O. K. (and presumably was O. K. before but without my, her, etc. knowledge)'. Furthermore, for states, *-yo*

and *-o* may translate not just 'x has become *F*', but simply 'x is *F*'. In this latter sense, these perfectives are particularizing; 'x is *F*' on this occasion, as opposed to a characterizing tense in which 'x is *F*' as a characteristic, regularly, if one were to observe x, etc.

The Newari *-gu* forms correspond to the Nepali *-eko* perfective and *-ne* imperfective participial forms, i. e. *-o + -gu (> v'-gu)* to *-eko*, and *-i-gu/-e-gu* to *-ne* (see below for *-a-gu*). As described above for Newari, the Nepali *-eko* and *-ne* suffixes form relativized (adjectivalized) and nominalized clauses. Such clauses likewise, can also stand as independent sentences expressing presuppositions rather than assertions. The same social implication, given as an example for Newari, follows from their meaning: e. g., *timi-le ke gar-eko?* 'what have you done?' vs. *timi-le ke gar-yaw?* 'I see you've done something; now, what was it?'. Basically, the *-eko* and *-ne* forms correspond to the *-yo* and *-cha* tenses respectively with regard to aspect. (For the imperfective *-cha* tense, see below.) *-eko* and *-ne* are quite common as the finite verb forms of independent sentences in the spoken language, and one bureaucratic style for interoffice memoranda is cast primarily in such sentences.

We see here a case where differences of form obscure similarities in function. Nepali has two adjectivalizing/nominalizing suffixes to differentiate aspect, whereas Newari has one and expresses aspect in the usual verb endings preceding this suffix. (Actually, the two Nepali suffixes are each segmentable, e. g. *-eko* contains *-e-* as a separate marker of the perfective).

Nepali *-eko cha*, as *us-le gar-eko cha* 'he has done', and *-eko thiyo*, as *us-le gar-ako thiya* 'he had done/did', make a distinction of time which the single Newari *-gu du* as *wo-n'ya.v'-gu du* 'he has/had done', does not. The latter includes Nepali *-eko cha* and overlaps with *-eko thiyo*. In both languages, as described in the discussion on Newari, these forms assert not only the action but also some sort of state or situation as resulting from the action and continuing after it up to some reference point. This is in contrast to the simple perfectivity of Nepali *-yo* and Newari *-o* which may not express continuance of the resultant.

The Newari *-v'* and *-i* (and *-e*) and Nepali *-cha*, *-thyo* and *-lā* overlap in most of their senses. The equivalents of 'do' will be used to exemplify the comparison. Newari *ya-v'*, when referring to past habitual (characterizing) 'used to do', corresponds to this sense of Nepali *gar-thyo*. In present habitual (characterizing) usage, *ya-v'* corresponds to Nepali *gar-cha* 'does'. *gar-cha* as 'does' also covers Newari *ya-i* in the latter's present habitual sense. (See 3.6 above for the uses of *-i*.) *gar-cha* as definite future, 'will do', renders this same sense of *ya-i*. The contingent future of Newari *ya-i*, 'may do' or '(watch out: he) might do (it)', corresponds to Nepali *gar-lā*. Newari *ya-e* '(I) will do', as a statement of the speaker's future intention, is rendered by the first-person form of Nepali *gar-cha*. Correspondences change slightly in the interrogative, where, for instance, request for permission may be expressed.

Nepali also has a future form, *gar-ne-cha* 'will do', expressing a strong assertion or prediction of a future event in the spoken language. In a modern, formal, often journalistic, written style, it is equivalent to the simple future of Western languages, particularly English.

Newari *-a* (and *-a-gu*) expresses only nonfuture time with regard to tense, and the evidential category of intentional action, assertable only by the performer of the action. In time and aspect, therefore, it is more general and covers the range of the Newari nonintentional *-o* (*.y'-gu*) and *-v'* both. It has no equivalent in Nepali and, in the simple declarative, corresponds to the first-person forms of Nepali third-person *-yo -cha*, *-thyo* (and *-eko* and *-ne*). Likewise, the perfect *-a-gu du* in the declarative expresses the first-person forms of Nepali *-eko cha* and *eko thiyo*.

Summary chart

Approximate tense-aspect correspondences

Newari	Nepali	Glosses with 'do'
<i>-gu</i>	<i>-ne</i>	'doing'
	<i>-eko</i>	'having done'
<i>-gu du</i>	<i>-eko cha</i>	'has done'
	<i>-eko thiyo</i>	'had done'
<i>-o</i>	<i>-yo</i>	'did'
<i>-v'</i>	<i>-thyo</i>	'used to do'
	<i>-cha.....</i>	'does'
<i>-i</i>		'will do'
	<i>-lā</i>	'may/might do'

4.2. Evidential categories and personal endings of verbs

As said, Newari endings may be put into two classes, *-a -e* for intentional associated with first person, and *-v' -o -i* for nonintentional (i. e., unmarked for intention). As evidential categories, these forms may occur with any person however, depending on evidence, affirmative vs. interrogative, assertive vs. quotative, and other factors, and furthermore do not distinguish number. (In addition Newari and Nepali have a set of high-honorific verb forms which are not considered here but do not essentially pose any exceptions to the tense systems.)

In the formal or official style of Nepali, the *-yo* tense is neutral as to the speaker's evidence for the assertion, in contrast to the aspectually corresponding Newari *-o* of direct observation but there are speakers who would avoid *-yo* if their evidence is hearsay. Both languages add quotative particles, Nepali *re* and Newari *hō*, to verb forms to specify hearsay evidence. The Nepali first-person ending and Newari *-a* may both occur with these quotative particles with third person reference if the speaker's source for the information is the performer of the action. Nepali has a further form, e. g. *gar-e-cha*, for actions or states found out about after the fact by later observation, hearsay, etc.

In the formal style, Nepali, has the Indo-European system of verb-tense endings consisting of a differentiation of three persons and two numbers. The second person, however, is tied in with the scale of honorifics, and its singular represents the low grade of the honorific scale, where its "plural" is middle grade with singular vs. plural being marked in the pronoun with *gar-* 'do', for example, in the past (perfective) tense and for tenses using (*-*) *cha*, the six forms are :

	<i>Sing.</i>	<i>Plur.</i>	<i>Sing.</i>	<i>Plur.</i>
1P.	gar-ē	gar-yāw	chu/chū	chāw
2P.	gar-is	gar-yaw	chas	chaw
3P.	gar-yo	gar-e	cha	chan

In the various spoken styles and dialects, however, not all of these distinctions are found. For example, in the few, earlier grammars of Nepali, often based on the speech of hill peoples serving outside of Nepal in the Gurkha regiments, notes, may be found to the effect that in speaking only the 1P. sing. and 3P. sing. forms need be used, the 3P. sing. for all non-1P. This begins to give the appearance of the two main evidential categories of the Tibeto-Burman Newari: the intentional, associated with (although not restricted to) 1P., and the nonintentional, associated with the other persons.

Because of social and regional variation, a further example of a Nepali colloquial will be given from the speech of a single individual, born in the Gurkha district, raised later in Kathmandu, educated, from a wealthy Chetri family. Primarily utilitarian in his approach to language, he describes the range from colloquial through formal speech to writing in terms of the rigor with which teachers in school corrected given items in students' speech and writing. In his colloquial speech as observed, and, he claims, that of his associates and family, as a rule the 1P. and 3P. *sing.* verb endings are used regardless of whether the subject is singular or plural. In the perfect tense *-eko cha* with transitive verbs, the 3P. *sing.* form *cha* tends to be used for all persons and numbers. (Note that transitives in perfective tenses are ergative, the "subject" taking the agentive suffix *-le*.) This is parallel to the Newari perfect *-gu du*, where *du* is the invariable form. In fast speech, the 2P. "plur." ending of the *-yo* tense, namely *-yaw* [yāw], tends to simplify phonologically and reduce to *-yo* [yo], and then both to reduce further to [yə].

In his variety of Nepali colloquial, then, there is no distinction of number in the verb endings, which only distinguish person (except in the *-eko cha* tense). The 2P. "plur." endings remain distinct from 2P. *sing.*, but, as said above, this is really an honorific distinction and note one of plural vs. singular number. Also, the 3P. "plur." verb ending of any tense may be used with a higher grade honorific function, without in fact distinguishing number semantically, with certain honorific pronoun (and noun) subject forms. Only these honorific pronoun forms will be marked for number. To use these honorific pronouns but replace the 3P. "plur." verb endings with the corresponding 3P. "sing." ones may be found humorous and labeled *pākhe*, the speech of a country bumpkin making gaffes in the use of forms he has not mastered.

It should be noted that the reductions of person-number distinctions in the verb endings in this variety of Nepali seem to result from more than one factor (e. g., *-yaw* becoming *-yo* appears to depend on tempo), but are all in the direction of the Tibeto-Burman system exemplified by Newari.

Although Indo-Aryan influence on Newari lies not so strongly in the area discussed here, there is reported to be a form of Newari spoken in the town of Patan, near Kathmandu, in which the intentional category has lost its evidential function and become fixed as a first-person ending.

4.3. The ergative and subject-verb concord

Newari, like related Tibeto-Burman languages, attaches an agentive suffix to the "subject" of a transitive verb in any tense-aspect, but not to the subject of an intransitive. This does not, however, affect the verb endings. Being evidential rather than concord or agreement suffixes, the latter continue to interact in the same way with the person of the subject regardless of whether the verb is transitive or an intransitive intentional action. Thus, the agentive suffix *-n'* does not affect the verb endings: *ji-n'-ya-a* 'I did (it)' and *ji won-a* 'I went' both have *-a*; *wo-n' yat-o* 'he did (it)' and *wo won-o* 'he went' both have *-o*.

In the more westerly of the North Indian languages and dialects, the tendency is to use the ergative (from the Sanskrit passive in the perfective tenses of transitive verbs, marking the "subject" usually with an agentive suffix; other verb forms are not ergative. Furthermore, verb endings are concord suffixes and agree in person and number, when there is agreement, with the "object" of transitive verbs in the perfective and with the subject of all other verb forms.

Nepali, a North Indian language, lies somewhere between these two systems. The agentive is regularly suffixed to the subject of transitives in perfective forms of the verb. However, usage with other verb forms of the transitives is variable, and the agentive suffix may be added to the subject in such cases too, depending on the particular nonperfective in which the transitive verb occurs and on such things as emphasis, speaker, style, dialect, etc. Furthermore, the verb endings, which are concord suffixes rather than evidentials at least in more formal style, agree in person (and number) with the subject of transitive verbs regardless of whether the agentive suffix appears, and of course with the subject of intransitives. Thus, Nepali verb endings follow a North Indian pattern in terms of person (and number) concord but show a Tibeto-Burman trait when remaining unaffected by ergativity. For example, *may-le gar-ē* 'I did (it)' and *ma gl-ē* 'I went' both have *-ē*; *us-le gar-yo* 'he did (it)' and *u ga-yo* 'he went' both have *-yo*.

5. Conclusion

As said at the beginning, Nepali and Newari have at this point been taken only as examples of the convergences discussed. It is not necessarily clear for all of the many parallels between them, which are due specifically to the several centuries

of contact between the two languages in the Kathmandu Valley and which are prior diffusions of broader areal features of this part of South Asia, including other ancient and more recent Indo-Aryan and Tibeto-Burman contacts.

Only major points in broad outline have been touched on in this comparison. There are other, more complex verb constructions and, of course, finer details and subtler points in tense usage not covered here. The area of comparison was one in which parallels are not as striking and lie more in a semantic rapprochement where convergence in form lags behind. Thus, a form in one language may add a function of a form in another without becoming identical to the latter in all senses, as, for example, a topic not covered, the influence between two Nepali verbs 'to be' and three Newari ones. A general syntactic comparison would merely have repeated basic patterns of the broader South Asian area. In the case of expanded verb morphology, many similarities would stand out: for instance, to express the continuous as in 'is doing', Nepali has *gar-i-rah-e-ko-cha* and Newari *yan-a-cwon. v'-gu du*; both are perfects in a sort of inchoative or inceptive of ongoing action and consist of *gar-/yan-'do'*, *-i/-a* absolutive participle suffix, *rah/cwon-'remain'*, *-e/-o > .v'* perfective, *-ko/-gu* adjectivalizing suffix, *cha/du* existential-locative verb 'be'. Such comparisons would have been more salient and certainly more convincing, but perhaps also more obvious.

Notes

1. This paper is based on research carried out in Nepal in 1965–1966, supported by Public Health Service research grant No. MH 05743. Works consulted for Nepali include: Clark 1963, Meerendonk 1964, Rogers 1950, Southworth 1967.
2. The following transcription system are used. Only a few phonological observations are made.

Nepali: *P t T c k, b d D i g, s h, m n, r l, w y; i e a ā u o*. *T D* are retroflex. Aspiration / breathiness is marked with *h* (*ph, bh, etc.*). Nasalization is marked with a tilde (*ẽ, ù, etc.*). *a* covers a broad schwa range. *ā* is low central to front.

Newari: *p t c k, b d j g, s h, m n, r l, w y; i e a o u*. *h* marks aspiration / breathiness. A tilde marks nasalization. *v* marks a long vowel (*iv, av, etc.*). *o* covers a broad schwa range, *a* is low central to front. *wo* includes [o] as a variant. Arguments can be made for treating *e* as *yo*. *oe / o-e* includes [ɛ:] as a variant. *ae/a-e* includes [æ:] as a variant. (The hyphen represents one of the morpheme boundaries.) *n'* represents lengthening and nasalization of the preceding vowel (e. g., *an'/a-n'* [ã:]); the acute accent marks special morphophonemic symbols). *v'* represents morphophonemic consonant loss, realized as lengthening of the preceding vowel, with nasalization if the deleted consonant is a nasal. (Thus, e. g., *an'/a-n'* and *anv'/anv'* are both realized as [ã:]).

Nepali *ā* and Newari *a* are phonetically equivalent, as are Nepali *a* and Newari *o*, and both of the latter include a centralized lower back rounded variant. Nepali *o* and Newari *wo* are approximately equivalent. However, for many Kathmandu speakers of Nepali, if not for others as well, a five-vowel system, as in Newari, would be appropriate, with [o] represented as *w* plus schwa rather than as a separate *o*.

LANGUAGES IN CONTACT IN WESTERN CHINA

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0. Introduction

During the 1982-83 academic year I investigated the linguistic situation in the eastern border region between Gansu province and Qinghai province. Although the area is located practically at the center between the eastern seaboard and the western boundary of China, it has always been the beginning of the Western Frontier of China. It covers the upper reaches of the Yellow River and it is near the terminal point of the Great Wall as well as the starting point of the silk route. The map below shows the provinces in western China. The area of study is shaded.



As the map shows, to the north and northeast of this area is the homeland of the Mongols; to the northwest are the Turkic Uighurs and Khazakhs; to the south and southwest lies the domain of the Tibetan culture; and to the east is the old civilization of the Han Chinese. It is, therefore, not surprising that this area should be a center where different ethnic groups, languages, and cultures come in contact with each other. Today aside from the Han Chinese, most of whom arrived as immigrants following the establishment of the People's Republic of China, the region is the homeland of seven other ethnic groups: Tibetan, Santa (Dongxiangzu), Salar (Salazu), Baonan (Baoanzu), Monguor (Tuzu), Hui (Huizu), and Wutun. Contact between many languages and the resultant linguistic borrowing and interference in this area is intense.

For a number of reasons, the most important of which were limited time and the representation of diverse language families, I focused my field work in this area on three languages--Baonan in southern Gansu, Wutun in Qinghai province, and the language of the Hui people in Linxia of Gansu province--and collected in-depth data on them. Baonan is a member of the Mongolian language family. Wutun belongs to the Chinese language family but it is so heavily influenced by the local Tibetan language, both lexically and grammatically, that one may easily mistake it, on first impression, for a Tibetan dialect. The language of the Hui in Linxia is a Chinese dialect replete with Altaic features. What I would like to do in this article is to focus on the Baonan language: in particular, the infusion of Chinese grammar and lexicon into Baonan. Before delving into that topic in Section III, however, I will briefly sketch the contact-induced characteristics of Wutun (Section I) and the Chinese dialect spoken by the Hui in Linxia (Section II).

I. Wutun

Wutun is spoken by a little more than two thousand people living in five villages in Tongren County of Qinghai province. The predominant population and language in that region, as is the case in most of Qinghai province, was and remains Tibetan.¹ According to the oral history of the Wutun people, their ancestors were Chinese Moslems who immigrated from the city of Nanjing and Sichuan province several centuries ago. Under the threat of total annihilation by the surrounding Tibetans, those immigrants were given three days to convert to Lama Buddhism, take on Tibetan names, and adopt the Tibetan costumes. During those three days, the women of Wutun worked day and night to sew Tibetan garments for the male members of their families, but were left with no time to make Tibetan dresses for themselves. The result is that to this day, the men of Wutun dress like Tibetans, but the women don't. The story of their forced Tibetanization is told every year in a ritual dance during the June Festival. However, the Wutun people nowadays consider themselves a subgroup of the Tibetan ethnic stock. Very few of the Wutun people can speak Chinese. Their second language is usually Tibetan.

To a linguist who works on Chinese, the first striking feature of Wutun is that it does not have tones. The lexicon, in elicited words and sentences, as well as discourse data, is primarily Chinese but without any trace of tones. The data does not provide any clues as to how and when the language lost its tones.

The loan words in Wutun not only contain consonantal clusters which are alien to the phonological structure of Chinese morphemes, but also display segments that are not usually found in Chinese dialects. The following examples are Tibetan loan words in Wutun whose phonological structures are alien to Chinese:

[ʃtɛxpá] = village	[tʃanxká] = number
[çoxuá] = extra	[aləb] = a living Buddha
[xuetʃhá] = book	[xtʃuŋ] = reason
[4aráj] = the altar room for worshipping the Buddha	[ʃkalá] = to like
[tsal 4xá] = leap month	

To highlight those grammatical features of Wutun which are alien to the Chinese language family, I will cite a few basic principles:

(a) The language is strictly postpositional and without co-verbs.

e.g.	[tʰuo - ʃl]	[nantʃiŋ - ra]
	head - on	Nanjing - from
	'on the head'	'from Nanjing'
	[tʰian - li]	
	sky - in	
	'in the sky'	

(b) The language is rigidly verb-final. The following sample sentences illustrate this principle.

- 1) wútʰun ʃtɛxpá wú - kə jɿ - li
Wutun village five - classifier exist - attitudinal
particle
'Wutun has five villages'
- 2) ŋo kuo ta - li
I him/her hit - attitudinal
particle
'I will hit him/her.'
- 3) ɕampá ŋa tsʰia ji - ta kʰa - liɔ
ɕampa me money one - dollar give - perfective
'ɕampa gave me one dollar.'

(c) Pronouns are inflected according to nominative-accusative/dative in the singular only. Other grammatical cases are expressed by case suffixes.

	Singular		Plural
	nominative	accusative/dative	
1st person	[ŋo]	[ŋa]	[ŋó-tɛikə]
2nd person	[ni]	[nia]	[ní-tɛikə]
3rd person	[ku]	[kuo]	[kú-tɛikə]

(d) The case suffixes of Wutun are the following:

Nominative = θ	Genitive = [-tə]
Dative/Accusative = [-ha]	Comitative = [-tə]
Instrumental = [-lian̄kə]	

There is an interesting interplay between the ordering of the nominals and the presence/absence of the dative/accusative suffix in a sentence. In the unmarked word order, [ha] marks the dative rather than the accusative. Of all the case suffixes, only the genitive, the comitative and the instrumental are obligatory in all contexts.

(e) The classifier [kə] has replaced almost all other classifiers in Wutun. When [kə] occurs with a numeral to form a classifier phrase, the phrase follows the head noun. For example,

[kua vu - kə]	[jitsí san - kə]
mountain five - classifier	soap three - classifier
'five mountains'	'three pieces of soap'
[t ^h iánmi ts ^h i - kə]	
candy seven - classifier	
'seven pieces of candy'	

[kə] can also occur as a nominal suffix with the meaning, 'one', e.g.,

[xuit ^h á - kə]	[p ^h ínkuo - kə]
book - classifier	apple - classifier
'one book'	'one apple'
[rən - kə]	
person - classifier	
'one person'	

(f) There is no resultative compound in Wutun. Instead, causative constructions are marked by a causative suffix, [-kə], on the verb, e.g.,

4) i) eampá toŋtsí - (ha)	tá - lió
ǂampa Doŋdzɿ - (accusative)	hit - perfective
'ǂampa hit Doŋdzɿ.'	
ii) ɲo eampá - ha	toŋtsí tá - kə - lió
I ǂampa - dative	Doŋdzɿ hit - causative - perfective
'I made ǂampa hit Doŋdzɿ.'	

Notice in 4) i) the accusative marker is optional, whereas in 4) ii) the agent [eampá] of the verb [ta] 'hit', having been demoted to the dative slot because of the causative, is obligatorily marked with the dative case marker.

I will limit the discussion of Wutun to the preceding sketch. In brief, the language differs significantly from members of the Chinese family and displays a fascinating mixture of Tibetan and Chinese features in every aspect of its structure.

II. The Hui languages of Linxia

The Hui people are Moslems. However, not all Moslems in China are Hui. For instance, the Baonan people, whose language will be discussed in Section III, are Moslems belonging to the Baonan ethnic group. The origin of the Hui, who are considered an ethnic group in China, is not clear. At this point, they live in various parts of China,² and each group speaks the local Chinese dialect of the place in which it lives. Traditionally in Linxia, the Hui people lived in the outskirts of the city, whereas the Han Chinese lived inside the city wall. Hostile clashes between the Han Chinese and the Hui were common until the establishment of the People's Republic of China. Today, the city wall of Linxia is the seat of the district government of the Linxia Hui Autonomous District. But one can still tell a Hui from a Han Chinese in Linxia by listening to his/her dialect. Within the Linxia Hui Autonomous District live the Baonan people, the Santa people, the Han Chinese, Tibetans, and Salars as well as the Hui. Santa and Baonan belong to the Mongolian language family. Salar is a Turkic language. The Tibetans in that region speak Anduo Tibetan. Language contact and linguistic interference are intense in this small district, which is about the size of a California county.

The Hui language of Linxia (henceforth abbreviated as Hui) is easily recognizable as a member of the Mandarin dialect group of the Chinese family. However, it displays a wide array of the grammatical features commonly associated with verb-final languages, even though it has few loan words. In the following discussion, I will describe a few of the structural features of Hui to illustrate the consequences of linguistic interference:

(a) Direct and indirect objects occurring before the verb (which is the preferred word order in simple sentences), are obligatorily marked with a case suffix. The unusual feature of this case suffix is that its phonetic realization is conditioned by the main vowel of the noun stem. Thus, one can say that this Chinese dialect has a restricted manifestation of vowel harmony. I will state the governing rule in the following:

- i) The dative/accusative case marker is /a/, if the noun ends in a back vowel or a nasal.³
- ii) The dative/accusative case marker is /ɛ/, if the noun ends in a front vowel.
- iii) The dative/accusative case marker is /ə/, if the noun ends in a mid vowel or an apical vowel such as [ɿ] or [i].

If the noun syllable ends in a vowel identical to the case suffix vowel, then the vowel of the noun syllable is lengthened. Here are some examples:⁴

- 5) ɲə tʂədʒl - ə ta: mai - czɿ - lió
| I car - accusative | him/her | sell - to - perfective |
| 'I sold the car to him/her.' | | |
- 6) vu - gə vəntʂi - ɛ hɔ dzɿɛdzɿɛ
| that - classifier | problem' - accusative | good solve |
| 'That problem is easy to solve.' | | |

- 7) ta dzje - e hæ - lji
s/he wine - accusative drink - attitudinal
'S/he drinks wine!' particle
- 8) ta ŋa ji - bən şu - a ka - liə
s/he me one - classifier book - accusative give - perfective
'S/he gave me a book.'
- 9) ŋə dzjanjɨŋ - a kan - guə
I movie - accusative see - experiential
'I've seen movies.' aspect
- 10) lədzəŋ jinjɨs: tɛiŋ - dzə - lji
Lədzəŋ music - accusative listen - progressive - attitudinal
'Lədzəŋ is listening to music!' particle

(b) Hui requires obligatory suffixal markers for the comitative case and genitive case. The forms are: [-la] for comitative and [-dzi] for genitive:

- 11) ŋə tamən - la van - lji
I they - comitative play - attitudinal
'I'll play with them!' particle
- 12) ɕiəli - dzi tuidzi duan - liə
ɕiəli - genitive leg break - perfective
ɕiəli's leg broke.'

(c) The preferred word order in Hui is verb-final. An object complement clause is usually marked with the accusative case marker and placed before the verb, e.g.

- 13) ta dzw dzi - ε ŋə mji tɛiŋdə
s/he leave nominalizer - accusative I not hear
'I haven't heard that s/he left.'
- 14) vu - əə mai niy dzi - ε ni
that - classifier sell cattle nominalizer - accusative you
(nom.)
- rəndzi la ?
recognize question
marker 'Do you recognize that person who sells cattle?'
- 15) ta hæ dzi dzje - e ŋə bu jə
s/he drink nominalizer wine - accusative I not want
'I don't want the wine that s/he drank.'

(d) The tone system of Hui exhibits signs of simplification. There are only three tones in isolation:

- i) A rising tone which may be represented by 24 on the tone scale. This tone generally corresponds to the 1st and 2nd tones (the Yin Ping and Yang Ping) of Mandarin.

- ii) A high level tone, 44, which generally corresponds to the 3rd tone of Mandarin.
- iii) A high falling tone, 42, which generally corresponds to the 4th tone of Mandarin.
- | | | | | | |
|-------|----|------------|-------|----|---------|
| /fəŋ/ | 24 | 'wind' | /jy/ | 44 | 'rain' |
| /biŋ/ | 24 | 'ice' | /ha/ | 44 | 'sea' |
| /gaŋ/ | 24 | 'steel' | /ma/ | 44 | 'horse' |
| /vu/ | 42 | 'fog' | /fan/ | 42 | 'meal' |
| /tɛɛ/ | 24 | 'eggplant' | /te/ | 24 | 'head' |

In terms of the number of tones, three is the lowest among the Chinese dialects. But the most interesting phenomenon of the tone system of Hui is that all three tones change to a low level tone, 22, when the syllable is "de-stressed". The best way to clarify the phonetic nature of "de-stressed" is to use a Mandarin example. In Mandarin, the third tone on a syllable such as /mä/ 'horse,' is realized as the 213 tone only when it is stressed. When it is "de-stressed", it is realized as a 21 tone. Thus, the tone of a de-stressed syllable in Hui is not equivalent to the neutral tone in Mandarin. The 22 tone of a de-stressed syllable in Hui is a full tone without any devoicing of the segments of the syllable or any weakening of the syllabic structure. The majority of compounds in Hui involve a de-stressed syllable. Here are some examples.

/sun-dzl/	22-44	'grandson'
/hə-dzl/	22-44	'box'
/tʂuən-təan/	24-22	'spring season'
/mi-rən/	24-22	'match-maker'
/tɛɛ-tʂa/	22-24	'iron fork'
/da-ji/	44-22	'overcoat'
/fu-laŋ/	44-22	'rich peasant'
/dzi-dzu/	44-22	'landlord'

Sentences 16) and 17) are examples illustrating de-stressed tones in sentences:

	24	22	22	22	42			
16) dzəŋsan		ɕiəli	- ε		nai			
Dzəŋsan		ɕiəli	- accusative		love			
	'Dzəŋsan loves ɕiəli.'							
	24	22	44	24	44	22	22	22
17) dzəŋsan		meiguə	tɛi	"bu	ha	liə		
Dzəŋsan		America	go	not	can	sentence		
	'Dzəŋsan cannot go to America.'					particle		

Finally, the 42 tone in Hui syllables in isolation (which corresponds to the falling tone of Mandarin), merges with the 44 tone if it is followed by another syllable. The 42 tone may occur only in the final position of an utterance. In the following examples, the syllable which has the 42 tone in isolation but is realized as 44 is underlined.

/tɕi-tɕə/	44-22	'automobile'
/ɕin-fəŋ/	44-24	'envelope'
/pu-dzi/	44-22	'shop'
/tɕian-dəŋ/	44-24	'electric light'
/gua-fu/	44- $\left. \begin{matrix} 44 \\ 42 \end{matrix} \right\}$	'widow'
/ma-de/	22- $\left. \begin{matrix} 44 \\ 42 \end{matrix} \right\}$	'a sack made of hemp fibre'
/lə-su/	44- $\left. \begin{matrix} 44 \\ 42 \end{matrix} \right\}$	'an old tree'
/jyɛ-lian/	22- $\left. \begin{matrix} 44 \\ 42 \end{matrix} \right\}$	'moon'

The overall picture of the Hui tone system yields the impression that it is significantly different from the tone systems of other Chinese languages. It has the least number of tones of all Chinese languages (except Wutun, which has no tones at all); it uses the de-stressed tones often in speech. These are signals indicating the simplification or perhaps weakening of the tone system.

In the above discussion, I have briefly presented some of the non-Chinese features in Hui. Since the ethnic origin of the Hui people is unknown, it is not possible to decide whether those non-Chinese features are the consequence of borrowing from Altaic and Tibetan languages by a group of Chinese-speaking people, or the result of substratum interference when a group of Altaic immigrants to China acquired Chinese as their language. A decision may be obtained in the future when sufficient information on the history, the culture as well as the language of the Hui is gathered. In this study, the language of the Hui people in Linxia is particularly important because it is the major Chinese language with which the Baonan people have been in contact.

III. Baonan

Although the Baonan language belongs to the Mongolian family, the ethnic origin of the Baonan people remains a mystery. The only definite information on their ethnic origin is their total rejection of the linguistically-based hypothesis that they are of Mongolian descent. The name, Baonan, was given to them by the Chinese. It designates a town in Qinghai province, which is the former homeland of the Baonan people.

The Baonan population in southwestern Gansu province is composed of approximately 5,000 Moslems occupying five villages in Jishishan county. They migrated to their present homeland in the mid-nineteenth century from Qinghai province because of religious strife with the Lama Buddhists. There remain approximately 2,000 Baonan people in Qinghai who are Lama Buddhists. But they consider themselves Tuzu, the Chinese name for the Monguor ethnic group. Their Baonan dialect differs from the Jishishan Baonan dialects in that the former is primarily influenced by Tibetan, whereas the latter are heavily sinicized. The Baonan dialect discussed in this paper is spoken in the Ganhetan village of Jishishan county in Gansu.

III.1 The genetic distance between Baonan and Inner Mongolian.

Since China was closed to foreigners until recently, American scholars know very little about the Mongolian languages in China: How similar or different are these languages? Where are they spoken? How many speakers are there of each language? There are nine Mongolian languages spoken in China: Daxur (Dagur), Dongxiang (Santa), Tuyu (Monguor), Baonan, Eastern Yugu (Yellow Uighur), Buriat, Oirat, Kalmak (Kalmyk) and Inner Mongolian.⁵ The lexical and grammatical differences between any two of these nine languages can be great. Since Inner Mongolian is the standard language of the Mongols in the People's Republic of China, I will briefly discuss the difference between Baonan and Inner Mongolian.

Baonan and Inner Mongolian are *not* mutually intelligible. One may compare the communicative gap between the two languages to that between German and English.

On the basis of approximately 3,000 Baonan morphemes I have collected, 50%-55% are loan words from Chinese. Since Inner Mongolian has relatively few Chinese loan words, the lexical difference between Baonan and Inner Mongolian alone constitutes a significant gap between the two languages. This gap is further widened by the fact that Baonan also has a number of Tibetan loan words, a consequence of centuries of interaction between the Tibetans and the Baonan in southern Qinghai and Gansu. Independent of the loan words, the indigenous words of Mongolian stock in Baonan show a tremendous distance from their cognates in Inner Mongolian (IM). Table 1 below provides an illustration:

Table 1 Cognate samples of Inner Mongolian and Baonan

Gloss	Inner Mongolian	Baonan
sun	[nor]	[naróŋ]
star	[ot]	[hot ^h ý]
wind	[xi:] 'air' [salx] 'wind'	[k ^h i]
donkey	[ólǝǝik]	[teigó]
fish	[tʃáǝǝs]	[tealǝasúŋ]
door	[u:t]	[təŋ]
cry	[uilax]	[lagá]
red	[úla:n]	[fúləŋ]
cooking pot	[t ^h ógo:]	[t ^h əŋ]
chicken	[t ^h áxíc]	[t ^h ɛa]
eat	[ídəx]	[ndagó]
water	[us]	[su]
cattle	[únə]	[unióŋ]
grass	[ops]	[vesúŋ]
negative imperative	[pát ^h k ^h i]	[t ^h əǝǝ]
cold	[xúit ^h ən]	[k ^h it ^h óŋ]
younger sister	[óxindu]	[ǝindý]
older brother	[ox]	[kagó]
fruit	[álim]	[almóŋ]
knife	[xút ^h ag]	[toǝó]
ride (a horse)	[únax]	[honəǝó]

The phonological systems of the two, languages also differ in many respects. For instance, IM has vowel harmony, but the Baonan in Gansu doesn't, vowel length (long vs. short) is phonemic in IM but not in Baonan; main stress falls on the word-initial syllable in IM whereas in Baonan the word-final syllable receives the main stress. There are also significant differences between the two phonemic inventories of the two languages.

In morphology and syntax, the two languages differ in many ways, Part of the difference is due to the large-scale influx of Chinese grammatical structures into Baonan. Those Chinese elements in Baonan will be discussed in Section III.2. Here, I will cite three other areas of morphological and syntactic differences between Baonan and IM.

- (i) Baonan has an intricate evidential system employed in all declarative sentences, whereas IM does not have an evidential system. The Baonan evidentials are codified as either verb suffixes or independent particles. One type of evidentials is used if the validity of the event, state or action denoted by the sentence is ascertained by the speaker, and the speaker only, on the basis of the speaker's own sensory perception. For example, if the speaker has noticed a flower nearby but the hearer hasn't, the evidential /ji/ must be used. On the other hand, if the speaker is aware that the hearer has also noticed the flower, the evidential /o/ must be used.
- (ii) Both Baonan and IM are verb-final languages, each with an elaborate case system. Whereas similarity between the case systems of the two languages exists, there are also important differences. For example, in Baonan, the agent of a transitive verb is demoted to the dative slot when that verb takes on a causative suffix, whereas in IM the same agent is demoted to the oblique slot and marked with the instrumental case.
- (iii) IM has a passive construction, a reciprocal construction, and a collective action construction, each of which commands a distinctive verb morphology as well as other grammatical features. Baonan does not have those constructions.

III.2 The sinicization of Baonan

Among the nine Mongolian languages spoken in China, Dongxiang (Santa) and Baonan have sustained the greatest Chinese influence.⁶ I have already mentioned that 50%-55% of the Baonan lexicon is borrowed from Chinese. Grammatically, the influence of Chinese is also pervasive. I will first illustrate the Chinese elements in Baonan at the lexical level.

(i) Chinese loan words in the Baonan lexicon

Since Chinese culture impinges upon every aspect of the life of the Baonan people, Chinese loan words are widespread in the Baonan lexicon. In those cultural areas

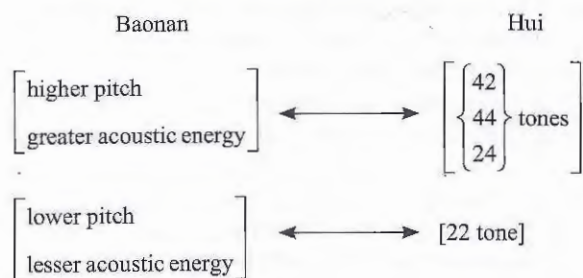
where the Baonan people are most indebted to the Chinese, Chinese loan words are dominant. For example, political terms such as 'chairman,' 'party secretary,' 'socialism,' 'prime minister,' 'committee,' 'conservative,' 'to make revolution,' 'to struggle against,' 'to promote,' 'to propagandize,' are almost exclusively modern Chinese loan words. Most vocabulary related to tools comes from Chinese, e.g., 'hammer,' 'saw,' 'drill,' 'nail,' 'pipe,' 'spade,' 'plier,' 'screw,' 'chain.' Words concerning education such as 'school,' 'university,' 'student,' 'teacher,' 'notebook,' 'principal,' 'pen,' 'pencil,' 'to study,' 'to take examination,' and words related to transportation and vehicles such as 'train,' 'automobile,' 'truck,' 'bicycle,' 'motorcycle,' 'airplane,' 'to drive,' 'to skid,' 'traffic,' 'to brake,' are usually from Chinese. One can cite many other semantic domains where Chinese loan words are dominant, but the impact of the Chinese language on Baonan is most striking when one finds that in many indigenous cultural areas, Chinese loan words have often displaced Baonan words. For example, out of the 61 kinship terms in Baonan, 29 are Chinese loan words and 10 are mixed compounds of Chinese words and Baonan words, whereas standard Mongolian of the Kangxi period⁷ and present day Inner Mongolian have preserved their own elaborate autochthonous kinship terminology, free of any Chinese loan words.

In the speech of the Baonan youngsters, Chinese loan words continue to replace indigenous Baonan words. For example, Chinese loan words have replaced indigenous numerals except in counting. In my discourse data, numerals are almost exclusively given in Chinese loan, but in my data obtained through single word elicitation, numerals are given in indigenous morphemes. Other examples of this on-going displacement of indigenous words by Chinese loans in Baonan are given in Table 2. A Baonan person may use words from either one of these two columns in his/her speech, i.e., both the loan and the indigenous words are in the lexicon of the speakers, indicating that the displacement process is not yet complete.

Table 2 Recent Chinese loans and their co-existing indigenous counterparts

Gloss	Recently adopted Chinese loan	Indigenous Baonan
highway	/goŋlú/	/fgo mər/
doctor	/dǎfu/	/manbú/
tiger	/loxú/	/basí/
to play an accordion	/la-gə/	/tçirgə/
mouse	/xaŋlotʂú/	/xardá/
to catch cold	/oanmó-gə/	/jibadý kur/
married couple	/lián-ky/	/erí muʂalá/
stutterer	/dzɛdzí/	/dəkəldzígý kuŋ/
thumb	/dámutsu/	/fgo ʁot/

Phonologically, the most significant Chinese influence is demonstrated by the placement of word stress in Baonan. The main stress of an indigenous Baonan word falls on the final syllable. This rule does not apply to the loan words from Chinese. Instead, the stress, of the loan words constituting 50%-55% of its lexicon is determined by the tones of the words in the source language. The source language from which the loan words are taken by Baonan is the Hui language of Linxia discussed in Section II. Recall that Hui has a low level tone (22 in terms of the tone scale) for all de-stressed syllables in speech. When bisyllabic words are borrowed from Hui into Baonan, the de-stressed syllable, regardless of its position in the word, is not stressed. If the word does not have a de-stressed syllable with the 22 tone in Hui, then both syllables are stressed in Baonan. I should point out that a Baonan stressed syllable is characterized not only with greater acoustic energy but also with higher pitch than an unstressed syllable. Table 3 provides some examples illustrating the correspondence of Baonan stress with the Hui tones. This correspondence can be stated as follows:



Since the indigenous stress rule in Baonan is disrupted by the massive infusion of loan words from Hui, and the assignment of stress depends on the tones of the source language, one would expect the occurrence of minimal pairs in Baonan to be distinct on the basis of stress placement only. Indeed, such minimal pairs exist. Table 4 provides some examples.

Just as the Hui language of Linxia shows a simplification or weakening of its tone system because of its contact with Baonan, Santa, Salar, and Anduo Tibetan, all non-tonal languages, so has the stress-accent of Baonan taken on some tonal features because of the influence of Hui. Thus, language change due to languages in contact with Western China works in both directions. Contact with the Hui language of Linxia has resulted in the sinicization of Baonan, and contact with verb-final languages has resulted in major structural changes in Hui and Wutun.

Before moving on to morphology, I should point out that beyond the 50%-55% Chinese loan words, semantic borrowing from Chinese at the lexical level is also pervasive. I will cite one example here. In Chinese, including Hui, the verb which means 'hit' has been generalized to denote a variety of activities depending on the object noun it combines with. Thus, in Mandarin, we have, for example, *dǎ-pé* 'hit-card = to play cards,' *dǎ-liè* 'hit-hunting = to hunt,' *dǎ-gār* 'hit-belch = to

Table 3 Correspondence of Baonan stress and Hui tones

Gloss	Hui	Baonan
craftsman	/dzəŋrən/ (44-22)	/dzəŋrən/
wild rabbit	/jɛtu/ (44-42)	/jɛtú/
blacksmith	/tɛɛdzəŋ/ (22-42)	/tɛɛdzəŋ/
glove	/ʃɛtə/ (44-44)	/ʃɛtót/
doctor	/dɛfu/ (44-22)	/dɛfú/
landlord	/dzɪdzɥ/ (44-22)	/dzɪdzɥ/
factory manager	(tʃəŋdzəŋ/ (44-42)	/tʃəŋdzəŋ/
school	/ɛyɛɛ/ (22-42)	/ɛyɛɛ/
automobile	/tɛitʃə/ (44-22)	/tɛitʃɛ/
male donkey	/dzɔly/ (44-22)	/dzɔly/
model (person)	/muəfan/ (22-42)	/mɔfán/
commune	/gɔŋʃə/ (22-42)	/gɔŋʃé/

Table 4 Baonan minimal pairs based on stress placement

/xəxə/	'box'	/xəxə/	'hairlip'
/dzɪndzɪ/	'mirror'	/dzɪndzɪ/	'nail'
/guándzɪ/	'crown of a bird'	/auandzɪ/	'restaurant'
/ʃɪdzɪ/	'persimmon'	/ʃɪdzɪ/	'lion'
/gáŋgáŋ/	'a metal bar'	/gəŋgəŋ/	'cistern'
/dándzɪ/	'courage'	/dandzɪ/	'a piece of cloth'

burp,' *dǎ-yú* 'hit-fish = to fish with a net.' This generalized usage of the 'hit' verb is borrowed in its entirety into Baonan. The indigenous Baonan verb root meaning 'hit' is /sgə/. Corresponding to the above Mandarin Chinese examples, we have the following expressions in Baonan:

/pɛ sɡə/	/vi sɡə/
card hit	hunting hit
'to play cards'	'to hunt'
/bɔgɛ sɡə/	/dzəɪvəsɯŋ sɡə/
belch hit	fish hit
'to burp'	'to fish (with net)'

It should be noted that whereas the Mandarin examples involving the semantically generalized 'hit' verb tend to fuse into verb-object compounds, there is no indication of compound formation in Baonan. For example, the object noun in those Baonan expressions involving the semantically generalized verb /sgə/ 'to hit' may take on the accusative suffix. It is also worth noting that whereas 'playing

cards' may be an activity borrowed from the Chinese, hunting is definitely native to the Baonan culture. Nevertheless, the above examples show that the expression for hunting involves a semantically generalized usage of the 'hit' verb, a result of semantic borrowing from Chinese, suggesting that the indigenous word for hunting in Baonan has been displaced.

(ii) *The influence of Chinese on Baonan morphology and syntax*

An important morphological process in Chinese, creating "resultative compounds," has made its impact on Baonan through the Hui language of Linxia. A typical resultative compound in Chinese is composed of two elements, with the second element signaling some result of the action or process conveyed by the first element.

For example: jiào-lái 'call-come = call (someone) with the result that s/he comes'

dǎ-yūn 'hit-faint = hit (someone) with the result that s/he faints'

Sentences 18) and 19) show examples of resultative compounds functioning as transitive verbs in Mandarin Chinese.

18) wǒ bǎ xiáoli dǎ - yūn - le
I Xiaoli hit - faint - perfective
'I hit Xiaoli with the result that s/he fainted.'

19) tā bǎ dàifu jiào - lái - le
3rd person doctor call - come - perfective
singular
'S/he called the doctor with the result that the doctor came.'

The Baonan counterparts of sentences 18) and 19) are 20) and 21) respectively.

20) bu habib - nǎ sǐgə - dzǐ fajýngə - dzǐ
I Habib - accusative hit - subordinator faint - perfective
'I hit Habib with the result that he fainted.'

21) dzəŋ défu - nə ur - dzǐ rə - dzǐ
s/he doctor - accusative call - subordinator come - perfective
'S/he called the doctor with the result that the doctor came.'

The Chinese borrowing in Baonan constructions exemplified by 20) and 21) is both semantic and syntactic. Semantically, the causative relationship between the two elements of a Chinese resultative compound is transplanted into the relationship between the two verbs in the Baonan complex sentence. This transplantation has occurred in spite of the fact that Baonan has a productive affixal causative construction. With the affixal causative, /-kə-/, sentences such as 20) and 21) can be transformed into indigenous Baonan causative constructions 22) and 23) respectively.

22) bu habib - nǎ sǐgə - dzǐ fajýngə - rə - dzǐ
I Habib - accusative hit - subordinator faint - cause - perfective
'I caused Habib to faint by hitting him.'

23) dzəŋ défu - nə ur - dzǐ rə - rə - dzǐ
s/he doctor - accusative call - subordinator come - cause - perfective
'S/he caused the doctor to come by calling him/her.'

Sentences 20) and 21) were volunteered by my Baonan consultant. 22) and 23), although made up by me, were perfectly acceptable to him.

Syntactically, the word order of the Chinese resultative compound is transplanted into the Baonan complex sentences 20) and 21), with the effect that the meaning of the sentence as given in 20) and 21) is exactly the opposite of what is to be expected from the indigenous grammatical structure of the sentence. Consider 20) for instance. The subject of 20) is 'I' and the main verb of the sentence is 'faint,' whereas the object of 20) is 'Habib' and the subordinate verb is 'hit.' Thus, the expected reading of 20) should be "I fainted as a result of hitting Habib," not "Habib fainted as a result of my hitting him." This reading "I fainted..." was elicited from my Baonan language consultant. In later testings, it was clear that the preferred readings of 20) and 21) are not the expected readings derived from the indigenous grammatical structure of the sentences. Rather, they are the given meanings in 20) and 21), which are the result of syntactic and semantic borrowing from Chinese.

An interesting syntactic borrowing from Chinese into Baonan involves the introduction of the Chinese copula verb, with the consequence that verb-medial copula sentences, which previously did not exist, are now established in Baonan. The indigenous Baonan copula construction, which is strictly verb-final, is illustrated by 24).

24) habib défu o
Habib doctor be
'Habib is a doctor.'

The following variant forms, involving the borrowed Chinese copula verb /sɿ/ in the sentence-medial position are used.

25) habib ɣi défu o
Habib be doctor be
'Habib is a doctor.'

26) habib ɣi défu
Habib be doctor
'Habib is a doctor.'

25) represents a transitional stage of the change from the traditional verb-final construction 24) to the new verb-medial construction 26). The elders of Ganhetan, my Baonan consultant's home village, use only the traditional structure illustrated by 24) with /manbú/ 'doctor', a word borrowed from Tibetan long before the Baonan people left Qinghai province. Thus, the copula sentence for 'Habib is a doctor' in the speech of village elders is 27):

27) habib manbú o
 Habib doctor be
 'Habib is a doctor.'

Although borrowing from Chinese probably began centuries ago in Baonan, the process of sinicization has been much more intensified during the past twenty to thirty years because of new political and sociological factors. One can, therefore, observe a significant linguistic gap between the elders of Ganhetan village, who are still steeped in Islam and who speak a less sinicized version of Baonan, and the youngsters of the village, who are no longer as religious and whose speech shows much greater Chinese influence. For instance, with respect to the copula construction, only the structures illustrated by 25) and 26) are used by the younger generation.

Another Baonan construction which is halfway toward becoming a northern Mandarin construction is the comparative construction. The Mandarin comparative structure involving the comparative morpheme, bí, is as follows:⁸

28) X bí Y dimension
 (standard)

Sentence 29) is a simple example from Mandarin:

29) wǒ bǐ nǐ gāo
 I compare you tall
 'I am taller than you.'

The indigenous Baonan comparative construction marks the standard of comparison with the suffix /s1/ which also means 'from, if':

30) X Y - s1 dimension
 (standard)

Sentence 31) is an example of the indigenous Baonan comparative construction:

31) bu tei - sí ondér
 I you(nom.) - comparative tall
 marker
 'I am taller than you'.

The frequently occurring comparative sentences in Baonan speech nowadays have the following structure:

32) X bi Y - s1 dimension
 (standard)

32) suggests a hybrid of the Chinese and the Baonan comparative constructions: the Chinese comparative morpheme occurs side by side with the Baonan comparative marker, analogous to the intermediate stage of the change of the copular construction shown in sentence 25). The change from an indigenous Baonan structure, 30), to the Chinese structure, 28), would be complete, if and when the Baonan suffix /s1/ in 32) is dropped. I have not found a single incidence of a Baonan comparative without the suffix /s1/ on the standard of comparison in my sentence and discourse data. It wouldn't be surprising, however, if the suffix /s1/ were to be dropped in the near future, completing the process of contact-induced syntactic change in Baonan.

Although there are other aspects of the sinicization of Baonan, because of the limitation of space, I would like to conclude this section by citing two short passages from my Baonan discourse data. The first passage is the beginning of a narrative describing the year-round agricultural activities in the Baonan village of Ganhetan. In order to distinguish the Chinese loans from indigenous morphemes, all morphemes borrowed from Chinese are underlined:

33) i) nə dzaŋdzárən - nə dzuandzi fánmian.
 the peasant - genitive agriculture aspect
 'The agricultural side of the peasant (life).'

ii) dzuandzi fánmian suŋ nə fú - tean loxomú
 agriculture aspect from the hot - day plowing
 sɣə - gɣ - s1 kesí
 do - nominalization - from begin
 'The agricultural side (of the peasant life) begins from the plowing (of the land) (during) the hot days.'

iii) fú - tean loxomú sɣə - gɣ - s1 nə,
 hot - day plowing do - nominalization - if pause
 particle

'As for plowing (the land) in the hot days,

dui dzaŋdzárən nə, sí liší dzuántuŋ.
 to peasant pause be history tradition
 particle

it is an historical tradition, of the peasant.'

iv) dzaŋdzárən jó - de - fú, fu - lí lí ty - tsá,
 peasant want - obtain - wealth heat - in plow first - round
 'If a peasant wants to do well, (he) plows the first round in the heat.'

v) jó - de - teún, sí - jye - lí lí ty - tsá
 want - obtain - poverty ten - month - in plow first - round
 'If (he) wants to be poor, in October, (he) plows the first round.'

- vi) nə sɿ dzaŋdzárən - nə bflín
 this be peasant - genitive rule
 'Such is the rule of the peasant.'

The second passage is the beginning of a narrative on the matrimonial tradition and practice of the Baonan people. As in 33), all Chinese borrowings are underlined.

- 34) i) buda - nə baonán gatei.
 we - genitive Baonan language
 (exclusive)
 'Out Baonan language.'
- ii) keší
 begin
 'Let me begin.'
- iii) au - dó verí kal - dzí gəsí
 son - dative wife talk - subordinator concerning
 'Concerning talking to (your) son about (getting) a wife,
jidó sí -wu -liy,
 as soon as ten-five-six
 as soon as (he) reaches fifteen or sixteen,
áda ámu verí kal - dzí ok - dzó.
 father mother wife talk - subordinator give -imperfective
 his father and mother (will) be giving (him) talks (about taking) taking
 a wife.'
- iv) verí kal - dzí gəsí,
 wife talk - subordinator concerning
 'As for talking about a wife,
keší éán kaŋ - nó agí saŋ.
 begin first who - genitive daughter good
 one begins with (the question): whose daughter is good?'
- v) agý - nó duíéán ndza - dzó.
 girl - accusative match look - imperfective
 '(The boy's parents will) be considering the girl as a match.'
- vi) ndza - dzl saŋi* jidzígəsí,
 look - subordinator good if
 'If (the boy's parents) consider (the girl) good,
agý vəndán, teintefn sy - dzó.
 girl steady relation settle - imperfective
 (that is,) the girl is steady, a relation will be in the making.'
- vii) teintefn sy - dzí gəsí
 relation settle - subordinator concerning
 'As for making a relation,

- keší, nə sɿ jigó, guandzán.
 beginning this be one pivot
 the beginning is pivotal.'

The two short narrative passages 33) and 34) demonstrate how extensive the Chinese borrowing in Baonan is. It includes content words as well as functor words, syntactic structures as well as morphological devices. In this paper, I have highlighted only a few facets of the Chinese borrowing into Baonan. One pattern of contact-induced syntactic change that repeats itself over and over again in Baonan and Wutun is a two-step process. The first step involves applying a borrowed grammatical morpheme for a construction that already has an indigenous grammatical device with the same function. At this stage of the contact-induced change, the affected construction may be described as a hybrid with a borrowed structure added onto an indigenous structure. The comparative in Baonan is a good example. The Mandarin comparative morpheme *bi* is added to the indigenous comparative structure and placed before the noun phrase denoting the standard of comparison as it is used in the source language. Notice that the addition of the borrowed morpheme *bi* results in a change in the constituent structure of the sentence: a previously non-existing constituent *bi + NP standard of comparison* is now created. But the indigenous structure involving a suffix marking the standard of comparison in the sentence remains at this juncture. Immediately following the influx of the borrowed structure, the native speaker's perception of what is the comparative marker undergoes a shift from the indigenous suffix to the borrowed word. If and when such a perceptual shift is completed, the indigenous grammatical device, (in the case of the Baonan comparative, the suffix *-si*), will be dropped. This dropping of the indigenous grammatical device constitutes the second step of the contact-induced syntactic change. In Baonan, we witness the entire process in the changing of the copular construction. The total effect is a rather dramatic change from a verb-final copular construction to a verb-medial copular construction.

IV. Conclusion

I have described a few features of two Chinese languages in order to illustrate the impact of Anduo Tibetan and Altaic languages on them and I have presented the highlights of the intrusion of Chinese elements into Baonan. The data from Baonan, Wutun and Hui as indicated by the above examples, suggests that contact-induced change has no constraints and requires no linguistic prerequisite, a conclusion already persuasively put forth by Thomason (1982). The most fascinating aspect of the Baonan situation is that contact-induced change is on-going and is proceeding at an astonishing pace, "as if centuries of diachronic processes were compressed into a few decades. The situation is a close approximate to a controlled experiment of contact-induced language change.

The definitive study of contact-induced change in language remains to date the work of Uriel Weinreich (1968), first published in 1953 as a monograph based on

his master's thesis and doctoral dissertation. The linguistic situation in the border region between Qinghai and Gansu offers us an unusual opportunity to take the study of languages in contact to a new frontier, beyond the pioneering works of Weinreich (1968) and Haugen (1950) among others. We have in this geographical area two diametrically-opposed typological groups of languages in contact: verb-final agglutinative languages versus verb-medial isolating languages. The Altaic and Tibetan languages are prototypical verb-final languages with complex suffixal morphologies, while the Chinese languages represent model isolating languages with a predominant verb-medial word order. In addition, Chinese languages are tonal, Altaic languages and Anduo Tibetan are not. The contact of these two groups of languages has resulted in fascinating lexical, morphological and syntactic changes in a number of cases. Depending on the sociological factors, some Chinese languages such as Wutun have been tibetanized or altaicized, while others such as Baonan and possibly Santa (Dongxiang) have been sinicized. As the modernization of the People's Republic of China accelerates and Putonghua, the official standard language based on Peking Mandarin, spreads its influence across the country, the sinicization of the Altaic and Tibetan languages in western China will probably hasten while the tibetanization and the altaicization of the Chinese dialects in that area may very likely be reversed. This possible reversal of the direction of contact-induced change would make the linguistic situation in western China even further deserving of our attention.

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Notes

1. The Tibetan language spoken in Qinghai province and in southern Gansu province is called Anduo Tibetan. It is significantly different, especially in phonology, from the standard Tibetan of Lhasa. For instance, Anduo Tibetan retains the complex initial consonantal clusters of Classical Tibetan, whereas Lhasa Tibetan doesn't; Anduo Tibetan does not have tones, whereas Lhasa Tibetan does.
2. The largest concentration of the Hui people is in the province immediately to the east of Gansu province, designated an Autonomous Region of the Hui people by the People's Republic of China.
3. Hui, like most members of the Mandarin dialect group, only has syllables that end in either a vowel or a nasal.
4. In all of the transcriptions of Hui and Baonan in this paper except for Table 1, the symbols for voiced stops and affricates stand for voiceless, unaspirated stops and

- affricates, whereas the symbols for voiceless stops and affricates represent voiceless aspirated stops and affricates. All Mandarin Chinese data are given in Pinyin.
5. The dialect of Xilinhot is considered the standard speech of Inner Mongolia. Eastern Yugu is spoken in the Yuguzu Autonomous County of the north central region of Gansu province. Western Yugu spoken in the same country, however, belongs to the Turkic language family.
 6. λ grammatical sketch of Santa by Liu (1981) indicates that the language contains grammatical as well as lexical loans from Chinese.
 7. This data is from the multi-lingual dictionary, *Qīngwénjiàn* (清文鑑), compiled during the Kāngxī reign (1661-1722) of the Qīng Dynasty.
 8. For further information on the comparative construction or any other aspects of Mandarin Chinese, see Li and Thompson (1981).

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ALTAIC ELEMENTS IN THE
LÍNXIÀ DIALECTContact-induced change on the
Yellow River Plateau¹

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Abstract

Language contact between the Hàn and non-Hàn languages of China has often been assumed to be unidirectional (i.e., Hàn > non-Hàn) and limited generally to lexical items, while morphosyntactic interference is believed to be moderate and comparatively recent. However, in the northwestern Chinese dialect of Línxià, it will be shown below that in fact the opposite is true: the Línxià dialect consistently retains certain native phonological and lexical features, while undergoing heavy interference in syntax.

In this paper three examples illustrating the nature and extent of contact-induced change in the Línxià dialect are examined. In Section 1 the morphemes for 'small, little' of the region's languages are compared as an illustration of extensive lexicosemantic diffusion resulting in areal convergence. In Section 2 it is concluded that the co-existing markers of the comitative/instrumental in Línxià represent two different types of borrowing: one, a calque on a compound numeral of the Mongolic languages of the region, and the other an outright loan from Mongolic of the Proto-Altaic comitative suffix *-lū. Finally, as an example of significant syntactic and phonological reanalysis, in Section 3 the Línxià postpositional conditional marker -ɣ̃ is examined.

We conclude that this is the result of the combination of certain social and linguistic factors, and that social factors, such as political dominance, may well be the primary determinants of change². These data provide evidence to support a reanalysis of certain universals of language contact.

0. Introduction

The Yellow River plateau, which includes modern-day western Qīnghǎi and southern Gānsù provinces and the Níngxià Huí Autonomous Region,³ has long

been a hotbed of cultural and linguistic contact. Represented in this area are not only the Chinese dialects loosely grouped under 'northwestern Mandarin', but also the Turkic languages of Salar and Western Yugur, the Mongolic languages of Monguor, Eastern Yugur, Bāonán and Santa, and Amdo Tibetan. In politics, language, and geography, this region represents a transition zone between Hàn-controlled and historically non-Hàn areas, between majority Hàn Chinese-speaking and majority Altaic-speaking peoples, and between the valleys and fertile loess plains of northern China and the arid, high steppe country of the Northwest.

With the innumerable political campaigns waged through this region by Hàn and non-Hàn alike, extensive cultural and linguistic contact was inevitable. Given, for example, the frequent intermarriage of Hàn and Altaic peoples during the partitioning of northern China in the fourth century, it is likely that linguistic interference could have occurred at an early date.

Línxià 臨夏 city (formerly Hézhōu 河州) is located south of the Yellow River at the confluence of the Dàxià River 大夏、河 in Gānsù province. It has long been an economic center for the Mongolic, Turkic, and Tibetan peoples residing in or on the perimeters of the Línxià Huí Autonomous district. Within Línxià city itself, significant linguistic differences between Hàn and Huí Chinese reflect the cultural differences of these two groups.

The Chinese spoken by the Hàn of Línxià is representative of the widespread and profound syntactic interference that has occurred in Chinese dialects in northwestern China. With head-final constructions and postpositions, the Línxià dialect, unlike Standard Chinese, is an SOV language.

Morphosyntactic markers and certain lexemes often bear a striking phonological resemblance to those of neighboring languages, while the lexicon and aspect markers of the Línxià dialect are clearly Chinese.

The convergence features exhibited by these languages can be isolated by comparing local varieties with related languages and with their historical counterparts. Past work on the Línxià dialect is lacking, with the notable exception of recent works on Línxià morphology by Mǎ Shujun.

1. 'Small, little'

In the Línxià dialect there are two expressions for 'small': *ka*⁴⁴ 杂 and *ei*⁰⁴⁴; the latter closely resembles Standard Chinese *xiǎo* 小. *ka* is perceived by Línxià speakers to be a more native word; only speakers from outside the region use *ka*⁴⁴. *ka*⁴⁴ also bears emotional overtones of affection, while *io* is neutral. For example, *ka*⁴⁴ *foŋ*¹³ *tse*³ expresses the speaker's subjective fondness of the house, i.e. 'a small (cute) house', whereas a *ei*⁰ *foŋ*¹³ *tse*³ expresses objectively 'a small house'. *ka*⁴⁴ is also used predicatively, e.g.:

- (1) *ts*⁷⁵³ *kə*³ *foŋ*¹³ *tse*³ *ka*⁴⁴ *ts*⁷³ *XE*¹⁴⁴
this M house small EXTENT very
'This house is pretty small'

Still, as an attribute, the Standard Chinese *εio* is used instead of *ka*, as in *εiokon* 小工 'unskilled laborer', *εiomi* 小米 'millet', and *εioyə* 小月 'lunar month'. Looking at the distribution of *εio* in both Linxià and Xīning, we notice that *εio* generally occurs in compounds which also occur in Standard Chinese. Attributive *ka*, on the other hand, only occurs in free lexemes, and is obligatory with kinship terms of the nuclear family (*ka wawa* 'small child' or even Xīning *wo te ta ka wawa* 'my eldest child'). With many other kinship terms, however, *ka* and *εio* alternate. *ka* also expresses the emphatic superlative 'youngest': *ka ertsɿ* 'my youngest son'; and Xīning *ka pa* 'youngest of father's younger brothers; uncle'.

Thus, in the Chinese dialects of the Yellow river plateau, *εio* occurs in bound lexemes as an attribute; some of these lexemes may have been borrowed from Standard Chinese. *ka* is colloquial, subjective and occurs in free lexemes attributively, and can express an emphatic superlative.

In addition to Linxià and Xīning, this distribution of features is partially reflected in the neighboring languages. The morpheme *ka* appears in Santa (in the attributive only), and in the Tángwǎng 唐汪 and Wūtún 五屯 creoles⁴ (in both the attributive and the predicative). In Santa, the attribute *ka* can be used subjectively (as in Linxià *ka*), or it can be used in bound forms borrowed from Standard Chinese (as in Linxià *εio*):

(2) *ka oʂ^hin* 'little girl' (affectionate)

(3) *ka ʂun* 'litre' (<Std. Chinese *sheng* 升)

Santa has another morpheme, *məila*, for the predicative:

(4) *məila oliə* 'half as small/half as young'

(5) *məila səila* 'the large and the small'

The source language for *ka* is uncertain; clearly it is not of Chinese origin: *ka* is a rare syllable in Chinese, appearing generally in loans or onomatopoeic syllables. It is striking that in at least four of the languages of the region, speakers distinguish between *ka* and one other morpheme for 'small, little' on the basis of both subjective and objective linguistic criteria.

Two other neighboring languages have a similar syntactic and/or semantic split. Amdo Tibetan has:

(6) (*w*)*o* 'little, small' (affectionate), as in *o-mo* 'girl'

(7) *ʂ^hun ʂ^hun* 'little, small' (neutral)

Both originate in literary Tibetan.⁵

The Bǎonán dialects have *dʒigan*⁶ and *bədi*⁷; it appears that the former is bound while the latter is a free morpheme:

(8) *fgo-dʒigan* 'the large and the small'

(9) *dʒigan ɣan ge dʒi* 'a little less, a little smaller'

(10) *bədi tsina qala* 'two small wolves (together)'⁸

From the above, it is clear that the languages of this region possess two distinct lexical items partitioning the functional load of 'small, little'. Although the specific morphemes may differ between languages, the semantic and syntactic features of these two morphemes is remarkably similar. This linguistic convergence illustrates the extent of lexicosemantic diffusion in this region.

2. Comitative/instrumental 'together with n'

Whereas in Standard Chinese prepositions (*yòng* and *gēn*) are used to express the instrumental and the comitative, in Linxià the postpositional elements *-la* and *lianɰə* are used.

(11) *ŋo⁴⁴ pfi¹³ lianɰə⁴⁴. 13 (~ -la.3) ʂi⁴⁴ ʂɿ⁵³*
I pen INST (INST) write
'I write with a pen.'

(12) *ŋo⁴⁴ ʂi^a13 lianɰə⁴⁴. 13 (~ -la.3) pfi²⁴ ʂɿ⁵³*
I he COM NEG go
'I won't go with him'

lianɰə is obviously derived from the Standard Chinese quantity numeral 兩 'two', and the general measure *ge* 個. But in the Linxià language, unlike in Standard Chinese, *lianɰə* functions both as the simple numeral 兩 'two' and the compound numeral 倆 'two together.' (Standard Chinese *lia* 俩 'two together' does not occur in the Linxià dialect.) Thus Linxià *lianɰə* has three functions: as a simple quantity numeral, as a compound numeral, and when used postpositionally, as an instrumental/comitative marker⁹.

The latter case marker appears to be an semantic extension and abstraction of the compound numeral 'two together'; however there is no precedent for the abstraction of a numeral to a case marker in Standard Chinese; moreover, its use as a postposition suggests more than mere drift is involved here. I would like to propose that Linxià *lianɰə* is a calque on the compound numeral 'two together' in Yellow River plateau Mongolic. In Bǎonán and Santa the compound numeral *qua-la* has been reanalyzed as a postpositional instrumental/comitative suffix *-qala* (~ *-qal*).

Looking at Bǎonán, we find:

(13) *gete-qala dalga node* 'use a mallet to pound earth clods'

(14) *bədi tsina-qala* 'two small wolves (together)'

This use of the compound numeral precisely parallels that of Línxià: Bonan, Santa:

-qala < *quar* 'two' + *le* (plural suffix) 'two together'¹⁰

Línxià:

lian̄kə < *lian̄* 'two (qty)' + *ke* (measure) 'two together'

The numeral has thus been reanalyzed first as a postposition, and then as an enclitic. What, then, is the origin of the Línxià alternate suffix *-la*? *-la* has a broad distribution in the languages of the region; it functions as an instrumental and/or comitative postposition.

For example, compare data from Tángwàng and Santa:

Tángwàng:

(15) *va53va53 -m* *ʃu53ʃu53 -la* *tʃ1*
child -PL. spoon -INST eat
'Children eat with a spoon.'

(16) *ɲ123* *a21 ka* *[-la]* *ɲ123a* *tʃ1*
you elder bro. COM together go
'You go together with elder brother.'

Santa:

(17) *kʰuwo5 -la* *ʃo-ʃo-qala* *itʃia*
child -PL spoon-INST eat
'Children eat with a spoon'

(18) *tʃu* *aka* *-le* *hantu* *etʃʰu*
you elder bro. -COM together go
'You go together with elder brother.'

In Santa, *-qala* marks the instrumental, while *-le* (~ *-la*) marks the comitative. In Tángwàng, *-la* marks both the instrumental and the comitative. This is true of many of the region's languages, including for example Salar:

(19) *men* *sen-la* *va(r)-ɰur*
I you-COM go-FUT
'I'll go with you'

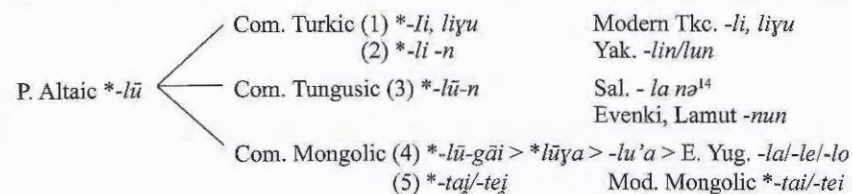
Let us compare the distribution of these markers in all the major languages of the region:

	Comitative	Instrumental
Línxià	<i>-la44 lian̄kə44.3</i>	<i>-la44 lian̄kə44.3</i>
Xining	<i>-lia.3 ~te324 N lia.3</i>	<i>-lia.3 ~te324 N lia.3</i>
Wutum	<i>lian̄kə</i>	<i>lian̄kə</i>

Tángwàng	<i>-la</i>	<i>-la</i>
Santa	<i>-qala/-qal</i>	<i>-lə (~ -lə x amtu)</i>
Bǎonán	<i>-qala/-qal</i>	<i>-lə (~ -qala x amtu)</i>
Monguor	<i>-la</i>	<i>-la (~ -la x amdə), -de</i>
E. Yugur	<i>aar/-eer/-oor</i>	<i>-la/-le/-lo xamdə</i>
Salar	<i>-la, -la bilə</i>	<i>-la, -la bilə, -la nə</i>
W. Yugur	<i>budzin ~vudzin</i>	<i>-s (Recip.-Refl. voice)</i>
Amdo Tibetan	<i>-ki/-gi</i>	<i>-la xamdə¹¹</i>

The source of *-la*, found in all four major language families above, is complex. Professor Poppe has identified the Proto-Altaic Comitative suffix **-lū*; the modern Turkic languages have the reflex *-li/-lig* (< **lū* + *gal* (adjectival)) except for Yakut and Salar, which have *-lin/-lun* and *-la nə*, respectively (< **lū* + *-n*, an ancient instrumental).¹² The modern Tungusic languages have only the latter compound type comitative *-nun* (< **lū* + *-n*, again, an ancient instrumental). Only the most conservative of Mongolic languages preserve Proto-Altaic **-lū*: Monguor, Santa, and Eastern Yugur. Most other modern Mongolian language instead have **-tai/-tei* as the comitative.¹³

Thus:



The above data indicates an Altaic origin for the comitative suffix *-la*; in particular, the following evidence suggests that Mongolic languages are the source for this suffix: Common Mongolic, unlike Common Turkic, preserved the feature [+BACK] of Proto-Altaic **-lū*. The vowel in **-lū* became lowered through regressive assimilation and coalescence with the suffix *-gai*. As Professor Poppe explains, "**-lū* should have resulted in *-lo* in Modern Mongolian, but when becoming part of the declension system, the comitative form appeared, analogically to all the other case forms, with the suffix *-lā/-lē* and, in some languages having the labial attraction, also with *-lō/-lō*."¹⁵

Furthermore, given the harmonic rules of Salar vowels, we would expect the suffix *-li(nə)*. The presence of a low back vowel in the modern comitative suffix *-la* suggests that it is also a loan from Mongolic.

Why do the case suffix *-la* and the former compound numeral (*-qala, lian̄kə*) co-occur as the instrumental/comitative markers in the languages of this region? Both markers appear in early Altaic sources; however, it is likely that Proto-Altaic

*-lū originally had a function other than to indicate the instrumental or comitative,¹⁶ and that only after its affixation to certain ancient particles (-gai in Mongolic, -gu/-u in Turkic, and -n in Turkic and Tungusic) did the compound suffix assume the function of instrumental/comitative marker.

The widespread use of a suffixed numeral postpositionally to mark the comitative is attested in Orxon Turkic: *birla* 'with' < *bir* 'one' + *la* (emphatic particle):

(20) *toquz tatar birla* 'together with the Tokuz Tatar'¹⁷

However, while in Bǎonán and Santa there is the suffixed numeral *-qala*, such a numeral is not attested in Middle Mongolic. Thus *-qala* could well be a calque from Salar *bilə*. The instrumental/comitative markers *lianjə* and *lia* in the Chinese dialects of the Yellow river plateau are the most recent examples of this regional loan translation. The Línxià postposition, unlike Xīníng *-lia*, still retains its full tonal features.

The two instrumental/comitative markers of the Línxià dialect reflect different degrees of interference: the suffix *-la* has been borrowed outright probably from Bǎonán or Santa, while the compound numeral postposition has been nativized to *lianjə*.

Interestingly, the Hàn Chinese of Línxià prefer to use *-la*, while the Huí tend to use *lianjə*.¹⁸ This may well reflect a stronger cultural identity on the part of the Huí Chinese, who are thus more likely to blend foreign and native features rather than borrowing outright.

3. Conditional -ɣ

In the Línxià dialect, there is a clause-final suffix *-ɣ* that is phonologically equivalent to the Standard Chinese copula *shì* 是 but functions instead as a marker of the conditional:

(21) koŋ13fu44 pfu34 xa53 tsɿ ɣ153 tsi53 (xa3) tei53 ei44 pfu32 xo44
time NEG spend PROG COND, kanji (ACC) then write NEG well
'If you don't take the time, you won't write well.'

(22) teia13 me44kuo13 tei ɣ153 no44 teia13 xun13 pfu32 teie44
he America go COND I he [won't marry]
'If he goes to America, I won't marry him.'

Compare the usage of the Salar conditional marker *-se*:

(23) at al-yu keli-se da eŋər al-ku keli
horse buy need-COND also saddle buy need
'If you want to buy a horse, you also need to buy a saddle.'

If we compare the conditional markers of the other languages of the region, we find that they are all clause-final suffixes which fall into two major groups: those

virtually identical with the Salar form (the Turkic and Mongolic languages), and those with a different suffix (the languages of Tibetan origin).

Salar	-sa/-se
W.Yugur	-sa/-se
Bǎonán	-sə
Santa	-sə
Monguor	-sa
E. Yugur	-sa /-se /-so
Amdo Tibetan	-na
Wütún	-ra

The conditional forms above have no cognates in the historical or modern Mongolic languages outside of this region (compare, for example, Khalkha *-bəl*). However, conditional *-sa /-se* is a regular feature common to all Turkic languages. This suggests that the Yellow river plateau Mongolic conditional suffixes are loans from Salar or West Yugur.

Given the phonological and morphosyntactic similarities between Línxià *-ɣ* and Salar *-sa*, it is conceivable that the Turkic conditional was loaned into Línxià and then underwent certain nativizing phonological changes. However, the syllable *sa* exists in Línxià Chinese;¹⁹ therefore there is no reason for it to have become retroflexed if Salar *-sa* was borrowed directly into the Línxià dialect. It is thus more plausible that Línxià *-ɣ* is a contraction of the Standard Chinese conditional marker *yàoshì* 要是, which has been reanalyzed as a verbal suffix.²⁰ Thus, only the morphosyntactic features of the Salar conditional marker were shifted into Línxià.

4. Implications for language contact theory

The maintenance of native structural features (including segmentals and tone) in the Línxià conditional marker *-ɣ*, coupled with the wholesale adoption of foreign morphosyntactic features, parallels the case of the instrumental/comitative marker *lianjə*. These two examples of the use of functionally equivalent structures in Línxià to nativize such adstratum features testifies to the resiliency of certain levels of the language, namely lexicon and, to a lesser degree, phonology. Even within the context of such heavy borrowing, "interference features are still scattered among the various grammatical subsystems, so that typological disruption in any one subsystem is limited: the inherited structures, including the morphemes that express them, are still largely intact."²¹

This contradicts the hallowed implicational universal that phonological and lexical change must precede any transfer of syntactic features. Moreover, constraints on naturalness and markedness would lead us to believe that in such a complex multicultural environment (where the need for intergroup communication at least in commerce is fairly high), that these would display trends towards simplification and less markedness, and, thus, convergence of certain features. In the Línxià dialect, the adoption of an SOV word order and its accompanying

postpositions (such as *lianjə*) and suffixes (such as *-gɿ*) to parallel the other languages of the region has resulted in a decrease in its areal markedness; yet by retaining certain features of an SVO order, the incorporation of external features has resulted in the complication of its structure.

This simultaneous co-existence of genetic (i.e. Chinese) features with borrowed features at all levels of language, while more complicated, serves two important functions for the speakers of the Línxià dialect: by increasing the number of structures for any given function, Línxià speakers are increasing the likelihood of intergroup communicative success, while at the same time maintaining their own linguistic identity. It is likely that this is a factor in maintaining both Altaic instrumental/comitative *-la* and also the nativized *-lianjə*.

In addition, the expressive possibilities within a given level of the Línxià dialect also increase. Take, for example, the *ka-εio* alternation discussed above. In Standard Chinese, subjective affection is expressed through reduplication or vocal inflection of the morpheme *xiǎo* 小. While these morphosyntactic or suprasegmental processes also occur in Línxià, its speakers have a lexical alternative as well.

Although the Línxià dialect has been drastically changed through incorporated Altaic features, it still maintains a basic stratum of Chinese lexicon and phonology. Social and historical factors, such as the political and economic dominance of the Hàn Chinese (even in a region where the Hàn are culturally a minority), have contributed to the genetic continuity of the Chinese stratum of the Línxià dialect. As we have seen, the stronger group identity of the Huí Chinese has resulted in significant structural isoglosses within Línxià city itself: Hàn Chinese is more vulnerable to substratum interference.

Through at least several hundred years of contact, the Línxià dialect has had pervasive substratum interference, particularly in syntax and morphology. Yet the surrounding languages have likewise undergone contact-induced changes. In these languages, it appears that those changes that were the result of Altaic or Tibetan interference are generally phonological and lexical and are temporally remote. This is due to their genetic relationship and typological similarity. Those changes that have been induced through contact with Chinese, however, are of two types. The older Chinese loans into these languages were also lexical and, to a lesser extent, phonological in nature. The more recent interference features, however, occur at all levels of language, and have in many cases been rapidly assimilated into the Altaic and Tibetan languages.²²

The difference in the nature of contact-induced changes between Hàn and non-Hàn can perhaps be explained in the following way. For the last several centuries, the non-Hàn have been economically and politically subordinate. They have thus been more motivated to become bilingual in the dominant language, Chinese. In learning the language, speakers of Altaic and Tibetan languages assimilate whatever vocabulary and pronunciation (morphophonemic rules) they need to function in Hàn society. Some speakers abruptly abandoned the vocabulary of their native language, while retaining its syntax, resulting in, for example, the Tángwàng and

Wütún creoles. Others who remained bilingual, like the Salar, Santa, and Bǎonán, were exerting pressure on Chinese syntax at the same time that Chinese features were being shifted to these languages. One can only speculate that this syntactic pressure resulted from either imperfect learning of Chinese on the part of the non-native speakers, thus introducing SOV syntax into intergroup communication; or that the Hàn Chinese began to produce a mixed SVO/SOV word order in their efforts at commercial or political communication.

Notes

1. An earlier version of this paper was presented to the Seventh Annual Meeting of *Central Asia at Berkeley*, May 19-20, 1989.
2. For case studies and further discussion on the social determinants of linguistic change, see Thomason and Kaufman.
3. The Yellow River plateau covers an area approximately 35-38 degrees latitude and 101-105 degrees longitude.
4. The Tángwàng creole represents the spoken language of two villages in the northeast of the Dōngxiāng Autonomous County in Gānsù. Numbering approximately 20,000, its speakers are Muslims and call themselves Santa (*Dōngxiāngzú* 東鄉族) although they do not speak the Santa language. While the lexicon is almost exclusively Chinese, the morphosyntactic features of Tángwàng are largely Santa. Speakers of the Wütún creole number about 2000 and reside in the *Huángnán* 黃南 Tibetan Autonomous State in eastern Qīnghǎi province. While Tibetan is the lingua franca for the area, most speakers are bilingual in Tibetan and Chinese, which is reflected in lexical and morphological features of their language.
5. Although the same graph 尕 appears in certain Tibetan place names of the region, it is a different morpheme altogether: 尕 is used to transliterate the Amdo Tibetan *kha* 'mouth' (and by extension, 'opening; col'). For example, *Kasar* 尕撒爾 (a village on the west bank of the Lóngwù river in Qīnghǎi), and *Wankatan* 完尕灘 village, located south of Línxià).
6. In Gānsù Bǎonán (Jíshíshān 積石山 county, Dàtún 大屯 village); based on data in Bu He, Chén Naixiong 1982.
7. In Qīnghǎi Bǎonán (Tóngrén 同仁 county); based on data in Bu He, Chén Naixiong 1981.
8. *bedi* may be cognate with Inner Mongolic *bagii* and also possibly Monguor *mula(a)* 'small' and W. Yugur *mula* 'child'. The origin of *dʒigaŋ* is unclear.
9. Conversely, in Xīníng, the compound numeral *lianj* has become generalized to these three functions to the exclusion of *lianjə*.
10. Bu He, Chén Naixiong p. 67; Liu Zhaoxiong 1981.
11. In Amdo Tibetan the comitative *-la xamdə* occurs only rarely with certain verbs (e.g., 'to have') in the literary language. It is unlikely that *-la* is native to Amdo Tibetan since it is not present in the basic stratum; furthermore, *xamtu* appears in *The Secret History of the Mongols* as 'together', suggesting that *-la xamdə* was borrowed into Amdo Tibetan from the neighboring Mongolic languages, perhaps during the medieval period.
12. Poppe 1977, p. 72.
13. Poppe 1955, p.204.
14. The Salar instrumental suffix *-la*, unlike the comitative suffix, alternates with *-la nə*, which I believe is the last trace of the Common Turkic (and Common Tungusic) ancient instrumental suffix *-n*.

15. Poppe 1955 p. 203.
16. Proto-Altaiic *-lū occurred without other suffixes only in pre-thirteenth century Turkic, where it functioned to create derived nouns or as a nominalizer: *tengriŋi yerlida* 'in Heaven and on earth'; *edguli ayıylı* 'the good as well as the evil one'. (examples from Poppe 1977, p. 204.)
17. Tekin, p. 277.
18. Personal communication from my language informant, Mr. Xiǎolǐ Zhū, to whom I extend my thanks for his patience and good humor.
19. For example, *sas3* 'what?'
20. This reanalyzed form of the Standard Chinese conditional *yàoshi* 要是 also appears in the Línxià clause-final counterfactual enclitic *zhèhuàshì* 這話是 (<*zhè53hua53* 這話 'actually, really' + *shì* [conditional marker]). Although the counterfactual, like conditional *shì*, maintains the segmental features of the original morphemes, tonal features are not maintained except in emphatic speech. *-shì* only occurs as a bound morpheme in Línxià. The verb *shì* 是 is ungrammatical in copular sentences unless it co-occurs with the negative particle *bù* 不. Thus at the levels of both phonology and syntax, what was in origin a copula and a preverbal conditional marker has been abstracted to a suffix in the Línxià dialect.
21. Thomason and Kaufman, p. 76.
22. Particularly after 1949 we see the rapid assimilation of Standard Chinese political and economic vocabulary and the adaptation or assimilation of certain Standard Chinese phonemes. For example, as much as 51% of Gānsù Bāonán vocabulary is Chinese in origin (Li, 1989).

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INTRODUCTION TO VOLUME III

Sinitic

This volume of the set is devoted to articles about the Sinitic varieties, particularly the historical development of this branch of the family.

We begin in Part I with studies on Old Chinese, in particular the identification of word families ("groups of words which may be suspected of being cognate" Karlgren 1956: 1), a methodology followed by every major figure working on historical linguistics in Sino-Tibetan. The first application of this concept within Sino-Tibetan is probably Stuart Wolfenden's 1928 article on word families in Tibetan, but as Walter Simon (1949: 3) mentions, Wolfenden's work in this area got a boost from our first article in this volume, Chapter 35, Bernhard Karlgren's "Word families in Chinese" (1933). Karlgren's basic insight is that:

Chinese does not consist of so and so many thousands of independent monosyllables, none of them cognate to any others; in Chinese, as in all other languages, the words form families, groups of cognate words formed from one and the same primary stem.

(p. 9)

Because of this, in doing internal reconstruction and in doing comparative work we need to first identify as many members of a particular word family as possible, and then analyse all of the members of the word family in order to isolate the root and affixes, if possible, in doing internal reconstruction, and also to identify the correct cognate forms when comparing with other languages (see also Wolfenden (1937), Chapter 14 in Volume I). This paper deals only with the internal identification of word families in Old Chinese. Except for a short note at the very end that some of the alternations involve "different parts of speech or similar grammatical distinctions" (p. 119), Karlgren does not discuss the variations as derivation. Karlgren says this very long paper is just a "short preliminary note" (p. 10), and he will expound on word families at greater length later, but from this article we can see the tremendous amount of work that went into collecting and comparing the different words to group 693 of them into word families. We of course could disagree with certain of his decisions, and with his reconstructions of Archaic (Old) Chinese, which are what he is often basing his families on, but we cannot

deny that this article led to a lot of very useful work in Chinese historical phonology and morphology, and is still a valuable resource on its own. Karlgren himself later (1956: 1) says of this paper:

My list was, of course, only tentative: in a great many of the cases adduced the affinity is obvious and undeniable, in other cases it is only probable or even merely possible and it was left to future research to determine which of the stem alternations proposed could be proved.

Chapter 36, Karlgren 1956, “Cognate words in the Chinese phonetic series”, is a short follow-up on Karlgren’s 1933 paper on word families, showing how the Chinese intellectuals who created the Chinese characters must have understood the word family relations among the members of many word families because of the way they used the same character to represent two words, or used similar characters to represent related words. He distinguishes cases where an element is used purely as a phonetic and cases where what might be considered the phonetic is in fact the basic root, e.g. he argues, for example, that 牙 “tooth” and 芽 “sprout” are the same word, and the second character is simply disambiguated by the addition of the “grass” radical, but 訝 “to welcome, receive” is different in that the “tooth” character has been borrowed (假借) for its sound alone, and then later disambiguated from “tooth” with the “to speak” radical, and so only in this case can we talk about the character being a combination of phonetic and radical. He gives pairs of words that he argues are variants of the same root, organized by the type of variation in initial or final (all together 546 characters are discussed, but this involves more than 546 words, as Karlgren only gives one number to a character used for two different words).

Karlgren stopped at identifying the variations and argued the alternations were part of Archaic Chinese (Wang Li’s view as well, e.g. 1979, 1982). In some cases that is all we can do, though in many cases we can identify the morphology involved in the variations. The third article in this set, Chapter 37, Downer’s seminal article, “Derivation by tone-change in Classical Chinese” (1959), was inspired by Wang Li’s (1958) insight that at least some of the tonal variation can be considered morphological derivation, with the *píng*, *shǎng*, and *rù* tones considered basic, and many of the *qù* tones considered derived.¹ Downer attempts to develop this idea. He gives a long list of forms broken down into the different types of semantic contrast between the two forms. He also mentions the alternation in voicing of initial segment in some pairs of words (including forms that also contrast in tone), and sees a similarity in the sorts of derivations found. Although he is aware of Haudricourt’s suggestion of an *-s suffix as the source of the *qù* tone, he does not discuss that and sees the variants simply as a difference in tone. He seems to not accept the possibility of affixes in Chinese. In his discussion of the difference in voicing of initials he says “. . . it is difficult to account for the incidence of voiced and voiceless initials. It seems that here there is only alternation, no system of derivation being demonstrable” (p. 263).² Now the idea of an

*-s suffix as the origin of the *qù* tone is generally accepted, and although there is still controversy about what affixes there were other than that and what they did, there is general agreement that affixation was a part of the earliest stages of Chinese, and Proto-Sino-Tibetan as well (see LaPolla (1994, 2017a)).

Chapter 38, Mei Tsu-lin’s 1970 classic, “Tones and prosody in Middle Chinese and the origin of the rising tone” brings together evidence from modern dialects, Buddhist sources with descriptions of Middle Chinese, and old Sino-Vietnamese loans to support Pulleyblank’s (1962) proposal that a glottal stop was the origin of the *shǎng* (rising) tone, a hypothesis that is now widely accepted. From the Buddhist sources Prof. Mei concludes that:

the tonal system of Middle Chinese around the eighth century is found to be (1) level tone: long, level, and low; (2) rising tone: short, level, and high; (3) departing tone: longishness about to be lost and probably high in pitch and rising in contour; and (4) entering tone: short, with uncertain pitch and contour . . .

(p. 110)

Given that there are some Min varieties that still have glottal stop in the rising tone, and given that the old (Han era) Sino-Vietnamese loans also point to a final glottal stop in those loan words, and given that glottal stop has been shown in other related languages to develop into a high tone, he concludes that the rising tone should have originated in a glottal stop.

Our fifth paper returns to the methodology of word families, in this case trying to find morphological explanations for the variant forms. Unlike Karlgren, who thought there was no discernable pattern that could be identified, Prof. Edwin G. Pulleyblank has quite a few papers on this issue, and here we reproduce two of them (see also Pulleyblank (1977–1978)). The first one, Chapter 39, is his “Some new hypotheses concerning word families in Chinese” (1973a), a follow-up to his two-part 1962 article on word families mentioned earlier in the discussion of Prof. Mei’s article. This article discusses the *-s suffix which is said to have resulted in the departing tone; a voiced glottal fricative prefix which he argues was the source of the voiced/voiceless initial alternations; an *-s- prefix which in some cases has a causative or transitivising function (see also Bodman (1973)); an *-r- prefix with a causative sense; and a vocalic ablaut. Prof. Pulleyblank presents word families in Chinese and Tibetan to support the reconstruction of these features in Chinese, and to show the parallels in the morphology between the two branches of the family. He also gives evidence from Chinese renderings (transcriptions) of foreign terms (expounded on more fully in the next article) in support of the *-s suffix. In support of his idea of a voiced prefix as the source of the voiced/voiceless initial variants he equates this prefix with the Tibetan prefix *ṣ*, which appears often as prenasalization before consonants in modern dialects, and has been argued to have been a voiced velar or glottal fricative in Old Tibetan (Coblin 2002; Hill 2009). As discussed in LaPolla (2017a), the association of this Tibetan prefix with

the Chinese voicing distinctions is problematic, as the Tibetan form did not have that function, and the voicing alternations are independent of that prefix. Currently some scholars argue that the variants were due to an *s- prefix (e.g. Dai (2001); Gong (2000, 2001); Phua (2004); and Mei (2012)) while Sagart and Baxter (2010, 2012) argue for an *N- prefix as the cause of many of the voicing contrasts said by the others to be due to *s-. My own view, argued in LaPolla (2017a), is that:

all three phenomena exist; while some of the voicing distinctions can be shown to be due to either an *s- prefix or a *nasal prefix, we need to also recognize the possibility that some of the voicing contrasts can't be explained by either of these prefixes and so are an independent phenomenon.

(p. 32)

The *s- prefix in Chinese and its correspondence with a similar prefix in many Tibeto-Burman languages is well accepted, though as mentioned earlier, there is controversy about which particular words it applied to in Chinese. The next few items discussed by Pulleyblank are not so well accepted, but stimulated thought about the issues he is trying to address. The first is what he initially calls an “*-r- infix associated with causative meaning” (1973a: 118),³ but then a couple of lines down he says, “This could well reflect an original *r* prefix which has left its trace as retroflexion of the following dental initial” (p. 118), and he compares it with the *r*- prefix in Tibetan, so it seems he intends it to be a prefix in the proto-language. Next he talks about vowel variations or ablaut, though does not give any meaning associated with the differences, so this does not seem to be derivational morphology. One very important contribution of this article is the move beyond the more limited sense of word family of Karlgren and others to allowing any sort of variation. As Pulleyblank discusses, Karlgren limited his word families to words that had finals of the same kind, and he mentions Tōdō Akiyasu's (1962) etymological dictionary of word families as being even more strict in terms of limiting the word families to words that were in the same rhyme category in the *Shījīng*. But there is no reason to be so strict. Pulleyblank gives a number of word families that show different types of variations, in initial, in final, or in vowel (see LaPolla (1994) for many examples where the forms differ only in the final consonant).

Chapter 40, also by Pulleyblank (1973b: “Some further evidence regarding Old Chinese -s and its time of disappearance”) is also a follow-up on his 1962 article. In the 1962 article Prof. Pulleyblank had given evidence from Chinese translations of foreign words for the persistence of a sibilant final in some words in the departing (*qù*) tone until the third century CE, and in this article he presents more evidence to push that date up to the sixth century CE in some areas. He also gives a justification for the use of transcription (transliteration) evidence in historical linguistics, which up to that time had not been widely used. He hypothesises that in those finals where there was no longer the original *s (< *-ts), there was still a final *h (< *-s) at the time the tone categories were recognized (late

fifth century), and all the words with sibilant finals were considered departing tone words.

The next article, Chapter 41, is only one of many I could have included from the many important works produced by W. South Coblin on the dialects of the Western and Eastern Han dynasty periods based on sound glosses, transcriptions, and other relevant materials (see the 15 works listed for Prof. Coblin between 1977 and 1994 in the references section). This was before he turned to looking at the dialects of the Tang period, the Qing period, and the modern period (e.g. Coblin (2005, 2011); see Simmons and Van Auken (2014) for a full listing of Prof. Coblin's publications up to 2014). The book *Fang Yan* (*The speech of different locales*) is an obvious source for people looking for dialect material, and Serruys had done important work on this (1955, 1959, etc.), but was criticized by Miller (1975) for assuming that the words in the *Fang Yan* were cognate. Prof. Coblin acknowledges that many of the sets are not cognate, but goes on to give lists of words that we could see as cognate, and compares them in terms of differing in initial, final, or tone, showing that there is regularity to the differences in the forms that could help us identify different dialects.

Up to this point, the work we have been looking at generally followed Karlgren's view that the *Qièyùn* (601 CE), on which Karlgren based his reconstruction of Ancient Chinese (now more often called “Middle Chinese”), was a real language and was a direct descendant of Archaic Chinese (roughly 1000 BCE, now called “Old Chinese”), and so the latter could be reconstructed at least partly on the basis of working backward from the former. Our next article, Chapter 42, Jerry L. Norman and W. South Coblin's, “A new approach to Chinese historical linguistics” (1995), breaks with that tradition, pointing out the problems with these assumptions and the whole methodology of relying solely on rhyme books and written materials rather than spoken dialect data in doing Chinese historical linguistics, and arguing for a more empirical approach to Chinese historical linguistics and dialect studies. It argues that the *Qièyùn* not only does not represent the Cháng'ān dialect of the Súi period, as Karlgren had assumed, it does not represent the phonological system of any single variety (as also argued by a number of the most eminent Chinese scholars): “. . . it is rather an inventory of a tradition of phonological glossing. As such, the *Chieh-yun* system is not really a language in any common sense of the term” (p. 580). As it does not represent the spoken language of any particular place or time, the *Qièyùn* (*Chieh-yun*) system cannot be the origin of the modern dialects. The modern dialects derive from earlier spoken languages. As Prof. Norman also argues in his 2014 article, the sources used for reconstructing Middle and Old Chinese are heterogeneous, and so can't reflect a single variety, and so we should work back from the spoken languages and reconstruct a much simpler proto-system. To do proper work on reconstructing Chinese, scholars need to collect full descriptions of modern and earlier documented dialects, compare the different dialects using the comparative method, and also work out the migration history to try to explain how the varieties came to be the way they are.

These ideas were largely due to Prof. Norman,⁴ who was, to Prof. Coblin (2013: 222), “the most original thinker in the field of Chinese linguistics encountered in nearly fifty years spent in the field. Simply put, he changed forever the way we perceive and think about Chinese”.⁵ The ideas presented in this article, like some of Prof. Norman’s other ideas, were ahead of their time and did not go down well with many of those working within the established traditions, and so aside from some of Prof. Norman’s students and colleagues who have focused on natural dialect data (e.g. Prof. Coblin, Kevin O’Connor, Richard V. Simmons, David Prager Branner, Zev Handel—see also LaPolla (2001) on the migrations and their influence on the dialects), most in the field did not heed the call of this article and are still mainly working within the old tradition based on the old problematic assumptions.

The final two papers in this part are on the grammar of Old Chinese. As mentioned (and criticized) in Norman and Coblin’s paper (Chapter 42), not much attention was paid to the grammar and lexicon of Old Chinese or later periods, as the focus was only on the phonology.

In Chapter 43, Derek D. Herforth’s paper, “A case of radical ambiguity in Old Chinese: some notes toward a discourse-based grammar” (1987), the point is not so much a description of the grammar, though some of that is included, but how readers of Old Chinese can understand expressions in context even though there is no redundancy in the language, and so all interpretation is context dependent. Although not mentioned by Herforth, the article is in line with W. von Humboldt’s view that Chinese “consigns all grammatical form of the language to the work of the mind” (1863[1988]: 230), and it presages David Gil’s work on Riau Indonesian, showing how little grammatical structure is necessary for communication (e.g. Gil (1994, 2008, 2013)). It also presages the constructionist approach, as it argues that much of the interpretation is based on the overall construction of the expression (see LaPolla 2013 for a constructionist approach to Modern Mandarin). It was also influential in the development of the ideas initially expressed in LaPolla 1990, 1993, 1995. Working with Chinese and seeing how different languages can be in terms of what they make explicit and what they don’t led me also to an understanding of communication that does not assume a coding-decoding model, but instead depends on abductive inference of the communicator’s intention in performing an act that the communicator intends for the addressee to infer the intention of (e.g. LaPolla (2015a)). My one quibble with the article is that it makes a distinction between topic and subject on the basis of semantics rather than any grammatical features, and so argues that topics cannot be arguments of the verb. This is a very different use of the terms from the usual typological literature, where topic is a pragmatic notion, what the clause is about (whether or not it is an argument of the verb), and subject is a grammatical notion that must be shown to have grammaticalized in the language.

The last paper in this part, Chapter 44, Sun Chao-fen’s “The adposition *yi* and word order in Classical Chinese” (1991), discusses the history and distribution of phrases formed with *yi* 以, which Sun treats as an adposition (in Old Chinese it

had verbal uses as well). He shows that within the adposition phrase (AP) *yi* can occur before or after its complement, i.e. as preposition or postposition, and the whole adposition phrase can occur before or after the verb, though the postpositional AP does not appear postverbally. Based on topic continuity counts of the type used in Givón 1983, he argues that the position of the prepositional AP before or after the verb is related to discourse-pragmatic factors—the preverbal type is more likely to be used in contrastive contexts. Sun also suggests that the postpositional, preverbal AP is the archaic order, in contrast to some scholars who argued that it was a newer order. See LaPolla 2015b for the significance of this.

In Part 2 we turn to the modern varieties of Sinitic.

The first paper, Chapter 45, written entirely in the International Phonetic Alphabet, as was the custom for the *Journal of the International Phonetic Association*, is the very famous and often cited but rarely read classic by Prof. Yuen-Ren Chao (1930) introducing his system for transcribing tones and intonation. This system has become standard in Sino-Tibetan studies and beyond. It involves seeing the tones as being on a five-level scale, and so the tones can be represented using numerals that refer to the levels, e.g. 33 for a mid level tone, and 53 for a high falling tone. He also created “tone letters” for expressing the same concept, such as ʃ (= 33) and ʋ (= 53).

Chapter 46 is also a classic by Prof. Chao (1934), in this case a classic for Structuralist linguistics generally, and is not normally thought of as a paper on Chinese linguistics, even though it uses examples from Chinese varieties. It points out the fact that a phonemic analysis is a model of a language, and different models may be constructed for different purposes, and so an analysis is not correct or incorrect, but good or bad for particular purposes. Prof. Chao puts forward a new and broader concept of the phoneme:

A phoneme is one of an exhaustive list of classes of sounds in a language, such that every word in the language can be given as an ordered series of one or more of these classes and such that two different words which are not considered as having the same pronunciation differ in the order or in the constituency of the classes which make up the word.

(pp. 39–40)

Prof. Chao points out that this proposal “leaves unspecified the scope of the word ‘sound’ as regards size and kind, i.e. the degree of analysis into successive elements and the degree of differentiation into kinds” (p. 40), and so the phoneme is not limited to individual segments. This concept was echoed by Firth (1957), and has recently been developed in Chinese linguistics by Shen Ruiqing, building on the concept of emergent phonology. Another thing that sets Prof. Chao’s view apart from much modern work is his awareness of the temporal aspect of communicative interaction, something that was lost in the latter part of the twentieth century, as scholars just worked with abstract symbols on paper (and so talk about “left edge” or “right edge” phenomena, showing how divorced they are from actual

speech). Only recently have efforts within Interactional Linguistics attempted to bring temporality back into linguistic analysis (e.g. Auer 2009, Hopper 2011).

Prof. Chao's article was considered very important in the development of Structuralist linguistics. Voegelin and Voegelin (1999: 79) said that "one of the longest critical bibliographies in the history of twentieth century linguistics will be concerned with tracing the reactions that followed Yuen-ren Chao's stimulus". Because of this importance it was selected for inclusion in Martin Joos' *Readings in Linguistics* (1957), a selection of important works in the Structuralist tradition.⁶

We see in Prof. Chao's paper an ability to think in an unbiased way about issues from different perspectives. One thing that strikes a reader of early twentieth century linguistics articles is the free-thinking nature of the discussions. This changed in the latter part of the twentieth century in the US, as Chomskyan dogma held sway. The next three articles are included here to show how differently people could think about certain issues, as discussed by Chao as well—in this case, how to analyse the phonemic system of the Beijing dialect of Chinese. Chapter 47 is Charles F. Hockett's "Peiping phonology" (1947), which argues for a different approach to phonology based on a non-traditional conception of distinctive features, where what is important is identifying a small set of "determining features" as opposed to "determined features", which allow us to create a minimal set of such features for distinguishing the different phonemes of the language. Like Chao and Firth, Hockett also argues for a non-linear approach to phonology, quite different from late twentieth century phonology, which as I mentioned was based on left-to-right written data, and so depended quite a bit on linearity. Hockett says (p. 255):

Phonological description thus consists of: (a) a list of the determining features (with alternative statements if alternatives exist); (b) a statement of the arrangements in which determining features occur in utterances; (c) a statement of the circumstances under which each determined feature occurs.⁷

The rest of the article is an application of this approach to the Beijing dialect of Chinese.

The next, Chapter 48, is Fang-Kuei Li's short article, "The zero initial and the zero syllabic" (1966), which I have selected because of Prof. Li's status in the field,⁸ but also because it presents a rather radical analysis, even suggesting the possibility of a vowelless analysis of Mandarin.

The next, Chapter 49, is Michael Halliday's article, "A systemic interpretation of Peking syllable finals" (1992), which argues for an approach that is a combination of the traditional Chinese approach which Prof. Halliday learned from Wang Li and Luo Changpei and the prosodic approach which Prof. Halliday learned from J. R. Firth (cf. Firth and Rogers 1937). Prof. Halliday explains his four principles of analysis:

One is the Chinese phonological principle whereby all syllables are structured simply as initial plus final. The second is the Firthian prosodic

principle whereby features such as posture (y/a/w) and resonance (nasal/oral) are treated nonsegmentally. The third is the paradigmatic principle whereby features are interpreted as terms in systems, each system having a specified condition of entry . . . The fourth is the dynamic principle whereby the syllable is envisaged as a wave, a periodic pattern of movement characterized by a kind of 'flow-and-return'.

(p. 435)

Prof. Halliday's approach is highly original and insightful, and not based on segmental phonemes, and the article contrasts the prosodic approach and the traditional segmental approach. It also suggests a typology of features, but one that is quite different from that of Hockett, as it classifies the syllables in terms of the initial and final prosodic systems, the initial systems being "alignment (place)" (pointed vs. flat), "manner", "voice onset" (early (unaspirated) vs. late (aspirated)), and "posture" (a-posture vs. y-posture vs. w-posture) and the final systems being "posture" (a-posture vs. y-posture vs. w-posture), "resonance" (oral vs. nasal), "aperture" (close, half-close, open), and "tone" (high level, mid rising, low rising, falling). "Posture shift" within the syllable is seen as yet another prosodic system.

We now turn to two articles on non-Mandarin varieties. The first is Jerry Norman's "Tonal development in Min" (1973), Chapter 50, which is relevant to Part 1, as it was sort of a forerunner of the article by Norman and Coblin (Chapter 42) discussed there, but as it is about a single group, Min, it is included here. It uses the comparative method to reconstruct the system of initial stops in Proto-Min in order to explain the tonal and initial correspondences between the different Min dialects. In doing this it shows that a six-way system of initial stops (plus voiceless resonants) is needed to explain the correspondences, which implies that the *Qièyùn* system, which only has a three-way system of initial stops, cannot be the ancestor of the Min group. What has stimulated a lot of interest in this article is Norman's reconstruction of a series of "softened initials", which he suggests might have been due to some sort of prefix.⁹ This has stimulated much work on this question, e.g. Handel (2003, 2010a, 2010b), and Baxter (2014).

Our next item, Chapter 51, Mantaro J. Hashimoto's 1992¹⁰ article "Hakka in Wellentheorie perspective", could have been included in Volume II, as it deals with language contact, but as it is mainly about a single branch of Sinitic, Hakka, I have included it here. It is very much the sort of dialect geography discussed in the introduction to Volume II of this set, in this case as a way to identify what is unique about the Hakka varieties, and to show how the correspondences between initials and tones is due to a particular wave of migration out of the Central Plains, which forms a ring around the Central Plains (see the maps given in the article). This also ties in with Prof. Chao and Prof. Norman's work on the dialects, as it argues for the same empirical approach involving comparing existing varieties.

Next we have Anne Oi-kan Yue-Hashimoto's "The lexicon in syntactic change: lexical diffusion in Chinese syntax" (1993a). I mentioned earlier how little attention had been given to the grammar of Sinitic varieties other than Mandarin due

to the nature of how fieldwork on the dialects simply involved asking people how to say certain characters so the researcher could see how that dialect related to Middle Chinese, plus there was the mistaken assumption that the grammar of the Sinitic varieties is basically the same, yet one researcher, Anne Oi-kan Yue-Hashimoto, has steadfastly been working on the grammar of the different varieties (see for example Yue-Hashimoto (1993b), Yue (2017)), aside from her excellent work on Cantonese. A student of William S-Y. Wang and also of Yuen-Ren Chao, she has taken from both teachers a concern for the non-Mandarin varieties of Sinitic and for an empirical approach. In this paper she argues for applying Prof. Wang's approach of looking at the spread of change through a language, generally discussed as "lexical diffusion" (e.g. Wang (1969, 1979); Wang & Lien (1993)), but in this case applied to grammatical changes.¹¹ She combines this with the geographical approach of Mantaro Hashimoto (her husband) and the language contact that is made manifest by looking at the distribution of forms to argue that there is stratification of language due to contact (see also Yue-Hashimoto (1991)) and that the strata can influence each other and create hybrid forms, much like Prof. Wang and Prof. Lien had shown for phonology.

Our last article in this volume, Chapter 53, Randy J. LaPolla's "Arguments against 'subject' and 'direct object' as viable concepts in Chinese" (1993), argues that the sort of restricted neutralizations in certain constructions that we associate with the ideas of "subject" and "direct object", to the extent that they exist, are grammaticalized, and so there is no certainty that all languages will have them, and they must be justified on grammatical grounds for such terms to be used. The article surveys a large number of constructions in Chinese usually associated with grammatical relations, and finds that Mandarin Chinese has not grammaticalized such restricted neutralizations, and so there is no validity in talking about grammatical relations in Chinese. As Yuen-Ren Chao (1955, 1959, 1968) and Lü Shuxiang (1979) had argued, all clauses in Chinese are topic-comment, and so, as they pointed out, what they called "subject" or "zhǔyǔ" in Chinese is not a grammatical relation, but simply a topic. As argued in LaPolla (1990, 1995, 2009), and LaPolla and Poa (2005, 2006), word order is based on a simple principle of information structure, with topical elements occurring before the verb, and non-topical and focal elements occurring after the verb. This simple principle can explain all of the word order patterns in Mandarin Chinese. This expanded the typology of alignment systems to include languages with no alignment, like Chinese. This view was not widely accepted when it was first proposed, as most linguists at the time simply imposed prefabricated generative metalanguages based on English (e.g. LFG, GPSG, HPSG, GB, etc.) onto Chinese, without questioning whether the categories assumed actually were manifested in the language. The work presented here actually developed out of an attempt to apply the Lexical Mapping Theory of LFG to Chinese. When done honestly, it didn't work, and this led to using a framework that did not assume grammatical relations as universals (Role and Reference Grammar) as a way to understand why Chinese was so different from other languages. Now there is more of a trend to analyse languages on their

own terms, and so the view expounded here is becoming more accepted within the field of linguistic typology and also in the field of Chinese linguistics, including being supported in a recent paper by Prof. Shen Jiaxuan, former Director of the Institute of Linguistics in the Chinese Academy of Social Sciences (Shen 2017).

Notes

- 1 Maspero (1935), Yu Min (1948), and Haudricourt (1954) had also argued that the variants involved derivation. Forrest (1960) followed Haudricourt's view of the *qù* tone being due to an *-s suffix and equated it with the -s suffix in Old Tibetan.
- 2 One problem for Downer is his acceptance of Karlgren's reconstruction of a voiced stop final in cases where there is rhyming or *xiéshēng* "contact" between *rù* tone (stopped) and *qù* tone (non-stopped) words (instead of an affix added after the stop final that led to its loss, as Haudricourt had suggested), as it is then not a tonal or affixal difference but a difference in final. This limits his thinking on the matter.
- 3 Bodman (1980) and Sagart (1999, 2001) accepted the idea of an *-r- infix. Bodman did not discuss its meaning; Sagart (1999) gives its meaning as 'repeated or strenuous action', but Sagart 2001 says it "derives nouns for plural objects and verbs of distributed actions" (p. 134).
- 4 See also Norman (2014) for a more recent statement of these views, and Coblin (2013), which reproduces correspondence between Prof. Norman and Prof. Coblin on these matters. See also Handel (2010b) for discussion of the differences in the two methodologies.
- 5 See also Sagart (2012) for an excellent summary and similar appreciation of Prof. Norman's influence.
- 6 For more on the life and work of Prof. Chao, see Chao (1977) and LaPolla (2006a, 2017b) (which contain somewhat different information).
- 7 See also Hockett (1950). While it seems the system he is presenting is similar to the idea of distinctive features, the concepts do not seem to be the same, and there is no mention of Jakobson (1941) or the ideas therein.
- 8 See LaPolla (2006b) and Li (1989) for the life and work of Prof. Li. It should be mentioned here for those new to the field that Prof. Chao and Prof. Li were the two major figures in the field of Chinese linguistics in the mid twentieth century aside from Karlgren, and many of the other scholars whose papers appear here or are mentioned here were students or colleagues of one or both of these scholars, and were greatly influenced by them.
- 9 See also Norman (1974) for reconstruction of the full set of initials; Norman (1986) for the view that the "softened initials" derive from prenasalized stops, based on comparison with Hmong-Mien loan data; and O'Connor (1976) and Norman (1986) for evidence of the distinction beyond Min. As Sagart (2012) points out, reaction to this article led to Prof. Norman working out the historical strata in Min (Norman 1979), which influenced work on other varieties in this regard (see the introduction to Volume II of this series).
- 10 This article was originally presented at a conference in 1986, and published posthumously, as Prof. Hashimoto passed away in 1987.
- 11 Although she calls what she is doing "lexical diffusion in Chinese grammar" in the article (p. 241), she is actually looking at constructions, and is in a sense ahead of her time in recognizing that grammaticalization is of constructions, not individual words.

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Part 1

ARCHAIC/OLD CHINESE AND
ANCIENT/MIDDLE CHINESE

WORD FAMILIES IN CHINESE

*Bernhard Karlgren*Source: *Bulletin of the Museum of Far Eastern Antiquities* 5, 1933, 9–120.

One of the great goals of Chinese historical phonetics is to prepare the ground for comparative Sinitic linguistics—a systematic comparison of Chinese, the T'ai languages and the Tibeto-Burman languages, which are all undoubtedly cognate though widely differentiated idioms. But in my opinion it will not do to pick out isolated Chinese *words* and compare them with isolated Tibetan or Siamese words. It stands to reason that Chinese does not consist of so and so many thousands of independent monosyllables, none of them cognate to any others; in Chinese, as in all other languages, the words form families, groups of cognate words formed from one and the same primary stem. It is not allowable to identify Chinese 目 Arch. *mjók*¹ 'eye' with Tibetan *mig* 'eye' so long as we have not first established the word family to which *mjók* belongs. Akin to *mjók* is undoubtedly the word 眸 Arch. *mjōg* 'pupil of the eye': and it is just as likely that it is this *mjōg* which corresponds directly to the Tibetan *mig*. In other words: before Sinitic comparative linguistics can be safely tackled there remains a great task to be solved in each of the language groups concerned. In Chinese the words must be sorted and grouped according to genetic affinity, and the same must be done in T'ai and in Tibeto-Burman. Then, but only then, we can start comparing the *word groups* of these three great branches and hope for reliable results.

That some words in Chinese are cognate to others is of course no new idea. Already August Conrady in his pioneer work: *Eine Indo-Chinesische Causativ-Denominativ-Bildung*, 1896, had this as a fundamental point of departure. In my *Analytic Dictionary* I have pointed out, in many cases, such affinities between words, not only examples in which one and the same word happens to be represented by two different characters, e. g. 集 *dz'jəp*: 輯 *dz'jəp*, and hence appears to be two different words, but also cases like 夾 Anc. *kap* 'to press': 狹 Anc. *γap* 'narrow' etc., which are clearly cognate words. Indeed, even the Chinese script often indicates two forms as cognate by designing them with one and the same character: 長 *d'jang*² 'long': 長 *ŋjang* 'grow long, grow up'. But it is important to take up this problem of the Chinese word

families for a more systematic investigation. The present paper is intended to be a short preliminary notice, as a kind of introduction to a larger work, which I hope to be able to publish soon.

Before entering upon this principal theme I shall have to give some long preparatory chapters. We must not build our study of Chinese word families on the language of the Ts'ie yün (Anc.) which is comparatively late (6th c. A. D.), since we can attain to a fairly detailed knowledge of Archaic Chinese, the language of the Shī king and the (slightly older) *hie sheng* characters (phonetic compound characters) dating from the early part of the Chou epoch. It is about this latter language I first wish to make some fairly extensive remarks.

In my »Shī king Researches« (this Bulletin vol. 4) I have studied certain phonetic categories in Archaic Chinese, and I wish to revert here to some points connected with those categories; and in that work I left the reconstruction of certain other Shī king rime categories for future discussion, and I wish to take them up here for a detailed analysis.

Categories ending in Arch. dental consonant

In Ancient Chinese (Ts'ie yün) there are two rimes -*jən* and -*jěn* between which the words are distributed in an obviously mechanized fashion (Phonol. Chin. p. 174):

kjěn, kjuěn; t̃jěn, t̃juěn; ljěn, ljuěn; tsjěn, tsjuěn; pjěn, 〇;
kjən, kjuən; 〇 〇 〇 〇 〇 〇 〇 〇 pjən.

The final *jən, juən* does not exist after palatals and dentals, only after gutturals and labials. It is natural to suspect that this is a result of the general tendency of nivellation, so strongly at work in Chinese, and that Arch. Chinese had both types: *t̃jěn* and *t̃jən*, but that these have been confounded in Anc. *t̃jěn*.

That this really was so is confirmed by the Shī king rimes. Let us state first that from the word groups here concerned we have to keep entirely separate words with Archaic *ā, a* (long) and *ǎ* (short). They form a Shī king rime category here called A, which is no. 14 in Tuan Yü-ts'ai's famous Liu shu yin kün piao and cat. 9 in Wang Nien-sun's equally important Ku yün pu (in Kao-yu Wang shī i shu). I need not reproduce their tables completely; they can be conveniently summed up in a few type words, for which I insert the Arch. and Anc. sounds:³

干管 顏關 展轉 見渴 閱憲 言原。

Arch. *kân, kwân; ngan, kwan; tjan, tjuwan; kian, kiwan; kǎn, g'wǎn; ngiǎn,*
ngiwǎn.

Anc. *kân, kwân; ngan, kwan; t̃jǎn, t̃juwǎn; kien, kiwen; kan, ywan; ngjwn,*
ngjwǎn.

From this rime category A are well distinguished two other Shī rime categories: B, cat. 12 of Tuan's = cat. 7 of Wang's. Here the principal words are:

賢年天田甸顛闕電填千翩。淵。
烟咽引榛漆臻綦陳臣塵身中仲人仁麟親信薪盡燼
膚瀆頽頽泯。均甸詢洵。

1. had Anc. -*ien* : *yien* etc.;
2. had Anc. -*iwen* : *iwen*;
3. had Anc. -*jěn* : *jěn* etc.;
4. had Anc. -*juěn* : *kjuěn* etc.

C, cat. 13 of Tuan's = cat. 8 of Wang's. Here the principal words are:

昆跟。昆呼存殮孩趣奔瑞門。
勤芹欣隱。君車訓無愷云雲員芬焚勞聞聞。
振辰晨吟忍負絡瘡。昔濟順鵝梓輪洽。
先洒珍。艱。鯨。鯨。
巾埤殷怒。說闕。限困。

1. had Anc. -*ən* : *kən*;
2. had Anc. -*uən* : *kuən* etc.;
3. had Anc. -*jən* : *g'jən* etc.;
4. had Anc. -*juən* : *kjuən* etc.;
5. had Anc. -*jěn* : *t̃jěn* etc.;
6. had Anc. -*juěn* : *t̃juěn* etc.;
7. had Anc. -*ien* : *sien* etc.;
8. had Anc. -*an* : *kan*;
9. had Anc. -*wan* : *kwən* etc.;
10. had Anc. -*jěn* : *kjěn* etc.;
11. had Anc. -*jien* : *t̃jien* etc.;
12. had Anc. -*iwen* : *jjuwen* etc.

Two preliminary remarks:

Firstly, I have entered, in a few cases, characters which do not occur in the Shī rimes but which belong to the category, as revealed by rimes in other Archaic texts or by their »phonetics«. Secondly, the second character in line 11 according to its Anc. sound should stand in the *w* line (12); I have placed it in the *w*-less line (11), since it had no *w* in Archaic Chinese.

This latter phenomenon is an important point, which concerns several common words. I have arrived at the opinion that in Ts'ie yün time there were two kinds of *ho k'ou w*: one is genuine and Archaic, occurring after all kinds of initials, one is secondary and late, occurring only after *p, p', b', m* and due to an exaggerated labial articulation of the initial. Whereas genuine *pjw*- regularly gives *f(w)*- at the very time of the Ts'ie yün: 方 *pjwang* > *fwang*, 分 *pjwən* > *fuən*, 非 *pjwei* > *fwei* etc., a secondary and evidently more volatile and weak *w* causes no such change. That 丙 Anc. *pjwəng*, 平 *b'jwəng*, 明 *mjwəng* had really a *w* in Ts'ie yün time is certain (丙 is spelled by 丞), but since this *pjw*- has not given *fw*- I conclude that the Arch. forms were *pjǎng, b'jǎng, mjǎng*, and that the *w* is secondary and parasitic. Such cases are to be found, besides in the table »*keng*«, also in the tables

»chü», »sham» and »chen» of the Sung rime tables (Phonol. Chin. pp. 149, 171, 177, 185).

If we now revert to our Shī king rime categories B and C and scrutinize them, we find that cat. B in the Ts'ie yün language had exclusively *e* vowels: *-en* or *-ĕn*; cat. C had a rich part with *a*: *-ən*, *-uən*, *-jən*, *-juən*, and then both *-ĕn*, *-en*, *-ən* and *-en*. To my mind there cannot be the slightest doubt that here in C the *-ən* vocalism is primary and principal, and that all the *-ĕn* and *-en* are secondary. Thus line C 5 was Arch. *ĥjən* etc. and line 6 was Arch. *ĥ'jwən* etc.; but whereas *-jən* after the gutturals and labials with *ho k'ou* was preserved down to Ts'ie yün time: line 2 *g'jən*, line 4 *kjuən*, *pjuən*, after palatals and dentals and after labials with *k'ai k'ou*, *-ən* became *> -ĕn*: line 5 Arch. *ĥjən* *>* Anc. *tšjĕn*, line 6 Arch. *ĥ'jwən* *>* Anc. *tš'juĕn*. This explains the gaps in the scheme of p. 2 above! In Ts'ie yün there are only types *kjən*, *kjuən* and *pjuən* but no types *ĥjən*, *ĥjuən*, *tšjĕn*, *tšjuən* etc.—because the latter, which existed in Arch. Chinese, have passed over to *tšjĕn*, *tšjuĕn*, *tšjĕn*, *tšjuĕn*, thus coinciding with the original (Archaic) *jĕn*, *jwĕn* (lines 3 and 4) of cat. B. Line C 7 is easily explained in consistency with this: just as Arch. *sĥjən* (with short *j*) in line 5 became Anc. *sĥjĕn* (after dental), so Arch. *sjən* (with long *j*) became Anc. *sien* (equally after dental).

There seems to be a great difficulty which vetoes this general theory: the words which I have placed in line C 10: 巾 Anc. *kjĕn* etc. If an Arch. *kjən* kept its *a* (after guttural): line 2 *g'jən* etc., how could we explain the *kjĕn* etc. of line 10 with *ĕ* after guttural in this same rime category? The answer to this riddle will be given presently after we have discussed lines C 8, 9, 11 and 12.

The *-ən* in lines 8 and 9 cannot be original, for then the words of these lines would have rimed in cat. A above. What their Arch. value was is not difficult to find. In my Shī king Researches (pp. 157 and 160) I have shown that 華 Arch. *kek* (with an open, short, slack *ä*- sound: *ε*) and 戒 *keg* (*>* Anc. *kai*) rime with *-ək*, *-əg*. Thus *ε* and *ə* regularly go together in the Shī rimes. I conclude that the Anc. *-ən*, *-wən* (lines 8,9) in our cat. C derive from Arch. *-en*, *-wen*: 8 *ken*, 9 *kwen*.

Next we have lines C 11 and 12. I am happy to be able to improve here my reconstruction system of Anc. Chinese (Ts'ie yün) on this point. For line 11, which is a rime of its own in the Ts'ie yün (no. 19 in the Nei fu ts'ang T'ang sie pen Ts'ie yün and in the Kuang yün, p'ing sheng) I had not been able to give any independent final at all; for line 12 I had given a very unsatisfactory reconstruction: I had distinguished it from line 6 only by a difference in the *ho k'ou* *w*: 6 *-juĕn*: 12 *-jwĕn*. Now this was very artificial and doubtful, and I have myself stated earlier that a new solution had to be found (Shī king Researches p. 126). Our Shī rime system helps us to solve the riddle. Lines 11 and 12 are the *j* correspondences to the *-en*, *-wen* of lines 8 and 9: 11 *tšjĕn*, 12 *jwĕn* (Arch. *giwĕn*). Anticipating this discussion I have already entered these values in the table on p. 3 above.

We can now revert to the mysterious line 10 巾 Anc. *kjĕn*. It is explained by the system of lines 11 and 12. If we take the latter two together, we have *tšjĕn* and *mĥjĕn* and we have *giwĕn*, but we have no type *kjĕn*, i. e. the *k'ai k'ou* final *-jĕn* after gutturals and laryngals (which are the most frequent of the Chinese initials)

is missing. It is obvious that in line 10 巾, 𠂔 Anc. *kjĕn*, *jĕn*, which the Shī rimes do not carry to cat. B (Arch. *-jĕn*, *-ien*) but to cat. C (bringing them together with Arch. *-ən*, *-jən*, *-wən*, *-jwən*, *-iən*, *tšjĕn*, *-jwĕn*) we have the missing type Arch. *kjĕn*. Thus we get an explanation on the one hand of their placing in this rime category C (cf. rime cat. *ek*: *ək*, *eg*: *əg* of the Shī), on the other hand of their evolution down to Anc. Chinese:

Arch. *kjĕn* *>* Anc. *kjĕn*;
 » *tšjĕn* *>* » *tšjĕn*;
 » *kjwĕn* *>* » *kjwĕn*.

It might be expected that in *ho k'ou*, as well as in *k'ai k'ou*, after guttural *-jwĕn* would become *-jwĕn*. And indeed, there is a strong tendency in this direction. For the word 困 Kuang yün gives double readings *g'jwĕn* and *kjwĕn* (rime 𠂔, not rime *juĕn* 𠂔!), for 𠂔 it gives *kjwĕn* (not *juĕn*!).

There is one more very strong support for our theory that the Anc. *-jĕn* of line 10 (巾 etc.) has a different Arch. origin from the *-jĕn* of cat. B (type 𠂔), that indeed it stood closer to Arch. *-jən* (type 𠂔), C 3, than did type 𠂔 (B 3). In Go-on, the most ancient dialect of which we have a detailed knowledge, type 𠂔 (B 3), Arch. *-jĕn*, is rendered by *in*; type 𠂔, 𠂔 (C 3), Arch. *-jən*, is regularly rendered by *-on*; now, the words 巾, 𠂔, 𠂔 of line C 10 are, in Goon, not *kin*, *in*, *in*, but *kon*, *on*, *on*. Evidently, in the dialect that was the basis of Go-on, the Arch. *kjĕn*, *jĕn*, *jĕn* in these words had become *kjən*, *jən*, *jən*, thus joining the C 3 type (𠂔 *kjən*, 𠂔 *jən*) and not, as in Ts'ie yün, becoming *kjĕn*, *jĕn* (joining the B 3 type 𠂔 *jĕn*).

We are now able to fill in the Arch. values of our tables B and C:

B.	Arch.	Anc.	Arch.	Anc.
	1. <i>ien</i>	<i>></i> <i>ien</i> ;	2. <i>iwĕn</i>	<i>></i> <i>iwĕn</i> ;
	3. <i>jĕn</i>	<i>></i> <i>jĕn</i> ;	4. <i>jwĕn</i>	<i>></i> <i>juĕn</i> .
C.	Arch.	Anc.	Arch.	Anc.
	1. <i>ən</i>	<i>></i> <i>ən</i> ;	2. <i>wən</i>	<i>></i> <i>uən</i> ;
	3. <i>kjən</i>	<i>></i> <i>kjən</i> ;	4. <i>kjwən</i>	<i>></i> <i>kjuən</i> ;
	5. <i>ĥjən</i>	<i>></i> <i>tšjĕn</i> ;	6. <i>ĥjwən</i>	<i>></i> <i>tš'juĕn</i> ;
	7. <i>iən</i>	<i>></i> <i>ien</i> ;		
	8. <i>en</i>	<i>></i> <i>ən</i> ;	9. <i>wen</i>	<i>></i> <i>wən</i> ;
	10. <i>kjĕn</i>	<i>></i> <i>kjĕn</i> ;		
	11. <i>tšjĕn</i>	<i>></i> <i>tšjĕn</i> ;	12. <i>jwĕn</i>	<i>></i> <i>juĕn</i> .

To the three *-n* categories A, B and C studied above there correspond three categories D, E and F ending in *-t* and *-d*. Before taking them up for discussion I wish to make a preliminary remark. In my Analytic Dictionary of Chinese (1923) I pointed out that numerous *hie sheng* cases like 𠂔 Anc. *kāt*: 𠂔 *yāt*, 𠂔 *lĥāt*: 例 *lĥāt* reveal an Arch. final dental in *-āt*, *jāt* lost, or rather vocalized into *-i*, before the time of Anc. Chinese; and since there is regularly a falling tone in such cases,

I concluded that the loss of the dental which I interpreted as *-d* (*yād*, *liäd* in contradistinction to *kāt*, *liät*) had entailed the falling tone. In some later articles I modified my theory and said that the Arch. final dental was a *-t* in *yāi* and *liäi* as well, and that the falling tone was primary and decided the evolution: whereas 割 *kāt*, 列 *liät* preserved their *-t*, 害 *yāt* and 例 *liät* vocalized it because of the falling tone (similarly 白 *b'vk* > *b'vk*; 怕 *p'vk* > *p'a*). This modified theory had great advantages (see *Shi king Researches* p. 119); and yet here I make a sudden *volte-face* and revert to my original theory such as it was sketched in my *Analytic Dictionary*. My reasons for so doing will be given on p. 23 below.

We now revert to the *-t*, *-d* correspondences to categories A, B and C. Two of them (the *-at* and the *-ət* groups) Tuan Yü-ts'ai has erroneously confused into one: his cat. 15 (ju sheng section). This is one of the weakest spots in his otherwise excellent *Shi rime* treatise. Wang Nien-sun is superior on this point; he has clearly distinguished the three categories.

D. Cat. 14 of Wang's is part of Tuan's cat. 15, ju sheng section. The principal words are:

- 1 葛曷渴渴恒達園。2 帶大害艾藹拔肺菴。
 3 括作浩闊滅撥專振將菱撥株。4 外噉殺兒脫翹。
 5 殺。6 薑。7 八。8 噲敗蓮。
 9 焚揭帽孽舌烈滅。10 厘樹趨哲世泄總。
 11 說懷絕威。12 帆說衛武蹶。13 截。14 端。
 15 臺。16 瘞。17 刮。18 拜。19 搗搗保。20 刈。
 21 嚴關月越鉞發伐發。22 吹吹。

- | | |
|--|--|
| 1. had Anc. <i>-ât</i> : <i>kât</i> etc.; | 2. had Anc. <i>-âi</i> : <i>tâi</i> etc.; |
| 3. had Anc. <i>-uât</i> : <i>kuât</i> etc.; | 4. had Anc. <i>-uâi</i> : <i>nguâi</i> etc.; |
| 5. had Anc. <i>-at</i> : <i>sat</i> ; | 6. had Anc. <i>-ai</i> : <i>t'ai</i> ; |
| 7. had Anc. <i>-wat</i> : <i>pwat</i> ; | 8. had Anc. <i>-wai</i> : <i>k'wai</i> etc.; |
| 9. had Anc. <i>-jât</i> : <i>g'jât</i> etc.; | 10. had Anc. <i>-jâi</i> : <i>liâi</i> etc.; |
| 11. had Anc. <i>-jwât</i> : <i>jwât</i> etc.; | 12. had Anc. <i>-jwâi</i> : <i>sjwâi</i> etc.; |
| 13. had Anc. <i>-iet</i> : <i>dz'iet</i> ; | 14. had Anc. <i>-iei</i> : <i>tiei</i> ; |
| 15. had Anc. <i>-at</i> : <i>kat</i> ; | 16. had Anc. <i>-ai</i> : <i>t'ai</i> ; |
| 17. had Anc. <i>-wat</i> : <i>kwat</i> ; | 18. had Anc. <i>-wai</i> : <i>pwai</i> ; |
| 19. had Anc. <i>-jpt</i> : <i>kjpt</i> etc.; | 20. had Anc. <i>-jpi</i> : <i>ngipi</i> ; |
| 21. had Anc. <i>-jwpt</i> : <i>kjwpt</i> etc.; | 22. had Anc. <i>-jwpi</i> : <i>b'jwpi</i> . |

There is first a strict parallelism between lines with odd and even numbers. To the final *-t* of the former corresponds *-i* of the latter. This *-i* is the vestige of the lost *-d*, dropped and causing the falling tone (*k'ü sheng*): whereas 葛 *kāt* has preserved its *-t*, 帶 *tâd* has become > *tâi*.

Further the whole of this category corresponds faithfully to the *-n* class in cat. A above. We therefore obtain the following Arch. values:

- | | | | | | |
|------------------|------------------|-------------------|-------------------|--------------|-----------------|
| Category D: | | | | Category A: | |
| 1. <i>ât</i> , | 2. <i>âd</i> ; | 3. <i>wât</i> , | 4. <i>wâd</i> ; | <i>ân</i> ; | <i>wân</i> ; |
| 5. <i>at</i> , | 6. <i>ad</i> ; | 7. <i>wat</i> , | 8. <i>wad</i> ; | <i>an</i> ; | <i>wan</i> ; |
| 9. <i>jat</i> , | 10. <i>jad</i> ; | 11. <i>jwat</i> | 12. <i>jwad</i> ; | <i>jan</i> ; | <i>jwan</i> ; |
| 13. <i>iat</i> , | 14. <i>iad</i> ; | ○ | ○ | <i>ian</i> ; | <i>(iwan)</i> ; |
| 15. <i>ât</i> , | 16. <i>âd</i> ; | 17. <i>wât</i> , | 18. <i>wâd</i> ; | <i>ân</i> ; | <i>wân</i> ; |
| 19. <i>jât</i> , | 20. <i>jâd</i> ; | 21. <i>jwât</i> , | 22. <i>jwâd</i> ; | <i>jän</i> ; | <i>jwân</i> . |

We can now pass on to cat. E, being the *-t* and *-d* correspondence to cat. B. The principal words are:

- 1 結結頤嗑嗑堽株節。2 噉嗑。3 血穴。
 4 吉一逸宜實空秩挂櫛瑟日漆七疾栗栗匹釋駟空。
 5 至。6 恤。

- | | |
|---|---|
| 1. had Anc. <i>-iet</i> : <i>kiet</i> etc.; | 2. had Anc. <i>-iei</i> : <i>tiei</i> etc.; |
| 3. had Anc. <i>-iwet</i> : <i>xiwet</i> etc.; | |
| 4. had Anc. <i>-jët</i> : <i>kjët</i> etc.; | 5. had Anc. <i>-i</i> : <i>tî</i> ; |
| 6. had Anc. <i>-jwët</i> : <i>sjwët</i> . | |

Here again 1 and 2, and 4 and 5 respectively had the same Arch. final, differentiated only by the contrast *-t*: *-d*, the latter having vocalized into *-i* and causing a falling tone. We thus obtain the following Arch. values:

- | | | |
|------------------|-----------------|---------------|
| Category E: | | Category B: |
| 1. <i>iet</i> , | 2. <i>ied</i> ; | <i>ien</i> |
| 3. <i>iwet</i> ; | | <i>iwen</i> |
| 4. <i>jët</i> , | 5. <i>jëd</i> ; | <i>jën</i> |
| 6. <i>jwët</i> . | | <i>jwën</i> . |

Somewhat more complicated is cat. F, being the *-t* and *-d* correspondence to cat. C. The principal words are:

- 1 混受後。2 穿沒。3 對對退潰蓄妹內。4 仇。
 5 氣堅。6 鬱用着拂。7 貴謂渭蔚味。
 8 脆。9 利淮肄四駟似比紕寐界。
 10 出卒述歎率律。11 類遂棧越碎萃許瘁穗。
 12 擊。13 辰棧溥。14 閱。15 惠嚙。16 真。17 屈。
 18 滑。19 簞。20 豎。21 棄器。22 橋。23 匪季悻位。

- | | |
|---|--|
| 1. not represented; | 2. had Anc. <i>-âi</i> : <i>kâi</i> etc.; |
| 3. had Anc. <i>-uət</i> : <i>tsuət</i> etc.; | 4. had Anc. <i>-uâi</i> : <i>tuâi</i> etc.; |
| 5. had Anc. <i>-jət</i> : <i>ngjət</i> ; | 6. had Anc. <i>-jɛi</i> : <i>k'jɛi</i> etc.; |
| 7. had Anc. <i>-juət</i> : <i>juət</i> etc.; | 8. had Anc. <i>-jwɛi</i> : <i>kjwɛi</i> etc.; |
| 9. had Anc. <i>-jɛt</i> : <i>liɛt</i> ; | 10. had Anc. <i>-i</i> : <i>lji</i> etc.; |
| 11. had Anc. <i>-juɛt</i> : <i>t's'juɛt</i> etc.; | 12. had Anc. <i>-wi</i> : <i>ljwi</i> etc.; |
| 13. had Anc. <i>-iet</i> : <i>p'iet</i> ; | 14. had Anc. <i>-iei</i> : <i>liei</i> etc.; |
| 15. had Anc. <i>-iwet</i> : <i>k'iwet</i> ; | 16. had Anc. <i>-iwei</i> : <i>ɣiwei</i> etc.; |
| 17. had Anc. <i>-at</i> : <i>kat</i> ; | 18. had Anc. <i>-ai</i> : <i>kai</i> ; |
| 19. had Anc. <i>-wat</i> : <i>ɣwat</i> ; | 20. had Anc. <i>-wai</i> : <i>k'wai</i> ; |
| 21. had Anc. <i>-jɛt</i> : <i>kjɛt</i> (family name); | 22. had Anc. <i>-i</i> : <i>k'ji</i> etc.; |
| 23. had Anc. <i>-juɛt</i> : <i>kjuɛt</i> ; | 24. had Anc. <i>-wi</i> : <i>kjwi</i> etc. |

Here again, as in categories D and E, the even numbers had the same Arch. finals as the odd numbers, but for the *-d* of the former and the *-t* of the latter. The *-d* has become *-i* and given falling tone. *-əx* is not represented in the *-t* series (1. *-ət*) but only in the *-d* series: 2. *kəd* has become *> kâi* (cf. the *-g* category, where 來 Arch. *læg* has become *> Anc. lâi*, see Shī king Researches p. 124). In the same way 3. *-uət* (*-wət*) has been preserved, but 4. *-uəd* (*-wəd*) has become *uâi*. This is nicely confirmed by the char. 𪛗, which has both readings Anc. *t'uət* and *t'uâi* (Arch. *t'uət* and *t'uəd*).

Furthermore, that 6. *-jɛi* is the *-d* correspondence to 5. *-jət*, and *-jwɛi* to *-juət* is proved by a large number of double readings and *hie sheng*, e. g. 𪛗 both readings *k'jət* and *k'jɛi* (Arch. *k'jət* and *k'jəd*); 𪛗 both readings *'juət* and *'jwɛi* (Arch. *'juət* and *'jwəd*); 𪛗 both readings *pjuət* and *pjwɛi* (Arch. *pjuət* and *pjwəd*); 𪛗 *pjuət* phonetic in 𪛗 *pjwɛi* (Arch. *pjuət* phon. in *pjwəd*) etc.

In this group, just as in cat. C, Arch. *-jət* had a different evolution according as it was preceded by a guttural and labial or by a palatal and dental. Just as Arch. *kljən* *>* Anc. *kljən*, but Arch. *l'ljən* *>* Anc. *tsjɛn* (see cat. C above), in the same way line 5. Arch. *kljət* *>* Anc. *kljət*, but 9. Arch. *l'ljət* *>* Anc. *tsjɛt*; and in the same way 6. Arch. *kljəd* *>* Anc. *kljɛi* but 10. Arch. *l'ljəd* *>* Anc. *ts'li*. And the case of the *ho k'ou* words is exactly the same: 7. Arch. *kljwət* *>* Anc. *kljuət*, but 11. Arch. *l'ljwət* *>* Anc. *ts'juɛt*; and 8. Arch. *kljwəd* *>* Anc. *kljwɛi*, but 12. Arch. *l'ljwəd* *>* Anc. *ts'wi*.

We can continue: just as, with long *i*, Arch. *-iən* *>* Anc. *-ien*, so here 13. Arch. *-iət* *>* Anc. *-iet* and 14. Arch. *-iəd* *>* Anc. *-iei*; 15. Arch. *-iwət* *>* Anc. *-iwet* and 16. Arch. *-iwəd* *>* Anc. *-iwei*.

Finally, just as Arch. *-ən* *>* Anc. *-an*, so 17. Arch. *-ət* *>* Anc. *-at* and 18. Arch. *-əd* *>* Anc. *-ai*; 19. Arch. *-wət* *>* Anc. *wat*, and 20. Arch. *-wəd* *>* Anc. *-wai*. And corresponding to Arch. *-jən*, *-jwən* we have here 21. Arch. *kljɛt* *>* Anc. *kljɛt* and 22. Arch. *kljɛd* *>* Anc. *klji*; 23. Arch. *kljwɛt* *>* Anc. *kljuɛt*, and 24. Arch. *kljwɛd* *>* Anc. *kljwi*.

We can sum up all this in the following table:

Category F.				Category C.	
Arch.		Anc.		Arch.	Anc.
1. (ət)	2. əd	1. (ət)	2. âi	ən	ən
3. wət	4. wəd	3. uət	4. uâi	wən	uən
5. kljət	6. kljəd	5. kljət	6. kljɛi	kljən	kljən
7. kljwət	8. kljwəd	7. kljuət	8. kljwɛi	kljən	kljuən
9. l'ljət	10. l'ljəd	9. ts'jɛt	10. ts'li	l'ljən	ts'ljɛn
11. l'ljwət	12. l'ljwəd	11. ts'juɛt	12. ts'wi	l'ljən	ts'juɛn
13. iət	14. iəd	13. iet	14. iei	iən	ien
15. iwət	16. iwəd	15. iwet	16. iwei	○	○
17. et	18. ed	17. at	18. ai	en	an
19. wət	20. wəd	19. wat	20. wai	wen	wən
21. jɛt	22. jɛd	21. jɛt	22. i	jɛn	jɛn, jɛn
23. jwɛt	24. jwɛd	23. juɛt	24. wi	jwɛn	jwɛn, jwɛn

In this last category, F, we have had a large number of words with Anc. final *-ɛi* and *-i*, and I have shown that these are remnants of an Arch. *-d*. Now, the same finals, *-ɛi* and *-i*, occur in still another great rime category of the Shī, which it is necessary to take up for examination: cat. G, which is cat. 13 of Wang Nien-sun's = cat. 15 of Tuan Yü-ts'ai's (one half of this latter only). The principal words are:

- 1 衰。2 回竄隨推頓摧罪雷壘杓。
 3 幾篋豈頗睇衣依。* 歸達煒葦園韓異威飛菲聯駢
 𪛗微薇尾。
 4 脂指与坻蕃底邱祗鴉破繻遲師尸屎矢視君莠搢
 質茨咎妬泚毗栳私死兇履毗臑匕毗悲美眉泥糜靡。
 5 迤水維唯鶯惟崔綰釐蕪。
 6 氏弟涕體婁婁樓淒齊齋齋蟻躄躄濟濟湑厚彌涌體
 禮黎泥迭。* 皆借階階潛。* 懷壞。10 凡飢郁伊。
 11 突駮遺。12 通漏。13 譔葦。

- | | |
|---|--|
| 1. had Anc. <i>-âi</i> : <i>-âi</i> ; | 2. had Anc. <i>-uâi</i> : <i>ɣuâi</i> etc.; |
| 3. had Anc. <i>-ɛi</i> : <i>kjɛi</i> etc.; | 4. had Anc. <i>-wɛi</i> : <i>kjwɛi</i> etc.; |
| 5. had Anc. <i>-i</i> : <i>tsi</i> etc.; | 6. had Anc. <i>-wi</i> : <i>twi</i> etc.; |
| 7. had Anc. <i>-iei</i> : <i>tiei</i> etc.; | |
| 8. had Anc. <i>-ai</i> : <i>kai</i> etc.; | 9. had Anc. <i>-wai</i> : <i>ɣwai</i> etc.; |
| 10. had Anc. <i>-i</i> : <i>kji</i> etc.; | 11. had Anc. <i>-wi</i> : <i>g'jwi</i> etc.; |
| 12. had Anc. <i>-iɛ</i> : <i>ɳiɛ</i> etc.; | 13. had Anc. <i>-wiɛ</i> : <i>ɳjwiɛ</i> etc. |

The interpretation of this category might seem to be very simple: nearly all the words end in *-i* and thus rime, and we could, for that matter, suppose it to

represent words with original, Archaic final *-i*. But the question is in fact infinitely more complicated and necessitates an extensive investigation.

In the discussion of cat. C above I have purposely left out a few curious rimes, in which Anc. *-ən* rimes with Anc. *-ɛi*, e. g. 晨: 輝: 旂 Anc. *ʒjɛn* (< Arch. *ʒjɛn*): *χjwɛi*: *g'jɛi* (ode T'ing liao); 芹: 旂 Anc. *g'jɛn*: *g'jɛi* (ode Ts'ai shu). These cases are all the more interesting since 輝 *χjwɛi* has for phonetic 軍 Anc. *kjuən* (with *-n*) and 旂 has for phonetic 斤 *kjɛn*. They naturally call to mind cases with other vowels in which similarly words with *-n* have riming or *hie sheng* connections with words ending in vowel, e. g. 儺 Anc. *nā* with phon. 難 *nân*; 幡 *b'uâ* with phon. 番 *b'jwɔn* and riming with 幡 *γân* (Yi king, kua 22); 單 *d'â* with phon. 單 *tân* and riming with 單 *γân* (Tso chuan, Süan 2nd year). In all these cases it is very natural to think of nasalization phenomena, so that certain *-ân* have become *-aⁿ* > *-â*, certain *-jɛn* have become *jɛⁿ* > *jɛi*. I suggested this in this Bulletin, vol. I, p. 182, and the same has been proposed by Prof. Lin Yü-t'ang in his Yü yen lun ts'ung pp. 82 ff.

The theory would purport that 儺 was originally **nân*, 幡 **b'wân* and 單 **d'ân*, and that 旂 was originally **g'jɛn*, which by nasalization became Anc. *nâ*, *b'uâ*, *d'â* and *g'jɛi* respectively. But if so, we have to answer the question: how did this nasalization work? If 單 was Arch. *tân* and has always kept its *-n* (Anc. *tân*, Peking *tan*), how could 單, if it was Arch. **d'ân*, get its *-n* eliminated by nasalization and become Anc. *d'â* (Peking *t'o*)? How could they develop differently? In the same way, if both 旂 and 芹 were Arch. *g'jɛn*, how could the former become Anc. *g'jɛi* (Peking *k'i*) and the latter Anc. *g'jɛn* (Peking *k'in*)? There is no possibility of this within the same line of the language. If it were so, it must be due to a mixing of dialects. Whereas *-n*, in the main line of the language, that of the Shī king and the *hie sheng* characters, High Chinese, was preserved and lived down to Ts'ie yün time, it has been nasalized in one or several dialects which were on the side of (parallel with) the High Chinese: from this side-track dialect, so to speak, a few forms like 單 *d'â*, 旂 *g'jɛi* have then penetrated into High Chinese and there ousted the regular forms **d'ân*, **g'jɛn* for these words and taken their place. Thus, in Ancient Chinese (Ts'ie yün) we have obtained 單 *d'â* (dialectal loan word) but 單 *tân* (regular form), 旂 *g'jɛi* (dialect form) but 芹 *g'jɛn* (regular form).

In principle, there would be nothing against such an explanation. We could find numerous parallels in other languages. In French, for instance, we have the words *cage*, *canevas*, *caillou*. In High French they should properly read *chage*, *chanevas*, *chaillou* according to the regular phonetic laws of that language, and such forms with *ch-* have really existed earlier, but have been ousted, in High French, by the dialect forms (Picardie, Normandie) *cage*, *canevas*, *caillou*. Again, in High Swedish, the words *spår* (*spör*), *län*, *stråk* (*strök*), *påse* (*pöse*) should regularly have been *spörr*, *lënn*, *strökk*, *pösse* (cf. *börr*, *tënn*, *lökk*, *mösse*), but have got long vowels because they are forms loaned from other dialects than the one which is the regular basis of High Swedish. The same phenomenon can be observed in Pekinese in certain sporadic cases. 孕 and 眞 should regularly give Pek. »ying» and

»cheng», but they are pronounced »yün» and »chen» through influence of some dialect in which *-ng* > *-n*. And certain Archaic words have similarly jumped over into Anc. Chin. categories where they should not properly belong: 生 Arch. *səng* should be Anc. *seng* (Kuang yün rime 13) but was really *song* (Kuang yün rime 12); 川 Arch. *t'jwən* (cat. C above) should give Anc. *tšj'uən* (Kuang yün rime 18) but has given Anc. *tšj'wän* (Kuang yün rime II, 2). It is here always a question of sporadic irregularities.

For a long time, indeed, I have imagined that this solution was the correct one. But the longer I have studied the question, the more I have become convinced that it must be wrong. I have gradually been brought to an opinion which approaches that expressed by W. Simon (Zur Rekonstruktion der altchinesischen Endkonsonanten II, p. 8), though it is by no means identical.

It is necessary here to make a survey of all the most important cases of interchange of final *-n* with final vowel in Arch. rimes, *hie sheng* characters and *kia tsie*. I limit the list to those cases that are pre-Han or Han; later examples out of the Ts'ie yün and Tsi yün, concerning words not attested before Liu ch'ao time of course prove nothing about Archaic Chinese. The readings given in this survey are all in Anc. Chinese.

1 儺	2 左	3 難	4 瘡	5 薑	6 龜	7 瘡	8 瘡	9 瘡	10 瘡	11 團
12 擗	13 瑞	14 瑞	15 溫	16 戰	17 纓	18 造	19 端	20 端	21 擊	22 擊
23 擊	24 擊	25 擊	26 擊	27 擊	28 擊	29 擊	30 擊	31 擊	32 擊	33 擊
34 擊	35 擊	36 擊	37 擊	38 擊	39 擊	40 擊	41 擊	42 擊	43 擊	44 擊
45 擊	46 擊	47 擊	48 擊	49 擊	50 擊	51 擊	52 擊	53 擊	54 擊	55 擊
56 擊	57 擊	58 擊	59 擊	60 擊	61 擊	62 擊	63 擊	64 擊	65 擊	66 擊
67 擊	68 擊	69 擊	70 擊	71 擊	72 擊	73 擊	74 擊	75 擊	76 擊	77 擊
78 擊	79 擊	80 擊	81 擊	82 擊	83 擊	84 擊	85 擊	86 擊	87 擊	88 擊
89 擊	90 擊	91 擊	92 擊	93 擊	94 擊	95 擊	96 擊	97 擊	98 擊	99 擊
100 擊	101 擊	102 擊	103 擊	104 擊	105 擊	106 擊	107 擊	108 擊	109 擊	110 擊
111 擊	112 擊	113 擊	114 擊	115 擊	116 擊	117 擊	118 擊	119 擊	120 擊	121 擊
122 擊	123 擊	124 擊	125 擊	126 擊	127 擊	128 擊	129 擊	130 擊	131 擊	132 擊

1. This is the already mentioned 1. *nâ* which in Shī (Chu kan) rimes with 2. *tsâ* and yet has *nân* as phonetic.
- ii. The word *nâ* 'ample' (Shī, Si sang) is written (kia tsie) 3. *nân*.
- iii. The word 4. has two Kuang yün readings *tân* and *tâ*; phonetic *tân*. Rimes as *tân* in Shī, Pan.
- iv. Is the already mentioned 5. *d'â* (Ts'ie yün but not Kuang yün has an alternative reading *d'ân*!) with phon. *tân* and riming with 6. *ngiwwn* (Li ki, Yü ling).
- v. 7. Ts'ie yün *t'â* and *t'ân* (T'ang yün also *tâ*, not in the Ts'ie yün); has phon. *tâ*. Shuo wen quotes Shī, Si mu, as 7.; the Mao version has 8. *t'ân*.
- vi. 9. *tuâ*, Shuo wen 'a horse whip', phon. *tuân*. No pre-Han text example.

- VII. 10. Anc. *t's'wię* 'to measure', phon. *tuân*. Used *kia tsie* for 11. *d'uân* in a *fu* written by Kia Yi († 168 B. C.) in *Ts'ien Han shu* (k. 48, p. 3 a). Kuo P'o, comm. to Fang yen, reads it *zjwän*.
- VIII. 13. *z'wię*, phon. *tuân*.
- IX. 14. *t's'wię*, phon. *tuân*, rimes (Shī, Siao yüan) with 15. *'uən* and 16. *t'sjän*, and (Chuang-tsī, Ts'i wu lun) with 17. *muân*. For 14. in Mengtsi II (Legge p. 187) the Ting version has 18. read *t'sjwän*.
- X. 19. Yü p'ien *tuân* and *tuâ*, phon. *tuân*; Shuo wen says »read like 20. (*tuân*)».
- XI. 21. *b'uân* and *b'uâ*, phon. *puân*.
- XII. 22. *b'uân* and *b'uâ*; it occurs in the bisyllabic expression 23. *b'uânsân* (Sima Siang-ju, Tsī-hü fu, Wen süan 7, p. 14 a; Li Shan indicates the reading *b'uân*), but this is evidently the same as Shī (Tung men chī fen) 24. *b'uâ-sa* (so also Er ya).
- XIII. 25. *kuân* 'libation'. All ancient commentators (Mao Heng, Hü Shen, Cheng Chung, Cheng Hüan) define it as 26. *kuân* 'libation', and it must be etymologically cognate to this; yet it has 27. *kuâ* as phonetic.
- XIV. 28. *b'jwön* 'a track', *p'jwön* 'a turn', *b'uân*, *p'uân*, *b'uâ* various place-names, *puâ* 'courageous'. In Shī (Sung kao) it rimes with 29. *tân*, *yân*, *çivn*.
- XV. 30. *b'uâ*, *puâ*. Rimes in Yi king (kua 22) with 31. *yân*, in Tso chuan (Süan 2) with 32. *yân*.
- XVI. 33. *b'uân* a place-name, *puâ* 'stone used for arrow point', cf. 34. *puâ*.
- XVII. 35. *puâ*; rimes in Kuan-tsī (Ti tsī chī, chapter 59) with 36. *b'uân* (the present text is corrupted by adding a word which spoils the rhythm and should be eliminated).
- XVIII. 37. *luâ*, phon. *luân*.
- XIX. 38. *muâi*, has phon. *mjän* and rimes in Shī (Sin t'ai) with 39. Arch. *d'ian*; there was, however, also a reading *muân* given by the T'ang commentator Ting Kung-chu (*ap.* Sun Shī) to Meng-tsī II (Legge p. 207), and already by Kuo P'o († 324 A. D.) in his comm. to Fang yen (k. 3, p. 4 a).
- XX. 40. *çjwön* 'to dry', Yi king (Shuo kua); *çjwię* 'fire', Chou li (Sī kwei shī), so read in Kuang yün and King tien shī wen. Both build on Cheng Hüan, who says it is read like 41. (the Ts'i dial. word for 42).
- XXI. 43. *t'się* (Kuang yün, Yü p'ien, King tien shī wen to Li ki T'an kung, and Tsī lin *ap.* King tien shī wen). Phonetic *tan*. Shuo wen gives a variant 44. with phon. *zjën*.
- XXII. 45. *niei*, phon. *nân*.
- XXIII. 46. frequent in various readings and meanings (many of them *kia tsie*): *tuən*, *t'sjuën*, *t'uən*, *d'uən*, *d'uân*, *tuâi*. In Shī (Pei men) it rimes with 47. *jwi*, *ts'uâi*; it is then read *tuən* by Mao Heng, *tuâi* by Cheng Hüan.
- XXIV. 48. *zjuën* (Arch. *djwän*), *tuən* 'a kind of bell'; *d'uâi* 'butt of a spear'. As *d'uâi* it rimes in Shī (Siao jung) with 49. *g'juən*.

- XXV. 50. *d'uâi* with phon. 46. *tuən*. In Sung Yü, Feng fu (Wen süan 13, p. 2 b), it occurs in a bi-nom 51. *d'uâi-yuən*, which I suspect should be read *d'uən-yuən* (after the pattern of innumerable such bi-noms) in spite of the *d'uâi* gloss of the commentary.
- XXVI. 52. *t'uən* and *t'uâi*. Rimes in Shī (Ts'ai k'i) with 53. *luâi*, *jwęi*.
- XXVII. 54. has a series of Anc. readings: *pjię*, *b'jwęi*, *b'juən*, *pjuən*, *b'uən*. To the *pjię* of Yi king (kua 22) Cheng Hüan (*ap.* King tien shī wen) says: »it means 55. *pjän*», which is evidently a phonetic gloss (the sense explained by an approximate homophone). In the reading *puən* it rimes with 56. *zjën* (Arch. *djän*) in Tso chuan (Hi 5).
- XXVIII. 57. *çjuën* serves as *kia tsie* for 58. *tuâi* in Chuang-tsī (Chī lo, last section).
- XXIX. 59. *çjwęi*, phon. *kjuən*.
- XXX. 60. *yuən* 'curved handle of a plough'; *çjwęi* 'a clothes-peg'.
- XXXI. 61. *çjwęi* 'light, brightness' rimes in Shī (T'ing liao) with 62. *zjën* (Legge translates it 'smoke' and reads it »*huâm*» i. e. Anc. *çjuən* and Couvreur translates 'fumée' and reads *hiun* i. e. Anc. *çjuən*; they both have followed Chu Hi, who has fabricated a »poetical« reading; Mao Heng says it means *kuang* 'brightness', indicating the ordinary sense and reading of the word; Lu Tê-ming underlines this by saying: »read 63. *çjwęi*). Other readings given by Kuang yün and Tsi yün are *çjuən*, *çjwön*, *yuən*, for which, however, there are no pre-Han examples. But it is used as *kia tsie* for 64. *jjuən* in Chou li (Shī tsin) and for 65. *jjuən* in Li ki (Tsi t'ung).
- XXXII. 66. *nguâi* and 67. *jwię* rime in Shī (Ku feng) with *jwön*.
- XXXIII. About 68. *kjwen* Shuo wen says: »it is read like 69. *jwęi*.
- XXXIV. 70. *kjwęi* rimes in Shī (Tung shan) with 71. *şan* (not recognized by Tuan Yü-ts'ai, but by both Wang Nien-sun, Kiang Yu-kao and Chu Tsün-sheng).
- XXXV. 72. *kai* and 73. *nzię* both rime in Shī (Ti tu) with 74. *g'jæn*.
- XXXVI. 75. *mjwęi* rimes in Ta Tai li (Wu ti tē) with 76. *jwön*.
- XXXVII. 77. *g'jęi* 'to pray' has phon. *kjæn*.
- XXXVIII. 78. 'name of a herb' read *g'jęi* and *g'jæn*, has phon. *kjæn* and is used as *kia tsie* on the one hand for 77. *g'jęi* 'to pray' (so often in bronze inscriptions), on the other hand for 79. *kjæn* in Chang Heng, Si king fu (Wen süan k. 2, p. 7 a).
- XXXIX. 80. *g'jęi* has phon. *kjæn* and rimes in Shī (T'ing liao) and in Tso chuan (Hi 5) with 62. *zjën*, and in Shī (Ts'ai shu) with 81. *g'jæn*.
- XL. 82. *g'jęi*, which in Shī (Shī jen) rimes with 83. *'jęi*, *ts'iei*, *si*, has *kjæn* as phonetic and is used as *kia tsie* in Li (T'an kung) either for 84. *k'æn* (so acc. to Lu Tê-ning) or rather for 74. *g'jæn* (so Chu Tsün-sheng, based on Cheng Hüan's gloss: »equal to 85.«), and also as *kia tsie* in Chou li (K'ao kung ki, Chou jen) for a word 'strong' which Cheng Chung (1 st c. A. D.) reads *k'æn*.
- XLI. 86. *g'jęi*, id. with 87. *g'jęi*, is also used for 88. *ngjæn* and has phon. *kjæn*.
- XLII. 89. *ngjęi* has phon. *kjæn* and is used as *kia tsie* for 88. *ngjæn* (Ts'ien Han shu, Sü chuan).

- XLIII. 90. 'jei rimes in Ch'u ts'i (Pu kü) with 91. *kuân*.
- XLIV. 92. Arch. 'jen is said by Cheng Hün (comm. to Li Ki, Chung yung) to be read like 90. 'jei by the people of Ts'i (cf. Lin Yü-t'ang, Yü yen lun ts'ung).
- XLV. 93. *pjwei* is used as kia tsie for 94. *piuân* in Chou li (Chung tsai) — so already acc. to Cheng Chung (1st c. A. D).
- XLVI. 74. *g'jan* is used as kia tsie for 80 (77) *g'jei* in Li ki (Tsi fa, Couvreur p. 259) — so already acc. to Cheng Hün.
- XLVII. 95. *sien* and *siei*; phon. *sien*.
- XLVIII. 96. *siei* 'bird's nest' = 97. *siei*. Applied as kia tsie to *siei* 'west'. But it is phon. in 98. *ts'ien* and 99. *sjên*. For the name 100. »Si shü» Mei Sheng in his Ts'i fa (Wen süan 34, p. 5 a) writes 101. »Sien shü», and the T'ang commentator Li Shan in his note to this passage quotes Chan kuo ts'ê (Ts'i ts'ê 4) so as to show that his Kuo ts'ê version had »Sien shü». 96. *siei* rimes, on the one hand in Shī (Liu yüe) with 102. *siei*, *g'jwi*, on the other hand with various *-n* words: in Shī (Sang jou) with 103. 'jen, *zjên*; in Li ki (Tsi i) with 104. *zjwên*; in the the Yi lin (3: 1, 11: 54, 12: 37, 12: 51, 13: 7, 13: 34, 27: 14, 32: 54, 37: 54, 43: 12, 51: 8) with a long series of *-n* words (105. *tsjân* etc.).
- XLIX. 106. *sai* 'to sprinkle', *siei* 'to wash'. In the latter reading it is identical with 95. above (*siei*, *sien*). And the character is used as kia tsie for various other words in *-n*: *sien* 'respectful' (Li ki, Yü tso), *sien* and *siei* 'scared' Chuang-tsī, Keng-sang-ch'u). In Shī (Sin t'ai) Lu Tê-ming reads it *ts'uâi*, but it rimes with 107. *d'ien*. *sai* 'to sprinkle' should be compared with 108. *sjên*, *sien* 'to sprinkle'.
- L. 109. *siei*, phon. *sjên*.
- LI. 110. is read both *jên* and *i* by Ts'ie yün, by Yü p'ien and by Lu Têming (Shang shu yin i 1, 3 a). 110. does not occur as a rime, but it is phonetic in various words ending in *-n*.
- LII. 111. *b'jên* and *b'ji* (Yü p'ien, Kuang yün, King tien shī wen). It rimes in Lao-tsī with 112. *si*.
- LIII. 113. 'i is used as kia tsie for 114. 'jên in the chapter Hung fan of Shang shu on the stone classics of the Tung Han Hi-p'ing period.
- LIV. For 115. *tsi* in Li ki (Nei tsê, Couvreur p. 666) Cheng Hün gives the variant 116. *tsjên*, and the same character in Shang shu (Wu yi, Couvreur p. 291) is rendered by 117. *tsjên* by Si-ma Ts'ien (Chou kung shī kia).
- LV. Instead of the char. 116. (var. 117) *tsjên* in Yi king (kua 32) Shuo wen cites 118. *tsi*.
- LVI. 119. *liet* rimes in Li ki (Li yün) with 120. *sjwân*.
- LVII. 121. *siei* rimes in Ch'u ts'i (Chao hun) with 122. *sien*, *ywan*.
- LVIII. 123. *ts'i* and 124. *mjiç* rime in Shī (Sin t'ai) with 125. *sjân*.
- LIX. 126. *swi* and 127. *d'iei* rime in Shī (Mien shuei) with 128. *tsjuên*.
- LX. 129. *pjwi* rimes in the Yi lin (64: 5) with 130. *muân*.

We see that the contacts of *-n* words with words ending in vowel are quite numerous, and the dialectal nasalization explanation becomes *eo ipso* somewhat dubious. But it becomes all the more so if we examine some of these cases more closely; the theory is indeed quite hopeless.

In the first place we should have to have recourse to *two* different nasalization phenomena:

- a). In cases like XXXIX 旂 *g'jei* with phon. 旂 *kjân* and riming with 旂 *zjên*, Arch. *djân*, we should have to say that the Anc. *-i* word 旂 *g'jei* had *-n* originally: **g'jân* and therefore got its phonetic 旂 and rimed with the *-n* word *djân*. But dialectally it developed **g'jân* > *g'jân* > *g'jei*. In other words, a nasalization which did *not* exist in the Shī king language, nor in the *hie sheng* language nor in the main line of the later High Chinese, occurred dialectally, and from this unknown dialect penetrated (through a certain number of loan words) in the Ts'ie yün language.
- b). On the other hand, in cases like LVIII 泚 *ts'i* riming with 泚 *sjân*, we should have to suppose that it was the Anc. *-n* word *sjân* which in some Archaic dialect had been nasalized: *sjân* > *sjân* > *sjâi* and therefore could — in a dialectally coloured Shī ode — rime with the *-i* word 泚 *ts'i*. In other words: a Shī ode would have revealed to us a nasalization that has left no trace whatever in later times and has not been mirrored in the Ts'ie yün language.

The necessity for two different nasalization theories is already very disturbing; and we should furthermore have to operate with the whole transitions *jân* > *jân* > *jêi* and *ân* > *ân* > *â* dialectally already in Shī king time. Whereas 旂 still had its *-n*: **g'jân* in a dialect which is the base of a rime like 旂: 旂 *g'jân* (Shī, Ts'ai shu), the originally homophonous 旂 **g'jân* would already have become *g'jei* in another dialect which is the base of a rime like 旂: 旂 *jei*: 旂 *ts'iei* (Shī, Shī jen). Similarly 西 (XLVIII) would have been **siân* in the dialect of the ode Sang jou, but *siei* in the dialect of the ode Liu yüe. Whereas 旂 was **d'ân* in a dialect which is the base of the *hie sheng* character (phonetic 單 *tân*) and of the rime 旂: 旂 *ngjwân* in Li ki, Yü ling, 旂 **nân* would have been **nâ* already in Shī time in the dialect of the ode Chu kan (riming with 旂 *tsâ*). All this is extremely unlikely.

In the third place — and worst of all — it is very difficult to imagine the nature of a dialectal nasalization which could explain the *-i*: *-n* contacts listed above. It is all very well to say that 旂 *sjân* had become dialectally *sjân* > *sjâi* in order to rime with 泚 *ts'i*. But what about 旂 *san* (Arch. *sân*) riming with 旂 *kjwei*, or 旂 *kuân* riming with 旂 *jei*? Here we could not very well postulate dialectal transitions *sân* > **sai*, > *kuân* > **kuâi*. And even if we were so bold, it would lead to impossible consequences; for if *kuân* > dial. **kuâi*, in order to rime with *kjwei* (with original *-i*), how could 旂 **nân* > dial. **nâ* in order to rime with 旂 *tsâ*, and not *nâi*? All this is plainly impossible.

We have, then, to abandon the nasalization theory as a means of explaining the totality of these *-i*: *-n* contacts and search for other ways.

We could, in the next place, imagine the possibility that we have not to do with a dialectal phenomenon but that 旂 was a true Arch. *-n* word (since it had *kjən* as phonetic and rimed with *-n* words) and yet in some way different from 旂 *g'jən*; this, then, would explain why the former has become Anc. *g'jei* and the latter Anc. *g'jən*. A glance at the cases listed above, in which there is contact between *-n* words and vowel-ending words, convinces us that it cannot have been a question of the vocalism — there are all types of vowels, all of which simultaneously occur in words with *-n* preserved to this day. Nor can it have been a question of tone.

For certain words it might be tempting to assume a palatalized *-n*: 旂 **g'jən*: 旂 *g'jən*. This would explain very nicely why *g'jən* has become *g'jei* but *g'jən* kept its *-n*: *g'jən*. On the other hand it would furnish a passable explanation why a supposed 旂 **g'jən* could rime with a 衣 *jei* — because of its yodized (*i*-tasting) final *-n*. But we realize immediately the impossibility of this explanation. It would explain only a few cases. It could never be applied to cases like 山 Arch. *sān* riming with 齏 *kjweɪ*, or 匪 *pjweɪ* kia tsie for 分 *pjwən*, for we cannot suppose a palatal *-n* in *sān* and *pjwən*, which have their *-n* preserved in Ts'ie yün and down to our time; nor would it be applicable to cases like 讎 *nā* (< **nān*?) riming with 左 *tsā*, 𠵹 *b'uā* riming with 𠵹 *γān*. And it is obvious that no explanation is plausible which does not solve *all* these contact problems, which are certainly connected and must have a common explanation. It would, moreover, be very bold to construct an Archaic antithesis 旂 *g'jən*: 旂 *g'jən*, for then we should have to find a reason why *-n* in the one case was »mouillé»: *-n*, in the other not: *-n*; simply to say that this is due to unknown earlier phenomena (in Proto-Chinese) would be very unsatisfactory.

We could, finally, imagine that in all these cases (I—LX) the member ending in Anc. vowel has had an Arch. *-n*, but an *-n* that was weaker than *-n* that was preserved: 旂 *g'jən* (short *-n*): 旂 *g'jən* (long *-n*), 讎 *nān* (short *-n*): 讎 *nān* (long *-n*), etc. But this would be, again, to construe a difference imputable to Proto-Chinese phonology, of which we know nothing, which is in itself risky, as just stated. Moreover, since the various *-i* words of I—LX above freely rime with the words of the entire Shī rime cat. G above, we should have to construe a weak final *-n* in the whole of this category; and this is absolutely impossible, for then we could never explain why this category in normal cases is well distinguished from our cat. C (*-ən* group) above.

We see that all these tentative solutions fail. We cannot arrive at a satisfactory explanation so long as we insist upon all these words of types 讎, 𠵹 *b'uā*, 旂 *g'jei* etc. having really an Arch. *-n*, which has been lost in one way or another. We shall have to start at another end and look more closely into the big group of words ending in *-i* (cat. G) and examine whether their *-i* cannot have represented something else than *-n* or *-i* in Arch. Chinese.

Experience from the guttural groups has taught us that Arch. final *-g* has to a large extent dropped and given rise to *-i*, e. g. 來 *læg* > *lāi*, 戒 *keg* > *kai*, 子 *tsjæg* > *tsi*, 𠵹 *χwæg* > *χuəi* > *χuāi*. Similarly *-d* has become *-i*, as described above (categories D, E, F): *liəd* > *liāi*, *ŋjēt* > *tsi*, *g'ād* > *γāi* etc. When we now, in our present

-i group (cat. G), find words of the types *-āi*, *-qi*, *-ei*, *-iei* etc., it is very natural to suspect that all these *-i* are vocalizations of some final consonant; that would only be in accordance with the well-attested general evolution of the Chinese language. The frequent interchange with words in *-n* shows that in such a case it must be a question of some kind of dental final.

This is underlined by the fact that besides the numerous contacts between *-i* and *-n* words in rimes, hie sheng and kia tsie adduced above, also an etymological connection between *-i* and *-n* words can be traced with a great amount of certainty in many cases:

- a. Between 衣 *jei* 'clothes' and 𠵹 *jən* 'to cover; conceal';
- b. Between 屛 *jei* 'a screen', 𠵹 *iei* 'a screen' and 𠵹 *jən* 'to cover, conceal';
- c. Between 依 *jei* 'to lean on' and 𠵹 *jən* 'to lean on' (common expression: »*yin ki*» 'to lean on a stool');
- d. Between 幾 *kjei* 'near to' (common expression *ki hu* 'near to') and 旂 *g'jən* 'near to';
- e. Between 畿 *g'jei* ('close quarters:') 'Royal domain proper' and 旂 *g'jən* 'near to';
- f. Between 饑 *kjei* 'famine', 飢 *kji* 'famine' and 饑 *g'jen* 'famine';
- g. Between 水 *swi* 'water' and 準 *tsjuən* (Arch. *ŋwən*) 'a water level';
- h. Between 圍 *jweɪ* 'to encircle, surround': and 運 *jiuən* 'to turn round';
- i. Between 緯 *jweɪ* 'woof': and 緯 *jiuən* 'woof'.
- k. Between 飛 *pjweɪ* 'to fly' and 奮 *pjuən* 'to start flying'.

Here, still more than in the rimes, the hie sheng and the kia tsie, it comes out clearly that *-i* is the vestige of a lost dental.

When it now comes to determining the nature of this dental final, it will not do at all to pose, as W. Simon (*op. cit.*) does, the same dental here as in categories D, E, F: cases like 例 *liäi* which has 列 *liät* as phonetic (Simon writes 例 *liäd*, 旂 *g'jed*). They are absolutely different. In the *liäi* type (cat. D, E, F) — Arch. *-d* — there is an interchange with *-t* in rimes and hie sheng; here, in the 旂 *g'jei* type (cat. G) there is an interchange with *-n* (cases I—LX above). The two types practically never mix.

In the *-i* words of our cat. G, the dental final cannot have been a *-t*, for as a rule they do not rime with ju sheng *-t*; we cannot suppose 旂 Arch. *g'jet* etc.

It cannot have been a *-d* for the same reason. The *-d* words are in cat. F, and rime frequently with the *-t* words, just as experience from other groups shows us that e. g. *-ək* and *-əg* rime quite freely. But with cat. F our cat. G here has very few rime connections (see p. 24 below); on the other hand, the *-t*, *-d* words practically never rime with *-n* words, but we have just seen how our cat. G here has quite considerable *-n* connections. A *-d* is therefore just as much excluded as a *-t*; we cannot construe 旂 Arch. *g'jed* etc.

It cannot have been an *-n*. We have already discussed extensively why 旂 cannot have had an *-n*. To suppose 旂 **g'jən* (>*g'jei*) 讎 **lien* (>*liei*), 𠵹 **g'uän*

(> *yuâi*) is impossible, for then we could never explain why we have Anc. 近 *g'jæn*, 麟 *lien*, 丸 *yuân* with preserved *-n*.

In other words: the final dental cannot have been *-t* or *-d* or *-n*. What is then left? Evidently *-r*, *-l* and *-s*.

It is a remarkable fact that Tibetan, to which Chinese is undoubtedly cognate, has a great number of words of the types *-r*, *-l*, *-s*, e. g. *dur*, *dul*, *dus* etc. It is but reasonable to expect some corresponding word types in Chinese, and the only phonological group in which these can very well be suspected of lurking is our very category G of the Shī rimes, i. e. words ending in Anc. *-i*. I have stated elsewhere and on p. 1. above that I consider it premature to try to compare isolated Tibetan and Chinese words; the following cases are therefore not meant as positive identifications but only as examples of how it might turn out that Chinese words correspond to Tibetan *-s*, *-r* and *-l* words:

Tib. *g-nis* 'two' = Chin. 二 *nī* (W. Simon, Tibetisch-Chinesische Wortgleichungen 1930, p. 29);

Tib. *lus* 'body' = Chin. 體 *t'iei* (Simon p. 30; the phonetic of the char. is *liei*);

Tib. *bras* 'rice' = Chin. 米 *miei* 'rice' (Simon, p. 30);

Tib. *'p'ur* 'to fly' = Chin. 飛 *pjwēi*;

Tib. *k'or* 'to return' = Chin. 歸 *kjwēi*;

Tib. *ser* 'finger' = Chin. 指 *tši*;

Tib. *ts'il* 'fat, grease' = Chin. 脂 *tši* (Simon, p. 27).

A possible indication of a final *-r* is to be found in the word 獅 Anc. *ši*, belonging to our cat. G, which was applied in early Han time to denote the 'lion', an animal earlier unknown in China. The question is interestingly linked with another loan word, designated by various words of the category. Pelliot has cleverly seen that all these forms point to an *-r*. He writes (T. P. XXVI, 1929, p. 141): »La boucle de ceinture en métal fut désignée d'un nom Hiong-nou, qui apparaît dans les textes chinois sous les transcriptions 鮮卑 *šjān-pjiē*, 師比 *ši pji* . . . 犀毗 *siei-b'ji*, 犀比 *siei-pji* . . . 犀比 *si-b'ji*; la forme originale du nom est inconnue . . . naturellement le nom . . . évoque spontanément celui des tribus *Sien-pi* (écrit de même manière) . . . il n'est pas impossible que le vieux nom des *Sien-pi* survive dans les tribus 塞 葷⁴ *che-wei* des T'ang, et ceci supposerait un original ancien du type **Sārbi*, **Serbi* (par une coïncidence curieuse, le 獅 de 師 比 a servi de transcrire sous les Han un nom étranger du lion qui pourrait bien être aussi à *-r* finale et s'apparenter au persan *šēr*)». Pelliot is very probably right about the final *-r* in these words. *ši* 'lion' would then transcribe an Iranian *šary*, according to what my friend Prof. G. Morgenstierne tells me.

If thus the words of our cat. G. ended primarily in *-r*, *-l*, *-s*, it is clear that in Shī king time they did not end, some of them in *-r*, others in *-l* and others again in *-s*. They all rime regularly and freely with each other, and there is no possibility of subdividing the category into smaller groups according to *-r*: *-l*: *-s*. Either all had *-r* or all had *-l* or all had *-s*.

The choice is not difficult. The final in question was *-r*. An *-s* in them all is easily excluded. In rimes like 旂 *g'jēi*: 旂 *g'jæn* we cannot pose a 旂 *g'jās*, and 旂 *kjæn* could not serve as phonetic in a 旂 *g'jās*; nor could 旂 *pjwēi*, if it were an Arch. *pjwās*, serve as kia tsie for 旂 *pjwæn*. *-r* and *-l* are equally possible from the point of view of rimes, hie sheng and kia tsie. A rime like 旂 *g'jār*: 旂 *g'jæn*, a hie sheng like 旂 *g'jār*: 旂 *kjæn* and a kia tsie like 旂 *pjwār* for 旂 *pjwæn* are passable; they are not good, and therefore only occur as exceptions (cases I—LX above), being indeed makeshift rimes and somewhat poor hie sheng and kia tsie, but still they might occur occasionally; *-l* would be equally good and equally bad as *-r*: *g'jāl*: *g'jæn*, *pjwāl*: *pjwæn*. But my decision for *-r* and against *-l* depends upon the fact that it is easier to imagine an evolution Proto-Chinese *-s* > Arch. *-r* (e. g. 二 *njās* > *njār*) than P. C. *-s* > Arch. *-l* (*njās* > *njāl*). The latter would go against all linguistic experience. The former is a common and well-known transformation. I need only recall the Germanic final *-s*, which regularly gives Old Icelandic *-r*: Got. *sunus*: Icel. *sunr*; and of the »rhotacism» in Latin (*genes-* > *gener-* in *generis*, *es* > *er* in the verb *esse*). Particularly suggestive, moreover, is the cognate language Tibetan, where there is sometimes an interchange of *-s*: *-r* as final consonant: *mdzes-pa* 'beautiful': *mts'ar-ba* 'beautiful'; *byus* 'misfortune': *byur* 'misfortune', etc.

I conclude, therefore, that the three Proto-Chinese types *a | s*, *a | l*, *a | r* have all become Arch. *a | r* and that the whole of our cat. G ended in *-r*.

That I am here on the right track seems to me to be confirmed, once we go back to the table of cat. G on p. 11 above and fill in the Arch. values. It turns out that this category with dental final, *-r*, forms an exact parallel to two other categories with dental finals, *-n* and *-t* (*-d*) studied earlier, categories C and F, and this I consider to be a strong corroboration:

Cat. G. (p. 11)		Cat. F. (p. 10)		Cat. C. (p. 10)	
Arch.	Anc.	Arch.	Anc.	Arch.	Anc.
1. <i>ər</i>	> <i>âi</i>	(ət), <i>əd</i>	> —, <i>âi'</i>	<i>ən</i>	> <i>ən</i>
2. <i>wər</i>	> <i>uâi</i>	<i>wət</i> , <i>wəd</i>	> <i>uət</i> , <i>uâi'</i>	<i>wən</i>	> <i>uən</i>
3. <i>kljər</i>	> <i>kljēi</i>	<i>kljət</i> , <i>kljəd</i>	> <i>kljət</i> , <i>kljēi'</i>	<i>kljən</i>	> <i>kljən</i>
4. <i>kljwər</i>	> <i>kljwēi</i>	<i>kljwət</i> , <i>kljwəd</i>	> <i>kljwət</i> , <i>kljwēi'</i>	<i>kljwən</i>	> <i>kljwən</i>
5. <i>ʃljər</i>	> <i>tšli</i>	<i>ʃljət</i> , <i>ʃljəd</i>	> <i>tšljēt</i> , <i>tšli'</i>	<i>ʃljən</i>	> <i>tšljēn</i>
6. <i>ʃljwər</i>	> <i>tšlwi</i>	<i>ʃljwət</i> , <i>ʃljwəd</i>	> <i>tšljwēt</i> , <i>tšlwi'</i>	<i>ʃljwən</i>	> <i>tšljwēn</i>
7. <i>iər</i>	> <i>iei</i>	<i>iət</i> , <i>iəd</i>	> <i>iet</i> , <i>iei'</i>	<i>iən</i>	> <i>ien</i>
8. <i>er</i>	> <i>ai</i>	<i>et</i> , <i>ed</i>	> <i>at</i> , <i>ai'</i>	<i>en</i>	> <i>an</i>
9. <i>wer</i>	> <i>wai</i>	<i>wet</i> , <i>wed</i>	> <i>wat</i> , <i>wai'</i>	<i>wen</i>	> <i>wan</i>
10. <i>jər</i>	> <i>i</i>	<i>jēt</i> , <i>jəd</i>	> <i>jēt</i> , <i>i'</i>	<i>jən</i>	> <i>jēn</i> , <i>jēn</i>
11. <i>jwər</i>	> <i>wi</i>	<i>jwēt</i> , <i>jwəd</i>	> <i>juēt</i> , <i>wi'</i>	<i>jwən</i>	> <i>jwēn</i> , <i>iwēn</i>

This tallies beautifully as far as lines 1—11 of the G table on p. 11 are concerned. There are then but two lines left to be explained: 12. Anc. *nziē* and 13.

χjwię. The rime examples of these two lines are very few and have to be considered as exceptional, just as occasional confusions can occur between other regularly distinguished categories. Just as there are irregular rime contacts *a : ə* (categories A : C) e. g. in Shī, Ch'u ts'ī: 燻 *χán* (A): 懸 *k'ian* (A): 孫 *suən* (C); in Shī, Siao jung: 羸 *g'iwən* (C): 羸 *iwān* (A); so we have here some occasional *a : ə* contacts: line 12. Arch. *njar, mjar*; 13. Arch. *χiwar, iwār* riming with *-ər* words).⁵

In connection with our table above it is the proper place here for reverting to the question of the Arch. final *-d* (see p. 7 above). That I have had to abandon my idea of *-t* in falling tone $> -i$ and go back to my construction *-d* $> -i$ of my Analytic Dictionary is just because the *-t* theory does not satisfy the general system of the Archaic language. I have shown earlier (following up ideas first advanced by W. Simon) that Arch. Chinese had both *-k* words and very large groups of *-g* words. It would be strange indeed if it possessed *-t* words and *-r* words but no *-d* words. All probability, then, speaks in favour of a *-d*, not *-t*, in the *-i* sections of categories D, E, F above. But probability is not the same as proof. I have obtained the proof in another way. I have stated above that cat. F. does *not* rime, as a rule, with cat. G, i. e. *-r* words. But there are some exceptions, and these are highly significant. I shall give some examples:

， 閏濟 ； 至禮 ； 利濟 ； 利禮 ； 致示死 ； 隨衰階 ； 至
濟死 ； 比累水 ； 衰飢 ； 至視 ； 至利視 ； 利威指 ； 位
氣威 ； 痔理 ； 懷叙 。

1. Shī, Tsai ch'ī; 2. Shī, Pin chī ch'u yen; 3. Yi, Hi ts'ī, hia; 4. Li ki, Fang ki; 5. Li ki, Ju hing; 6. Li ki, K'ü li; 7. Ch'u ts'ī, Kiu pien 6; 8. Sung Yü, Kao t'ang fu; 9. Shu, Shun tien; 10. Chuang-tsī, Chī pei yu; 11. Sün-tsī, Ch'eng siang; 12. Han Fei-tsī, Chu tao; 13. Han Fei-tsī, Kie Lao; 14. Kuan-tsī, Sin shu; 15. Sung Yü, Feng fu.

The words to the left of the colon belong to cat. F, those to the right to cat. G (*-r*). Now, the striking fact is that in one case only (15) have I been able to find a real ju sheng *-t* riming with *-r*. In all the other cases it is a question of the final dental, which was lost before Anc. Chinese, causing a falling tone, the dental which I had first interpreted as *-d* and later as *-t*. It is quite evident here that the former interpretation must be right. For if it had been a *-t*, there is no reason whatever why *-r* should rime more with *-t* than with *-t*. If, on the other hand, it was a *-d*, it is but reasonable that *-r* rimes more easily with *-d* than with *-t*. We can then well understand the cases above: as a rule neither *-t* nor *-d* rimed with *-r*; yet exceptional rimes *-d : -r* could sometimes occur, *-d* and *-r* being sufficiently similar phonetically, but hardly ever *-t : -r*.

These are the considerations that have forced me back to my original construction of *-d* (and of *-g* in 惟 etc.) in my Analytic Dictionary. It is true that it will then be necessary to find an explanation of the phenomena discussed in my Shī king Researches p. 120. I shall revert to that question on another occasion.

If we now, having arrived at a final *-r* as the solution of cat. G, go back to the cases I—LX on p. 13 above — it must be remembered that after all they are exceptional cases, makeshift rimes, hie sheng and kia tsie — we obtain the following results:

- i. 1. *nār* has phon. *nān* and exceptionally rimes with 2. *tsā* (an occasional contact *-ār : -ā* is phonetically not very shocking; cf. the High English pronunciation of *far* with the *-r* brought out practically only when followed by a vowel).
- ii. *nār* 'ample' is written kia tsie by 3. *nān*.
- iii. 4. double readings *tār* and *tān*.
- iv. 5. *d'ār* and *d'ān* has phon. *tān* and rimes with 6. *ngiwān*;
- v. 7. *t'ār* and *t'ān* with phon. *tā* (cf. I above).
- vi. 9. *twār* with phon. *twān*.
- vii. 10. *t'iwār*, phon. *twān*, used kia tsie for 11., 12. *d'wān*, read *z'iwān* < *điwān* by Kuo P'o.
- viii. 13. *điwār*, with phon. *twān*.
- ix. 14. *t'iwār*, with phon. *twān*, riming with 15. *wān*, 16. *t'ian*, 17. *mwān*. For *t'iwār* in Meng-tsi Ting reads 18. *t'iwān*.
- x. 19. *twān* and *twār*, phon. *twān*, Shuo wen: »read like 20. *twān*»
- xI, xII. 21, 22. *b'wān* and *b'wār*, phon. *b'wān*.
- xIII. 25. *kwān*, phon. 27 *kwār* (that this »kuo» series had all *-r* is confirmed by the fact that it does not rime in the *-ā* category (Tuan cat. 17)).
- xIV. 28. *b'iwān*, *p'iwān*, *b'wān*, *p'wān*, *b'wār*, *pwār*.
- xV. 30. *b'wār*, *pwār* riming with 31, 32 *g'ān*.
- xVI. 33. *b'wān*, *pwār*. How this stands to 34. *pwā* is an intricate question; it must reasonably show that forms with lost *-r* must already have existed very early.
- xVII. 35. *pwār*, riming with 36. *b'wān*.
- xVII. 37. *lwār*, phon. *lwān*.
- xIX. 38. *mwār*, *mwān*.
- xx. 40. *χiwān*, *χiwār*, 41. *χiwār*; observe that 42. must have had two Arch. readings: *χwār* in the Shī king (rimes regularly in cat. G) and *χwār* $>$ T'sie *yün* *χuā* $>$ Mand. »huo».
- xxI. 43. *t'iar*, phon. *tān* (or 44. *đian*).
- xxII. 45. *niār*, phon. *nān*.
- xxIII. 46. *twān*, *t'iwān*, *t'wān*, *d'wān*, *d'wān*, *d'wār* (riming with 47. *g'iwār*, *ts'wār*).
- xxIV. 48. *điwān*, *twān*, *d'wār* (*d'wār* riming with 49. *g'iwān*).
- xxV. 50. *d'wār*.
- xxVI. 52. *t'wān*, *t'wār*; riming with 53. *lwār*, *'iwār*.
- xxVII. 54. *p'iar*, *b'iwār*, *b'iwān*, *p'iwān*, *b'wān*; *p'iar* explained (Cheng Hüan) by 55. *p'ian* (< *plian*).
- xxVIII. 57. *t'iwān* kia tsie for 58. *twār*.

- XXIX. 59. *xiwər*, phon. *kiwən*.
 XXX. 60. *g'wən* and *xiwər*.
 XXXI. 61. *xiwər*, riming with 62. *djan*, kia tsie for 64, 65. *giwən*.
 XXXII. 66. *ngwər* and 67. *iwar* riming with *iwǎn*.
 XXXIII. 68. *kiwən*. Shuo wen says: »read like *iwər*» (a gloss based on an approximate phonetic resemblance).
 XXXIV. 70. *kiwər* riming exceptionally with 71. *sǎn*.
 XXXV. 72. *kər* and 73. *hjar* riming with 74. *g'jan*.
 XXXVI. 75. *mjwər* riming with 76. *giwǎn*.
 XXXVII. 77. *g'jar*, phon. *kjan*.
 XXXVIII. 78. *g'jar* and *g'jan*, kia tsie for 77. *g'jar* and for 79. *g'jan*.
 XXXIX. 80. *g'jar* with phon. *kjan* rimes with 62. *djan* and 81. *g'jan*.
 XL. 82. *g'jar* rimes with 83. *jar*, *ts'iar*, *sjar*, has phon. *kjan* and serves as kia tsie for 84. *k'an* or more probably for 74. *g'jan*.
 XLI. 86. *g'jar* serves as kia tsie for 88. *ngjan*.
 XLII. 89. *ngjar* has phon. *kjan* and is used as kia tsie for 88. *ngjan*.
 XLIII. 90. *jar* rimes exceptionally with 91. *kwǎn*.
 XLIV. 92. *jan* is said by Cheng Hūan to be read, by the Ts'i people, like 90. *jar*.
 XLV. 93. *piwər* used as kia tsie for 94. *piwǎn*.
 XLVI. 94. *g'jan* used as kia tsie for 80. (77.) *g'jar*.
 XLVII. 95. *sian* and *sjar* with phon. *sian*.
 XLVIII. 96. *sjar* = 97. *sjar*, kia tsie for *sjar* 'West', phon. in 98. *ts'ian* and 99. *sjan*. The *sjar* 'West' rimes with 102. *sjar*, *g'jwer*, and with 103. *jan*, *djan*, 104. *dz'iwǎn* etc.
 XLIX. 106. *ser* 'spinkle', *sjar* 'to wash', kia tsie for *sian* 'respectful', *sjar* 'scared'. In Shī, Sin t'ai, read *ts'wər*, riming with 107. *d'ian*; cognate to 108. *sjan* 'to sprinkle'.
 L. 109. *sjar*, with phon. *sjan*.
 LI. 110. *djan* and *djar*.
 LII. 111. *b'jan* and *b'jar*, riming with 112. *sjar*.
 LIII. 113. *jer*, used as kia tsie for 114. *jan*.
 LIV. 115. *hjar*, has the variant 116. *hjan*.
 LV. 116. (117.) *hjan* has the variant 118. *hjar*.
 LVI. 119. *liar* rimes exceptionally with 120. *sjwǎn*.
 LVII. 121. *sjar* rimes with 122. *sian*, *g'wen*.
 LVIII. 123. *ts'jar* and 124. *mjar* rime with 125. *sjan*.
 LIX. 126. *sjwər* and 127. *d'iar* rime with 128. *h'iwǎn*.
 LX. 129. *pjar* rimes with 130. *mwǎn*.

Though these rimes, hie sheng and kia tsie are exceptional, yet they are sufficiently numerous to show that the Chinese in Archaic times had a very strong feeling for the close affinity between *-n* and *-r* words. This was *not only* due to the phonetic similarity (a rime like *jar*: *kwǎn* must be said to be phonetically very poor) but also and above all because they had numerous word pairs in *-n*: *-r* which

they knew and felt to be cognate, two aspects of the same stem. Here we revert to the examples on p. 20 above:

- a) *jar* 'clothes': *jan*, 'to cover, conceal';
- b) *jar* 'a screen', *iar* 'a screen': *jan* 'to cover, conceal';
- c) *jar* 'to lean on': *jan* 'to lean on';
- d) *kjar* 'near to': *g'jan* 'near to';
- e) *g'jar* 'close quarters, Royal domain proper': *g'jan* 'near to';
- f) *kjar* 'famine', *kjer* 'famine': *g'jen* 'famine';
- g) *sjwər* 'water': *h'iwǎn* 'a water-level';
- h) *giwər* 'to encircle': *giwǎn* 'to turn round';
- i) *giwər* 'a woof': *giwǎn* 'a woof';
- k) *piwər* 'to fly': *piwǎn* 'to start flying'.

To these cases we can now add the following, out of our cases I—LX above, which are clearly such double aspects of the same stem:

- III, 4. *tār* and *tān* 'distressed';
- IV, 5. *d'ār* and *d'ān* 'iguana';
- V, 7. *t'ār* and *t'ān* 'exhausted';
- X, 19. *twār* and *twān* 'hanging ears of grain';
- XI, 21. *b'wār* and *b'wān* 'to eliminate';
- XIX, 38. *mwār* and *mwān* 'to defile';
- XX, 42, 41, 40. *xwər*, *xwār*, *xiwər* and *xiwǎn* 'fire';
- XXVI, 52. *t'wər* and *t'wǎn* 'in complete array';
- XXXVIII, 78. *g'jar* and *g'jan* 'name of a herb';
- XLVII, 95. *sjar* and *sian* 'to wash';
- XLIX, 106. *ser* and *sjen* 'to sprinkle';
- LI, 110. *djar* and *djan* 'respectful';
- LII, 111. *b'jar* and *b'jan* 'female'.

The cases are sufficiently numerous to make a seemingly bold theory of an alternation *-r ~ -n* within the same word stem plausible. Moreover, we find a very suggestive parallel to this in Tibetan, where there is a frequent alternation both of *-r ~ -n*, of *-l ~ -n* and of *-r ~ -l*:

-r ~ -n:

- sbur-ma* 'chaff': *spun-pa*, *sbun-pa*, 'chaff';
gčer-ba 'bare, naked': *rjen-pa* 'bare, naked';
'byor-ba 'to arrive': *'byon-ba* 'to arrive';
dkor 'rare, precious': *dkon* 'precious thing';
gnyer-ba 'take pains with': *nyen-pa* 'to be pained, labour hard';
nyer-ba 'to tan, make soft': *mnyen-pa* 'flexible, soft';
star-ba 'to tie fast': *brtan-pa* 'firm', *gtan* 'to bar (a door)';

-l ~ -n:

p'ul 'complete, perfect': *p'un* 'complete, perfect';
rtsol-ba 'to be diligent, to endeavour': *brison-pa* 'to be diligent, to
endeavour';
'dral-ba 'to pull down, tear to pieces': *'dren-ba* 'to pull, tear out';

-r ~ -l:

dgar-ba 'to separate': *'gol-ba* 'to separate';
'byer-ba 'to give way, be removed': *'byol-ba* 'to give way, step aside';
gžor-ba, *gžer-ba* 'to weigh': *gžal-ba* 'to weigh';
k'al 'a burden, load': *k'ur* 'a burden, load';
'jur-ba, *'dzur-ba*, *'č'or-ba* 'to evade': *'jol-ba* 'to evade';
sbyor-ba 'to join, mix': *spel-ba* 'to join, mix';
'k'yer-ba 'to carry away', *'k'ur-ba* 'to carry': *skyel-ba* 'to carry away',
'k'yol-ba 'to be carried';
'k'or-ba, *k'yir-ba* 'to turn round': *'k'al-ba*, *'kel-ba* 'to twist, to spin',
'k'yil-ba 'to twist';
sgor-ba 'to boil': *skol-ba* 'to boil'.

The reconstruction system of Archaic Chinese sketched here means that I have come to the conclusion that an *-i* as final and principal vowel of an Arch. syllable did not exist at all; *i* (strong, vocalic) or *i* (short, consonantic) occurred exclusively as a »medial *i*», a subordinate element inside the syllable, combined with other vowels. This means that on an important point I have to waive my objections (»Tibetan and Chinese«, TP 1931, p. 24 ff.) to W. Simon's reconstructions, in so far as he has concluded a final dental in our cat. G (though not the *-r* at which I have arrived). It might seem that I should then also have to give up my there expressed criticism of and objections to his general theories of the Sinitic final consonants. I have (*loc. cit.* p. 31, 32) adduced a great number of forms from all kinds of Sinitic languages for the word stems 'four' (四 Anc. *si*), 'to die' (死 Anc. *si*) and 'water' (水 Anc. *šwi*) and shown that everything points to Sinitic roots ending in vowel, not in dental consonant; I have therefore objected to Simon's construing a Proto-Tibetan 四 *bžið* and 死 *šið* on the strength of Chinese forms in dental — a dental which I contested. Now, when because of rimes like 四: 緄: 罍 (*si:*) *biəd*: *piəd* (the *-d* in the last two is certain for hie sheng reasons) I have to acknowledge the *-d* in 四 *siəd*; and when, for all the various reasons given above, I have to admit the *-r* in 死, it would seem to be a corollary that I accept Simon's Proto-Tibetan *bžið*, *šið* (or such-like, at least some dental final) which would mean a dental final in these words in Sinitic.

But in spite of appearances it does not. In my article just quoted I have given ample examples showing that we have to distinguish Chinese *-k* and *-t* words with

primary (general Sinitic) *-k* and *-t*, e. g. 六 Arch. *liók* (p. 18), 八 *pwat* (p. 15) which have their *-k* and *-t* in the great majority of the Sinitic languages, and words with Chinese *-k* and *-t*, in which these *-k* and *-t* must be an innovation, some kind of suffix in one or several Sinitic languages but not primary and common to them all. As such examples I have given 百 Arch. *pāk* 'hundred', (p. 17), 日 *hjet* 'sun' (p. 19), 月 *ngiwāt* 'moon' (p. 21) — they all have typically vowel-ending Sinitic roots. It is just the same with the final *-g* in 九 *kjüg* 'nine', which must be a special Chinese feature, without correspondence in other Sinitic languages (Tib. *dgu* etc., *op. cit.* p. 36). Now, the words 'four' (Tibetan *bži* etc.), 'to die' (Tib. *ši* etc.) and 'water' (Tibetan *č'u* etc.) are typical vowel-ending Sinitic roots (*op. cit.* pp. 31, 32) and from the Arch. Chin. 四 *siəd*, 死 *šjər*, 水 *šiwər* I dare not, by any means, conclude any Sinitic dental finals. Their final consonants may be just as particularly Chinese as the *-t* in 日 *hjet* and 月 *ngiwāt*.

It should be emphasized that it is only because of the contrast with the well-known cases with real Sinitic *-k*, *-t* (六, 八), in which *-k* and *-t* do appear in a great number of Sinitic languages, showing that Sinitic *-k*, *-t* should not disappear in all languages except Chinese, that I refuse to see a primary Sinitic *-t* in cases like 日 *hjet*, 月 *ngiwāt*, and *-d* in 四 *siəd*. If it were not for that contrast, I would not deny the theoretical possibility of a primary Sinitic *-d* in the latter, having been dropped in all languages except Chinese. This would in itself be theoretically admissible. We must remember that — apart from Chinese — for one language only, Tibetan, we know a stage as ancient as the 7th c. A. D.; for Siamese only the 13th c. A. D. Most of the Sinitic languages we know only in their modern and certainly very strongly evolved forms. We could never, from all the modern Germanic languages, reconstruct an Ancient Germanic language in the very least similar to the Anc. Germanic we know thanks to Gothic texts and to comparative Indo-European linguistics. From Icelandic *steinn*, German *Stein*, Swedish *sten*, English *stone* we could never suspect the Anc. Germanic *stainaz*. The reason for this is obvious. There were inherent in the Germanic peoples certain common psychological tendencies which have caused their languages to evolve — even after the cohabitation of the peoples was broken — along parallel lines. Hence *stainaz* has lost its final consonant and its vowel of the ending in these languages independently of each other and by a parallel evolution. Just the same may have taken place in all the Sinitic languages, so that by a parallel evolution they all lost their *-d* in 'four' except Arch. Chinese (and later on Chinese as well). That is why I say that I conclude against such a wholesale dropping of a final *-d* in 四 *siəd* only because of the contrast with words with preserved Sinitic final consonants.

It is quite necessary to keep in mind this possibility of independent and yet parallel evolutions, once we think of a comparison between e. g. Siamese and Chinese. In his work »Le dialecte de Tch'ang-ngan sous les T'ang« (BEFEO 1920) H. Maspero has given a series of Siamese-Chinese word comparisons, some of which seem quite convincing.⁶ If we dress a table with the Siamese forms, the Anc. Chinese (6th c. A. D.) and the Arch. Chinese as reconstructed

by me, the Siamese forms seem to afford crushing evidence against my Archaic reconstructions:

	S.	Anc.	Arch.
九	<i>kgo</i>	<i>kjəu</i>	<i>kjūg</i>
舊	<i>kgo</i>	<i>g'jəu</i>	<i>g'jūg</i>
丘	<i>k'go</i>	<i>k'jəu</i>	<i>k'jūg</i>
牛	<i>ngua</i>	<i>ngjəu</i>	<i>ngjūg</i>
告	<i>klau</i>	<i>kāu</i>	<i>kōg</i>
袋	<i>tai</i>	<i>d'ai</i>	<i>d'ag</i>
害	<i>hai</i>	<i>γai</i>	<i>g'ād</i>
雞	<i>kai</i>	<i>kiei</i>	<i>kīar</i>

It would seem that Siamese forbids the reconstruction of the Arch. final consonants. And yet, in several of these very words there are absolute proofs of their existence:

- 舊 rimes in Shī with 時, which frequently rimes with *-k* (e. g. Chuang-tsī: Ta tsung shī, Huai-nan-tsī: Lan ming, Yi Chou shu: Tu hūn etc.);
- 丘 rimes in Ch'u tsī with 之, which frequently rimes with *-k* (e. g. Shu: Lü hing, Sün-tsī: Kūn tao); and it rimes in Sün-tsī: Ta lüe with 背, the final *-g* of which is certain from the element 北 *pək*;
- 牛 rimes in Shī with 哉, which frequently rimes with *-k* (e. g. Chuang-tsī: Ta tsung shī and Shan mu etc. and which has the same phonetic as 載, which latter again regularly rimes with *-k* and is used for 駭 *tsək*) and in Chuang-tsī with 來 which regularly rimes with *-k* (dozens of examples);
- 告 has two Anc. readings *kāu* and *kuok* and regularly rimes with *-k* (*passim*); there cannot be the slightest doubt about its Arch. final guttural;
- 袋 has the same phonetic as 駭 *d'ək*, and as 貸 *t'ai* and *t'ək*; its phonetic 代 has phon. 弋 (*djək*);
- 害 *γai* is phonetic in 割 *kāt* and serves as *kia tsie* for 曷 *γāt*.

Thus, in spite of Siamese, we cannot but acknowledge the Arch. final consonants in these words, and I can see no reason why Proto-T'ai could not have had final consonants as well, lost or changed into *-u*, *-i* in the same fashion as in Chinese, and thanks to parallel evolutions.

It is, indeed, interesting, in this context, to observe the parallelism of Tibetan and Chinese sound evolutions during the last millennium on several striking points. Just as the ju sheng *-t* has been lost in the whole of Northern China: 𠵹 *pwat* > *pa*, 𠵹 *ts'jēt* > *ts'i*, 𠵹 *kuət* > *ku* etc., so Tib. final *-d* has been lost in the Central provinces: *nad* > *nā*, *bod* > *b'ö*, *dpwid* > *ci* etc. And just as certain voiced initials, i. e. explosives, affricates and fricatives, have become surd in the whole of Chinese, except the Wu dialects, so certain voiced initials, namely fricatives, have become surd in Tibetan: Chin. 𠵹 *zię*, > *šī*, 𠵹 *zjang* > *siang*, Tib. *ža* > *ša*, *za* > *sa*.

Categories ending in Arch. guttural consonant

Having finished the investigation of the words ending in Arch. dental, I wish to take up once more the question of the word groups ending in *-k*, *-g*, *-ng*, extensively treated in my Shī king Researches. Professor Li Fang-kuei has recently published an article: »Ancient Chinese *-ung*, *-uk*, *-uong*, *uok* etc. in Archaic Chinese» (Bull. Nat. Research Inst. Hist. Phil. vol. III, pt. 3, 1933), which is largely a polemic against my conclusions and a system of reconstruction of his own. This article is full of interesting observations and ideas, and on some points I can revise my system thanks to his proposals; on the whole, however, I cannot accept his conclusions, and his reconstruction scheme is in my opinion quite impossible.

Among the points which seem to me to be acceptable, I first mention his opinion that the hie sheng characters must be somewhat older than the Shī king odes, a fact which I had doubted earlier. In fact, in the *-ət* category above (F) there are certain phenomena which confirm Li's opinion. We find there, quite regularly, 𠵹 and 𠵹 riming with *-t* words, which clearly indicates Shī *nwəd*, *twəd*. But that 𠵹 had originally a *-b* is quite certain. The labial final is brought out by 𠵹 Arch. *nəp* (Anc. *nāp*, Mand. *na*), originally written simply 𠵹, and it is obvious that this Arch. *nəp* 'to bring in': 𠵹 *nwəb* 'interior': 𠵹 *njəp* 'to enter' are but three aspects of the same stem. And 𠵹 *twəb* 'to answer, vis-à-vis, etc.' stands to 𠵹 *təp* 'to answer' just as *nwəb* 'interior' stands to *nəp* 'to bring in'. In Shī time *nwəb* had become *nwəd* by dissimilation.⁷

Another valuable point in Li's treatise concerns the words treated on pp. 136–140 in my Shī king Researches, e. g. 𠵹. This was an original *glāg*, since it had 𠵹 *klāk* for phonetic. And yet it rimes in Shī king with words of type 𠵹 *ko* and never with ju sheng *tsāk* etc. Li had assumed earlier that it had lost its final *-g* already between hie sheng time and Shī king time. But since type 𠵹 *ko* regularly rimes with type 𠵹 *kā*, and type 𠵹 rimes with type 𠵹 *ko* but not with type 𠵹 *kā*, I had concluded that 𠵹 could not be simply *glo* in Shī, and so I had supposed an implosive final: 𠵹 *kā*: 𠵹 *ko*: 𠵹 *glo*. Now Li proposes, instead, a final laryngal: 𠵹 *glo* (»glottal stop»), which is an extremely common substitute in modern dialects for an earlier ju sheng *-k*, and he thus obtains a nice system of rimes: *kā*: *ko*: *glo*; but never *kā*: *glo*, the latter two being too dissimilar phonetically. This I think is much better than my own explanation. We have therefore to state that final *-g* was still living, in Shī times, after *e*, *a*, *o* and *u* (e. g. 𠵹 *læg* riming with *-k*) but that after the vowel *a* it very early became (glottal stop): 𠵹 *glāg*, 𠵹 *p'äg*, 𠵹 *zjag* became *glā*; *p'a*; *zja*, and these again *glo*; *p'o*; *zjo* in the Shī language, which explains the rimes in Tuan Yü-ts'ai's cat. 5, which are otherwise inexplicable.

So far, so good. But for the rest Li's constructions are very disappointing. He seems to start from an assumption that every Arch. vowel must exist in combination with every Arch. final consonant — if there are gaps, the construction must be wrong. The chess-board of $8 \times 8 = 64$ squares must have every one of the 64 squares filled; if not, we are on the wrong track. This is a funny axiom, to say

the least of it. I know of no language with such a structure, and I fail to see why Chinese should be one. He finds in Anc. Chinese, in the *-əng* group:

1 登 2 肱 3 〇
4 兢 5 〇 6 弓

1. əng 2. wəng 3. 〇
4. jəng 5. 〇 6. jʉng

Since there is no Anc. *jwəng* and no Anc. *-ung* (in this Shī rime group), he concludes for Arch. Chinese:

1. əng 2. wəng 3. 〇
4. jəng 5. 〇 6. jwəng.

This looks very nice indeed, but it is extremely embarrassing, once it has to be applied to the corresponding words with *-k* and *-g*:

1 得 2 國 3 〇
4 互 5 域 6 囿
7 來 8 交 9 孚
10 子 11 翹 12 久

In Anc. Chinese they were:

1. tək 2. kwək 3. 〇
4. kɛk 5. jɛwək 6. jɛuk
7. lái 8. ɣuái 9. mɛu
10. tsi 11. kjwi 12. kɛɣu

On the analogy of his interpretation of the *-ng* words, Li has to assume *the same* Arch. final for 5. and 6.; for 8. and 9.; and for 11. and 12. Thus:

1. tək 2. kwək 3. 〇
4. kɛk 5. gɛwək 6. gɛwək
7. læg 8. ɣwæg 9. mwæg
10. tsjæg 11. kɛwæg 12. kɛwæg

But since it is impossible that an Arch. *-jwək* could give sometimes Anc. *-jwək* and sometimes *-juk*; that an Arch. *-wæg* could give sometimes Anc. *-uái* and sometimes *-ɣu*; and that an Arch. *-jwæg* could give sometimes *-wi* and sometimes *-jɛu*, he has to find explanations for these divergent treatments.

In the first place (5: 6) he has to deal partly with labial-initialled words, e. g. 國 *p'jwək*: 肱 *b'juk*. These cause no real difficulty, for in *p'jwək* the *w* is a »false ho k'ou» (see p. 4 above) and the Arch. form was *k'ai k'ou p'jək*. Partly he has to deal with guttural-initialled words: 域 (*g'jwək*): 囿 (*g'juk*), and here Li has no better way out of the difficulty than to refer to »analogy»: 囿 **g'jwək* has become Anc. (*g'juk*) by analogy, through influence of other *-juk* words in another Shī rime group — but 域 *g'wək* (Anc. *j'wək*) has *not* undergone this analogical influence! And he passes this somewhat severe judgment (p. 391): »We have so far in discussing Chinese phonology made little use of analogy, but such a forceful principle so well attested in many languages cannot leave no trace in Chinese . . . Karlgren's reconstructions, I believe, fail because . . . he fails to recognize certain analogical processes which are of paramount importance». I am afraid I know sufficiently well the part played by analogy in various languages to be aware that it cannot be drawn upon in Li's haphazard and hazy way: if we explain an evolution by analogy, we have to show which particular word or words have been influenced by which other particular word or words, and why they have done so; and we are certainly *not* allowed to explain a 囿 **g'jwək* > *j'juk* by »analogy» unless we show at the same time why 域 *g'wək* has *not* equally become *j'juk* but remains Anc. *j'wək*. Li has here left the field of linguistic science.⁸

In the second place Li has to explain why certain *-wæg* have become *-uái* and others *-ɣu* (8: 9). Here he has found a very clever explanation. He thinks there is a tone difference: *-wæg* in shang sheng (rising tone) became *-ɣu*, *-wæg* in p'ing sheng (even tone) became *-uái*. This would be a brilliant expedient — if it were true. In order to prove it to be so Li gives statistics drawn from the Kuang yün. He serves us a series of characters many of which are of Liu ch'ao make and did not exist in Chou, Ts'in or Han time — and consequently prove nothing at all (this is a methodical fault which recurs throughout Li's paper). If we keep to the really pertinent words, above all those existing in the Shī king, we find e. g. 摺 *b'ɣu* in p'ing sheng which according to Li should be *b'uái*, and 每 *muái* and 悔 *ɣuái* in shang sheng, which according to him should be *mɣu*, *ɣɣu*. The latter two are particularly important, since they are two of the most common words in the language. Li has to consider these *muái*, *ɣuái* in shang sheng as »exceptional»!

If Li's tone theory is thus an obvious failure, I think none the less that I was wrong, in my Shī king Researches, in supposing 9. Arch. *mug*. It must be observed that 9. *-ɣu* occurs exclusively after labials: *pɣu*, *b'ɣu*, *mɣu*. And on the other hand 7. *ái* occurs after all kinds of initials: *kái*, *tái*, *lái*, *tsái*, except labials; there are no *pái*, *b'ái*, *mái*. I conclude that 9. *mɣu* is the labial-initialled class answering to those 7. *ái*: 7. *kæg* > *kái*, *læg* > *lái*, *tsæg* > *tsái*: 9. *mæg* > *mɣu*.

There is one objection to this theory which may seem fatal: a general rule in the hie sheng characters says that *k'ai k'ou* and *ho k'ou* words do not serve for each other. A *kân* is very rarely phonetic in a *kuân* or *vice versa*. But here we have 母 *mɣu* phonetic in 每 *muái*. Is it then possible to reconstruct 母 Arch. *mæg* phonetic in 每 *mwæg*?

Yes, it is. For the words with labial initials are exceptions from the general rule. A few examples will suffice to show this:

非排·分貧·麻摩·曼慢·門闕·元晚·皮波。

1. Anc. *pjwɛi*: *b'ai*; 2. *pjwən*: *b'jɛn*; 3. *ma*: *muá*; 4. *muân*: *man*; 5. *muən*: *mjɛn*; 6. *mjân*: *mjwən*; 7. *b'jiɛ* (< *b'ia*): *puá*. Thus a *mæg* can very well serve as phonetic in a *mwæg*. Moreover, this same 每 *mwæg* is undeniably phonetic, again, in a plainly *k'ai k'ou* word: 海 *χái* (< *χmæg*).

In the third place Li has to explain why certain *-jwæg* become *-wi* and others *-jəu* (11: 12). It is true that half of the enigmatical cases in question can be eliminated. There are both guttural-initialled words (*kjwi*: *kjəu*) and labial-initialled words (*pjwi*: *pjəu*) in our category. The *pjwi* etc. have not become T'ang (and later) *fi*, but have preserved their *p-*, which shows the *ho k'ou w* here to be secondary, a parasitic addition to the initial *p-* (see p. 4 above). Thus they were not Arch. *pjwæg* but *pjæg* and need cause no trouble. But there always remains the contrast *kjwi*: *kjəu* for Li to explain; there he cannot refer to the tones, so he thinks that the contrast is due to »a dialectal difference or maybe variations in one dialect«. This, then, would be cases of the kind which I have exemplified on p. 12 above: a mixing of dialects, the Ts'ie yün language having obtained, from sister dialects, certain words *-wi* which have ousted the regular *-jəu* or *vice versa*.

This last idea is of course not impossible in itself, though we shall see presently that it is not at all necessary. But when we find that Li, in order to surmount the three serious difficulties which obstruct his reconstruction scheme, has to resort to three different explanations: one theory of analogy which is not scientifically founded; one tone theory which is disavowed by the most common of the words in question; and one theory of »dialectal variations« inside the Ts'ie yün language — then it is impossible to follow him.

The simple truth is that the five Anc. endings *-ək*, *-wək*, *-jək*, *-jwək*, *-juk* cannot successfully be reduced to one Arch. final *(i)(w)ək*; and the six Anc. endings *-ái*, *-uái*, *-əu*, *-i*, *-wi*, *-jəu* cannot successfully be reduced to one Arch. final *-(i)(w)əg*. I have every possible reason to remain by my own earlier reconstruction (except for 9.):

1. <i>ək</i>	2. <i>wək</i>	3. <i>o</i>
4. <i>jək</i>	5. <i>jwək</i>	6. <i>juk</i>
7. <i>kləg</i>	8. <i>wəg</i>	9. <i>mləg</i>
10. <i>jəg</i>	11. <i>jwəg</i>	12. <i>jug</i> .

If I do so, however, I have to give an acceptable answer to two questions: why did *-jung*, *-juk*, *-jug*, exist in this Shī rime group but no *-ung*, *-uk*, *-ug*? And why does *-jung* rime with *-əng*, *-jəng*, why does *-juk* rime with *-ək*, *-jək*, nay even with

-ək — an apparently very unsatisfactory rime from the acoustic point of view? I think it is possible to answer both these questions (see p. 43 below).

If Li has been so keen on eliminating my *jung*, *juk*, *jug* in this rime category, it is because he thinks he has found these Arch. finals in quite another Shī rime group cat. 9. of T'uan's, cat. 1. of Wang's. We find in this category words of the five Anc. types:

1. 江 Anc. *kāng*: 2. 工 *kung*: 3. 宮 *kjung*: 4. 冬 *tuong*: 5. 恭 *kjwong*.

And, correspondingly in the *ju sheng*:

1. 角 *kāk*: 2. 谷 *kuk*: 3. 菊 *kjuk*: 4. 酷 *k'uok*: 5. 曲 *k'iwok*.

It has been a much debated theme among Chinese philologists, whether Anc. *-āng*: *-ung*: *-jung*: *-uog*: *jwong* form one rime category in Shī king or two (and whether *-āk*: *-uk*: *-juk*: *-uok*: *-jwok* form one or two). The two greatest authorities, Tuan Yü-ts'ai and Wang Nien-sun both voted for one category (Wang, however, only as far as the *-ng* words were concerned), and they were followed by the brilliant linguist Chu Tsün-sheng. But two other great experts, K'ung Kuang-sen and Kiang Yu-kao, thought it possible to distinguish two *-ng* classes (and two *-k* classes). One is formed by Anc. *-āng*, *-ung* and *jwong*; one is formed by Anc. *-uog* and *-jung*. Li Fang-kuei follows the latter. By adducing extensive materials he shows that not only in the Shī rimes but also in the hie sheng characters there are frequent and close connections between Anc. *-āng*: *-ung*: *-jwong* (and between *-āk*: *-uk*: *-juk*: *-uok*) on the one hand, between *-uog*: *-jung* (and between *-uok*: *-juk*) on the other; but that a mixing of an *-uog* or an *-jung* into the *-āng*: *-ung*: *-jwong* series, or, *vice versa*, of an *-āng*, an *-ung* or an *jwong* into the *-uog*: *-jung* series (and similarly in the *-k* groups) is a comparatively rare phenomenon (though by no means unknown). There cannot be the slightest doubt, to my mind, that he is right. A seeming obstacle, the character 降 Anc. *kāng*, which regularly goes together with *-uog*, *-jung* and not with other *-āng* nor with *-ung*, *-jwong* he shrewdly guesses to be a word different from other Anc. *kāng*. He draws the perfectly legitimate conclusion that my earlier reconstruction system:

	1.	2.	3.	4.	5.
Arch.	<i>āng</i>	<i>ong</i>	<i>jong</i>	<i>uog</i>	<i>jwong</i>
Anc.	<i>āng</i>	<i>ung</i>	<i>jung</i>	<i>uog</i>	<i>jwong</i>

is defective, since it does not explain these curious rime and hie sheng interrelations 1: 2: 5 versus 3: 4. He therefore thinks that Anc. *-āng*: *-ung*: *-jwong* had one kind of principal vowel in Arch. Chinese, *-uog*: *jung* another. And since the former series contains *-āng*, he decides that those were Arch. 1. *-āng*: 2. *-ong*: 5. *-jong* (*-ong* becoming Anc. *-ung*, and *jong* breaking into *-jwong* just as *-jo* > *-jwo*,

proved by me), whereas the latter were 4. *-ung*: 3. *-jung* (*-ung* breaking into Anc. *-uoug*). Similarly Anc. 1. *-âk*: 2. *-uk*: 5. *-jwok* were Arch. *-âk*: *-ok*: *jok*, forming one rime group, and Anc. 4. *-uok*: 3. *-juk* were Arch. *-uk*: *-juk* forming another rime group.

This looks all very nice, and I admit that at first sight I was strongly tempted to accept it. And yet it is inadmissible. There are various obstacles. So far Li is right that the two sub-categories had a difference in principal vowel; but for the rest he is quite off the right track.

In the first place it must be remembered that a *strict* distinction between the two groups is not maintained. They are confused often enough to cause Tuan and Wang to join them in one great category (the latter only the *-ng* words). When Shī (Lie wen) rimes 邦 *pāng*: 崇 *tš'jung* and Yi king frequently rimes 邦 *pāng*: 中 *tjung*, then Li's Arch. values: *pāng*: *tš'jung*, *pāng*: *tjung* are not very convincing.

In the second place it might be argued that it goes against the testimony of the ancient dialects. When I proposed, in my Shī king Researches, that Anc. 工 *-ung*, 谷 *-uk* and 宮 *-jung*, 菊 *-juk* derived from Arch. *-ong*, *-ok*, *-jong*, *-jok*, (*ung* < *ong* accepted by Li), it was because I could show that even in Ts'ie yün time there were considerable dialects which had an *o* vocalism. Now, that is true not only of *-uk* (谷, Li Arch. *-ok*) but also of *-juk* (菊, Li Arch. *-juk*), which has *o* regularly in Go-on (see Shī king Researches p. 127): Ts'ie yün *kjuk*, *tš'juk*, *ljuk*, *sjuk*, *piuk*, *mjuk* = Go-on *koku*, *soku*, *roku*, *soku*, *poku*, *moku*, and after labials also in Kan-on and Sino-Corean: Ts'ie yün *mjuk* = Kan-on *boku*, Cor. *mok*. And even more serious: the Ts'ie yün rime 冬, which would have been Arch. *-ung* according to Li, has perfectly regularly *-ong* in Sino-Corean and *-ou* in both Kan-on and Go-on! If we conclude Arch. *-ong*, *-ok* for 冬, 菊, Ts'ie yün *-ung*, *-uk*, because sister dialects of the Ts'ie yün language had *o*, we seem forced to pose an Arch. *-o* also for 冬 (Ts'ie yün *-uoug*), which shows exactly the same phenomenon. This objection, however, is not very fatal, for, as we shall see, I was wrong in surmising Arch. 工 *-ong*, 谷 *-ok* for Ts'ie yün *-ung*, *-uk* (I shall revert to that presently); indeed, the various Sui time dialects had a most variable pattern answering to these finals in Arch. Chinese, and it is dangerous to draw far-reaching conclusions from them.

In the third place there is an objection which is much more serious. There are certain Arch. rimes which are irreconcilable with Li's interpretation. There crop up, here and there, some freer rimes due to *licentia poetica*, contacts between different rime categories, and these are often very telling. When we find in Shī (Lie wen) 崇 Anc. *dž'jung*: 皇 *ɣwáng*; in Yi king (*ken*) 躬 *kjung*: 正 *tšjäng*: 終 *tšjung*; in Ch'u ts'í (Kiu chang) 中 *tjung*: 窮 *g'jung*: 行 *ɣvng* (< *g'äng*), and so on, then we can safely say that Arch. *-jung* for Anc. *jung* is absolutely excluded. A make-shift rime *-ong*: *äng*, an *-ong*: *-äng*, an *-ong*: *-äng* might pass, but not an *-ung*: *äng*, an *-ung*: *-äng*, an *-ung*: *-äng*. No, Anc. *-jung* was undoubtedly Arch. *-jong* of some kind; and that Anc. *-uoug* had some kind of *o* is indisputable.

How, then, are we to explain the two sub-categories, since my earlier reconstruction obviously fails (see p. 37 above) to account for them? I think we had better start our investigation not from the *-ng* words but from the *-k* and *-g* words;

for here, as in the *-əng* category, it turns out that the *-ng* words are less fully represented in all the possible combinations than the *-k* and *-g* words. Let us draw a table of type words, representing the various Anc. finals which fall in the three (for the *-ng* words only two) categories of the Shī king, which tally very well (it is highly important to observe this) with the distinctions in the hie sheng characters. I arrange them in a peculiar way with a view to the following discussion.

I			II			III		
1 學	2 包	11 樂	12 郊	23 角	24 穀			
3 皓	4 老	13 較	14 郊	25 谷	26 啓			
5 旬	6 休	15 沃	16 高	27 曲	28 仆			
7 陶	8 陶	17 藿	18 餒					
9 威	10 蕭	19 處	20 廟					
		21 的	22 苜					
29 降				32 江				
30 冬				33 工				
31 宮				34 恭				

(24, 26 and 28 are erroneously placed by Tuan in other categories; their phonetics prove them to belong to our cat. III here).

The Anc. values of these type-words were:

I		II		III	
		11. <i>âk</i>	12. <i>o</i>		
1. <i>âk</i>	2. <i>au</i>	13. <i>âk</i>	14. <i>au</i>	23. <i>âk</i>	24. <i>ɣu</i>
3. <i>uok</i>	4. <i>âu</i>	15. <i>uok</i>	16. <i>âu</i>	25. <i>uk</i>	26. <i>ɣu</i>
5. <i>juk</i>	6. <i>jəu</i>	17. <i>juk</i>	18. <i>jwo</i>	27. <i>jwok</i>	28. <i>ju</i>
7. <i>o</i>	8. <i>jäu</i>	19. <i>jak</i>	20. <i>jäu</i>		
9. <i>iek</i>	10. <i>ieu</i>	21. <i>iek</i>	22. <i>ieu</i>		
29. <i>äng</i>				32. <i>äng</i>	
30. <i>uong</i>				33. <i>ung</i>	
31. <i>jung</i>				34. <i>jwong</i>	

I have placed the *-k* and *-u* words abreast in the way hie sheng characters with double readings show them to belong together. There is e. g. 覺 read both *kâk* (1) and *kau* (2); 告 read both *kuok* (3) and *kâu* (4); 祝 read *tšjuk* (5) and *tšju* (6) — and so on.

Cat. I is Wang Nien-sun's cat. 21, II his cat. 20 and III his cat. 19 (ju sheng). There are a considerable number of rime contacts between the three categories; and in my Shī king Researches I even called in question the correctness of distinguishing I and II. Prolonged deliberation has convinced me that after all it is necessary to accept such a distinction. It is necessary to keep apart I and II, insignificant though the difference must have been, not only because of the rimes in the Shī and other classics, which in spite of numerous contacts on the whole must be

said to keep these classes apart from each other; it is also and above all because the very same three-class distinctions are clearly discernible in the hie sheng characters, an extremely interesting and important fact. Li Fang-kuei has brought out this in a very meritorious way).⁹

So far, therefore, he has convinced me. But his reconstruction scheme suffers from such great faults that it is entirely unacceptable. In order to get a different principal vowel in the three categories he introduces, besides the ordinary *o* and the open *â*, which is »half-way between» *o* and *â* (as in Engl. *all*), still a third open *o* sound, written ω »half-way between» *â* and *â!* This is of course phonetically extremely unnatural and impossible. Still more unnatural is the way in which Li has worked out this idea:

I		II		III	
		11. <i>ok</i> (> <i>âk</i>)	12. \circ		
1. ?	2. <i>og</i> (> <i>au</i>)	13. <i>âk</i> (> <i>âk</i>)	14. <i>âg</i> (> <i>au</i>)	23. <i>âk</i> (> <i>âk</i>)	24. ?
3. <i>uk</i> (> <i>uok</i>)	4. <i>ug</i> (> <i>âu</i>)	15. <i>wok</i> (> <i>uok</i>)	16. <i>wg</i> (> <i>âu</i>)	25. <i>ok</i> (> <i>uk</i>)	26. ?
5. <i>juk</i> (> <i>juk</i>)	6. <i>jug</i> (> <i>jâu</i>)	17. ?	18. ?	27. <i>jok</i> (> <i>jwok</i>)	28. ?
7. \circ	8. ?	19. <i>jok</i> (> <i>jak</i>)	20. <i>jog</i> (> <i>jâu</i>)		
9. <i>iuk</i> (> <i>iek</i>)	10. <i>iug</i> (> <i>ieu</i>)	21. <i>iok</i> (> <i>iek</i>)	22. <i>iog</i> (> <i>ieu</i>)		
29. ?				32. <i>âng</i> (> <i>âng</i>)	
30. <i>ung</i> (> <i>uong</i>)				33. <i>ong</i> (> <i>ung</i>)	
31. <i>jung</i> (> <i>jung</i>)				34. <i>jong</i> (> <i>jwong</i>)	

We can see at a glance how unsatisfactory all this is:

- 1) Can anyone seriously believe that such different Arch. values as those in Li's cat. I (nearly all with a *u* vocalism) could give in nearly every detail the same Anc. results as those in cat. II (nearly all with a vowel more open than *â*, practically an *â*)?
- 2) What about all the empty spaces, in particular 1, 24, 26, 28, 29 (8, 17, 18 are of little consequence, as we shall see presently)? How will it be possible, under Li's system, to fill in logically any Arch. values in them? Li has wisely abstained from saying anything about them at all. And yet these words (and many others for which they serve as type words) clearly belong to these categories. If, with Tuan Yü-ts'ai, Li would place 26 and 28 not in III but in I, he would jump from the frying-pan into the fire; it would make it still more impossible for him to find separate Arch. values for these word types. His system here breaks down entirely.
- 3) If II had a vowel intermediate between *â* and *â*, how is it possible that II does not interchange frequently with words of type 作 Arch. *tsâk* etc. (Tuan's cat. 5) and with cat. III (*âk* according to Li) but does so, in numerous cases of contact between I and II, with *-u-* words? That is perfectly inexplicable.
- 4) Why do not 13. »âk», 14 »âg» rime with 23 »âk»?

All this is plainly impossible. We shall have to find ways of approach quite different from those of Li.

Let us start with rime cat. III, and acknowledge at once a fundamental fault committed in Shī king Researches: the endeavour to elucidate it by aid of such late dialects as Sino-Japanese and Sino-Corean. My conclusion that Anc. 25. *kuk* was Arch. *kok* was devoid of value. Leaving apart, for the moment, 24, 26, 28 and concentrating upon the principal types: 23, 25, 27, Anc. *âk*, *uk*, *jwok*, which, as vindicated by K'ung Kuang-sen and Kiang Yukaio, form a rime category distinguished from I and II, we shall have to judge them in the light of Arch. Chinese itself. There are two salient facts to be taken into account:

- 1) Whereas the *âk*, *uok*, *juk* of I and II have frequent connections, in rimes and hie sheng, with words of types Anc. *âk*, *jak*, *iek*, *jâu*, *ieu*, words which obviously all had k'ai k'ou, the *âk*, *uk*, *jwok* of III have no such connections (yet see note on p. 40).
- 2) In irregular rimes, III very often (but I and II never) mixes with Tuan's cat. 4, which quite certainly was Arch. *-u*, *-ju* (see Shī king Researches p. 145). Examples:

「驅績數」奕祿「木附屬」谷穀始「屬貝」谷黽漏

1. (Shī, Siao jung) Anc. *k'ju*: *zjwok*: *kuk*; 2. (Shī, Ch'u ts'i) Anc. *tsju* (< *tsu*): *luk*;
3. (Shī, K'ue kung) *muk*: *b'ju*: *zjwok*; 4. (Shī, Sang jou) *kuk*: *kuk*: *kju* (< *ku*); 5. (Li sao) *zjwok*: *g'ju*; 6. (Yi king, *tsing*) *kuk*: *b'ju*: *lju* (< *lu*).

Indeed, this phenomenon is so marked that Wang Nien-sun has placed our cat. III (Anc. *âk*, *uk*, *jwok*) as the ju sheng correspondence to Anc. *ju*, *ju* (Arch. *u*, *ju*).

These two facts remove all doubt about the Arch. values of types 25. 谷 Anc. *kuk*. 27. 曲 *k'jwok*. They were not, as I supposed in Shī king researches, *ok*, *jwok*; nor were they, as Li supposes, *ok*, *jok*. They were clearly ho k'ou words: 25 *uk*, 27. *juk*. Therefore makeshift rimes were possible such as those in the table p. 41 above: Arch. 1. *k'ju*: *dzjuk*: *kuk*; 2. *tsu*: *luk*; 3. *muk*: *b'ju*: *djuk*; 4. *kuk*: *kuk*: *ku*; 5. *djuk*: *g'ju*; 6. *kuk*: *b'ju*: *lu*. (With Li's system: 1. *k'ju*: *dzjok*: *kok*; 2. *tsu*: *lok* etc. would be quite inexplicable).

The Arch. *-uk* was preserved in the Ts'ie yün dialect, but in other ancient dialects it was broken into *uok* (S.-Jap. spells 屋 *woku*, 翁 *wou*); *juk* was broken into *jwok*. Yet in the corresponding *-ng* words the Arch. 34. *-jung* peeps through in the oldest Anc. dialect we know of, the Wu dialect, which was the base of Go-on. We find (Karlgren, Phonol. Chin. p. 853) Ts'ie yün *kjwong*, *g'jwong*, *jwong*, *h'wong*, *ljwong*, *sjwong* etc. = Go-on *ku*, *gu*, *iu*, *çu*, *riu*, *šu* etc.

So far all is plain sailing. But type 23. Anc. *âk* seems to form a serious obstacle. If 25. was Arch. *uk* and 27. *juk*, what was this 23. *âk*?

It is obvious that *âk* III (23) had a different Arch. origin from *âk* I (1) and *âk* II (13), since none of the three types rimes with any of the others. *âk* III (23), which

corresponds to the Arch. -g word 24. Anc. -*ɤu*, whereas *āk* I (1) and *āk* II (13) correspond to 2, 14 Anc. *au*, evidently had a darker vowel than the others. Since it rimes with 25. Arch. *uk* and 27. Arch. *juk* and constantly interchanges with them in the hie sheng, it must have been some kind of *u*. But what was the difference? I think the secret lies in the quantity.

H. Maspero was the first to emphasize the great and fundamental difference between long-vowelled (tense-vowelled) and short-vowelled (slack-vowelled) syllables in Anc. (and of course in Arch.) Chinese. This was a fecund idea, and it has enabled us to solve a long series of riddles. There was this contrast in nearly every Arch. category. There were *ang*: *ǎng*; *iang*: *iǎng*; *an*: *ǎn*; *ian*: *iǎn*; *ien*: *iĕn*; *ieng*: *iĕng*; *am*: *ǎm*; *iam*: *iǎm*. If we examine the short-vowelled rimes in the *a*-groups, we find that when having medial *i* they existed only after gutturals (with laryngals) and labials, but not after palatals and dentals: Anc. types *kjɔn*, *kjwɔn*, *pjwɔn*; *kjɔng*, *kjwɔng*, *pjwɔng* etc.; furthermore that when they had no medial *i*, they existed after the said gutturals and labials, and besides that, in some cases, after *t*, *tʰ*, *ts*, *tsʰ*, *dz*, but not after *l*, *t*, *tʰ*, *d*, *ts*, *tsʰ*, *dz*, *s*: types *kɔn*, *pɔn*, *ʃɔn*. Here, in our present categories I, II and III, we find that the three Anc. *āk* types (1, 13, 23) had exactly this peculiarity: they existed principally after gutturals and labials (*kāk*, *pāk*) and in a few cases like 𠄎 *tʰāk* etc. Similarly the two Anc. *ǎng* types 29, 32, were *kǎng*, *pǎng* and an occasional 𠄎 *ʃǎng* etc. I conclude that the types 1, 13, 23, 29, 32 belonged to this class of short-vowelled syllables, and this gives us the key to various distinctions in our tables I, II and III which otherwise would be inexplicable. If we revert, first, to cat. III, we can now fill in the Arch. values:

23. Arch. *ūk* > *ōk* > Anc. *āk*; 25. Arch. *uk* > Anc. *uk*; 27. Arch. *juk* > Anc. *iwok*;
And, in the corresponding -g series:
24. Arch. *ūg* > *u* > Anc. *ɤu* (just as 𠄎 Arch. *ku* > Anc. *kɤu*); 26. Arch. *ug* > *u* > Anc. *ɤu*; 28. Arch. *jug* > Anc. *iu*.

In the -ng series:

32. Arch. *ūng* > *ōng* > Anc. *ǎng*; 33. Arch. *ung* > Anc. *ung*; 34. Arch. *iung* > Anc. *iwong*.

And here we obtain quite unexpectedly the solution of the riddle that puzzled us in the *a* category above (p. 36). In that Arch. category:

<i>ang</i>	<i>wang</i>	○
<i>iang</i>	—	<i>iung</i>
<i>ak</i>	<i>wak</i>	○
<i>jak</i>	<i>iwak</i>	<i>juk</i>
<i>ag</i>	<i>wag</i>	○
<i>iag</i>	<i>iwag</i>	<i>iug</i>

we had *iung*, *iuk*, *iug*, but, strange to say, no *ung*, *uk*, *ug*.

In the present category:

<i>ūng</i> , <i>ūk</i> , <i>ūg</i>	○ ○ ○
<i>ung</i> , <i>uk</i> , <i>ug</i>	<i>iung</i> , <i>iuk</i> , <i>iug</i>

we have *ūng*, *ūk*, *ūg* but no *iūg*, *iūk*, *iūg*! When we find that in the *a* category the 𠄎 *iung* 𠄎 *iuk*, 𠄎 *iug* existed only after gutturals (laryngals) and labials, types *kjung*, *kjuk*, *pjuk*, *kjug*, *pjug*, but after no other initials, and thus clearly agreed with the short-vowelled types in the *a*-groups (*kjǎn*, *kjwǎn*, *pjwǎn* but no other initials), we can see at a glance that the 𠄎, 𠄎, 𠄎 in the *a* category are the very types (short-vowelled): *iūng*, *iūk*, *iūg* which are missing in our cat. III here.

Why, then, should they rime, not with *ūng*, *ūk*, *ūg* in our cat. III here but with the *ang*, *ak*, *ag* in the *a* category? It stands to reason that the short *ū* must have been modified, when preceded by an *i*, so as to make the sound less labial and less velar than in *ūng*, *ūk*, *ūg*. It must have been something similar to the Swedish *u* in *kung* or the English *u* in *value*. This, indeed, stands genetically and acoustically fairly close to *a*, and we easily understand that in rimes and hie sheng it goes together rather with *a* than with a narrowly labialized and strongly velar *ū* and *u*. This once said, and this peculiarity in script and rimes nicely explained, we can be satisfied to write it, etymologically correct, 𠄎 *kjūng*, 𠄎 *giūk*, 𠄎 *kjūg*, keeping in mind that the *ū* in these syllable types had a different and more open *timbre* than the *ū* in types *kūng*, *kūk*, *kūg*.

Let us now take up for examination the intricate categories I and II on p. 39 above. If we look at their Anc. values, there is an almost shocking similarity. It would seem to be absolutely futile to endeavour to find a difference in quality of the principal vowel for these two Arch. categories. And yet such a difference must have existed, since they are distinguished fairly clearly as rime categories — with numerous confusions, it is true. And we have necessarily to solve the riddle.

In the first place we shall somewhat reduce the apparent similarity of the two categories. The table on p. 39 above is correct, yet it is somewhat misleading. For all the types there given are not equally normal and frequent. The normal types in cat. I are 1, 2, 3, 4, 5, 6, 9, 10; the type 8. *iǎu* is hardly existent. It is represented by the word 陶 Anc. *iǎu* in some rimes. Moreover, Tuan brings in 𠄎 *g'iǎu* and 𠄎 *tsiǎu* in our cat. I, because of their phonetics, but in Shí they only rime with each other once and with no other words, so we cannot know exactly whether they belong in I or in II. Among the words with Anc. *iǎu* in the Ts'ie yün the great majority are obviously words of cat. II, having phonetics belonging to that category; a few words have phonetics belonging to cat. I, but that does not necessarily place those words in the Arch. cat. I, for these characters may be due to contact between the (undoubtedly very similar) categories I and II in the hie sheng. Altogether it can be said that the Anc. *iǎu*, regular and frequent in cat. II, as a rule does not exist in cat. I, just as *iəu* (I, 6), regular and frequent in cat. I, does not exist at all in cat. II. Here, then, is a strong and real difference between I and II.

In cat. II the normal types are 11, 13, 14, 15, 16, 19, 20, 21, 22. Types 17 and 18 are represented each only by an isolated word, and these we must disregard, since they cannot be built upon. They may be due to some special conditions in individual cases. We may therefore reduce somewhat our scheme of the normal type words of our three categories, and rewrite it thus:

I		II		III	
1 學	2 包	9 樂	10 〇	19 角	20 穀
3 皓	4 老	11 較	12 郊	21 谷	22 替
5 菊	6 休	13 沃	14 高	23 曲	24 仆
7 威	8 蕭	15 處	16 廟		
		17 的	18 茗		
25 降				28 江	
26 冬				29 工	
27 宮				30 禁	

In Anc. Chinese:

I		II		III	
		9. <i>āk</i>	10. <i>o</i>		
1. <i>āk</i>	2. <i>au</i>	11. <i>āk</i>	12. <i>au</i>	19. <i>āk</i>	20. <i>əu</i>
3. <i>uok</i>	4. <i>âu</i>	13. <i>uok</i>	14. <i>âu</i>	21. <i>uk</i>	22. <i>əu</i>
5. <i>juk</i>	6. <i>iəu</i>	15. <i>jak</i>	16. <i>jäu</i>	23. <i>iwok</i>	24. <i>iu</i>
7. <i>iek</i>	8. <i>ieu</i>	17. <i>iek</i>	18. <i>ieu</i>		
25. <i>äng</i>				28. <i>äng</i>	
26. <i>uong</i>				29. <i>ung</i>	
27. <i>jung</i>				30. <i>iwong</i>	

Since cat. III had *u*, I and II cannot possibly have had *u*. And since *ək*, *ek*, *āk*, *ak*, *ek* are to be found in other Shī king rime categories, neatly distinguished from our categories I and II here, I maintain what I said in my Shī king Researches, against Li Fang-kuei's proposals: these two categories had some kind of *o* for principal vowels. But Li is surely right in saying that II must have had a more open principal vowel than I. This gives us closed *o*: *ō* for I, open *o*: *o* and *ā* for II. And then we have to apply the distinction we have already determined between long-vowelled and short-vowelled syllables: *ō* as against *o*, *ō* as against *ō* (for typographical reasons, in order to avoid an ugly *ō*, I write the short *ō* thus: *ô*). And we are finally able to fill in our scheme with Archaic values which will nicely explain both the distinction between the three categories in rimes and hie sheng, and the

considerable number of exceptional contacts between them, equally in rimes as well as in hie sheng. Observe that the *-ng* group is much poorer than the *-k* and *-g* groups. It has fewer forms with medial *i*, and it has forms corresponding only to I and III, not to II. Whether the latter is due to confusion of two primarily different groups it is impossible to tell; we can merely state that neither Shī rimes nor hie sheng indicate a distinction here similar to that in the *-k* and *-g* words.

I		II		III	
		9. <i>āk</i> (> <i>āk</i>)	10. <i>o</i>		
1. <i>ək</i> (> <i>āk</i>)	2. <i>өг</i> (> <i>au</i>)	11. <i>ōk</i> (> <i>āk</i>)	12. <i>ōg</i> (> <i>au</i>)	19. <i>ūk</i> (> <i>āk</i>)	20. <i>üg</i> (> <i>əu</i>)
3. <i>ok</i> (> <i>uok</i>)	4. <i>ög</i> (> <i>âu</i>)	13. <i>ok</i> (> <i>uok</i>)	14. <i>og</i> (> <i>âu</i>)	21. <i>uk</i> (> <i>uk</i>)	22. <i>ug</i> (> <i>əu</i>)
5. <i>iök</i> (> <i>iuk</i>)	6. <i>iөг</i> (> <i>iəu</i>)	15. <i>iok</i> (> <i>iak</i>)	16. <i>iog</i> (> <i>iäu</i>)	23. <i>iuk</i> (> <i>iwok</i>)	24. <i>iug</i> (> <i>iü</i>)
7. <i>iök</i> (> <i>iek</i>)	8. <i>iөг</i> (> <i>ieu</i>)	17. <i>iok</i> (> <i>iek</i>)	18. <i>iog</i> (> <i>ieu</i>)		
25. <i>өг</i> (> <i>äng</i>)				28. <i>wng</i> (> <i>äng</i>)	
26. <i>óng</i> (> <i>uong</i>)				29. <i>wng</i> (> <i>wng</i>)	
27. <i>ióng</i> (> <i>iung</i>)				30. <i>iung</i> (> <i>iwong</i>)	

There is one more group with guttural finals which needs a few words of elucidation. Tuan's cat. 11, Wang's cat. 6 contains words with Anc. *eng*, *iäng*, *ieng*)¹⁰ and since it never rimes with the *ang*, *iang*, *äng*, *iäng* etc. of Tuan's cat. 10, we can see that the palatal vowel was Archaic. To this *-ng* category correspond as *-k* and *-g* words Tuan's cat. 16, Wang's cat. 11, with Anc. *-ig*, *iei*, *ai*, *iwei*. The *ię* of this category should be well distinguished from the *ię* (< *ia*) of Tuan's cat. 17, e. g. 何 Anc. *ya*, 遇 *kuā* (< *kwā*), 皮 *b'jię* (< *b'ia*), 爲 *jwię* (> *gwia*), 加 *ka*, which had *-a* (open syllable) in Arch. Chinese. The *-ię* in cat. 16. is the *-g* correspondence to Anc. *-iäng*.

In Shī king Researches (p. 157) I stated that the Anc. *-eng*, *-ek* rimes: 耕 *keng*, 革 *kek* etc., rime, in the Shī, the former in the *e* group, i. e. with *-iäng*, *-ieng*, the latter in the *ə* group, i. e. with *-ək*, *-əg*. This is true, but not the whole truth. Anc. *eng* (*ek*) contains characters of two quite different Arch. origins. One of them, with an open, slack *ä* sound: Arch. *-eng*, *-ek*, rimes with the neutral slack *ə*: *əng*, *ək*; the other, which in Anc. Chinese coincided with the open *ε* (since 耕 *eng*: 清 *iäng*: 青 *ieng* are different rimes in the Ts'ie yün) must have been another kind of *ä* or *e* in Arch. Chinese. On the analogy of cat. B above (pp. 3, 6), where we have Arch. *iēn*: *ien* as rimes, I conclude in our present category that the three principal endings were *ęng*: *ięng*: *ieng*, and I obtain the following scheme: Archaic *ε* class, riming in the *-əng*, *-ək* category:

1 橙 2 革 3 戒
4 宏 5 麥 6 徑

1. <i>eng</i> (> <i>eng</i>)	2. <i>ek</i> (> <i>ek</i>)	3. <i>eg</i> (> <i>ai</i>)
4. <i>weng</i> (> <i>weng</i>)	5. <i>wek</i> (> <i>wek</i>)	6. <i>weg</i> (> <i>wai</i>)

Archaic *e* and *ě* class, forming Tuan's categories 11 and 16:

1	耕	3	危	3	解
4	嶺	3	割	6	挂
7	清	8	易	9	知
10	莖	11	○	12	○
13	青	14	錫	15	提
16	后	17	昊	18	圭

- | | | |
|------------------------------------|----------------------------------|--|
| 1. <i>ěng</i> (> <i>eng</i>) | 2. <i>ěk</i> (> <i>ek</i>) | 3. <i>ěg</i> (> <i>ai</i>) |
| 4. <i>wěng</i> (> <i>weng</i>) | 5. <i>wěk</i> (> <i>wek</i>) | 6. <i>wěg</i> (> <i>wai</i>) |
| 7. <i>jěng</i> (> <i>jäng</i>) | 8. <i>jěk</i> (> <i>jäk</i>) | 9. <i>jěg</i> (> <i>ia</i> > <i>ię</i>) |
| 10. <i>iwěng</i> (> <i>iwäng</i>) | 11. ○ | 12. ○ |
| 13. <i>ieng</i> (> <i>ieng</i>) | 14. <i>iek</i> (> <i>iek</i>) | 15. <i>ieg</i> (> <i>iei</i>) |
| 16. <i>iweng</i> (> <i>iweng</i>) | 17. <i>iwek</i> (> <i>iwek</i>) | 18. <i>iweg</i> (> <i>iwei</i>). |

For 3. *ěg* > *ěi* > *ai* cf. German *ei* > *ai*. The transition *jěg* > *ia* must have taken place quite early, for the Anc. *ię* < Arch. *jěg* (our present cat., Tuan 16) and the Anc. *ię* < Arch. *ia* (Tuan cat. 17), which are neatly distinguished in the Shī king, rime quite freely already in Lao-tsī and Chuang-tsī.

* * *

It might seem bold to reconstruct in its petty details Archaic Chinese, a language of some 2500 years ago, by aid exclusively of internal evidence, without comparative Sinitic materials, nay, on some points even seemingly against the evidence of e. g. Siamese (cf. p. 30 above). It must be observed, however, that in certain important respects we are much better situated for such a reconstruction than the scholar who has to reconstruct an earlier stage of a language exclusively by aid of divergent but *later* materials. The example adduced on p. 30 above: *steinn*, *Stein*, *sten*, *stone*: *stainaz* is very instructive as to the dangers the latter runs. There may be important features in the early language which the late materials never reveal. Our position is very much more favourable in as far as we have sources for Arch. Chinese dating back to the very period of the language (say roughly 1000—600 B. C.), sources which give no concrete sound values, it is true, but which give so to speak the *frame* to be filled out, the phonological categories which need only be interpreted. And the value of these early sources is enhanced enormously by the fact that they are of two kinds absolutely independent of each other: the Shī rimes and the hie sheng characters. By a very lucky chance these two sources throw light upon a practically identical language. On a few points, it is true, the

hie sheng reveal a slightly older stage of the language (see p. 32 above). But in most categories the accord is astoundingly good: the same distinctions, the same division of words into phonological groups can be observed in both sources. It is evident that the Shī king odes were given their final form and the standard set of hie sheng (originally *kia tsie*) were invented in one and the same centre, presumably the Chou court, and that dialectal aberrations were allowed to appear in the rimes and in the script only in sporadic cases.

There is, however, one great deficiency to be pointed out. If we are favourably placed, thanks to the double sources, for the reconstruction of the Arch. vowels and the final consonants, we are greatly handicapped when it comes to the initials, by our having recourse here only to *one* set of materials, the hie sheng; here, of course, the poetry fails us entirely. It is true that the hie sheng have made it possible on many important points to discern Arch. initials very different from the Anc. ones (*g' > γ*, *đ > ź*, *ń > řź*, *t > tś*, *s | a > śa*, *gi > ji*, *dj > j* etc., see my Analytic Dictionary); but many differences between the Arch. and the Anc. initial system, which do not happen to be revealed by this single source, the hie sheng, are sure to have escaped us. In particular I am afraid that many consonant groups may have existed where we can only discern single consonants. The possibility of such *x*'s in our equations, which can only be filled out in future by Sinitic comparisons, must never be forgotten. To a certain extent they will make the following investigation less reliable than it would appear at first sight. In spite of this we have to attempt it, confident that though a revision may be necessary on isolated points, the system as a whole must be fairly reliable.

There is one point regarding initial consonant groups on which I wish to say a few words. When we have the well-known alternation *k-*: *l-* and *p-*: *l-* in the hie sheng, e. g. 各 Anc. *kāk*: 洛 *lāk*, 變 *piän*: 罽 *ljwän*, it might seem dubious whether the consonant group existed in the *k* (*p*) member or in the *l* member or in both members. Thus three interpretations seem *a priori* possible:

A. 各 *klāk*: 洛 *lāk*; B. 各 *kāk*: 洛 *klāk* (*glāk*); C. 各 *klāk*: 洛 *glāk*.

There is, of course, no fixed rule to be expected for this, for not all hie sheng characters may have been built on exactly the same principles. But in many cases there is one of these three alternatives which is decidedly the most plausible: the alternative C.

Alt. A. is excluded in several examples where we can build on reliable testimonies. There is, first, the case 藍 Anc. *lām* 'indigo', often discussed earlier. Here we have, fortunately, double *points d'appui*, which fact admits of a definite conclusion. When on the one hand we have 監 Anc. *kam* as phonetic, on the other hand Siamese *k'ram* 'indigo' < older *gram*, then the Arch. guttural before *lām* is certain: Arch. *glām* 'indigo'. Again, there is an interesting case in which the guttural before *l* can be shown to have lived down to early Han time, which Prof. G. Morgenstierne has pointed out to me. The city Lou-lan at Lop-nor, first found and excavated by Sven Hedin, was called 樓蘭 already in Chang K'ien's travel report (2d c. B. C.), and this transcription of the foreign word must be approximately of

that age. The *lou* has the same phonetic as 𩇛 *g'ju*, revealing a guttural, and the city is called *Kroraimna* in Kharoshti documents (Stein, Serindia p. 41 a). So *l̥əu* was Han *glu*. In both these examples the alt. A. is excluded.

H. Maspero (Le dialecte de Tch'ang-ngan sous les T'ang) has identified 變 *piän* (phon. *liwän*) with Siamese *plien*. If this is right, which seems probable, then this is a case where alt. B. is excluded. And here again we can find a trace of a *kl-* in the Anc. *k-* member (各 *kák*) even down in Han time. 各 *kák* has as homophone 關 *kák*. 各 serves as phonetic in 洛 *glák* (with the *g-* restituted according to what was said of alt. A. above). Was 關 Arch. *kák* or *klák*? It occurs in Shī king, Sī kan, in a phrase 約之關關 where *kák* 'chamber' gives no sense. Mao Heng (middle of 2nd c. B. C.) explains it by a method often resorted to by early commentators. He considers it as a *kia tsie* for another word with a similar sound, and says »*kák kák* is equal to 歷歷 *liek liek*.« This phonetic gloss, impossible and meaningless if 關 were an Arch. *kák*, is comprehensible if it was an Arch. *klák*: »*klák-klák* is equal to *liek-liek* (such a measure of phonetic dissimilarity occurs sometimes in the *kia tsie*). This decidedly speaks in favour of alt. C, and therefore we obtain 各 *klák*: 洛 *glák* etc.

Even if we can obtain a definite answer in this case, and if it seems probable that there are many analogous cases, we must not, on the other hand, generalize too rigidly and conclude that it was always so; there is of course no guarantee that the *hie sheng* creators did not apply sometimes the A type and sometimes the B type just as well as the C type.

* * *

We are now, finally, going to dress a series of tables of words which can be suspected of being cognate, i. e. of forming word families. In order to be cautious at the start, I shall keep within certain fairly narrow limits in the present paper. In the first place I leave out entirely words which consist of only *two* elements, an initial and a vowel (or diphtong). A comparison of words like *ku: ko, pâ: pia* etc. is very risky, because the word bodies are too short. There is infinitely greater chance of hitting the truth in words with *three* elements: initial, vowel (diphtong) and final: *kân, gian: k'jwan; tung: tók: d'ôg* and such-like. In the second place, it is quite possible that words with extremely different initials are really cognate — especially in the light of other Sinitic languages which show us that a simple Chinese initial is often a violent reduction of a long consonant group (Tib. *brgyad* = Chin. *pwat* 'eight') — and that e. g. 時 Arch. *đjag* may be in affinity with 期 *g'jag*; 𩇛 *đjôg* with 考 *k'ôg* and 老 *lôg*. But at present I leave all such questions open as a *cura posterior*. Here I keep within the limits of phonetically cognate groups, and quite arbitrarily I decide not to go outside the following principal categories.

First I divide the words into three great groups according to finals:

1. *-ng, -k, -g*;
2. *-m, -p, -b*;
3. *-n, -t, -d, -r*.

Then I subdivide these principal groups into categories according to Archaic initials:

- A. *k-, k'-, g-, g'-, ng-χ-, ';*
- B. *t-, t'-, d-, d'-, t̥-, t̥'-, đ-, đ';; ts-, ts'-, dz-, dz'-, tʃ-, tʃ'-, dz';; s-, s-, z-, -s;*
- C. *n-, n-, l-;*
- D. *p-, p'-, b'-, m-*.

(Words with initial consonant groups (*kl-*, *gl-* etc.) I consider to be so risky materials that I have only adduced them in a few cases).

For the vowels, on the contrary, I make no group limitations. Experience from Tibetan teaches us that this language has a richly developed *Ablaut* which allows of the most varied vocalism inside the same word stem. I have come to the conviction that the same phenomenon obtains in Chinese.

Of the tones I take no notice at all. It would not do simply to apply the Anc. tones to the Arch. words, and it is doubtful if we can ever arrive at a detailed knowledge of the Arch. tone system. Hence the phonetic difference between the words of my tables is often greater than it appears from the forms given: there is often a tonal difference as well, which is not marked in my transcriptions. I hope to revert to this question in a future paper.

The purport of the tables should not be misunderstood. I am very far from affirming that all the words in each group *are* cognate; I only mean to say that they may be suspected of being cognate. In a few cases the affinity is absolutely obvious and certain. In many more it is strongly probable. In the rest it is only possible and at least worth discussion. So each small »family group« has to be considered merely as a kind of *frame*, containing materials from which a choice will have to be made in future. Definite results can only be gained by comparative Sinitic researches, for the phonetic similarity can sometimes very well be deceptive. There is, for instance, such a large number of Chinese words which all end in *-ng* that we may well suspect that many of them derive from Sinitic words ending in quite other consonants. Again, the *č-* and *ʃ-* series may be a result of a simplification of the most varied Sinitic consonant groups. Therefore, at best, only a part of the combinations can be true word families; many similarities must reasonably be due to chance. And yet I do not hesitate to put up these frames, for a start has to be made and I see no other way of tackling the problem.

The present collection of possibly cognate words is not meant to be exhaustive; very many more could be adduced, but at present I only wish to give a few examples.

For an investigation like the present one it is necessary to be critical as to the words adduced. They must be words well known to have been real, living words. If we should draw upon the Kuang yün and Tsi yün, with their tens of thousands of »dictionary words«, or even if we took all words for granted which are given in the earliest dictionaries, Er ya, Ts'ang kie p'ien, Fang yen, Shuo wen kie tsī,

Kuang ya, we could easily obtain very large groups of »cognate words«. But such materials are not acceptable. I adduce only words which either belong to the most common and current words of the language — these are the majority in my tables — or, if less common, are well attested in early *texts*.

A. Words of type K-NG

1 果 2 鏡 3 光 4 晃 5 煌 6 旺 7 望 8 耿 9 頌 10 炯 11 熒
 12 螢 13 杲 14 赫 15 旭 16 熙 17 晞 18 曉 19 映 20 行 21 徨 22
 往 23 迳 24 街 25 巷 26 邀 27 語 28 告 29 更 30 改 31 趨
 32 酵 33 迎 34 逆 35 穰 36 穀 37 穀 38 瘳 39 癰 40 鴻
 41 鵠 42 浴 43 沃 44 澗 45 形 46 營 47 影 48 亢 49 狂 50
 競 51 衡 52 橫 53 局 54 杠 55 至 56 涇 57 漿 58 澄 59 江 60
 潢 61 洋 62 泳 63 澤 64 洪 65 浩 66 頌 67 洵 68 決 69 注 70 滄
 71 擴 72 恆 73 驚 74 警 75 敬 76 惶 77 恆 78 競 79 恭 80 恐 81
 翼 82 懼 83 駭 84 忌 85 惡 86 愕 87 恍 88 恂 89 嚇 90 覷 91 罔
 92 擊 93 陞 94 嶺 95 扛 96 企 97 起 98 高 99 踞 100 喬 101 翹 102 丘
 103 印 104 昂 105 仰 106 嶸 107 額 108 嶽 109 崖 110 危 111 傲 112 堯 113 峴
 114 興 115 奮 116 慶 117 馨 118 炕 119 曠 120 洞 121 嬰 122 檣 123 檣
 124 莢 125 稂 126 熬 127 烘 128 煨 129 頸 130 剽 131 項 132 脛 133 骸
 134 康 135 慶 136 幸 137 祺 138 喜 139 好 140 誑 141 誑 142 惑 143 乘
 144 誑 145 詭 146 怪 147 欺 148 充 149 狡 150 矯 151 疑 152 詭

1. *kjǎng* bright, light, scenery etc.: 2. *kjǎng* (light-reflector:) mirror: 3. *kwáng* light, brightness: 4. *g'wáng* bright: 5. *g'wáng* bright, to blaze: 6. *giwang* bright: 7. *giwǎng* glittering, as a gem: 8. *kěng* brilliant: 9, 10. *kiweng* light, bright: 11. *g'iweng* bright, lights: 12. *g'iweng* glow-worm, firefly: 13. *kog* bright; 14. *χǎk* burning, brilliant: 15. *χjuk* brightness: 16. *χjǎg* bright: 17. *χjǎg* bright: 18. *χjog* dawn, light; 19. *jǎng* bright.

20. *g'ǎng* to walk, go, a street: 21. *g'wáng* to go to and fro: 22. *giwang* to walk, go: 23. *giwang* to walk, go: 24. *kěg* street: 25. *g'ǔng* street, lane; 26. *ngog* to ramble, stroll.

27. *kǔng* to speak, explain: 28. *kôk, kôg* to tell.

29. *kǎng* to change, alter: 30. *kǎg* to change, alter.

31. *k'jok* leaven, yeast: 32. *kôg* leaven, yeast.

33. *ngiǎng* to meet, go out to meet: 34. *ngiǎk* to go out to meet, go against, oppose.

35. *k'áng* husk of grain: 36. *k'ǔk* husk of grain: 37. *kuk* (husked things:) grain.

38. *jěng* a swelling, tumour: 39. *jung* carbuncle, ulcer.

40. *g'ung* wild goose, wild swan: 41. *kôk* snow-goose, swan.

42. *giuk* to bathe; 43. *'ok* to soak, moisten: 44. *'ǔk* to soak.

45. *g'ieŋg* contour, shape, form: 46. *giwěng* to draw a plan, to plan (to build etc.); 47. *'jǎng* form, image, shadow.

48. *k'àng* violent: 49. *g'iwang* violent, mad, furious: 50. *g'jǎng* to be violent, quarrel.

51. *g'ǎng* yoke of an ox, horizontal bar of a balance, cross-wise: 52. *g'wǎng* cross-wise, horizontal: 53. *kiweng* door-bar, bolt: 54. *kǔng* cross-bar.

55. *kieng* underground stream: 56. *kieng* to flow: 57. *g'iweng* rivulet: 58. *giwěng* rivulet: 59. *kǔng* river: 60. *g'wáng* accumulated water: 61. *g'ieŋg* watery expanse: 62. *giwěng* to wade in water: 63. *kôŋg* flood, inundation: 64. *g'ung* flood, inundation: 65. *g'og* expanse of water; 66. *χung* expanse of water: 67. *χjung* to flow, rushing water; 68. *'jǎng* to flow, float: 69. *'wáng* expanse of water: 70. *'ung* to flow, float.

71. *k'wáng* to hate, be annoyed at, abhor: 72. *g'ieŋg* to be annoyed.

73. *kjǎng* frightened: 74. *kjǎng* (to frighten:) to warn: 75. *kjǎng* (awed:) respectful: 76. *g'wáng* frightened: 77. *k'iwang* frightened: 78. *kjǎng* frightened, respectful: 79. *kjung* respectful: 80. *k'jung* to be frightened, fear: 81. *kjwak* frightened looks: 82. *kjwak* startled: 83. *g'eg* frightened: 84. *g'jǎg* to fear; 85, 86. *ngák* to scare, scared; 87. *χwáng* troubled: 88. *χjung* frightened: 89. *χǎk* frightened: 90. *χǎk* frightened.

91. *káng* mountain ridge: 92. *g'jǎng* to lift: 93. *g'ieŋg* cliff, precipitous: 94. *g'wěng* lofty: 95. *kǔng* to lift: 96. *k'jěg* to raise oneself on the toes: 97. *k'jǎg* to lift, rise: 98. *kog* high: 99. *k'jog* to raise oneself on the toes: 101. *g'jog* to lift: 102. *k'jog* hill; 103, 104. *ngáng* high, to raise: 105. *ngiang* to raise the eyes, lift the face, look upwards: 106. *ngák* cliff, hill-side, edge: 107. *ngǎk* top of the head, forehead: 108. *ngôk* mountain, peak: 109. *ngěg* cliff, hill-side, edge: 110. *ngiwěg* high, precipitous, dangerous: 111. *ngog* haughty: 112. *ngiog* high, lofty: 113. *ngiog* high, precipitous; 114. *χjǎng* to lift, raise.

115. *χjǎng* fragrant: 116. *χjǎng* musk: 117. *χjeng* fragrant.

118. *k'àng* to dry: 119. *k'wáng* sunburnt, desolate, waste: 120. *g'ák* to dry up: 121. *g'ôk* a spring drying up, become dry: 122. *kog* straw: 123. *kog* dry, withered, rotten: 124. *kôg* dried grass: 125. *k'jog* parched rice, dry provisions; 126. *ngog* to dry, roast; 127. *χung* to burn, roast: 128. *χok* hot, burning.

129. *kjěng* neck, throat: 130. *kieng* to cut the neck, behead: 131. *g'ǔng* neck.

132. *g'ieŋg* shin-bone, shank: 133. *g'eg* shin-bone, shank.

134. *k'àng* rich year, prosperity: 135. *k'jǎng* felicity, blessings, to felicitate: 136. *g'ěng* luck, fortunate: 137. *g'jǎg* felicity; 138. *χjǎg* joy, to rejoice: 139. *χog* to find pleasure in, to love.

140. *kjwang* to deceive, cheat: 141. *g'iwang* to deceive, lie: 142. *g'wák* deceive, mislead, doubt: 143. *kwěg* deceitful, crafty: 144. *kwěg* to deceive: 145. *kjwěg* deceitful, to deceive: 146. *kweg* bewildered, astonished: 147. *k'jǎg* to deceive, to cheat: 148. *kjwǎg* traitor: 149. *kog* crafty: 150. *kjog* to feign; 151. *ngiǎg* doubt, to be in doubt; 152. *χwáng* to lie.

153 梗 154 穎 155 荊 156 鋸 157 鋸 158 穎 159 刑 160 研 161 榑 162 刻 163 棘
 164 酸 165 剗 166 鋸 167 鋸 168 疆 169 竟 170 澆 171 垆 172 互 173 窮 174
 郭 175 極 176 國 177 域 178 固 179 永 180 詠 181 恆 182 久 183 咬 184
 綱 185 綆 186 韉 187 繩 188 經 189 紘 190 鞅 191 望 192 羅 193 繫 194 系 195
 係 196 絞 197 絞 198 繳 199 糾 200 纏 201 鞅 202 纏 203 紫 204 縑 205 約
 206 坑 207 墟 208 陸 209 礦 210 磬 211 磬 212 望 213 孔 214 空 215 腔 216 壑
 217 谷 218 壞 219 臼 220 竅 221 峇 222 胸 223 壑 224 涵 225 榜 226 膚 227 臍
 228 康 229 廣 230 宏 231 弘 232 擴 233 廓 234 吳 235 呼 236 瓊 237 緋
 238 紅 239 頰 240 僵 241 傾 242 降 243 航 244 匡 245 公 246 考 247
 舊 248 舅 249 翁 250 剛 251 銅 252 僵 253 強 254 競 255 勁 256 確 257 硬
 258 凝 259 垣 260 缸 261 鈞 262 盜 263 嬰 264 嬰 265 寶 266 枉 267 肱
 268 弓 269 鑿 270 曲 271 踞 272 卩 273 尪 274 奧 275 澳 276 皇 277 王
 278 獲 279 攬 280 勾 281 拘 282 搯 283 搯 284 右 285 有 286 握 287 擁 288
 厄 289 扼 290 阨 291 軛 292 噬 293 抑 294 隘 295 戰 296 擊 297 摑 298 噬
 299 斃 300 考 301 敲 302 縞 303 皓 304 皚 305 皚 306 皎 306 皎

153. *kǎng* spinous tree, thorny: 154. *kǎng* fish-bones, pricking: 155. *kǎng* bramble, thorn: 156. *kwǎng* awn of wheat etc: 157. *kěng* plough-bill: 158. *giwěng* awn, tip, sharp: 159. *g'ieng* (to cut:) to amputate, punish: 160. *g'ieng* (sharpener:) whetstone: 161. *g'wāk* to cut the grain: 162. *k'ək* to cut: 163. *k'jak* brambles, thorny: 164. *kwək* cut off the ear (of an enemy, trophy): 165. *k'iweg* to stab, to cut: 166. *kog* sharp point, scissors: 167. *ngāk* point, edge of a blade.

168. *k'iang* limit, boundary, frontier: 169. *k'iang* limit, end, finish: 170. *k'iang* limit, boundary, region: 171. *kiweng* border regions, frontier area: 172. *kəng* extreme, limit: 173. *g'jūng* extreme, limit, end, go to the extreme, exhaust, poor: 174. *kwāk* outer wall of a city (its boundary): 175. *g'jak* extreme, end: 176. *kwək* (delimited, bounded area:) state, country: 177. *giwək* boundary, region, state: 178. *giŋg*, *giŋk* (fenced area:) park.

179. *giwǎng* long, distant, continuous, eternal: 180. *giwǎng* (to draw out the words:) recite, sing: 181. *g'əng* perpetual, constant: 182. *k'jūg* a long time, long: 183. *k'jūg* chronic disease.

184. *kāng* string, tie, bond: 185. *kāng* a long rope: 186. *k'iang* reins, bridle: 187. *k'iang* strings by which to wrap a child and carry it on the back: 188. *kieng* threads of a warp: 189. *g'weng* hat string, to tie: 190. *k'ung* bridle, halter: 191. *k'jung* to tie with a leather strap: 192. *k'jēg* halter: 193. *g'ieg* to tie, bind: 194, 195. *g'ieg* to bind, connect: 196. *kog* to wrap, to wind around, strangle: 197. *k'jog* to tie: 198. *kiog* to wind around, bind: 199. *k'jōg* threefold cord, to tie; 200. *ɣwāk* string; 201. *'iang* halter: 202. *'jēng* cap string, tassel: 203. *'iwěng* entwine: 204. *'iek* to strangle: 205. *'jok* to bind.

206. *k'āng* hole, pit, moat, canal: 207. *k'wāng* grave, tomb, vault: 208. *g'wāng* empty, city moat: 209. *kwǎng* a mine: 210. *k'ieng* empty, hollow: 211. *k'ieng* (hollow stone:) instrument of sonorous stone: 212. *giwěng* grave: 213. *k'ung* hole: 214. *k'ung* hollow, empty: 215. *k'ūng* chest: 216. *k'jung* eyehole in axe: 217. *kuk* ravine, valley: 218. *g'og* moat: 219. *g'jōg* mortar: 220. *k'iog* hole: 221. *kōg* cave; 222. *ɣiung* chest: 223. *ɣāk* ravine, gully: 224. *ɣiwək* moat, canal: 225. *ɣiog* hollow tree, hollow, empty; 226. *'jəng* chest, breast: 227. *'jak* breast.

228. *k'āng* wide-hearted, magnanimous: 229. *kwāng* wide, broad, vast: 230. *g'weng* spacious, large hall: 231. *g'wəng* vast, liberal: 232. *k'wāk* to widen, enlarge, extend: 233. *k'wāk* wide, vast: 234. *g'ōg* vast (as the sky): 235. *ɣiog* vast.

236. *g'iwěng* red-coloured precious stone: 237. *kōng* strong red, purple: 238. *g'ung* red.

239. *g'àng* to go down in flying (birds): 240. *k'iang* to fall down, prostrate: 241. *k'jwěng* to fall down, tumble over: 242. *kōng* to descend, go down, throw down.

243. *g'àng* square raft, two boats lashed together so as to form a square: 244. *k'iwang* square.

245. *kung* »old man«, father: 246. *k'ōg* old: 247. *g'jōg* ancient, old: 248. *g'jōg* (»old man«:) uncle: 249. *'ung*, father, old man. Possibly *ɣiwǎng*, Mand. »hiung« 'elder brother' belongs here too.

250. *kāng* hard: 251. *kāng* steel: 252. *k'iang* stiff, rigid: 253. *g'jang* strong: 254. *g'jǎng* strong (see Tso chuan, Hi, 7th year): 255. *k'jěng* strong, vigorous: 256. *k'ōk* solid, hard; 257. *ngǎng* hard: 258. *ngiang* (frozen water:) to become hard, solid, congeal.

259. *kūng* jar: 260. *g'ūng* jar: 261. *g'ieng* soup-tureen; 262. *'āng* bowl, basin: 263, 264. *'əng* jar: 265. *'ung* jar.

266. *giwang* to bend, crooked: 267. *kwəng* (bending part:) elbow: 268. *k'jūng* a bow: 269. *k'iwak* hook: 270. *k'juk* to bend, crooked: 271. *g'juk* crooked, cramped: 272. *k'jōg* hook; 273. *'wāng* crooked leg, lame: 274. *'ōg* angle, corner of the house: 275. *'jōk* (»hook«:) the concave side of a bend in a meandering river.

276. *g'wāng* emperor, imperial: 277. *giwang* king, royal.

278. *g'wāk* to catch, seize: 279. *k'iwak* to grasp, seize: 280. *k'jōk* a handful: 281. *k'jōk* to hold in both hands: 282. *k'iwag* to lay hands on, seize, hold: 283. *g'ieg* to hold by the hand, lead: 284. *giŋg* right hand: 285. *giŋg* to hold, have; 286. *'ūk* to grasp, seize.

287. *'jung* to press: 288. *'ək* narrow, straits: 289. *'ək* to press, throttle, grasp firmly: 290. *'ək* narrow pass, defile: 291. *'ək* yoke, to restrain: 292. *'jēk* throat: 293. *'jak* to press down: 294. *'ēg* a pass, straits, narrow.

295. *k'jak* long lance: 296. *k'iek* to beat, strike, kill: 297. *kwək* to beat: 298. *k'jak* to kill: 299. *kōg* large drum (which is beaten): 300. *k'ōg* to beat: 301. *k'og* to beat.

302. *kog* white silk: 303, 304. *g'og* white: 305. *kjög* white: 306. *kiog* white.

307 鞠 308 壽 ○ 309 亟 310 處 311 霍 312 癩 ○ 313 胎 314 鞋 ○ 315 隙 316
 317 霏 318 隔 319 膈 320 解 321 異 ○ 322 殃 323 惡 324 亞 325 虐 ○ 326
 327 欲 328 求 329 要 ○ 330 鞞 331 革 ○ 332 頰 333 頤 ○ 334 跪 335 踞
 ○ 336 蟹 337 蟄 ○ 338 蟻 339 學 340 校 341 效 342 教 343 數 344 巧 345 考
 ○ 346 衰 347 驍 348 趺 ○ 349 奇 350 幽 351 黝 352 窈 ○ 353 嬌 354 夭 355
 妖 356 么 ○ 357 交 358 爻 ○ 359 纒 360 球 361 毬 ○ 362 烏 363 鴉 364 鴛
 365 毫 366 裘 367 九 368 远 ○ 369 覽 ○

307. *kjök* to rear, nourish: 308. *xiök* to rear, nourish.

309. *kjak* haste, urgent: 310. *g'iwag* sudden, rapid: 311. *xwäk* sudden: 312. *xwäk* (sudden illness:) cholera.

313. *kjak* leg, foot: 314. *g'ëg* boot.

315. *k'jak* rift, crack: 316. *k'jäk* (to separate oneself from:) reject, decline:

317. *k'wäk* rift in the clouds, weather clearing: 318. *këk* to separate, partition:

319. *këk* diaphragm: 320. *këg* to separate, divide, dissolve: 321. *giäg* separate, different.

322. *iang* misfortune, calamity, to destroy: 323. *'äk* bad, vicious, wicked: 323. *'äg* to hate: 324. *'äg* inferior: 325. *ngiök* cruel, wicked, to maltreat, destroy.

326. *kjak* to wish, hope for: 327. *giuk* to wish, desire: 328. *g'jög* to seek for, pray for, entreat, aim at: 329. *jog* to wish, seek for.

330. *k'wäk* leather: 331. *kek* hide, skin, to flay.

332. *g'æg* chin, jaw: 333. *giäg* chin, jaw.

334. *g'jwëg* to kneel: 335. *g'jæg* to kneel.

336. *g'ëg* crab: 337. *g'jæg* small crab.

338. *g'wäng* school: 339. *g'ök* to study, learn, a school: 340. *kög* school: 340. *g'ög* to study, examine, compare: 341. *g'ög* (to learn:) to imitate: 342. *kög* to teach: 343. *g'ög* to teach: 344. *k'ög* (trained:) skilled: 345. *k'ög* (to study:) to examine.

346. *g'og* vigorous, martial, brave: 347. *kiog* vigorous: 348. *kiög* vigorous, courageous.

349. *'iog* sundown, darkness: 350, 351. *'jög* dark, black: 352. *'iög* secluded.

353. *kjög* delicate, beautiful: 354. *'jog* young, delicate, tender, fresh, beautiful:

355. *jog* to die young: 356. *'iög* small, tender.

357. *kög* to cross, entwine: 358. *g'ög* to cross.

359. *kjök* foot-ball: 360. *g'jög* jade ball: 361. *g'jög* ball.

362. *kiög* owl: 363. *giog* (so in Ts'ie yün) owl (the dialects point to an Arch (*xiog*); 364. *xiög* owl.

365. *g'og* hair: 366. *g'jög* fur.

367. *kjüg* nine: 368. *g'jwæg* point where nine roads meet.

369. *kök* to wake up: 369. *kög* to wake up.

B. Words of type T-NG

1 償 2 賄 3 賄 4 贈 5 賈 6 賜 ○ 7 正 8 政 9 整 10 征 11
 懲 12 董 13 職 14 飭 15 勅 16 帝 17 治 18 則 19 司 ○ 20 正 21 直
 22 植 23 置 24 蒔 25 栽 ○ 26 章 27 程 28 稱 29 度 30 尺 31 測 32
 商 33 升 ○ 34 通 35 桶 36 筭 37 筒 38 衙 39 衙 40 銃 41 瀆 42 資
 43 窗 ○ 44 檣 45 撐 46 棧 47 璋 48 杖 49 丈 50 玳 51 挺 52 筵 53
 挺 54 楨 55 楹 56 橋 57 杙 58 支 59 枝 60 肢 61 保 62 樞 63 柵 ○
 64 上 65 尚 66 揚 67 賜 68 頂 69 登 70 乘 71 棟 72 冢 73 塚 74 戴
 75 陟 76 卓 77 提 78 臺 79 擡 80 崇 81 截 82 穎 83 昇 84 嵩 ○ 85
 盈 86 贏 87 贏 88 盛 89 充 90 容 ○ 91 勇 92 馭 93 獎 94 壯 95 勝
 ○ 96 寵 97 憚 98 祉 99 怡 100 悰 ○ 101 偵 102 瞪 103 督 104 覲 105 矚
 106 眈 107 眺 108 相 109 慳 110 省 111 伺 ○ 112 打 113 鉦 114 沖 115 撞 116
 鐘 117 衝 118 鑄 119 析 120 鐸 121 權 122 策 123 極 124 錫 125 觸 126 咎 127
 擣 128 昏 ○ 129 腔 130 宕 131 洞 132 井 133 井 ○ 134 中 135 仲 ○ 136 堂
 137 廷 138 庭 139 寺 140 宗 ○ 141 脈 142 漲 143 腫 144 瘡 145 瘡 ○ 147 成
 148 終 149 已 ○

1. *djang* to give compensation: 2. *djæg* to give, bequeath: 3. *tiög* to give; 4. *de'äng* to give, bestow; 5. *sjang* to give, bestow, reward: 6. *sjëg* to give, bestow.

7. *tiëng* straight, correct: 8. *tiëng* (correcting, regulating, adjustment:) government, administration: 9. *tiëng* (to make straight:) to adjust: 10. *tiëng* (to correct:) to punish: 11. *d'jang* to correct, punish: 12. *tung* to correct, govern: 13. *tiäk* to direct, govern, office, official: 14, 15. *t'jak* to direct, to order: 16. *tiæg* ruler, emperor: 17. *d'jæg* to govern; 18. *tsæk* law, rule; 19. *sjæg* to direct, govern, manage.

20. (cf. the preceding) *tiëng* straight: 21. *d'jak* straight, upright: 22. *djak* door-post, to set upright, to erect, to plant: 23. *tiæg* to put up, establish, place: 24. *djak* to erect, to plant; 25. *tsæg* to plant.

26. *tiang* a measure, norm, rule: 27. *d'jëng* measure, to measure (weight, length, volume): 28. *i'jang* to weigh, steelyard: 29. *d'äk* to measure, *d'äg* a measure: 30. *i'jak* a measure of ten inches; 31. *ts'jak* to measure, to fathom; 32. *sjang* to measure, to appreciate, to deliberate: 33. *sjang* a pint.

34. *t'ung* to pass through, communicate (all through, all etc.): 35. *t'ung* (tube-formed:) tub, barrel: 36, 37. *d'ung* tube, pipe: 38. *d'ung* passage, connecting lane: 39. *i'jung* passage, connecting lane: 40. *i'jông* hole through the head of an axe: 41. *d'uk* sluice, drain, gutter, ditch: 42. *d'üg* sluice, drain, gutter, ditch; 43. *ts'üng* vent, flue, window.

44, 45. *t'äng* a post, pole, to pole: 46. *d'äng* a prop, post: 47. *tiang* sceptre: 48. *d'jang* staff, pole: 49. *d'jang* a length of ten feet: 50. *t'ieng* sceptre, baton: 51. *t'ieng*, *d'ieng* to stick out, stiff: 52. *d'ieng* stalk, straw, small beam: 53. *d'ieng* stalk, stick, staff: 54. *tiëng* pole: 55. *djëng* pillar, column: 56. *tüng* pole, post,

stake: 57. *djak* stake: 58, 59. *tiēg* branch: 60. *tiēg* limb: 61. *d'iōg* branch, stick: 62. *dz'iang* boom, spar: 63. *ts'ēk* bars, fence, palisade.

64. *diang* above, on top, high, ascend: 65. *diang* high: 66. *diang* to raise, lift: 67. *diang* tossed up by the wind: 68. *tieng* top of the head, to carry on the head, summit: 69. *təng* to ascend, rise, mount: 70. *d'iəng* to ascend, to mount, ride on: 71. *tung* ridge-pole, the top: 72. *tiung* peak, lofty, mound, tumulus: 73. *tiung* tumulus, tomb: 74. *təg* to carry on the head: 75. *tiək* to ascend, rise: 76. *tōk* high, lofty: 77. *d'ieg* to raise high, lift: 78. *d'əg* elevated platform, a look-out, high: 79. *d'əg* to raise high, lift, carry: 80. *dz'ióng* high, lofty: 81. *tsəg* (put on top:) to load (as a car); 82. *səng* (top of the head:) forehead: 83. *siəng* to ascend, rise: 84. *siōng* lofty.

85. *diēng* full: 86. *diēng* full, ample, surplus: 87. *diēng* abundant, surplus: 88. *diēng* to be full of, hold, contain; abundant, overflow: 89. *t'ióng* full, to fill: 90. *diung* (to be full of:) contain, hold.

91. *diung* vigorous, brave; 92. *tsəng* strong horse: 93. *tsiang* to encourage: 94. *tsiang* strong, vigorous, robust; 95. *siəng* to have the force for doing, capable; (to be the stronger:) to conquer.

96. *t'jung* to find pleasure in; be in favour: 97. *djak* pleased, happy, joy: 98. *t'jəg* happy, happiness: 99. *djəg* pleased, joy; 100. *dz'óng* pleased, glad, joy.

101. *t'jēng* to spy: 102. *d'eng* to stare: 103. *tōk* to supervise, inspect, examine: 104. *d'iōk* to see: 105. *tiuk* to look, stare: 106. *t'jəg* to stare: 107. *t'io* to stare; 108. *siang* to gaze, look, consider, regard: 109. *sieng* (discerning, mentally clear-sighted:) intelligent, to understand: 110. *siēng* to watch, look, examine: 111. *siəg* to watch, spy.

112. *tieng* to beat: 113. *tiēng* a small bell (which is struck): 114. *d'ióng* to dash against: 115. *d'üng* to strike, beat, knock against: 116. *tiung* a bell: 117. *t'jung* rush against: 118. *diung* a big bell: 119. *t'ək* »beater«, wooden knocker used by night guards: 120. *d'ək* bell with clapper: 121. *d'ək* (beater, propeller:) oar, scull: 122. *tiək* to ram, pound, build: 123. *tük* to beat, strike: 124. *d'ük* small bell: 125. *t'juk* to butt, knock against, rush against, strike: 126. *t'jəg* to beat, flog: 127. *tōg* to pound; 128. *siung* to pound, to ram.

129. *t'əng* (the dialects indicate a *d'əng*) cavity, hollow, chest, palate: 130. *d'əng* cave, cavern, grotto: 131. *d'ung* cave, hole, pit, ravine: 132. *tsiēng* a well: 133. *dz'jēng* pit, pit-fall, hole.

134. *tiōng* middle, centre, interior, inside: 135. *d'ióng* (the middle one:) second of three (or four) brothers, second of three months.

136. *d'əng* hall: 137. *d'ie*ng court: 138. *d'ie*ng hall, court; 139. *dzjəg* hall: 140. *tsōng* ancestral hall, temple (the last, however, more probably to gr. 542 below).

141. *tiang* to swell, swelled abdomen, dropsical: 142. *tiang* swelling water, to flood, to rise: 143. *tiung* to swell, tumefy, tumour: 144, 145. *diung* dropsy of leg.

147. *diēng* to complete, finish, achieve: 148. *tiōng* to finish, end; 149. *ziəg* to finish, end.

150. *t'ək* to cleave, split: 151. *tiək* to hew, chop: 152. *tiək* barb of arrow: 153. *tēk* (to prick:) to blame, criticise: 154. *t'iek* to cut asunder: 155. *tük* to cut, chop,

hew: 156. *tük* to cut gems: 157. *tiēg* a spinous orange tree, thorn: 158. *t'jəg* tooth, esp. front tooth: 159. *tog* knife: 160, 161. *tiōg* to cut gems, carve; 162. *dz'iang* to wound, kill: 163. *ts'iang* a wound, sore: 164. *ts'iang* to wound: 165. *tsjak* to cut off: 166. *ts'ək* thorn: 167. *tsək* to blame, criticize: 168. *ts'jēk*, *ts'jēg* thorn, to sting, blame, criticize: 169. *dz'ək* a cut-throat, bandit; to hurt, to wound: 170. *ts'jak* a sharp plough share: 171. *dz'ək* chisel, bore: 172. *tsuk* barb of arrow: 173. *ts'ük* to spear fish, pierce, stab: 174. *ts'jēg* thorn: 175. *ts'jēg* to blame, criticize: 176. *tsəg* to slaughter: 177. *dz'əg* to cut: 178. *tsiəg* a hoe: 179. *tsiəg* to cut, slice, mince: 180. *tsjəg* to stab: 181. *dziəg* plough-share: 182. *tsōg* jujube (thorny): 183. *tsiōg* to

150 拆 151 斫 152 鏞 153 誦 154 剔 155 斲 156 琢 157 枳 158 齒 159 刀 160 珣
 161 彫 162 戕 163 瘡 164 創 165 斲 166 萊 167 責 168 刺 169 賊 170 戛 171 鑿
 172 鏃 173 擗 174 刺 175 諫 176 宰 177 裁 178 鉞 179 戢 180 剗 181 起 182 莖
 183 刺 184 傷 185 整 186 析 187 削 188 斯 189 擗 190 張 191 長 192 昶 193
 腸 194 塙 195 掌 196 常 197 敞 198 堂 199 同 200 銅 201 調 202 相 203
 等 204 嶺 205 增 206 層 207 陟 208 腺 209 腥 210 糖 211 棠 212 橙 213
 蔗 214 飴 215 餚 216 疼 217 痛 218 恫 219 葬 220 賊 221 倉 222 藏
 223 湧 224 溶 225 漾 226 滔 227 漾 228 澤 229 滴 230 涿 231 涎 232 漬 233
 滋 234 液 235 濯 236 滌 237 洮 238 瀑 239 澗 240 漱 241 滄 242 陽 243
 昌 244 矔 245 的 246 燭 247 熾 248 朝 249 潮 250 耀 251 耀 252 燄 253 昭 254
 照 255 晝 256 晶 257 晴 258 晴 259 燦 260 星 261 晰 262 燦 263 陽 264 湯
 265 煬 266 鼎 267 蒸 268 蒸 269 融 270 鎔 271 蕪 272 炙 273 灼 274 粥 275 熟
 276 勻 277 陶 278 鑄 279 涓 280 奎 281 壘 282 鼎 283 炒 284 竈 285 焦 286 湘
 287 籬 288 腊 289 鍊 290 燥 291 燒 292 脩 293 銷 294 消 295 精 296 清 297
 淨 298 澗 299 澄 300 湜 301 淑 302

cut off; 184. *siang* to wound, injure: 185. *siək* to sting: 186. *siək* to cut asunder, cleave: 187. *siok* to slice off, cut off, to pare: 188, 189. *siēg* to cleave.

190. *tiang* to extend, draw out, spread, expanse, surface: 191. *tiang* become long, grow up: 192. *t'iang* a long day: 193. *d'iang* extended, long: 194. *d'iang* (the long ones:) bowels: 195. *tiang* palm of the hand: 196. *diang* (long:) constant: 197. *t'iang* plateau, high open space.

198. *tāng* league, union, party, faction: 199. *d'ung* join, together: 200. *d'ung* alloy, bronze: 201. *d'iōg* to join, mix; 202. *siang* joined, together, mutual.

203. *təng* steps of staircase, ledge, section, degree: 204. *təng* ledges, tiers of a hill; 205. *tsəng* (to place layer on layer:) to pile up, accumulate, add, increase: 206. *dz'əng* layer, stratum, storey, degree: 207. *dz'əg* staircase.

208. *sog* fat, smell of raw meat, rancid: 209. *sieng* fat, smell of raw meat, rancid.

210. *d'əng* sugar: 211. *d'əng* sweet apple: 212. *d'eng* orange (cf. *kan* orange = *kan* the sweet fruit): 213. *tiəg* sugar cane: 214. *djəg* sugar, sweet; 215. *dz'jēng* sugar, sweets.

216. *d'ông* pain, to ache: 217. *t'ung* pain, to ache: 218. *t'ung* pained, to suffer, moan.

219. *tsâng* to hide, bury: 220. *tsâng* hidden goods: 221. *ts'âng* store-room, granary: 222. *dz'âng* to hide, to store, store-room.

223. *djung* to well up (as water): 224. *djung* overflowing water: 225. *d'ôg* great waves: 226. *t'ôg* swelling and rushing water: 227. *zjang* moving water, waves.

228. *d'âk* to soak: 229. *tiek* to drop, drip: 230. *tûk* to drip, trickle; 231. *dz'ûk* to soak: 232. *dz'jêg* to soak: 233. *tsjæg* to soak: 234. *zjak* fluid, juice.

235. *d'ôk*, *d'ôg* to wash, rinse: 236. *d'iôk* to wash, scour: 237. *t'og* to wash, rinse; 238. *tsog* to bathe; 239. *siek* to wash rice: 240. *sjôg* to rinse: 241. *sjôg* water in which rice has been washed.

242. *djang* light and heat of the sun: 243. *t'jang* sunshine, shining: 244. *d'ung* sun just rising: 245. *tiok* bright: 246. *tjuk* torch: 247. *t'jæg* to blaze: 248. *tjog* dawn, morning: 249. *d'jog* morning ceremony, audience etc.: 249. *d'jog* morning tide: 250, 251. *djog* bright: 252. *djog* bright, to enlighten: 253. *tjog* bright, brilliant: 254. *tjog* to shine upon, enlighten: 255. *tjôg* day-light, day-time (as opp. to night); 256. *tsjêng* bright, clear, crystal: 257. *tsjêng* iris of the eye: 258. *dz'jêng* clearing sky, light: 259. *tsjok* torch, to light; *sieng* star: 261. *siek* bright: 262. *sjok* bright, flashing.

263. (cf. the preceding group) *djang* light and heat of the sun: 264. *t'âng* hot liquid: 265. *djang* to roast, to heat, to fuse: 266. *tieng* (boiler:) tripod: 267. *tjæng* to steam: 268. *tjæng* firewood, to smoke: 269. *djông* to steam, to heat: 270. *djung* to fuse metal: 271. *t'âk* withered leaves: 272. *tjak*, *tjag* to roast: 273. *tjok* to roast, burn: 274. *tjok* to boil rice, gruel: 275. *djôk* heated through, well cooked, ripe: 276, 277. *d'ôg* (burner, burnt goods:) kiln; pottery: 278. *tjôg* to fuse, cast metal: 279. *tiôg* fade, wither: 280. *djog* kiln: 281. *djog* jar (burnt piece); 282. *tsjæg* a kind of tripod (boiler): 283. *ts'ôg* to fry, roast: 284. *tsôg* stove, furnace: 285. *tsjog* to scorch, burn; 286. *sjang* to boil: 287. *sjang* to boil: 288. *sjak* dried meat: 289. *sjok* to melt; bright: 290. *sog* to dry: 291. *sjog* to burn, bake: 292. *sjôg* dried meat: 293, 294. *sjog* to melt (metal).

295. *tsjêng* pure, fine, essence: 296. *ts'jêng* pure, clean, limpid: 297. *dz'jêng* clean, pure, cleanse; 298, 299. *d'jæng* clear, pure, limpid: 300. *djæk* pure, clean water: 301. *djôk* pure.

302, 303, 304. *dz'jêng* quiet, still: 305. *dz'iek* quiet, still.

306. *t'jang* dejected, disappointed: 307. *t'jang* dejected: 308. *t'jông* grieved: 309. *d'ieg* to wail: 310. *tog* grieved: 311. *d'og* grieved: 312. *t'jog* grieved: 313. *djog* distressed: 314. *t'jôg* dejected: 315. *d'jôg* sorry; 316. *ts'jang* grieved: 317. *ts'jak* grief, pity: 318. *ts'og* sad: 319. *ts'jog* grief, sorry: 320. *dz'jog* distressed: 321. *dz'jôg* grief; 322. *sâng* mourning: 323. *sjak* pained, grief, pity.

324. *t'iek* to fear, respectful; 325. *dz'âk* bashful; 326, 327. *sjung* terrified, respectful: 328. *sjôk* terrified, respectful: 329. *sjæg* to fear.

330. *t'jêng* red: 331. *d'jêng* naked (red, flesh-coloured): 332. *d'ông* red: 333. *t'jak*

302 靖 303 靜 304 靜 305 寂 ○ 306 悵 307 悄 308 忡 309 啼 310 忉 311 悼 312
 招 213 摺 314 惆 315 怵 316 淒 317 惻 318 悽 319 情 320 慙 321 愁 322 喪 323
 惜 ○ 324 悵 325 怵 326 淒 327 慄 328 肅 329 蕙 ○ 330 穎 331 程 332 彤 333
 赤 334 駢 335 藹 336 蕩 337 蕙 ○ 338 蒼 339 青 ○ 340 醒 341 耐 342 耐 343
 洒 344 苗 ○ 345 碇 346 訂 347 定 348 亭 停 滄 ○ 349 孕 350 育 351 畜 352
 胎 353 子 354 孽 字 355 生 356 姓 357 性 ○ 358 虹 359 蛟 360 蜻 ○ 361 倉
 362 愈 363 在 364 覺 365 促 366 躁 367 造 368 倏 369 倏 370 速 ○ 371 羊 372
 祥 ○ 373 洋 374 瀛 ○ 375 聽 376 聰 ○ 377 頑 378 藏 379 祥 380 祚 ○ 381
 像 382 似 383 俏 384 肖 385 猶 ○ 386 童 387 種 388 續 ○ 389 冬 390 凍 391
 滄 392 清 393 霜 ○ 394 知 395 智 396 志 397 誌 398 悠 399 想 400 諒 401 思
 402 猶 ○ 403 擋 404 搪 405 塘 406 帳 407 璋 408 障 409 廠 410 城 411 登 412
 町 413 幢 414 墻 415 場 416 遮 417 幃 418 疇 419 稠 420 侑 421 悞 422 膏 ○
 423 擢 424 搯 425 由 426 抽 ○ 427 當 428 食 429 饒 430 饜 431 飼 ○

red; 334. *sjêng* red horse: 335. *sjak* red: 336. *sjæk* a red flower: 337. *sjôg* Rubia, red-colouring stuff.

338. *ts'âng* green, blue: 339. *ts'ien* green, blue.

340. *d'jêng* drunk: 341. *tieng* drunk: 342. *d'jôg* fine spirits; 343. *tsjôg* spirits: 344. *dz'jôg* spirits.

345. *tieng* (a »fixer«) anchor: 346. *t'ien* (to settle:) to judge, decide: 347. *d'ien* to fix, settle: 348 a. *d'ien* to settle, to stop: 348 b. *d'ien* stopping place, resting place, pavilion: 348 c. *d'ien* stagnant water.

349. *djang* pregnant: 350. *djôk* to rear and foster children: 351. *t'jôk* to rear, nourish, feed: 352. *t'æg* womb, pregnant; 353. *tsjæg* (progeny:) son: 354. *dz'jæg* to breed, rear, bear, nurture; 355. *sêng* to bear, beget; live: 356. *sjêng* (maternity:) clan (issuing from the same mother): 357. *sjêng* (innate qualities:) nature, natural disposition.

358. *tieng* dragon fly: 359. *d'ien* dragon fly; 360. *ts'ien* dragon fly.

361. *ts'âng* hurried: 362. *ts'ung* hurried: 363. *tsâng* suddenly, abruptly: 364. *tsjôk* to urge, urgent: 365. *ts'juk* to urge: 366. *tsog* to hasten, quickly: 367. *ts'og* to hasten: 368, 369. *sjôk* suddenly, quickly: 370. *suk* to hurry, quickly.

371. *zjang* sheep (male and female): 372. *tsâng* sheep (female).

373. *zjang* ocean: 374. *djêng* ocean.

375. *t'ien* to hear: 376. *ts'ung* acute of hearing.

377. *tjêng* auspicious; 378. *tsâng* auspicious: 379. *dzjang* auspicious: 380. *dz'æg* auspicious.

381. *dzjang* image, shape, form, like: 382. *dzjæg* like, resembling: 383. *ts'jog* like, resembling; 384. *sjog* like, resembling: 385. *zjôg* like, resembling.

386. *d'ung* youngster, young boy or girl: 387. *d'ung* hornless calf: 388. *d'uk* calf.

389. *tóng* winter: 390. *tung* to freeze; 391. *ts'iang* cold; 392. *ts'jěng* cold; 393. *sjang* frost.

394. *tjěg* (to have in the mind:) to know; 395. *tjěg* knowledge, wisdom; 396. *tjæg* mind, thought, will, resolution; 397. *tjæg* (to have in the mind:) to remember; a record; 398. *djög* to think (of); 399. *sjang* to think (of); 400. *sjæk* to know; 401. *sjæg* to think (of); 402. *zjög* a counsel, a plan.

403. *täng* to screen, protect, prevent, resist; 404. *d'äng* to obstruct, parry; 405. *d'äng* dyke; 406. *tjang* curtain; 407. *tjang* dyke, bank; 408. *tjang* dyke, screen, barricade, partition; 409. *t'jang* cover, shelter, shed; 410. *djěng* city wall; 411. *täng* umbrella; 412. *t'jeng* raised path (dyke) between fields; 413. *d'üng* a plume fan, to screen, curtain; 414. *djung* a wall; 415. *djěk* dyke between fields, boundary; 416. *tjæg* to screen, protect, cover, hide; 417. *d'ög* a covering, *d'jög* a screen, curtain; 418. *d'jög* dyke between fields, field; 419. *d'jög* coverlet, curtain; 420. *tjög* to veil, conceal; 421. *dz'jang* wall; 422. *sěng* film over the eye; obstruction, calamity.

423. *d'ök* to pull out; 424. *t'ög* to draw out, pull out; 425. *djög* come out, out from, from; 426. *t'jög* to draw out, pull out.

427. *djang* to taste; 428. *d'jak* to eat; 429. *t'jæg* nourishment, food and drink; 430. *t'og* to eat gluttonously; 431. *dzjæg* food.

432 逸 433 綽 434 詔 435 縱 436 釋 437 赦 438 寫 439 瀉 440 踣 441 倒 442 膏 443 函 444 暉 445 易 446 竭 447 遞 448 代 449 琳 450 夕 451 汐 452 宿 453 夙 454 夜 455 舍 456 寄 457 牒 458 籍 459 冊 460 策 461 賃 462 借 463 債 464 等 465 侍 466 侍 467 伎 468 廐 469 伺 470 膝 471 繩 472 統 473 緹 474 縵 475 繳 476 勒 477 屬 478 妨 479 緝 480 緝 481 縶 482 紹 483 紬 484 倥 485 紆 486 緇 487 緇 488 緇 489 綜 490 總 491 席 492 績 493 績 494 擘 495 縑 496 紉 497 囚 498 素 499 束 500 縮 501 結 502 縑 503 跣 504 躄 505 腰 506 踣 507 踣 508 躄 509 躄 510 躄 511 躄 512 躄 513 躄 514 之 515 躄 516 躄 517 從 518 躄 519 躄 520 躄 521 躄 522 躄 523 躄 524 躄 525 躄 526 躄 527 躄 528 承 529 擇 530 拏 531 拏 532 持 533 受 534 投 535 將 536 捉 537 采 538 操 539 縑 540 以 541 收 542 絜 543 衆 544 氏 545 僑 546 崇 547 叢 548 積 549 族 550 曹 551 稍 552 小 553 少 554 親 555 釋 556 置 557 韜 558 鞘 559 鷓 560 鷓 561 鷓 562 笛 563 飢 564 鹿 565 清 566 蕭 567 旌 568 幟 569 得 570 迨 571 到 572 即 573 就 574 作 575 造

432. *d'æg* remiss, careless; 433. *t'jök* to slacken, indulgent; 434. *t'jög* to unbend a bow, to slacken, release; 435. *tsjung* to slacken the rein, lax, loose; 436. *sjæk* to loosen, let go; 437. *sjæg* (to let off:) to pardon, amnesty; 438. *sjæg* to let loose, to ease, release; 439. *sjæg* (to let loose water:) to drain.

440. *d'äng* to fall, slip; 441. *tog* to fall.

442. *tsjěng* leek flower; 443. *ts'ung* leek, onion.

444. *djak* relay of horses, post; 445. *djěk* to change, *djěg* (changeable, mobile:) easy; 446. *djěk* chameleon, lizard; 447. *d'ieg* to substitute, take the place of, change; 448. *d'æg* to substitute, take the place of, change; 449. *siek* chameleon, lizard.

450. *dzjak* evening; 451. *dzjak* evening tide; 452. *sjök* to pass the night; 453. *sjök* early morning (before dawn); 454. *zjæg* night; 455. *sjæg* (place for passing the night:) hotel, lodging, house; 456. *sjög* night, darkness.

457. *d'uk* writing tablet, document; 458. *dz'jak* writing tablet, list, register, record; 459, 460. *ts'ěk* writing tablet, list, register, record.

461. *t'æg* to lend, to loan (on interest); 462. *tsjak*, *tsjæg* to lend, to loan; 463. *tsěg* debt, to owe money.

464. *täng* to wait; 465. *d'æg* to wait, to wait upon, to treat; 466. *djæg* to wait upon; 467. *dz'jæg* to wait; 468. *sjěg* waiter, attendant; 469. *sjæg* to wait, to wait upon.

470. *d'æng* string, cord, to tie, to bind; 471. *djang* string, cord; 472. *t'ung* a thread, to attach, join; 473. *djak* to draw out threads (from cocoons), unravel; 474. *tjæk* to weave; 475. *tjök* silk string (tied to arrow); 476. *tiök* reins; 477. *tjuk* tied to, attached to; *djuk* attached, subordinated; 478. *tjěg* («weaver») spider; 479. *d'ieg* to tie, knot; 480. *d'ög* to twist, bind; 481. *t'ög* twisted silk cord; 482. *djög* («anknüpfen») to join on, continue; 483. *d'jög* thread, to weave, woven silk; 484. *d'jög* leather reins; 485. *d'jög* crupper; 486. *d'jög* to bind, tie; 487. *djög* seal ribbon; 488. *tsäng* woven silk; 489. *tsóng* warp, to weave; 490. *tsung* to tie together, collect; 491. *dzjak* (plaited, woven thing:) mat; 492. *tsiek* to twist, spin; 493. *dzjuk* («anknüpfen») to join on, continue; 494. *tsjög* to bind, tie together; 495, 496. *ts'jög* crupper; 497. *dzjög* to tie, bind, captivate, a captive; 498. *sák* cord; 499. *sjuk* to tie together, bundle; 500. *sjuk* to bind, bind together, restrict etc.; 501. *sjæg* silk thread; 502. *sog* to draw out threads (from cocoons), unravel; 503. *şög* («weaver») spider; 504. *siög* spider.

505. *djang* to follow, escort; 506. *tjung* heel, to follow; 507. *tjak* to tread, trample, foot-sole; 508. *d'jök* to tread, walk; 509. *d'juk* to tread, foot-print; 510. *d'ieg* to tread on, kick; 511. *d'ieg* hoof; 512. *d'ieg* leather shoes; 513. *tjæg* foot, toes; 514. *tjæg* to go to; 515. *d'ög* to trample; 516. *tsjung* footsteps, to follow; 517. *dz'jung* to follow; 518. *tsjak* to walk carefully; 519. *tsjak* to walk with small step; 520. *tsjěk* foot-prints, traces; 521. *tsjök* to walk carefully; 522. *ts'jök* to trample, kick; 523. *tsjuk* foot; 524. *dzjæg* to follow after, succeed; 525. *sjæk* slipper; 526. *sjěk* to go to; 527. *sjök* to walk carefully.

528. *djang* to hold, receive, present; 529. *d'äk* to pick, select; 530. *tjak* to pick up, take; 531. *těk* to take, to pick; 532. *d'jæg* to grasp, hold; 533. *djög* to receive (534. *djög* to pass from hand to hand, transmit, same word); 535. *tsjang* to take, bring; 536. *tsük* to catch, seize; 537. *ts'æg* to take, pick; 538. *ts'og* to grasp, hold; 539. *sjæk* to harvest; 540. *zjæg* to take; 541. *sjög* to take, collect, gather, harvest.

542. *tjang* all; 543. *tjung* a crowd, many, all; 544. *djěg* (a group:) a clan, family; 545. *d'jög* a group, flock, party; comrade; 546. *tsóng* a clan; ancestors etc.; 547. *dz'ung* to crowd, crowded; 548. *tsjěk* to accumulate, collect, many; *tsjěg*

provisions: 549. *dz'uk* bundle, crowd, group, clan: 550. *dz'og* group, flock, partner, plural mark.

551. *şog* small quantity, little: 552. *şog* small: 553. *şog* little, few.

554. *t'iang* bow case: 555. *t'ak* sheath of bamboo: 556. *d'uk* a case, sheath: 557. *t'og* sword case, sheath: 558. *şog* sword case, sheath.

559. *diog* bird of prey, kite, falcon: 560. *tiog* eagle: 561. *dz'ioğ* eagle, vulture.

562. *d'ioğ* flute: 563, 564. *d'jög* flute: 565. *siog* to blow, whistle: 566. *siog* flute.

567. *tsjeng* flag, banner: 568. *tjak* flag, banner.

569. *tak* to reach, obtain: 570. *d'ag* to reach: 571. *tog* to reach.

572. *tsjak* to go to: 573. *dz'ioğ* to go to.

574. *tsak* to make, do, act: 575. *dz'og* to make.

576 勺 577 酌 578 匙 579 舀 580 州 581 酢 582 挑 583 爵 584 醜 585 斤
 586 逐 587 止 588 島 589 州 590 洲 591 逃 592 遙 593 迢 594 驚 595
 躍 596 賈 597 市 598 售 599 糶 600 帚 601 掃 602 杯 603 騰 604 踊 605
 躍 606 跳 607 超 608 蒸 609 蟲 610 請 611 祝 612 咒 613 祝 614 禱 615
 討 616 軸 617 周 618 週 619 啞 620 嘲 621 譙 622 笑 623 媿 624 醜
 625 伺 626 意 627 慙 628 瘕 629 蟲 630 是 631 之 632 茲 633 斯 634
 傲 635 擊 636 始 637 賈 638 袋 639 箱 640 筍 641 婿 642 敵 643 擊
 644 漳 645 槽 646 壘 647 緇 648 朔 649 早 650 皂 651 稻 652 稷 653
 粟 654 再 655 雙 656 恥 657 羞 658 役 659 徕 660 碩 661 變
 662 射 663 弋 664 矰 665 撻 666 瓜 667 豎 668 撻 669 駮 670 肘 671 袖
 672 手 673 昨 674 昔 675 則 676 即 677 招 678 召 679 誘 680 證
 681 徵 682 執 683 蟻 684 植 685 獨 686 動 687 墮 688 掉 689 搖
 690 馬 691 逃 692 盜 693 趙

576. *djok* spoon, ladle: 577. *tjak* (to ladle a cup full:) to fill a cup of wine, to pledge: 578. *djög* spoon, ladle: 579. *diog* ladle: 580. *djog* to fill a cup, to pledge (a host pledging a guest); 581. *dz'ak* to fill a cup, to pledge (a guest pledging the host): 582. *t'ioğ* big ladle: 583. *tsjog* to fill a cup and drink it: 584. *tsjog* (to ladle out wine:) libation sacrifice.

585. *t'jak* to drive, expel: 586. *d'jok* to drive, expel.

587. *tjag* islet: 588. *tog* island: 589, 590. *tjog* islet.

591. *t'iek* far off, distant: 592. *djog* far off, distant: 593. *d'ioğ* far off, distant.

594. *djok* to sell: 595. *d'ioğ* to buy grain: 596. *djuk* to trade, to deal: 597. *djag* market, fair: 598. *djog* to sell, to buy: 599. *t'ioğ* to sell grain.

600. *tjog* broom: 601, 602. *sog* to sweep.

603. *d'ang* to jump: 604. *djung* to jump, leap: 605. *djok* to jump, skip, leap: 606. *d'ioğ* to jump, skip, leap: 607. *t'ioğ* to leap, skip.

608. *tjog* grasshopper: 609. *d'ioğ* insects, vermin.

610. *ts'jeng* to request, pray, seek: 611. *tjok* to pray to: 612, 613. *tjog* imprecation: 614. *tog* to pray: 615. *t'og* to ask for, to seek.

616. *d'jok* a roller, a pivot: 617. *tjog* a circle, all round: 618. *tjog* a circle, a revolution, a year.

619. *t'jag* to laugh: 620. *tog* to deride, to ridicule: 621. *dz'jog* to ridicule, to scold: 622. *şog* to laugh.

623. *t'jag* ugly: 624. *t'jog* ugly.

625. *t'ung* stupid: 626. *t'ung* stupid: 627. *tung* stupid: 628. *t'jag* stupid: 629. *t'jag* stupid.

630. *djög* this: 631. *tjag* him, her, it: 632. *tsjag* this: 633. *şjög* this.

634. *t'jok* to begin: 635. *d'ioğ* to begin: 636. *şjag* to begin.

637. *t'ak* bag, sack: 638. *d'ag* bag, sack.

639. *şiang* hack of a car, box: 640. *şjag* square box.

641. *tiek* (a *vis-à-vis*, a partner, an equal:) principal wife: 642. *d'iek* (a *vis-à-vis*) adversary, opponent, enemy: 643. *djog* (a *vis-à-vis*) adversary, opponent, enemy; to answer back.

644. *tsjag* dregs: 645. *tsog* dregs.

646. *d'ag* to blacken the eyebrows: 647. *tsjag* black: 648. *şak* 1st day of the moon; North (the fundamental sense, therefore, must be 'dark'): 649. *tsog* early morning: 650. *dz'og* black.

651. *d'og* rice: 652. *tsjak* millet: 653. *şjuk* millet, grain (generally).

654. *tsag* twice, a second time: 655. *şung* two, a pair, both.

656. *t'jag* shame: 657. *şjog* shame.

658. *djök* forced labour, expedition: 659. *diog* forced labour, expedition.

660. *djak* great: 661. *djök* great.

662. *d'jak*, *d'jag* to shoot with bow and arrow: 663. *djak* arrow with string attached: 664. *tsang* arrow with string attached.

665. *d'jök* to scratch: 666. *tsog* nail, claw: 667. *tsog* to scratch; a flea: 668. *sog* to scratch with the nails: 669. *sog* to rub a horse.

670. *tjog* arm, elbow: 671. *dzjog* sleeve: 672. *şjog* hand, arm.

673. *dz'ak* yesterday: 674. *şjak* yesterday, previously, long ago.

675. *tsak* then, thereupon: 676. *tsjak* then, thereupon.

677. *tjog* to call, beckon: 678. *d'ioğ* to call, summon: 679. *dzjog* to call, allure, entice.

680. *tjang* to verify, prove, testify, evidence: 681. *tjang* to verify, prove, testify, evidence.

682. *djok* who, which: 683. *d'jog* who?

684. *d'ak* alone, single: 685. *d'uk* alone, single.

686. *d'ung* to move: 687. *d'ung* moved, excited: 688. *d'ioğ* to shake: 689. *diog* to shake.

690. *t'jeng* to run, gallop: 691. *d'og* to run, to run away: 692. *d'og* a run-away, a bandit: 693. *d'jog* to run, hasten.

C. Words of type N-NG

1 溯 2 理 3 壤 4 農 5 諾 6 若 7 聆 8 耳 9 擡
 10 掠 11 擗 12 撈 13 撩 14 量 15 料 16 朗 17 亮 18 烙 19 琮
 20 瞭 21 燎 22 力 23 勞 24 輻 25 輳 26 輟 27 輳 28 輟 29
 樂 30 祿 31 苓 32 籠 33 麓 34 撓 35 擾 36 繞 37 滾 38 零
 39 漚 40 漉 41 露 42 雷 43 溜 44 圖 45 牢 46 戮 47 劉 48
 繞 49 扭 50 紐 51 縲 52 樓 53 菱 54 能 55 耐 56 曩 57 仍
 58 良 59 令 60 靈 61 陵 62 醜 63 涼 64 冷 65 凌 66 膿
 67 濃 68 醜 69 浪 70 潦 71 流 72 乃 73 而

1. *lak* veins in stone and mineral: 2. *liəg* veins in stone and mineral.
3. *ɲiəŋ* fertile and arable soil, worked soil: 4. *nóng* to work the soil, agriculture.
5. *nāk* (like that, thus, *sic.*) yes, to say yes: 6. *ɲiak* to resemble, like, as, according to.
7. *liəŋ* to hear: 8. *ɲiəg* ear.
9. *ɲiəŋ* to grasp, seize, snatch: 10. *gliəŋ*, *gliək* to grasp, seize, snatch: 11. *nək* to grasp, seize: 12. *log* to seize, take out: 13. *liog* to grasp, take.
14. *liəŋ* to measure: 15. *liog* to measure.
16. *lāŋ* bright, clear: 17. *gliəŋ* bright, clear: 18. *glāk* to burn: 19. *liok* lustre, brilliancy (of gems): 20. *liog* bright, clear (said of eyes): 21. *liog* torch, to blaze, burn, shine, bright.
22. *liək* force, strength: 23. *log* to use force, to toil.
24. *liəŋ* a car (the explanation »a pair» i. e. two-wheeled car is a folk etymology, as shown by the existence of cognate words »car»): 25. *gliəŋ* a car where there is place to lie down: 26. *liəŋg* to crush under car wheels: 27. *liok* to crush under car wheels: 28. *glāg* chariot.
29. *lāk* joy: 30. *luk* happiness.
31. *liəŋ* basket: 32. *lung* basket: 33. *luk* basket.
34. *nōg* to disturb, to trouble: 35. *ɲiog* to disturb, to trouble: 36. *niog* to trouble, molest.
37. *ɲiəŋ* to drip, dew: 38. *liəŋ* dropping rain, to drip: 39. *liək* to drip, soak: 40. *luk* to drip, soak: 41. *glāg* dew: 42. *liōg* opening in the roof (of the ancient house) for allowing rain water to drip down; to drip: 43. *liōg* to drip.
44. *liəŋ* prison: 45. *lōg* a fold, enclosure, prison.
46. *gliōk* to kill: 47. *liōg* to kill, slay.
48. *ɲiog* to tie, wind round: 49. *ɲiōg* to tie, twist: 50. *ɲiōg* to tie, a knot: 51. *liog* to tie, twist, coil.
52. *ləŋ* square piece of wood, angle, angular, edge, corner, lozenge-shaped: 53. *liəŋ* (the lozenge-shaped fruit:) water-chestnut.
54. *nəŋ* be able to, can: 55. *nəg* capable of, to endure, bear (55. sometimes used for 54., e. g. in Li ki: Li yün).

56. *nəŋ* of old, anciently: 57. *ɲiəŋ* as of old, as before.
58. *liəŋ* good: 59. *liəŋg* good: 60. *liəŋ* wonderful, divine.
61. *liəŋg* mound, tumulus: 62. *liəŋg* mound, tumulus.
63. *gliəŋ* cold: 64. *liəŋ* cold (the dialects point to an Arch. *lěŋ*): 65. *liəŋ* ice.
66. *nōŋ* (thick fluid:) pus, matter: 67. *ɲiəŋg* thick, rich (fluid): 68. *ɲiəŋg* strong, rich (wine).
69. *lāŋ* waves: 70. *log* torrent, flood: 71. *liōg* to flow.
72. *nəg* then, thereupon: 73. *ɲiəg* then, thereupon).¹¹

D. Words of type P-NG

1 棚 2 幘 3 蓬 4 覆 5 幘 6 盲 7 虱 8 冥 9 瞑 10 傍 11 蒙
 12 蒙 13 蒙 14 幘 15 幕 16 幘 17 幘 18 幕 19 膜 20 眈 21 昌 22 幘
 23 霧 24 默 25 墨 26 黑 27 煤 28 溟 29 溟 30 第 31 旁 32
 傍 33 膀 34 傍 35 蚌 36 扇 37 蚌 38 井 39 竝 40 朋 41 副 42 陪
 43 明 44 望 45 亨 46 炳 47 病 48 烽 49 爆 50 曝 51 卜 52 暴 53
 炮 54 庖 55 燠 56 焯 57 白 58 帛 59 伯 60 目 61 眸 62 兵
 63 鋒 64 蜂 65 峯 66 剝 67 芒 68 鉞 69 蟲 70 萌 71 苗 72 烏 73
 雀 74 毛 75 旄 76 芑 77 博 78 丕 79 茫 80 滂 81 龐 82 焱 83
 防 84 屏 85 鞞 86 邦 87 封 88 障 89 擗 90 棒 91 擗 92 拍 93 擗
 94 撲 95 秉 96 柄 97 捧 98 奉 99 俸 100 擗 101 擗 102 擗 103 擗
 104 擗 105 擗 106 關 107 派 108 剖 109 瓶 110 缶 111 甌 112 杯 113 鱗
 114 紡 115 縛 116 保 117 包 118 袍 119 袍 120 經 121 北 122 背 123 背
 124 信 125 負 126 脩 127 干 128 朽 129 燻 130 碑 131 鈞 132 崩 133 匄 134
 踏 135 伏 136 服 137 仆 138 馱 139 馱 140 馱 141 馱 142 馱 143 馱 144
 馱 145 馱 146 馱 147 馱 148 馱 149 馱 150 馱 151 馱 152 馱

1. *b'āŋ* awning, shelter, shed: 2. *pěŋg* shelter, awning: 3. *b'ung* mat cover, awning, sail: 4. *p'iōk* to cover: 5. *b'iuk* cover for the head, head-towel, turban, cap: 6. *mǎŋ* blind: 7. *mǎŋ* (»the stupid ones», *yü min.*) the common people: 8. *miəŋ* (sun covered:) darkness, dark: 9. *miəŋ* to shut the eyes, bad sight: 10. *məŋg* darkened, stupid, ignorant: 11. *mung* to cover; ignorant: 12. *mung* a film over the pupil, blind, ignorant: 13. *mung* (shut eyes:) to sleep, dream: 14. *mung* a cover, head-towel: 15. *miek* to cover with a towel: 16. *miek* to cover, a veil: 17. *miek* to cover with plaster: 18. *māg* (a cover:) veil, curtain: 19. *māg* membrane covering a muscle: 20. *mog* dim-sighted: 21. *mōg* to cover, veil, cap: 22. *mōg* a cap: 23. *müŋg* fog, mist.
24. *mək* black, dark, silent: 25. *mək* ink (made from soot): 26. *ɣmək* black: 27. *mwəg* soot-black, ink; coal.
28. *miəŋg* drizzle: 29. *mung*: drizzle.

30. *pwāng* (be at the side of:) to assist, help: 31, 32. *b'wāng* side, beside: 33. *b'wāng* sides of the body, loins: 34. *b'wāng* to walk beside, accompany: 35. *b'wāng* (»side-walker») crab: 36. *b'iwang* side-room: 37. *b'āng* crab: 38. *piēng* side by side, two together, abreast: 39. *b'ieng* side by side, two together, abreast: 40. *b'ang* companion, associate, friend; a pair: 41. *p'jūk* an associate, assistant: 42. *b'wəg* (to be at the side of:) to accompany, to second, aid.

43. *mjāng* bright, luminous, clear: 44. *mjwang* full moon.

45. *p'āng* to boil, fry: 46. *piāng* to blaze, flame, luminous: 47. *b'jāng* (fever:) sickness: 48. *p'jung* to burn, to blaze, beacon: 49. *b'ok* to burn: 50. *b'ok* to dry in the sun: 51. *puk* to burn tortoise shell for divination: 52. *b'og* scorching heat: 53. *b'og* to fry: 54. *b'og* kitchen: 55. *piog* leaping flames: 56. *b'jog* to steam, to heat.

57. *b'āk* white: 58. *b'āk* white silk: 59. *pāk* (the white one, white-haired:) old man, eldest, eldest brother etc.

60. *mjōk* eye: 61. *mjōg* pupil of the eye.

62. *piāng* a pointed weapon: 63. *p'jung* point of a weapon, sharp point: 64. *p'jung* wasp, bee, hornet: 65. *p'jung* point of a mountain, peak: 66. *p'jog* sharp point, to pierce; 67. *māng* point of grass, awn: 68. *mjwang* sharp point of a weapon: 69. *māng* gadfly: 70. *māng* sprouts: 71. *mjog* sprouts.

72. *piog* long hair; 73. *mūng* long-haired: 74. *mog* hair: 75. *mog* yak's tail used as a flag: 76. *mog* grass covering the earth (like hair), herbs, edible herbs etc.

77. *pāk* wide, vast: 78. *p'jog* wide, vast, great; 79, 80. *māng* wide, vast: 81. *mūng* wide, vast: 82. *mjog* vast as sea.

83. *b'iwang* rampart, embankment, to guard, protect: 84. *piēng* to screen, protect, *b'ieng* protecting wall, screen: 85. *b'ieng* screened carriage: 86. *pūng* (walled territory:) state, country: 87. *piung* frontier wall, boundary, fief: 88. *b'jēg* parapet, wall.

89. *b'āng* to beat, fustigate: 90. *b'ūng* cudgel, to beat: 91. *pāk* to beat: 92. *p'āk* to beat: 93. *b'iek* to beat the breast: 94. *p'uk* to beat.

95. *piāng* to grasp, hold: 96. *piāng* a handle: 97. *p'jung* to hold with both hands: 98. *b'jung* to hold in both hands, receive, present: 99. *b'jung* (what is received:) salary: 100. *pāk* to grasp: 101, 102. *b'ūg* to grasp; 103. *māk* to take in the hand, grasp, feel.

104. *pēk* to cleave, split: 105. *p'iek* to cleave, split: 106. *b'iek* to open: 107. *p'ēg* (to cleave:) to bifurcate, to branch (flowing water): 108. *p'ūg* to cleave, split.

109. *b'ieng* jug, vase, bottle: 110. *piōg* earthenware jar, jug, pot, bottle: 111. *p'ūg* jar, pot: 112. *pwəg* cup. (The Fang yen defines 110. by 111. and 109. as a small 111.).

113. *peng* to tie, bind, wrap, swaddle: 114. *p'iwang* to bind, twist, spin: 115. *b'iwak* to tie, bind: 116. *pōg* (to swaddle:) to protect, guard (the same char. enlarged by rad. 145 means 'swaddling clothes'): 117. *pōg* to wrap: 118. *b'og* (a wrapper:) a long robe: 119. *b'og* to enfold, embrace; 120. *māk* to bind, a cord.

121. *pāk* (back side:) North: 122. *pwəg* back; behind: 123, 124. *b'wəg* to turn the back, turn round: 125. *b'jūg* to carry on the back.

126. *pāng* flat board, tablet: 127. *b'jāng* level, flat, even: 128. *b'jāng* to plane: 129. *b'ēg* flat board, tablet: 130. *piēg* stone tablet, stele: 131. *b'og* to plane.

132. *pəng* mountain collapsing, land-slip, to collapse: 133, 134. *b'wək* to fall to the ground, fall prostrate: 135. *b'jūk* fall to the ground, fall prostrate: 136. *b'jūk* to throw down, subdue, throw oneself down, submit: 137. *p'jug* to fall prostrate.

138, 139. *piog* whirl-wind: 140, 141. *p'jog* whirl-wind: 142. *b'jog* whirl-wind (these readings in the Ts'ie yün ms. from Tun-huang, Stein coll., London).

143. *māng* toad: 144. *māg* frog, toad.

145. *p'wəg* foetus, embryo: 146. *p'og* placenta.

147. *pōk* streaked horse, streaked: 148. *pōg* (striped animal:) leopard: 149. *piog* stripes of a tiger, stripes, streaked.

150. *p'og* bladder: 151. *b'jog* fish's air bladder.

152 匏 153 瓢 ○ 154 復 155 覆 156 報 ○ 157 步 158 拜 ○ 159 頁 160 葉 161 俸 ○ 162 椶 163 華 164 貌 165 描 ○ 166 芥 167 馥 ○ 168 洒 169 迫 170 逼 ○ 171 板 172 倍 ○ 173 賈 174 賈 175 貿 ○ 176 福 177 富 ○ 178 護 179 煤 180 謀 ○ 181 漂 182 浮 ○ 183 訪 184 聘 ○ 185 豐 186 華 187 丰 ○ 188 培

152. *b'og* gourd: 153. *b'jog* gourd (cognate to 150, 151: bladder-shaped?)

154. *b'jōk* to turn, return, go back: 155. *p'jōk* to turn over, capsize: 156. *pōg* (to return:) to give back, requite, recompense, report etc.: 154. *b'jōg* (reverting:) again.

157. *mwek* wheat, barley: 158. *mjōg* barley.

159. *miek* to strive for, to seek: 160. *māg* to long for, to seek: 161. *mjōg* to covet.

162. *māg* model, pattern: 163. *māg* follow a pattern: 164. *mōg* form, shape: 165. *mjog* to trace according to a pattern, to depict.

166. *p'iwang* fragrant: 167. *b'jōk* fragrant.

168. *pāk* to press: 169. *pāk* to press: 170. *piək* to press.

171. *piōk* double: 172. *b'wəg* double.

173. *mēg* to buy: 174. *mēg* to sell: 175. *mug* to buy and sell, trade.

176. *piūk* happiness, prosperity: 177. *piūg* wealth.

178. *māg* to scheme, to plan: 179. *mwəg* (schemer, planner:) a marriage go-between: 180. *mjūg* to scheme, to plan.

181. *p'jog* to float: 182. *b'jōg* to float.

183. *p'iwang* to enquire: 184. *p'jēng* to enquire.

185. *p'jōng* luxuriant, rich, ample, fine: 186. *pung* luxuriant, rich (growth): 187. *p'jung* luxuriant, fine.

188. *b'ūg* a small mound: 188. *b'wəg* to earth up a plant (make a small mound around).

E. Words of type K-N

1 軒	2 九	3 還	4 圍	5 寰	6 盤	7 環	8 卷	9 圈	10 捲	11 拳
12 圍	13 員	14 環	15 圍	16 纒	17 鉉	18 困	19 袞	20 輓	21 困	22 軍
23 運	24 暈	25 衛	26 回	27 涸	28 歸	29 圍	30 祀	31 祭	32 軒	33 乾
34 旱	35 暈	36 燿	37 炫	38 焜	39 渴	40 焯	41 煖	42 焜	43 軒	44 乾
45 焜	46 焜	47 焜	48 焜	49 焜	50 焜	51 焜	52 焜	53 焜	54 焜	55 焜
56 焜	57 焜	58 焜	59 焜	60 焜	61 焜	62 焜	63 焜	64 焜	65 焜	66 焜
67 焜	68 焜	69 焜	70 焜	71 焜	72 焜	73 焜	74 焜	75 焜	76 焜	77 焜
78 焜	79 焜	80 焜	81 焜	82 焜	83 焜	84 焜	85 焜	86 焜	87 焜	88 焜
89 焜	90 焜	91 焜	92 焜	93 焜	94 焜	95 焜	96 焜	97 焜	98 焜	99 焜
100 焜	101 焜	102 焜	103 焜	104 焜	105 焜	106 焜	107 焜	108 焜	109 焜	110 焜
111 焜	112 焜	113 焜	114 焜	115 焜	116 焜	117 焜	118 焜	119 焜	120 焜	121 焜
122 焜	123 焜	124 焜	125 焜	126 焜	127 焜	128 焜	129 焜	130 焜	131 焜	132 焜
133 焜	134 焜	135 焜	136 焜	137 焜	138 焜	139 焜	140 焜	141 焜	142 焜	143 焜
144 焜	145 焜	146 焜	147 焜	148 焜	149 焜	150 焜	151 焜	152 焜	153 焜	154 焜
155 焜	156 焜	157 焜	158 焜	159 焜	160 焜	161 焜	162 焜	163 焜	164 焜	165 焜

1. *kwân* a crank, to turn round, to wind: 2. *g'wân* rolling object, ball: 3. *g'wan* revolve, return: 4. *g'wan* revolve, surround: 5. *g'wan* surrounding wall: 6. *g'wan* to wind the hair into a knot: 7. *g'wan* a ring, to surround: 8. *k'jwan* a roll, a scroll: 9. *g'jwan* enclosure, *k'jwan* circle, encircle: 10. *k'jwan* round wooden bowl: 8. *g'jwan* curved: 11. *g'jwân* (hand made round:) fist: 12. *giwan* round: 13. *giwan*, *giwân* jade ring: 14. *giwân* (enclosure:) garden, park: 15. *g'iwēn* to encircle, wind round, bind: 16. *g'iwēn* tripod handle rings: 17. *k'wân* surrounded, enclosed, pressed: 18. *kwân* dress embroidered with curled dragons: 19. *kwân* to revolve smoothly (a wheel): 20. *k'jwēn* round granary: 21. *k'jwēn* troupe, army (escorting footmen surrounding the war chariot; so the character): 22. *giwân* to revolve: 23. *giwân* a halo round the sun or the moon: 24. *giwad* (to surround:) to escort, guard: 25. *g'wār* to revolve, a circuit, come back, return, a turn: 26. *g'wār* eddy: 27. *k'jwār* to return: 28. *giwār* to surround; 29. *ngwân* to cut round (cut off corners so as to make a thing round); 30. *wân* round bowl: 31. *wât* a crank, to turn round, to wind.

32. *kân* dry, *g'jan* (sunshine:) Heaven: 33. *g'ân* drought, dry: 34. *g'ian* dawn, beginning sunshine: 35. *kwân* to make fire by a burning mirror: 36. *g'iwēn* light, dazzling: 37. *g'wân* light, fire, flames: 38. *k'ât* (dry:) thirsty: 39. *giwār* blazing, red as fire; 40. *χân* dry, hot, parched: 41. *χiwân* to dry in the sun, heat, light: 42. *χjân* dawn, beginning sun-shine: 43. *χjân* brightness, heat: 44. *χjwar* to make fire by a burning mirror: 45. *χjār* dawn, to dry in the sun: 46. *χwār*, *χwâr*, fire: 47.

χiwār, *χjwar*, *χwâr* fire, to blaze, burn: 48. *χiwār* bright, blazing; 49. *wân* warm: 50. *jât* to suffer from heat: 51. *wār* fire in a brazier.

52. *k'jan* to attach: 53. *kwân* band holding together the hair (Shuo wen), cap: 54. *k'jwân* string which ties up a sleeve: 55. *k'jwân* to attach: 56. *g'jwan* bindings of a harness: 57. *k'jēn* to tie tightly: 58. *g'ien* string: 59. *g'ien* bow string: 60. *kwân* cord, girdle: 61, 62. *k'wân* to tie together: 63. *kwât* to bind: 64. *kiet* to tie, a knot: 65. *kied* top-knot of hair: 66. *kied* (»anknüpfen«:) to connect, continue: 67. *kwât* to tie: 68. *g'wât* tassel: 69. *giwet* well-rope: 70. *kwâr* to bind: 71. *giwār* wool thread.

72. *g'jât* to exhaust, finish: 73. *kjât* to finish, end, stop, reach to: 74. *ked* to end, finish, reach to: 75. *kjed* end of a season, last: 76. *kjad* to end, finished: 77. *kjad* to end, finish, reach to; 78. *χjât* to reach to.

79. *kân* fornication, to deceive: 80. *kan* fornication, to deceive: 81. *g'wân* to cheat, trick, magic: 82. *g'wet* deceitful: 83. *kiwat* deceitful: 84. *kwâd* deceitful; 85. *χiwân* deceitful; 86. *ngan* counterfeit, false: 87. *ngjēn* deceitful.

88. *kiwat* swift horse: 89. *k'wad* swift, quick.

90. *giwân* distant, go away: 91. *giwât* pass away, pass over, transgress: 92. *giwār* distant, pass away, transgress.

93. *g'ât* how, what, why?: 94. *k'jār* how?: 95. *ân* how?: 96. *jân* how?

97. *k'wân* broad, wide, magnanimous: 98. *k'wât* broad, wide, magnanimous.

99. *k'ân* intense feelings, earnestly: 100. *k'wân* intense feelings, earnestly: 101. *kād* intense feelings, suppressed feelings.

102. *k'jât* to beg: 103. *kād* to beg: 104. *g'jār* to beg, to pray.

105. *g'jan* to lift: 106. *kat* to tuck up the skirt: 107. *k'iat* to lift: 108. *kjât*, *g'jât*, *k'jad* to lift: 109. *χjân* to lift: 110. *χjân* to lift up and present.

111. *k'ân* to gnaw: 112. *g'wât* to gnaw: 113. *ngiat* to gnaw.

114. *k'wân* a hole: 115. *kiwan* a dug ditch, canal: 116. *k'jwât* a hole in a wall, opening, gate: 117. *g'jwât* to make a hole, *g'jwât* to dig, excavate: 118. *g'iwēt* hole, pit, cave: 119. *k'wât* hole, pit, cave: 120. *kwât* to dig, make a pit: 121. *wân* to scoop out, dig: 122. *wât* to dig, excavate: 123. *jwât* to dig out (e. g. the eyes of a person).

124. *kwân* officer, official: 125. *g'wan* officer, official: 126. *kjwân* chief, prince: 127. *giwēn* officer, governor.

128. *k'ân* to look, see: 129. *kian* to look, see: 130, 131, *g'ian* become visible, appear: 132. *kwân* to look, regard: 133. *kjwan* to regard, love etc.: 134. *g'jân* (to be seen, appear:) have audience; 135. *χian* visible, manifest, display: 136. *χjār* to regard; 137. *ngēn* eye.

138. *giwân* to say, to have said: 139. *giwât* to say: 140. *g'wad* talk, speech, words: 141. *giwad* to say; 142. *ngjân* to talk: 143. *ngjan* a saying, proverb; 144. *jât* to tell, report.

145. *jēn* oppressed, anxious, zealous: 146. *jwât* oppressed, anxious: 147. *jwār* awe, to fear: 148. *jwār* awe-inspiring.

149. *kwân* reed, pipe, flute: 150. *g'wân* sedge: 151. *k'wad* reed: 152. *giwār* reed.

153. 'iān bend, bend down: 154, 155. 'wān the wrist: 156. 'wan to bend, curve: 157. 'wan a bend, a bay: 158, 159. 'iwān (bending:) soft, yielding, docile: 160. 'iwān crooked, a wrong: 161. 'iwar to bend down, crooked: 162. 'wər a bay.

163, 164, 165. g'wān confused, turbid: 166. kwət confused, turbid.
167. giwān a fragrant herb; 168. xiwān fragrant: 169. xiwān onions and other strong-smelling food stuffs: 170. xiwān reeking of liquor: 171. xiwān smoke: 172. g'iwəd fragrant orchid; 173. 'ien smoke.

174. k'iad to stop, rest: 175. xiāt to stop, rest: 176, 177. 'āt to stop, rest.
178. 'ān peace, tranquillity: 179. 'an peace, tranquillity: 180, 181. 'ian at ease, feast.

182. g'en threshold: 183. k'wān threshold: 184. kiwāt threshold.
185. g'ān bar, bolt: 186. g'iān bar, bolt: 187. kwan bar, bolt.
188. g'wan market wall: 189. giwān wall; 190. ngiwān walled-in premises, court-yard; 191. 'iān embankment, dyke: 192. 'iwān (fenced-in area:) park: 193. 'ien dyke, to dam.

163 混	164 涸	165 渾	166 滑	167 芸	168 薰	169 葷	170 醞	171 熏	172 蕙	173
烟	174 悞	175 歇	176 遏	177 闕	178 安	179 晏	180 燕	181 宴	182 限	
183 榭	184 榭	185 閑	186 榭	187 闕	188 闕	189 垣	190 院	191 堙	192 苑	
193 豆	194 閑	195 閑	196 閑	197 閑	198 閑	199 采	200 希	201 稀		
202 壑	203 閑	204 閑	205 啓	206 權	207 勻	208 均	209 鈞	210 計	211 揆	
	212 閑	213 訓	214 因	215 茵	216 隱	217 依	218 隱	219 衣	220 辰	221
222 醫	223 諱	224 艱	225 堅	226 侃	227 悍	228 佃	229 搦	230 健	231	
232 劾	233 偈	234 傑	235 佹	236 活	237 滑	238 滑	239 灌	240 裸	241	
242 澆	243 澆	244 澆	245 澆	246 澆	247 介	248 鎧	249 憫	250 歡	251	
252 欣	253 按	254 印	255 軋	256 抑	257 尉	258 慰	259 苑	260 蕙	261	
262 苑	263 藹	264 表	265 裙	266 氤	267 氤	268 飲	269 餽	270 餽	271	
	272 干	273 杆	274 許	275 稽	276 饑	277 饑	278 恨	279 怵		
280 悵	281 怨	282 慍	283 恩	284 愛	285 毀	286 壞	287 咽	288 噎		
289 皆	290 諧	291 摻	292 攀	293 援	294 輟	295 牽	296 縶	297 擦	298 摺	299
300 握	301 刊	302 券	303 虔	304 痕	305 斤	306 剗	307 剗	308 鉞	309 鉞	
310 刷	311 害	312 臆	313 劍	314 剗	315 剗	316 剗	317 剗	318 剗	319 剗	320 剗
321 剗	322 近	323 饒	324 饒	325 捐	326 拈	327 棄	328 遺	329 燕	330	
331 餽	332 餽	333 買	334 買							

194. kǎn interstice, interval: 195. g'ān (interval in time:) leisure: 196, 197. kǎn (to peep through a crevice:) to peep, spy; 198. xiēn crevice, interstice, disaccord, feud.

199. xān rare, sparse, few: 200. xiār rare, sparse, few: 201. xiār sparse, thin.

202. k'ān to open up new soil: 203. k'ār to open: 204. k'ār to open: 205. k'ār to open.

206. g'iwan steelyard, to weigh with a steelyard: 207. giwēn equal, even: 208, 209. kiwēn equal, equalize, in balance.

210. kiār to reckon, calculate: 211. g'iwer to reckon, calculate, measure.

212. g'ān to train, teach, exercize: 213. xiwān to teach.

214. 'iēn to base oneself upon, rely on, because of etc.: 215. 'iēn support, cushion: 216. 'iān to lean upon: 217. 'iār to lean upon, rely upon.

218. 'iān to conceal, hide, cover, screen: 219. 'iār (covering:) clothes: 220. 'iār a screen: 221. 'iār a screen: 222. 'iār cataract over eye; 223. xiwār to conceal, hide, taboo.

224. ken hard-broken soil, hard, difficult: 225. kien hard, firm.

226. k'ān strong-minded, bold, straightforward: 227. g'ān energetic, courageous: 228, 229. g'ān strong, energetic, martial: 230. g'iān strong, robust: 231. k'at energetic: 232, 233. g'iat strong, martial, heroic: 234. g'jēt strong, robust: 235. ngiāt strong, martial.

236. g'wāt moist (as opp. to dry), living, to live etc.: 237. g'wet slippery.

238. kwān (to pour water over:) to wash the hands: 239. kwān to pour water, to water, to wash: 240. kwān to pour out wine, libation: 241, 242. g'wān to wash: 243. kiwen clean: 244. kiat clean, to cleanse: 245. kəd to pour water, wash; 246. xwəd to wash the face.

247. kād scales, armour: 248. k'ār armour.

249. g'ān glad, pleased; 250. xwān glad, pleased: 251. xiān glad, pleased.

252. 'ān to press down, lay hand on: 253. 'iēn (to press down:) to seal, a seal: 254. 'at to press down under the wheels, to crush: 255. 'jēt to press down, repress ('jēt as shown by Shī rimes; the same character is also used for a synonymous word 'jək): 256. 'iwət (to press:) to iron linen: 257. 'iwəd to press down, subdue, pacify: 258. 'iwəd to pacify, soothe, to comfort.

259. 'iwān rich vegetation, luxuriant: 260. 'iwān rich vegetation, luxuriant: 261. 'iwāt rich vegetation, luxuriant: 262. 'ād rich vegetation, luxuriant.

263. giwān long robe: 264. g'iwān skirt.

265. 'iēn aura: 266. 'iwān aura.

267. xād spoilt tainted food; 268. 'iād spoilt tainted food: 269. 'jēd spoilt tainted food: 270. 'iwād spoilt tainted food.

271. kǎn shield: 272. g'ān to ward off, protect.

273. k'jēt to investigate, examine: 274. kiār to investigate, examine.

275. g'jen famine: 276. kjer famine: 277. kjer famine.

278. g'ān to hate, angry: 279. ngiāt aversion; 280. 'iwan angry: 281. 'iwān to hate, resentment: 282. 'iwān to hate, resentment.

283. 'ēn love: 284. 'ād love.

285. xiwar to destroy: 286. g'wer to destroy.

287. 'ien throat, to swallow: 288. 'iet food sticking in the throat, to choke.

289. ker all: 290. g'er all together, in union, harmony.

291, 292. g'ian to pull out, seize: 293. giwān to pull out, draw, drag, seize: 294. giwān (»pullers») cart shafts: 295. k'ien to haul, drag, lead: 296. k'ien tow-rope, to haul: 297, 298. kiwān to take, pick up; 299. 'at to pull up.

300. *k'ân* to cut: 301. *k'jwän* (a cut notch:) notch, tally, bond, deed: 302. *g'jan* to cut, kill (char. used *kia tsie*): 303. *g'an* (a cut:) scar: 304. *kjan* (cutter:) axe: 305. *kât* to cut: 306. *ket* lance: 307. *kwät* cut off, scrape off: 308. *giwät* halberd: 309. *k'iat* sickle, to cut: 310. *giwät* to incise: 311. *g'äd* (to cut:) to injure: 312. *kwäd* to cut meat to pieces, to mince: 313. *kwäd* cut off: 314. *kwäd*, *kjad* to cut, to wound: 315. *kjwäd* sharp, to cut, to wound: 316, 317. *k'iad* to cut, a notch: 318. *kär*, *ngər* scythe, sharp, to sharpen: 319. *ngwät*, *ngjwät*, *ngwät* to amputate, cut off the feet: 320. *ngiäd* to mow, cut: 321. *ngjäd* to amputate, cut off the nose.

322. *g'jan* close, near: 323. *g'jar* (close quarters:) Royal domain proper: 324. *kjar* near (in the common expression »*ki hu*»).

325. *giwän* to throw away: 326. *giwän* to drop, to lose: 327. *k'jed* to throw away: 328. *giwer* to leave behind, lose.

329. *'ian* swallow: 330. *'at* swallow.

331. *kjan* sinew: 332. *g'jän* ends of a sinew.

333. *kwän* to perforate, pass through: 334. *g'wan* to perforate, pass through.

F. Words of type T-N

1 緣 2 絕 3 經 4 紹 5 第 6 維 7 篋 8 續 9 紉 10 綵 11 綫
 12 紳 13 綫 14 紉 15 割 16 短 17 斷 18 段 19 割 20 膊 21 鉗 22
 制 23 製 24 刺 25 薙 26 割 27 剪 28 剪 29 打 30 截 31 絕 32 節 33
 切 34 疊 35 劑 36 檣 37 刪 38 端 39 銳 40 鉗 41 箭 42 錢 43 錫
 44 笋 45 矢 46 娠 47 產 48 死 49 尸 50 鞞 51 鞞 52 晒 53
 啞 54 童 55 道 56 信 57 恂 58 閱 59 察 60 親 61 樹 62 襯
 63 嶂 64 岬 65 崖 66 山 67 峻 68 珍 69 殘 70 散 71 撒
 72 醜 73 瓚 74 袒 75 顛 76 脫 77 蛻 78 穿 79 鑽 80 墩 81
 頓 82 堆 83 趁 84 逮 85 至 86 致 87 臻 88 前 89 追 90 晉 91
 費 92 贖 93 祭 94 贖 95 先 96 出 97 黜 98 津 99 濟 100 吞 101
 餐 102 喂 103 探 104 掣 105 掇 106 奪 107 篋 108 掇 109 撮 110 竊 111 拈
 112 跟 113 踮 114 踐 115 踐 116 躄 117 躄 118 順 119 述 120 迨 121 殉
 122 遵 123 循 124 馴 125 遂 126 臻 127 帥 128 率 129 推 130 搯 131 催
 132 造 133 突 134 駢 135 駢 136 俊 137 狝 138 迅 139 豚 140 脬 141 逸
 142 伏 143 恣 144 濞 145 洩 146 泄 147 涕 148 滂 149 泗 150 屯 151 隊
 152 最 153 萃 154 賑 155 資 156 彗 157 刷 158 慨 159 帥 160 怛 161
 情 162 怛 163 怛 164 悵 165 悵 166 悵 167 悵 168 悵

1. *djwan* border band (on dress), along the edge, along, sequel, cause: 2. *djwan* silk thread: 3. *d'iet* band of hemp worn on mourning dress: 4. *tjwat*, *tjwad* to tie, fasten, sew; (»anknüpfen»:) connect, continue: 5. *täd* band round the waist, girdle: 6. *djwər* a string, to tie: 7. *tswän* red string, to tie together, compile: 8. *tswän*

(»anknüpfen»:) continue: 9. *dziwän* silk cord, to bind: 10, 11. *sjan* cord, thread: 12. *sjěn* band round the waist, girdle: 13, 14. *sjat* to tie, fasten.

15. *twän* to cut to pieces: 16. *twän* (cut short:) short: 17. *twän*, *d'wän* to cut off: 18. *d'wän* (a cut-off piece:) section, piece, slice: 19. *d'wän*, *ijwan* to cut to pieces: 20. *djwan* to mince meat: 21. *tjět* sickle, to cut grain: 22. *ijad* to cut, trim, restrain, regulate: 23. *ijad* to cut: 24. *t'iar* to cut hair: 25. *t'iar* to cut grass: 26. *ts'an* to cut, cut off: 27, 28. *tsjan* to cut, clip: 29. *ts'wän* to cut to pieces: 30. *dz'iat* to cut off: 31. *dz'iwat* to cut off: 32. *tsiet* section: 33. *ts'iet* to cut: 34. *tsjar* to mince: 35. *dz'iar* to cut, to trim: 36. *dz'iar* to cut grain: 37. *san* to cut.

38. *twän* point, tip, end: 39. *djwad* pointed, sharp: 40. *ijwər* pointed, sharp, awl, tip: 41. *tsjan* arrow: 42. *tsjan* a hoe: 43. *tsjwan* to pierce, engrave, incise: 44. *sjwan* (points:) bamboo shoots: 45. *sjər* arrow. (This group may be cognate to the preceding).

46. *ijän*, *sjän* pregnant: 47. *san* to bear.

48. *sjər* to die: 49. *sjər* corpse.

50, 51. *t'jan* to laugh: 52. *sjän* to laugh: 53. *d'iet* to laugh.

54. *tän* true, sincere: 55. *ijěn* true, sincere: 56. *sjěn* true, believe, faith: 57. *sjwěn* true, sincere.

58. *djwat* to examine: 59. *ts'at* to examine.

60. *ts'jěn* close, intimate, love etc.: 61. *ts'jěn* inner coffin (closest to the body): 62. *ts'jěn* inner garments.

63. *tswän* high as a mountain, lofty: 64. *dz'iwät*, *tsjwad* mountain peak: 65. *ts'wər*, *dz'wər* high, lofty, precipitous: 66. *sän* mountain: 67. *sjwän* high, steep, lofty.

68. *d'ian* to destroy, annihilate: 69. *dz'an* to murder, kill, destroy.

70. *sän* to scatter: 71. *sät* to scatter.

72. *tsän* wine cup: 73. *dz'an* libation cup.

74. *d'an* to strip, doff, take off clothes, lay bare: 75. *tjan* pellicule, to peel off: 76. *t'wät* to peel off, strip, doff, undress; 77. *sjwad* cast off skin (as reptiles).

78. *ijwan* to bore through, to pierce: 79. *tswän* to bore, awl.

80, 81. *twän* mound, heap: 82. *twər* mound, heap.

83. *t'jan* to reach to, catch up: 84. *d'äd* to reach, catch up: 85. *ijäd* to arrive, reach to, go to: 86. *tjäd* to cause to go (causative to 85.); 87. *tsjén* to arrive, reach to.

88. *dz'ian* to advance, precede, before: 89. *tsjén* to advance, bring forward: 90. *tsjén* to advance: 91, 92. *dz'jén* to bring forward as a present, a gift: 93. *tsjad* to bring forward in sacrifice, to sacrifice: 94. *tsjar* to bring forward as a present, a gift; 95. *sian* to advance, precede, before.

96. *ijwat* to come out, bring out, out: 97. *t'iwät* to eliminate, degrade.

98. *tsjén* to ford, a ford: 99. *tsjar* to ford, à ford.

100. *t'wän* to swallow, gulp down, devour: 101. *ts'an* to swallow, gulp down, devour: 102. *ts'wad* to devour (swallow a whole slice of meat in one mouthful).

103. *d'jat* to seize: 104. *ijjat* to grasp, lay hold of: 105. *twät* to pluck, take, grasp: 106. *d'wät* to snatch, carry off, take by force; 107. *ts'wan* to take by force,

grab: 108. *tswən* to pinch, lay hand on: 109. *ts'wāt* to pinch, pick, gather: 110. *ts'iat* to snatch, steal: 111. *dz'wət* to grasp, seize.

112. *tjan* to tread, trample: 113. *djwan* heel, to trample; 114. *dz'jan* to tread, trample: 115. *dz'wən* to kick, trample: 116. *dz'wət* to trample: 117. *ts'iar* to tread, trample.

118. *d'jwən* to follow, obey, accord with: 119. *d'jwət* to follow: 120. *tjwər* to follow after; 121. *dzjwən* to follow in death: 122. *tsjwən* to follow, obey, accord with: 123. *dzjwən* to follow, accord with: 124. *dzjwən* (obeying:) docile, tamed (horse): 125. *dzjwəd* to follow; 126. *swən* (follower:) grandson: 127, 128. *sjwət* to follow; (cause to follow:) to lead: 127, 128. *sjwəd* leader.

129. *t'wər* to push; 130. *dz'wər* to push, press, thrust: 131. *ts'wər* to push, to urge.

132. *djwan* quickly, to hasten: 133. *d'wət* quickly, suddenly, rush out: 134. *t'wəd* fleet horse, to run swiftly; 135. *tsjwən* fleet horse: 136. *tsjwən* quick-witted, intelligent, gifted: 137. *ts'wət* abruptly; 138. *sjən* quick.

139. *d'wən* pig: 140. *t'wət* pork fat.

141, 142. *djēt* to let loose, escape, relieve, leisure; 143. *tsjər* to let loose, unrestrained, licentious; 144. *sjat* to let out water, leak, disperse: 145. *sjat* to let out water, leak, relieve, disperse; *zjad* to disperse: 146. *zjad* to let out water, let loose, relieve, leisure.

147. *t'iar* dripping from the eye, tears: 148. *t'iar*, *djər* dripping from the nose, nasal mucus; 149. *sjəd* nasal mucus.

150. *d'wən* to collect, to mass; a group of soldiers, a camp, to camp: 151. *d'wəd* a group of soldiers, a regiment: 152. *dz'wəd* to collect, to assemble, accumulate: 153. *dz'jwəd* to collect, numerous, dense, thicket.

154. *hjan* property; 155. *tsjər* property.

156. *dzjwad* broom; 157. *sjwat* to brush, to scrape clean: 158. *sjwad*, *sjwat* towel, kerchief: 159. *sjwat* towel, kerchief.

160. *tān* grieved, distressed: 161. *d'wān* grieved, distressed: 162. *d'wən* grieved, sad: 163. *tāt* grieved, distressed: 164. *tjwat* grieved, sad: 165. *hjar* sad, anxious; 166. *ts'wət*, *dz'jwəd* grieved, sad: 167. *ts'iar* grieved, distressed; 168. *sjwēt* pained, grieved, to pity.

169 統 170 前 ○ 171 戰 172 鍛 173 頓 174 換 175 捷 176 扶 177 執 178 抵 179
 180 捶 181 確 182 桂 183 椎 184 確 ○ 185 攔 186 誕 187 闌 188 挺 189 延
 190 筵 191 演 192 陳 193 陣 194 引 195 示 196 申 197 伸 198 肆 ○ 199 躡 200
 201 跌 202 躡 203 躡 ○ 204 騰 205 臀 206 腿 ○ 207 輝 208 輝 209 前 210
 211 鑿 212 鑿 213 餃 214 煖 215 燧 ○ 216 款 217 諄 ○ 218 炭 219 杉 220
 221 鬚 ○ 222 田 223 畛 ○ 224 銓 225 付 226 寸 227 揣 228 算 ○ 229 獸 230 顫
 231 振 232 震 233 電 ○ 234 灌 235 凌 236 潛 237 邃 238 秩 239 第 240 第
 241 梯 242 次 ○ 243 際 244 輟 245 竣 246 卒 ○ 247 撤 248 逝 249 逝 250
 251 還 ○ 252 歡 253 碎 ○ 254 績 255 綴 ○ 256 賤 257 仇 258 細 ○ 259

260 彈 261 辰 262 輟 263 纏 264 躍 265 遭 266 團 267 搏 268 轉 269 傳 270 棟 271
 271 紛 272 旋 273 聰 274 漩 275 蛟 276 璿 277 徇 278 自 279 巡 280 晬 281 宣 282
 282 躑 283 歲 ○ 284 坦 285 壇 286 埠 ○ 287 咒 288 屏 ○ 289 迭 290 替 ○ 291
 291 準 292 水 ○ 293 大 294 大 295 蟬 296 蝶 297 蛩 ○ 298 單 299 禪 300
 301 但 302 禮 303 擅 304 專 ○ 305 滿 306 汎 307 洗 308 洒 ○ 309 損 310 衰 ○
 311 旦 312 晨 313 曠 ○ 314 填 315 瑣 316 空 ○ 317 達 318 徹 ○ 319 丹 320
 320 旂 321 縉 322 苗 323 績 324 紫 ○ 325 齊 326 妻 327 儕 ○ 328 術 329 隧 ○
 330 遁 331 遊 332 退 333 遠 334 遜 ○ 335 鮮 336 新 ○ 337 折 338 脍 339 碎
 ○ 340 舌 341 警 342 說 ○ 343 陸 344 隕 ○ 345 鐵 346 鐫 ○ 347 鈇 348
 ○ 349 瘡 350 疾 351 瘡 352 瘡 ○ 353 盡 ○ 354 軼 ○

169. *d'jēt* to sew: 170. *tjər* to sew, embroider.

171. *hjan* to fight, battle: 172. *twən* to hammer, to forge: 173. *twən* to beat the head against the floor: 174. *d'ien* to beat, to drum: 175. *t'āt* to beat, flog: 176. *t'jēt* to beat, flog: 177. *tjər* to butt, resist: 178. *tjər* to knock against, resist: 179. *twər* to throw: 180. *twər* pestle: 181, 182. *hjar* to beat: 183. *d'jwər* to beat, hammer, pestle.

185. *t'ān* to extend, spread: 186. *d'ān* to extend, enlarge, large, exaggerate: 187. *t'jan* to enlarge, open out: 188. *t'jan* drawn out, long: 189. *djan* to extend, spread out, prolong etc.: 190. *djan* (what is spread out:) mat: 191. *djan* to expand, extend: 192. *d'jēn* to spread out in a row, arrange: 193. *d'jēn* a troupe spread out in a row, array: 194. *djēn* to draw out, stretch; lead etc.: 195. *djər* (to spread out:) make known, exhibit, proclaim, announcement, presage; 196. *sjēn* to extend, expand, make known, repeat etc.: 197. *sjēn* to extend, stretch out: 198. *sjər* to extend, spread out, display etc.

199. *tien* to stumble: 200. *d'iet* to stumble: 201. *t'āt*, 202, 203. *tjər* to stumble.

204. *djwan* calf of the leg: 205. *d'wən* rump, buttocks: 206. *t'wər* leg, thigh, ham.

207. *t'jan* to burn, to cook: 208. *t'wən* colour of fire, *d'wən* torch for burning divination shell; 209. *tsjan* to roast, fry: 210. *ts'wān* to make fire, burn, cook: 211, 212. *dz'wən* cooked food: 213. *tsjwən* fire-prepared, cooked food: 214. *tswən*, *tsjwən*, *ts'wət* to make fire, burn: 215. *dzjwəd* to ignite, draw fire.

216. *twən* firm, solid: 217. *hjarwən* (to make solid:) inculcate.

218. *t'ān* coal: 219. *hjan* black clothes: 220. *hjen* black hair.

221. *d'ien* cultivated field: 222. *hjan* raised borders of the fields.

223. *ts'jwan*: 224. *ts'wən* to calculate, measure: 225. *ts'wən* inch: 226. *ts'jwar* to measure, estimate: 227. *swān* to calculate, estimate, reckon.

228, 229. *hjan* to tremble, shiver, shake: 230. *hjan* to shake: 231. *hjan* shock of thunder, shake: 232. *d'ien* (vibration in atmosphere:) lightning, thunder.

233. *ts'wər* deep: 234, 235. *sjwən* deep: 236. *sjwəd* deep.

237. *d'jēt* order, series, degree, rank: 238. *d'iar* order, series, sequence, degree: 239. *d'iar* (the next one, the second as opp. to the first:) younger brother: 240. *d'iar*

younger sister: 241. *t'iar* steps (in sequence), stairs: 242. *ts'iar* order, sequence, the next one, the second.

243. *t'jad* to stop, finish (Ch'u dialect): 244. *tjwat* to stop, finish: 245. *ts'iwən* to stop, finish: 246. *tsjwət* to stop, finish, die.

247. *t'jat*, *d'jat* to remove: 248. *đjad* to go away, pass away, die: 249. *d'iad* to go away: 250. *ts'ian* 'to go away, remove'.

251. *tjwat* to drink: 252. *tsjwəd* drunk.

253. *tjěn* fine and tight textile: 254. *d'jěd* fine and tight textile.

255. *dz'jan* petty, cheap, mean: 256. *ts'iar* small, petty: 257. *sjat* small, trifling, petty: 258. *sjar* small, fine, thin.

259. *d'an* bullet, to shoot with bullet: 260. *tjan* to unroll, open out, turn round: 261. *tjan* to turn round: 262. *d'jan* to wind round, wrap up: 263. *d'jan* to go round, revolution of a celestial body, path etc.: 264. *d'jan* to turn round (Ch'u dialect): 265. *d'wán* round: 266. *d'wán* to roll round: 267. *tjwan* to revolve, turn round: 268. *d'jwan* (to circulate:) to hand over from one to another, transmit: 269. *d'jwan* round spars, rafters (round, see Tso chuan, Huan 14th year, comm.): 270. *tjən* to twist, revolve; 271. *dziwan* to turn round, revolve: 272. *dziwan* whirl-wind: 273. *dziwan* circling water: 274. *dziwan* snail: 275. *dziwan* sphere: 276. *dziwěn* all round: 277. *dziwěn* a cycle of 10 days: 278. *dziwən* to go round, patrol: 279. *tswád* (a complete cycle:) a complete year: 280. *sjwan* to revolve, go everywhere, to pass round, circulate, proclaim: 281. *sjan* to whirl, pirouette: 282. *sjwad* a cycle, a year.

283. *t'an* level, even, flat: 284. *d'an* altar: 285. *đjan* cleared (levelled, flat) open area (for sacrifices).

286. *dzjar* rhinoceros: 287. *sjar* rhinoceros.

288. *d'iet* (to substitute one for another:) to alternate, change: 289. *t'iad* to substitute, change, instead of.

290. *tjwən* a water level: 291. *sjwər* water.

292. *d'ád* great: 293, 294. *t'ád* great.

295. *đjan* cicada; 296. *dz'jěn* small cicada: 297. *tsat* small cicada.

298. *tán* single, alone, only: 299. *tán* single, unlined dress: 300. *d'an* single, alone, only: 301. *tjan* single (not double, e. g. mat): 302. *đjan* to act alone, on one's own responsibility, dictatorial: 303. *tjwan* single, alone, special, particular.

304. *tsjan* to wash: 305. *sjěn* to throw water over, sprinkle: 306. *sjan* to wash the feet: 306, 307. *sjar* to wash: 307. *ser* to throw water over, sprinkle.

308. *swən* to diminish: 309. *sjwər* to diminish.

310. *tán* dawn, morning: 311. *đjan*, *d'jən* dawn, morning: 312. *t'wən* sun just rising.

313. *d'ien* to block, fill up, stop up: 314. *t'ien*, *tjěn* ear-stopper: 315. *tjět*, *tiet* to block, fill up, stop up.

316. *d'át* to penetrate, pass through, communicate, everywhere: 317. *d'jat*, *t'jat* to penetrate, pass through, communicate, everywhere.

318. *tán* cinnabar, red: 319. *tjan* red banner: 320. *tsjěn* light red silk, red: 321. *ts'ien* Rubia, red-colouring stuff: 322. *ts'ien* red-coloured silk: 323. *tsjar* purple silk, purple.

324. *dz'iar* uniform, equal, even: 325. *ts'iar* wife of first rank (equal, mate): 326. *dz'er* group of equals, category, class, company.

327. *d'iwət* road, way; method etc.: 328. *dziwəd* road, way; tunnel.

329, 330. *d'wən* to draw back, retire, skulk, flee: 331. *t'wər* to draw back, withdraw, retire; 332. *ts'iwən* to draw back, shrink: 333. *swən* to recede, give way, yield.

334. *sjan* fresh, new: 335. *sjěn* new.

336. *tjat* to break, snap, *d'jat* fracture: 337. *ts'iwəd* easy to break, brittle: 338. *swəd* to break into pieces, fragments.

339. *d'jat* tongue: 340. *đjad* a speech, pronouncement, declaration: 341. *sjwat* to speak, explain, *sjwad* to speak to.

342. *d'iwəd* to fall down, collapse: 343. *d'wər* to fall down, collapse.

344. *d'wər* metal butt on spear shaft: 345. *dz'wən* metal butt on spear shaft.

346. *d'iad* fetters on the feet: 347. *tjět* fetters on the feet.

348. *tien* sickness, ill; 349. *dz'jět* sickness, ill: 350. *tsed* sickness, ill: 351. *tsjar* sickness, ill.

352. *tsjěn* to exhaust: 352. *dz'jěn* exhausted, empty.

353. *d'iet*, *djět* a car passing another.

G. Words of type N-N

1 赧 2 然 3 燃 4 烜 5 煖 6 煖 7 燠 8 熬 9 熬 10 日 11 爛
 12 鍊 13 煉 14 烈 15 聯 16 連 17 綸 18 倫 19 緯 20 累 21 疊
 22 縲 23 紉 24 衛 25 刺 26 鍊 27 列 28 裂 29 厲 30 礪 31 利 32
 犁 33 耒 34 刃 35 賴 36 利 37 踳 38 躡 39 履 40 鄰 41 和
 42 暉 43 暉 44 尼 45 通 46 賴 47 媿 48 蠟 49 蠟 50 河 51 漂

1. *nan* (hot in the face:) to blush, ashamed: 2, 3. *njan* to burn, roast: 4, 5. *nwán* hot, warm: 6. *nwán* hot water: 7. *njat* hot, heat: 8. *njwat* to burn, to heat: 9. *njět* sun, sun heat: 10. *njar* (hot in the face:) to blush, ashamed; 11. *glán* heated through, well-cooked etc.: 12, 13. *gljan* to smelt, refine: 14. *ljat* burning, flaming, bright.

15, 16. *ljan* to string together, connect, join: 17. *ljwən* silk strings: 18. *ljwən* ties, human relationships: 19. *sljwət* rope, cord: 20, 21. *ljwər* to tie, bind, string: 22. *ljwər* to tie, bind, string; 23. *njan* to thread, string.

24. *ljwan* (*bljwan*?) to slice, slice: 25. *lât* to cut: 26. *lât* (cutting:) sharp, pungent: 27. *ljat* (to cut apart:) to divide, distribute: 28. *ljat* to cleave, split: 29, 30. *ljad* (sharpener:) whetstone: 31. *ljəd* sharp: 32. *ljər* («cleaver, cutter») plough: 33. *lwər* plough; 34. *njan* edge, blade.

35. *lād* profit, benefit: 36. *ljəd* profit (probably same stem as the preceding group: the cuttings, the harvest).

37, 38. *ljěn* to tread, trample: 39. *ljər* to tread, trample, a shoe.

40. *ljěn* near, neighbour: 41. *njět* clothes nearest to the body: 42, 43. *njar* near: 44. *njar* near: 45. *njar* near.

46. *njwan* weak, soft: 47. *nwən* weak, soft.

48. *ljad* oyster: 49. *ljəd* oyster.

50. *ljat* cold: 51. *ljět* cold.

H. Words of type P-N

1 翻 2 翩 3 奮 4 扮 5 飛 6 踏 7 跋 8 般 9 拚 10 撥
 11 潑 12 發 13 被 14 廢 15 費 16 播 17 駢 18 蟻 19 匹 20 比 21
 此 22 媿 23 妃 24 配 25 北 26 采 27 辨 28 辯 29 片 30 篇 31 半
 32 判 33 胖 34 班 35 板 36 版 37 扁 38 分 39 別 40 伐 41 剗 42 似
 43 荆 44 刎 45 辦 46 絆 47 編 48 幘 49 紵 50 緋 51 紵 52 響 53
 縲 54 坊 55 粉 56 塗 57 拂 58 悖 59 評 60 聞 61 味 62
 貝 63 拜 64 憤 65 悲 66 悶 67 逆 68 閔 69 兇 70 悌 71 扮 72
 捫 73 繁 74 縵 75 紡 76 素 77 芽 78 菜 79 辭 80 苾 81 緋 82
 蜚 83 不 84 尤 85 喘 86 匪 87 非 88 末 89 茂 90 勿 91 未 92
 慢 93 愧 94 瞞 95 悞 96 悞 97 民 98 眠 99 昏 100 賤 101 悞 102 悞
 103 婚 104 昧 105 忽 106 昧 107 昧 108 寐 109 迷 110 轄 111 藩 112 藩 113
 臆 114 閉 115 鞞 116 筆 117 市 118 蒂 119 鞞 120 第 121 第 122 敵 123 閉 124
 閉 125 庇 126 蒂 127 扉 128 扉 129 悞 130 墜 131 門 132 閤 133 幘 134 密
 135 本 136 莖 137 拔 138 跋 139 肺 140 鼻 141 泥 142 泥 143 敗 144
 敝 145 弊 146 弊 147 畢 148 墻 149 墻 150 蕪 151 肥 152 邊 153 偏
 154 瀆 155 曼

1. *p'iwǎn* to fly: 2. *p'ien* to fly: 3, 4. *p'iwǎn* to fly: 5. *p'iwər* to fly.
 6. *b'iwǎn* animal's foot, paw: 7. *b'wāt* foot, heel, trample, march.
 8. *pwǎn* to transport away, distribute etc.: 9. *p'wǎn* throw away (dialectal word):
 10. *pwāt* to spread, distribute, scatter, transfer, throw away, dismiss: 11. *p'wāt* to
 throw, spill: 12. *p'iwāt* to throw out, launch, send out, issue: 13. *p'iwāt* to throw
 out bad influences, expel: 14. *p'iwǎd* to throw away: 15. *p'iwəd* (to throw away:)
 to spend, to waste: 16. *pwār* to spread out, sow; throw away.
 17. *b'ien* two horses abreast, a pair: 18. *b'jǐn* mate, wife: 19. *p'jǐt* mate: 20. *b'jət*, *b'jər*,
pjər (a pair, two together:) to bring together, compare etc.: 21. *pjər* (mate of the father:)
 deceased mother: 22. *p'jər* mate: 23. *p'jwər* mate, wife: 24. *p'wər* to mate, match.
 25. *b'jən* female (of animals): 25. *b'jər* female (of animals) — possibly cognate
 to the preceding group: the mate of the male animal.
 26. *b'ǎn* to separate, distinguish, discriminate: 27. *b'ǎn*, *b'jan* to divide, distin-
 guish, discriminate: 28. *b'jan* to distinguish, discriminate, argue: 29. *p'ian* cleft
 wood, splint, slice, slip, board, tablet: 30. *p'jan* (cleft wood:) writing tablet: 31.
pwǎn divide in half, half: 32. *p'wǎn* to cleave, divide, discriminate: 33. *p'wǎn* one
 half of a victim divided in two parts: 34. *pwǎn* to distribute: 35, 36. *pwǎn* board:
 37. *p'ien* board, tablet, flat: 38. *p'jwən* to divide, *b'jwən* a part: 39. *pjət*, *b'jat* to
 cleave, separate, divide: 40. *b'jwāt* to cut, attack: 41. *b'jwət* to cut, attack: 42.
p'jər to separate, part: 43. *b'jwər* to cut off the feet, amputate; 44. *mjwən* to cut,
 cut the throat.

45. *b'jan* to twist cord: 46. *pwǎn* (to tie:) fetter, hobble: 47. *p'ien* to tie together:
 48. *b'jwən* cords on horse's bit: 49, 50. *p'iwət* rope: 51. *p'iwət* silk band: 52. *pjər*
 (cords:) reins, bridle: 53. *mjən* cord, string.
 54. *b'jwən* dust: 55. *p'jwən* (powdered:) flour: 56. *p'jwən* to dust: 57. *p'jwət* to dust.
 58, 59. *b'wād*, *b'wət* disorderly, rebellious.
 60. *mjwən* to hear, to smell (perceive by the senses): 61. *mjwəd* to taste, taste.
 62. *pād* cowry shell, valuables: 63. *pwād* (to bring cowry shells as presents,
 present valuables:) to salute (this primary sense of »*pai*» is revealed by the earliest
 bronze inscriptions which show a man presenting strings of cowries).
 64. *b'jwən* to grieve: 65. *pjər* to grieve: 66, 67. *mwən* to grieve: 68. *mjən* to
 grieve: 69. *mjwən* mourning hair dress: 70. *b'jwət* distressed.
 71. *b'jwən* to grasp, seize: 72. *mwən* to grasp, seize.
 73. *b'jwǎn* mixed and numerous, multitudinous: 74. *p'jǐn* tangled, confused, mul-
 titudinous: 75. *p'jwən* tangled, confused, multitudinous; 76. *mjwən* tangled, confused.
 77. *p'jwən* strong-smelling, fragrant: 78. *b'jwən* fragrant wood, aromatic wood:
 79. *b'wət* fragrant: 80. *b'jǐt* fragrant: 81. *pjwər* fragrant: 82. *b'jwər* stinking insects.
 83. *pwət* not (no such reading in the ancient dictionaries, but indicated by all the
 dialects): 84. *p'iwət* not (with the modal sense of 'not be able to, not be willing to'):
 85. *b'jwət* to say no, contradict: 86. *pjwər* not: 87. *pjwər* is not; 88. *mwāt* not (char.
 used *kia tsie*): 89. *miət* not (char. used *kia tsie*): 90. *mjwət* don't: 91. *mjwəd* not yet.
 92. *man* careless, forgetful, negligent: 93. *mwən* careless, forgetful.
 94. *mwǎn* closed eyes, darkened sight: 95, 96. *mjǐn* darkened intelligence, stu-
 pid: 97. *mjǐn* the common people (the »darkened, stupid ones», »*yü min*» stupid
 people): 98. *mien* closed eyes, to sleep: 99. *χmwən* darkness, darkened, darkened
 intelligence, stupid: 100, 101, 102, 103. *χmwən* dim sight, darkened intelligence:
 104. *mwāt* troubled sight: 105. *χmwət* not discerning, stupid, careless: 106. *mwād*
 troubled sight: 107. *mwād* darkness before dawn: 108. *mjəd* to sleep: 109. *mjər*
 something in the eye, troubled sight: 110. *mjər* (to blind:) to confuse, lead astray.
 111. *p'jwǎn* (a cover:) carriage screen: 112. *p'jwǎn* (cover:) hedge: 113. *b'jǐn* knee
 cap (bone which is like a cover, a cap): 114. *pjət* to shut a door, close, cover: 115.
pjət knee cover: 116. *pjǐt* (cover, screen:) wicker hedge, shutter, small door made
 of branches: 117, 118, 119. *pjwət* knee cover: 120, 121. *pjwət* carriage screen: 122.
pjād to cover, conceal: 123. *pjād* to shut a door, close, cover: 124. *pjǐd* to shut a
 door, shut, covered, hidden, secret: 125. *pjəd* to cover, screen: 126. *pjwəd* covering,
 shady: 127. *pjwər* (a shutter:) door-leaf: 128. *b'jwər* covered, screened, secret; 129.
mwǎn screen, curtain: 130. *mwǎn* (covering:) plaster on a wall: 131. *mwən* (shut-
 ters:) door-leaves, door, gate: 132. *χmwən* gate-keeper: 133. *miət* a cover on the front
 part of a carriage: 134. *mjǐt* shut off, covered, concealed, solitary, secret, silent.
 135. *pwən* lower part of a tree or a plant, stem, root (as opp. to top, branches, ear
 of grain): 136. *pwāt* lower part of a tree or a plant, stem, root; straw (as opp.- to
 ear): 137. *b'wət* to uproot, pull up: 138. *b'wāt* lowest part of a vertical object, base,
 foot, heel, to trample (cf. »*ken*» which means both 'stem, root' and 'heel').
 139. *pjwǎd* (breathers:) lungs: 140. *b'jǐd* (breather:) nose.
 141. *pjǐd* to gush forth (as a source): 142. *pjwəd* to gush forth.

143. *b'wad* to destroy, ruin, spoil, defeat: 144. *b'jad* to spoil, ruin, wear out: 145. *b'jad* spoiled, bad: 146. *b'jad* (destruction:) death: 147. *piët* (destroy:) make an end to, to end, finish.

148. *b'jwän* grave-mound: 149. *b'jwän* grave-mound.

150. *piwän* fertilizer, ordure, manure: 151. *b'jwät* fat, rich, fertile.

152. *pian* side, edge, border: 153. *p'jan* on one side, oblique: 154. *piën* (side, edge of the water:) shore, beach.

155. *mwän* long, extended: 155. *mjwän* long, extended.

I. Words of type K-M

1 闔 2 闔 3 食 4 闔 5 闔 6 蓋 7 蓋 8 暗 9 掩 10 奄 11 闔
12 黯 13 翕 14 揜 15 堵 16 闔 17 暗 18 黯 19 蔭 20 陰 21 頤 22
函 23 銜 24 頷 25 含 26 珍 27 頰 28 頷 29 拮 30 鉗 31 夾 32 扶
33 狎 34 陟 35 鈇 36 扶 37 扶 38 肱 39 脇 40 鹽 41 鹹 42 醜 43
43 飲 44 吸 45 噏 46 飲 47 坎 48 陷 49 珍 50 壓 51 壓 52
鈇 53 甲 54 橙 55 輕 56 柳 57 陸 58 龜 59 匠 60 匣 61 反 62
62 崑 63 嶽 64 巖 65 陳 66 峯 67 險 68 瞰 69 監 70 鑑 71 覽 72
72 兼 73 咸 74 協 75 洽 76 裕 77 合 78 會 79 會 80 翕 81 歛 82
謙 83 歎 84 欠 85 感 86 撼 87 劍 88 戣

1. *giam* (shutter:) gate: 2. *g'iem* dark, black: 3. *k'jam* (covering:) coverlet: 4. *g'ap* (shutter:) door, to close: 5. *kəp* (shutter:) inner door (to the harem): 6, 7. *g'ap*, *kāb* covering, to cover: 8. *'ām* covered, obscured, dark: 9. *'jam* to cover, conceal: 10. *'jam* to cover, all-covering: 11. *'jam* (the man who covers, shuts, keeps the doors of the harem shut, cf. 132 above:) door-keeper, eunuch: 12. *'em* dark, black: 13, 14. *'iem* to cover, conceal: 15. *'əm* to cover with earth, bury: 16. *'əm* to shut a door, shut, closed, covered, dark: 17. *'əm* darkened sun, dark, darkness: 18. *'əm* black: 19. *'jam* (covering:) shade: 20. *'jam* darkness, dark, shade, North side etc. For the connection between 'to cover' and 'dark': 'to shut': 'gate', cf. group H 111—134 above.

21. *g'am* jaws, jowl: 22. *g'am* to hold in the mouth: 23. *g'em* (what is »jawed», bitten:) horse's bit, to hold in the mouth: 24. *g'am* jaws, jowl: 25. *g'am* to hold in the mouth, contain: 26. *g'am* objects put in a corpse's mouth: 27. *kiap* jaws, jowl, cheeks: 28. *g'ap* jaws, jowl (possibly cognate to next group: »pincher» = jaw?).

29. *g'iam* to press from both sides, pinch: 30. *g'iam* (pincher:) iron collar; gyves; pincers: 31. *kap* to grasp from both sides, squeeze, pinch: 32. *g'ap* (pressing from both sides:) narrow: 33. *g'ap* (pressing:) close; intimate: 34. *g'ap* (narrow, pressing from both sides:) chasm, pass: 35. *kiap* pincers: 36. *kiap* pincers, chopsticks: 37. *g'iap* to press from both sides, hold under the arms, clasp under the arm to support; to press, coerce: 38. *k'jāp* to open the sides, to rifle; *k'jwāb* sides of the body, flanks: 39. *xiāp* sides of the body, flanks; to press from both sides, to press, coerce.

40. *giam* salt: 41. *g'em* salty, salted: 42. *ngiām* soda (drawn from salty soil).

43. *χəp* to suck in, draw in, swallow, drink: 44, 45. *xiəp* to suck in, draw in, swallow: 46. *'jam* to swallow, drink.

47. *k'am* pit: 48. *g'am* pit, throw or fall into a pit: 49. *k'jam* pit.

50. *'ap* to press down: 51. *'iap* put down the finger on.

52. *g'am* mail: 53. *kap* scales, mail.

54. *g'am* cage (for wild animals etc.): 55. *g'am* car with cage on: 56. *g'ap* cage (for wild animals etc.): 57. *k'jwāb* pen, enclosure for wild animals.

58. *k'am* to hold, contain, receptacle, box: 59. *k'iap* box, satchel: 60. *g'ap* case, box: 61. *g'iep*, *g'jəp* satchel, book box.

62. *k'am* cliff: 63. *k'jam* high, precipitous: 64. *ngam* cliff: 65. *ngiam* high bank: 66. *ngiam* high ridge of cliff: 67. *xiām* high, precipitous, difficult of access, perilous.

68. *k'am* (*k'lām*?) to see, watch: 69. *klam* to see, examine, inspect: 70. *klam* mirror: 71. *glām* to see, watch.

72. *kiam* (*kliam*?) to join two or several things, bring together, combine, unite, both: 73. *g'em* (several united:) all: 74. *g'iap* to unite, accord, harmony: 75. *g'ep* accord: 76. *g'ep* collective sacrifice (to all ancestors): 77. *g'əp* to join, bring together, unite, accord: 78. *g'wəb* (> *Shi* *g'wəd* > Anc. *yūāi*) to come together, bring together, unite, accord: 79. *kwəb* (to add up:) to make up accounts: 80. *xiəp* to unite, accord, harmony.

81. *k'am* (to make oneself defective, imperfect:) to humble oneself: 82. *k'iam* to humble oneself: 83. *k'am*, *k'iam* insufficient food, insufficient: 84. *k'jām* deficient (char. used *kia tsie*).

85. *kəm* to move, be moved: 86. *g'am* to move, shake.

87. *kjām* sword: 88. *k'am* to stab, cut down.

K. Words of types T-M, N-M, P-M

1 鑿 2 鑿 3 刻 4 搥 5 鐵 6 尖 7 鑿 8 鑿 9 箴 10 鉞 11 鋸
12 插 13 鉞 14 斬 15 芟 16 疊 17 鑿 18 褶 19 襲 20 擗 21
慄 22 惛 23 慄 24 織 25 撈 26 湛 27 潛 28 潭 29 沈 30 墊 31
添 32 倣 33 擔 34 恬 35 帖 36 寔 37 駁 38 捷 39 駁 40 慄
41 炎 42 燂 43 熯 44 疔 45 濕 46 隰 47 繫 48 緝 49 瞻 50
覘 51 執 52 拾 53 繫 54 擊 55 捷 56 攝 57 談 58 屨 59 譚 60
諧 61 喋 62 沾 63 露 64 漸 65 澌 66 浸 67 滂 68 淫 69 灑 70
忝 71 慄 72 譚 73 諧 74 參 75 參 76 參 77 僂 78 參 79
選 80 接 81 雜 82 集 83 輯 84 戢 85 答 86 對 87 納 88 內 89
內 90 入 91 範 92 法

1. *tsām* awl, chisel, to pierce: 2. *dz'am* awl, chisel: 3. *djam* sharp-pointed, sharp: 4. *tjam* to pierce: 5. *tsjam* awl, sharp: 6. *tsjam* sharp point, sharp: 7. *tsəm* needle: 8. *tsjam* hair pin: 9, 10. *tjam* needle: 11. *ts'ap* long needle: 12. *ts'ap* to put a spit through, pierce: 15. *səp* chisel, to engrave.

14. *tsam* to cut off, decapitate: 15. *sam* to cut grass, to mow.

16. *d'iap* layer, to fold: 17, 18. *d'iap* dress with two layers of stuff, lined, double; put in layers, to fold; 19. *dzjap* dress with two layers of stuff, lined, double; put in layers, to fold.

20. *h̄iap* to fear, afraid: 21. *d'iap* afraid: 22. *h̄iep* to fear, afraid: 23. *h̄iap* to fear, afraid.

24. *sjam* slender, thin, fine, small: 25. *sem* slender, delicate.

26. *d'em* to sink in water, deep water: 27. *dz'iem* to go down in the deep, go down in water, lie hidden: 28. *d'am* deep, deep water, abyss: 29. *d'iam* to go down in the deep, sink in water: 30. *d'iam* down in the depths of earth, deep down: 31. *šjam* deep water, deep.

32, 33. *d'am* quiet, peaceful: 34. *d'iam* quiet, peaceful: 35. *t'iap* quiet, peaceful.

36. *tsam* swift: 37. *ts'jam*, *ts'iam* to gallop, run swiftly: 38. *dz'jap* swift: 39. *sap* to gallop, run swiftly.

40. *d'am* to burn: 41. *djam* to blaze, flame: 42. *d'am*, *dz'iem* to burn, to heat: 43. *d'iam* stove: 44. *šjam* fever.

45. *šjap* moist, wet, damp: 46. *dzjap* marsh.

47. *tjap* to bind, tie: 48. *ts'jap* to bind together.

49. *h̄iam* to look, see: 50. *t'iam* to look, see.

51. *h̄iap* to catch, grasp, seize: 52. *d̄iap* to seize, grasp, pick up: 53. *h̄iab* (a «catcher»): bird of prey: 54. *h̄iab* to grasp: 55. *dz'jap* (to catch:) to take booty, quarry, game: 56. *šjap* to grasp, hold.

57. *d'am* to talk, chat: 58. *h̄iam* to chatter: 59. *d'am* to talk, chat: 60. *d'ap* to chatter: 61. *d'iap* to chatter.

62, 63. *tjam* to soak: 64, 65. *tsjam* to soak: 66. *tsjam* to soak: 67. *šjam* to soak: 68, 69. *zjam* soaking rain.

70. *t'iam* to put to shame, disgrace: 71. *dz'am* shame, to be ashamed.

72. *dz'am* to slander: 73. *dz'jam* to slander.

74. *sam* three: 75. *ts'am* three (persons or things) together, a triad: 76. *šjam* (the three-star constellation:) Orion.

77. *dz'am* of unequal length: 78. *ts'jam* of unequal length.

79. *d'ap* mixed: 80. *tsjap* to bring together, join: 81. *dz'ap* collected, mixed: 82. *dz'jap* to bring together, gather, collect, mix: 83. *dz'jap* to bring together, gather, harmony: 84. *tsjap* to collect.

85. *tap* to answer: 86. *twab* (> Shī *twad* > Anc. *tuái*) to answer.

87, 88. *n̄ap* (to cause to enter, causative to 90:) to bring in, to present: 89. *n̄wab* (> Shī *n̄wad* > Anc. *nuái*) interior, inside, in: 90. *h̄jap* to enter.

91. *b'jwām* pattern, rule, law, norm: 92. *pjwāp* pattern, rule law, norm.

Laws of alternations

At a first glance at the word families established above the reader may well ask: is it not extremely farfetched to imagine an etymological connection between words which are so strongly dissimilar phonetically as many of the cases proposed? Is it

not unreasonable to combine e. g. A 213 *k'ung*: 225 *χjog*; B. 64 *d̄iang*: 76 *tök*: 79 *d'ag*; E 93 *g'ât*: 94 *k'iar*; E 142 *ngiän*: 140 *g'wad*; F. 66 *sän*: 65 *dz'war* — when in all such cases there is not one consonant or vowel common to the two members of the combination? This objection may seem quite justified. Yet a rash judgment of the kind is not just; all the families proposed must be seen in the light of the general laws of alternations which can be derived from the materials adduced. In the following résumé I shall pick out a number of comparatively safe and convincing examples of those various laws.

The final consonants

Here we have three undeniable series of alternations:

1. *ng ~ k ~ g*;
2. *n ~ t ~ d ~ r*;
3. *m ~ p ~ b*.
ng ~ k:

A 33. *ngiäng*: 34. *ngiäk*; 103. *ngäng*: 106. *ngäk*; 118. *k'äng*: 120. *g'äk*; 155. *kjäng*: 163. *kjäk*; 172. *käng*: 175. *g'jæk*; 226. *'jäng*: 227. *'jæk*; 229. *kwäng*: 232. *k'wäk*; 268. *kjung*: 270. *k'juk*, 271. *g'juk*; B 69. *täng*, 70. *d'jäng*: 75. *tjæk*; 115. *d'üng*: 123. *tük*; 260. *sieng*: 261. *siek*; 269. *djông*: 275. *d̄jök*; 298. *d'jäng*: 300. *d̄jæk*; 302. *dz'jäng*: 305. *dz'iek*; 322. *säng*: 323. *sjæk*; 387. *d'ung*: 388. *d'uk*; 516. *tsjung*: 523. *tsjuk*; 547. *dz'ung*: 549. *dz'uk*; C 10. *gliang* and *gliæk*; 32. *lung*: 33. *luk*; 38. *lieng*: 39. *liek*; D 8,9. *mieng*: 15—17. *miek*; 114. *p'iwang*: 115. *b'iwäk*.

ng ~ g:

A 29. *käng*: 30. *kæg*; 63. *kông*: 65. *g'óg*; 73. *kjäng*: 84. *g'jæg*; 92. *g'jäng*: 97. *k'jæg*; 135. *k'jäng*: 137. *g'jæg*; 132. *g'ieng*: 133. *g'eg*; B 69. *täng*: 79. *d'æg*; 210. *d'äng*: 213. *h̄jæg*; 308. *t'jông*: 314. *t'jög*; 378. *tsäng*: 380. *dz'äg*; 408. *h̄jäng*: 416. *h̄jæg*; 464. *täng*: 465. *d'æg*; 528. *d̄jäng*: 532. *d'jæg*; C 25. *gliang*: 28. *gläg*; 54. *näng*: 55. *næg*; D 84. *pjäng*, *b'ieng*: 88. *b'jæg*; 143. *mäng*: 144. *mäg*.

k ~ g:

A 28. *kök* and *kög*; 31. *k'jök*: 32. *kög*; 279. *kjwäk*: 282. *kjwäg*; 290. *'ék*: 294. *'æg*; 318. *kök*: 320. *kæg*; 323. *'äk* and *'äg*; 339. *g'ök*: 343. *g'ög*; 342. *kög*, 340. *kög*, *g'ög*; 369. *kök* and *kög*; 22. *d̄jök*: 24. *d̄jög*; B 29. *d'äk* and *d'äg*; 41. *d'uk*: 42. *d'üg*; 169. *dz'ök*: 177. *dz'æg*; 168. *ts'jök* and *ts'jög*; 170. *ts'jök*: 181. *dzjög*; 235. *d'ök* and *d'ög*; 272. *h̄jök* and *h̄jög*; 289. *sjök*: 291. *sjög*, 293. *sjög*; 436. *sjök*: 437. *sjög*; 445. *d̄jök* and *d̄jög*; 450. *dzjök*: 454. *zjög*; 452. *sjök*: 456. *sjög*; 462. *tsjök* and *tsjög*; 548. *tsjök* and *tsjög*; 565. *siök*: 566. *siög*; 569. *tök*: 570. *d'æg*; 576. *d̄jök*: 579. *djög*; 595. *d'ök*: 599. *t'jög*; 594. *d̄jök*: 598. *d̄jög*; 605. *djök*: 606. *d'jög*, 607. *t'jög*; 611. *h̄jök*: 612. *h̄jög*; 662. *d'jök* and *d'jög*: 682. *d̄jök*: 683. *d'jög*; C 1. *lök*: 2. *ljög*; D 24,25. *mök*: 27. *mwög*; 49. *b'ök*: 52. *b'ög*; 60. *m̄jök*: 61. *m̄jög*; 104. *pök*: 107. *p'ög*; 121.

pək: 122. *pwæg*, 123, 124. *b'wæg*; 135. *b'jūk*: 137. *p'jug*; 147. *pök*: 148. *pög*; 154. *b'jök* and *b'jóg*; 176. *pjūk*: 177. *pjüg*.

n ~ t:

E 1. *kwân* and *'wât*; 32. *kân*: 38. *k'ât*; 53. *kwân*: 63. *kwât*; 90. *giwân*: 91. *giwât*; 97. *k'wân*: 98. *k'wât*; 105. *g'ian*: 108. *g'iat*; 121. *'wân*: 122. *'wât*; 138. *giwân*: 139. *giwât*; 163. *g'wân*: 166. *kwät*; 226. *k'ân*: 231. *k'at*; 230. *g'jân*: 232, 233. *g'jat*; 252. *'ân*: 254. *'at*; 253. *'jên*: 255. *'jêt*; 260. *'jwân*: 261. *'jwät*; 287. *'ien*: 288. *'iet*; 300. *k'ân*: 305. *kât*; 329. *'ian*: 330. *'at*; F 10. *sjan*: 13. *sjat*; 27. *tsjan*: 30. *dz'iat*; 70. *sân*: 71. *sât*; 108. *tswân*: 111. *dz'wät*; 115. *dz'wân*: 116. *dz'wät*; 118. *d'jwân*: 119. *d'jwät*; 139. *d'wân*: 140. *t'wät*; 160. *tân* and *tât*; 214. *tswân* and *ts'wät*; 245. *ts'jwân*: 246. *tsjwät*; 314. *tjên*: 315. *tjêt*; 313. *d'ien*: 315. *tiet*; G 2, 3. *hjan*: 7. *hjat*; 4, 5. *mwân*: 8. *hjat*; H 27. *b'jan*: 39. *b'jat*; 48. *b'jwân*: 49—51. *pjwät*; 56. *pjwân*, 54. *b'jwân*: 57. *p'jwät*; 64. *b'jwân*: 70. *b'jwät*; 78. *b'jwân*: 79. *b'wät*; 94. *mwân*: 104. *mwät*; 99—103. *χmwân*: 105. *χmwät*; 113. *b'jên*: 115. *pjêt*.

n ~ d:

E 12. *giwan*: 24. *giwad*; 105. *g'ian*: 108. *k'jad*; 138. *giwân*: 141. *giwäd*; 149. *kwân*, 150. *g'wân*: 151. *k'wad*; 167. *giwân*: 172. *g'iwäd*; 283. *'ên*: 284. *'äd*; 300. *k'ân*: 316, 317. *k'iad*; F 123. *dzjwân*: 125. *dzjwäd*; 150. *d'wân*: 151. *d'wäd*; 214. *tsjwân*: 215. *dzjwäd*; 234. *sjwân*: 236. *sjwäd*; H 94. *mwân*: 106. *mwäd*; 98. *mien*: 108. *mjäd*.

n ~ r:

A series of examples of this alternation has already been given on pp. 20, 27 above. We have furthermore: E 19. *kwân*, 22. *giwân*: 25. *g'wâr*, 27. *kjwâr*, 28. *giwâr*; 37. *g'wân*: 39. *giwâr*; 42. *χjân*: 45. *χjâr*; 49. *'wân*: 51. *'wâr*; 53. *kwân*: 70. *kwâr*; 158, 160. *'jwân*: 161. *'jwâr*; 202. *k'ân*: 203, 204. *k'âr*; F 2. *d'jwân*: 6. *d'jwâr*; 80. *twân*: 82. *twâr*; 89, 90. *tsjên*: 94. *tsiâr*; 98. *tsjên*: 99. *tsiâr*; 118. *d'jwân*: 120. *tjwâr*; 205. *d'wân*: 206. *t'wâr*; 223. *ts'jwân*: 226. *ts'jwâr*; 306. *siân* and *siâr*; 308. *swân*: 309. *sjwâr*; 329. *d'wân*: 331. *t'wâr*; 345. *dz'wân*: 344. *d'wâr*; G 17. *ljwân*: 22. *ljwâr*; 37, 38. *ljên*: 39. *ljâr*; H 77. *p'jwân*, 78. *b'jwân*: 81. *pjwâr*, 82. *b'jwâr*; 95, 96. *mjên*: 110. *miâr*; 150. *pjwân*: 151. *b'jwâr*.

t ~ d:

E 64. *kiet*: 65, 66. *kied*; 73. *kjät*: 76, 77. *kjäd*; 83. *kiwat*: 84. *kwäd*; 88. *kiwat*: 89. *k'wad*; 108. *kjät*, *g'iat* and *k'iad*; 107. *k'iat*: 108. *k'iad*; 139. *giwät*: 140. *g'wad*, 141. *giwäd*; 256. *'jwät*: 257. *'jwäd*; 305. *kât*: 311. *g'äd*; 307. *kwät*: 313. *kwäd*; 308. *giwät*: 315. *kjwäd*; 309. *k'iat*: 316, 317. *k'iad*; 319. *ngiwät*: 320. *ngiäd*; F 4. *tjwat* and *tjwad*; 64. *dz'jwät* and *tsjwäd*; 127, 128. *sjwät* and *sjwad*; 144, 145. *sjat*: 146. *zjad*; 157. *sjwat*: 158. *sjwad*; 166. *ts'wät* and *dz'jwäd*; 341. *sjwat* and *sjwad*; G 25. *lät*, 27. *ljät*: 29, 30. *ljäd*; H 12. *pjwät*, 11. *p'wät*: 14. *p'jwäd*; 13. *p'jwät*: 15. *p'jwäd*; 58, 59. *b'wät* and *b'wäd*; 90. *mjwät*: 91. *mjwäd*; 104. *mwät*: 106. *mwäd*; 114. *piät*: 123. *piäd*; 116. *pjêt*: 124. *pjäd*; 120, 121. *pjwät*: 126. *pjwäd*.

t ~ r:

E 63. *kwät*: 70. *kwâr*; 102. *k'jät*: 104. *g'jâr*; 146. *'jwät*: 147, 148. *'jwâr*; F 64. *dz'jwät*: 65. *dz'wâr*; 119. *d'jwät*: 120. *tjwâr*; 164. *tjwat*: 165. *tjwâr*; G 42, 43. *njät*: 44. *njâr*; H 10. *pwät*: 16. *pwâr*; 20. *b'jät* and *b'jâr*; 41. *b'jwät*: 43. *b'jwâr*; 79. *b'wät*: 81. *pjwâr*, 82. *b'jwâr*; 84. *pjwät*: 86, 87. *pjwâr*; 120, 121. *pjwät*: 128. *b'jwâr*.

d ~ r:

E 24. *giwad*: 28. *giwâr*; 247. *käd*: 248. *k'âr*; F 64. *tsjwäd*: 65. *ts'wâr*; 236. *sjwäd*: 233. *ts'wâr*; G 31. *ljäd*: 32. *ljâr*; H 126. *pjwäd*: 128. *b'jwâr*.

m ~ p:

I 1. *giam* 4. *g'áp*; 21, 22. *g'am*: 27. *kiap*; 24—26. *g'am*: 28. *g'ap*; 29, 30. *g'iam*: 37. *g'iap*; 52. *g'am*: 53. *kap*; 54. *g'am*: 56. *g'ap*; 72. *kiam*: 74. *g'iap*; 73. *g'em*: 75, 76. *g'ep*; K 34. *d'iam*: 35. *t'iap*; 36. *tsám*: 38. *dz'iap*; 37. *ts'iam*: 39. *sap*; 57. *d'am*: 60. *d'áp*.

p ~ b:

I 38. *k'jáp* and *k'jwáb*; 77. *g'ap*: 78. *g'wáb*; K 51. *tjap*: 53, 54. *tjáb*; 87. *náp*: 89. *mwáb*; 85. *táp*: 86. *twáb*.

For further examples of these alternations of final consonants see pp. 107—110 below.

The initial consonants

Here we have first four great series of consonants, the members of which interchange freely in the formation of words from one and the same stem:

1. *k ~ k' ~ g ~ g'*;
2. *t ~ t' ~ d ~ d' ~ f ~ f' ~ d̄ ~ d̄'*;
3. *ts ~ ts' ~ dz ~ dz' ~ tʃ ~ tʃ' ~ dz' ~ s ~ ʃ ~ z ~ z'*;
4. *p ~ p' ~ b'*.

Examples:

k ~ k':

A 32. *kóg*: 31. *k'jök*; 37. *kuk*: 36. *k'ük*; 79. *kjung*: 80. *k'jung*; 148. *kjwæg*: 147. *k'jæg*; 191. *kjung*: 190. *k'ung*; 268. *kjüng*: 270. *k'juk*; 331. *kek*: 330. *k'wák*; 342. *kóg*: 344. *k'óg*; E 120. *kwät*: 119. *k'wät*; 129. *kian*, 132. *kwân*: 128. *k'ân*; 149. *kwân*: 151. *k'wad*.

k ~ g:

A 3. *kwäng*: 6. *giwang*; 156. *kwäng*: 158. *giwäng*; 176. *kwæk*: 177. *giwæk*; 209. *kwäng*: 212. *giwäng*; 362. *kióg*; 363. *gióg*; E 19. *kwân*: 22. *giwân*; 208. *kjwên*: 207. *giwên*; E 315. *kjwäd*: 308. *giwät*.

k ~ g':

A 3. *kwäng*: 4, 5. *g'wäng*; 98. *kog*: 100. *g'jog*; 140. *kjwang*: 141. *g'jwang*; 172. *käng*: 175. *g'jök*; 237. *köng*: 238. *g'ung*; 250. *käng*: 253. *g'iang*; 259. *küng*: 260.

g'üŋg; 268. *kjüŋg*: 271. *g'juk*; 279. *kjwak*: 278. *g'wäk*; 302. *kog*: 303. *g'ög*; 340. *kög* and *g'ög*; 342. *kög*: 343. *g'ög*; 347. *kioŋg*: 346. *g'og*; 357. *kög*: 358. *g'ög*; E 1. *kwän*: 2. *g'wän*, 3—7. *g'wan*; 8. *kjwan* and *g'jwan*; 32. *kän* and *g'jan*; 32. *kän*: 33. *g'an*; 57. *kjën*: 58. *g'ien*; 67. *kwät*: 68. *g'wät*; 108. *kjät* and *g'jat*; 124. *kwän*: 125. *g'wan*; 129. *kian*: 130. *g'ian*; 149. *kwän*: 150. *g'wän*; 166. *kwät*: 163. *g'wän*; 187. *kwän*: 185. *g'an*; 195. *kän* and *g'an*; 238. *kwän*: 241, 242. *g'wän*; 271. *kän*: 272. *g'an*; 276. *kjer*: 275. *g'jen*; 289. *ker*: 290. *g'er*; 305. *kät*: 311. *g'äd*; 333. *kwän*: 334. *g'wan*; I 31. *kap*: 32—34. *g'ap*; 35, 36. *kiap*: 37. *g'iap*; 72. *kiam*: 74. *g'iap*; 79. *kwäb*: 78. *g'wäb*; 85. *käm*: 86. *g'am*.

k' ~ g:

E 9. *k'jwan*: 12. *gjwan*; 301. *k'jwän*: 310. *gjwät*.

k' ~ g':

A 77. *k'jwang*: 76. *g'wäng*; 207. *k'wäng*: 208. *g'wäng*; 246. *k'ög*: 247. *g'jög*; 270. *k'juk*: 271. *g'juk*; E 9. *k'jwan* and *g'jwan*; 10. *k'jwan*: 11. *g'jwan*; 102. *k'jät*: 104. *g'jät*; 116. *k'jwät*: 117. *g'jwät*; 119. *k'wät*: 117. *g'jwät*; 151. *k'wad*: 150. *g'wän*; 226. *k'an*: 227. *g'an*; 300. *k'an*: 302. *g'jan*; I 47. *k'am*: 48. *g'am*; 59. *k'iap*: 60. *g'ap*.

g ~ g':

A. 6. *gjwang*: 4. *g'wäng*; 22, 23. *gjwang*: 21. *g'wäng*; 58. *gjwäng*: 57. *g'iweng*; 277. *gjwang*: 276. *g'wäng*; 333. *gjäg*: 332. *g'äg*; E 39. *gjwät*: 37. *g'wän*; I 40. *gjam*: 41. *g'em*.

t ~ t':

B 190, 191. *tjang*: 192. *t'jang*; 310. *tog*: 312. *t'jog*; 614. *tög*: 615. *t'ög*; 627. *tüŋg*: 626. *t'üŋg*.

t ~ d:

B. 248. *tjog*: 250. *djog*; 560. *tiög*: 559. *djog*.

t ~ d':

B. 69. *täng*: 79. *d'äg*; 103. *tök*: 104. *d'ök*; 123. *tük*: 124. *d'ük*; 134. *tjông*: 135. *d'jông*; 191. *tjang* and *d'jang*; 248. *tjog*: 249. *d'jog*; 310. *tog*: 311. *d'og*; 358. *tieng*: 359. *d'ieng*; 403. *täng*: 404, 405. *d'äng*; 420. *tjög*: 417, 419. *d'jög*; 531. *tëk*: 529. *d'äk*; 569. *tæk*: 570. *d'äg*; 641. *tiek*: 642. *d'iek*; F. 17. *twän* and *d'wän*; 180. *twät*: 183. *d'jwät*; 261. *tjan*: 262, 263. *d'jan*; 267. *tjwan*: 268. *d'jwan*; 298. *tän*: 300. *d'an*; 314. *tjën*: 313. *d'ien*.

t ~ t':

B. 190. *tjang*: 195. *t'jang*; 248. *tjog*: 253. *t'jog*; 588. *tog*: 589. *tjög*; 614. *tög*: 613. *tjög*; 681. *tjäŋg*: 680. *tjäŋg*; F. 86. *tjäd*: 85. *tjäd*; 164. *tjwät*: 165. *tjwar*; 216. *twän*: 217. *tjwän*; K 4. *tjäm*: 9. *tjäm*.

t ~ t':

B. 123. *tük*: 125. *t'juk*; 190. *tjang*: 197. *t'jang*.

t ~ d:

B. 23. *tjäg*: 24. *djäg*; 464. *täng*: 466. *djäg*; F. 112. *tjan*: 113. *djwan*; 301. *tjan*: 302. *djan*.

t ~ d':

B. 69. *täng*, 75. *tjak*: 70. *d'jäŋg*.

t' ~ d:

B. 98. *t'jäg*: 99. *djäg*; 312. *t'jog*: 313. *djog*; 351. *t'jök*: 350. *djök*; 426. *t'jög*: 425. *djög*; 582. *t'jog*: 579. *djog*; F 148. *t'jät* and *djät*; 188. *t'jan*: 189. *djan*.

t' ~ d':

B. 34. *t'ung*: 38. *d'ung*; 44. *t'äng*: 46. *d'äng*; 51. *t'ieng* and *d'ieng*; 119. *t'äk*: 120. *d'äk*; 192. *t'jang*: 191. *d'jang*; 217. *t'ung*: 216. *d'öŋg*; 226. *t'ög*: 225. *d'ög*: 237. *t'og*: 235. *d'ög*; 314. *t'jög*: 315. *d'jög*; 330. *t'jäng*: 331. *d'jäng*; 346. *t'ieng*: 347. *d'ieng*; 481. *t'ög*: 480. *d'ög*; 599. *t'jog*: 595. *d'jog*; 607. *t'jog*: 606. *d'jog*; F. 140. *t'wät*: 139. *d'wän*; 185. *t'an*: 186. *d'an*; 206. *t'wät*: 205. *d'wän*; 208. *t'wän* and *d'wän*; 241. *t'jät*: 238. *d'jät*; 247. *t'jät* and *d'jät*; 283. *t'an*: 284. *d'an*; 314. *t'ien*: 313. *d'ien*; 317. *t'jät* and *d'jät*; 331. *t'wät*: 329. *d'wän*.

t' ~ t':

B. 14. *t'jak*: 13. *tjak*; K. 50. *t'jam*: 49. *tjam*.

t' ~ t':

B. 306. *t'jang*: 307. *t'jang*; 628. *t'jäg*: 629. *t'jäg*; F. 97. *t'jwät*: 96. *t'jwät*.

t' ~ d:

B. 599. *t'jog*: 598. *djög*; F. 283. *t'an*: 285. *djan*.

t' ~ d':

F. 312. *t'wän*: 311. *d'jän*.

d ~ d':

B. 280. *djog*: 277. *d'ög*; 445. *diëk*; 447. *d'ieg*; 592. *djog*: 593. *d'jog*; 605. *djök*: 606. *d'jog*; 689. *djog*: 688. *d'jog*; F. 189. *djan*: 186. *d'an*; 194. *djën*: 192. *d'jën*; 353. *djët* and *d'iet*.

d ~ t':

B. 118. *djung*: 116. *tjung*; 250. *djog*: 253. *tjog*.

d ~ t':

B. 242. *djang*: 243. *t'jang*; F. 189. *djan*: 187. *t'jan*.

d ~ d:

B. 66. *djang*: 64. *djang*; 85. *djäng*: 88. *djäng*; 269. *djông*: 275. *djök*; 594. *djök*: 596. *djuk*, 598. *djög*.

d ~ d':

B. 66. *djang*: 70. *d'jäŋg*; 663. *djak*: 672. *d'jak*.

d' ~ t':

B. 609. *d'jông*: 608. *tjông*; 678. *d'jog*: 677. *tjog*; F. 19. *d'wän* and *tjwan*; 183. *d'jwät*: 181. *tjwät*; K. 21. *d'iap*: 20. *tjap*.

d' ~ t':

B. 29. *d'äk*: 30. *t'jak*; 635. *d'jog*: 634. *t'jök*.

d' ~ d̂:

B. 21. *d'jak*: 22. *d̂jak*; 298. *d'jəŋg*: 300. *d̂jak*; 465. *d'əg*: 466. *d̂jəg*; 470. *d'əŋg*: 471. *d̂jəŋg*; 532. *d'jəg*: 528. *d̂jəŋg*; 683; *d'jōg*: 682. *d̂jōk*; F. 284. *d'ân*: 285. *d̂jan*.

d' ~ d̂':

B. 79. *d'əg*: 70. *d̂'jəŋg*.

î ~ î':

B. 116. *îjung*: 117. *î'jung*.

î ~ â:

B. 143. *îjung*: 144. *d̂jung*; 274. *îjōk*: 275. *d̂jōk*; 577. *îjok*: 576. *d̂jok*; F. 19. *îwan*: 20. *d̂jwan*; K. 51. *îəp*: 52. *d̂jəp*.

ts ~ ts':

B. 219, 220. *tsəŋg*: 221. *ts'əŋg*; 295. *tsjəŋg*: 296. *ts'jəŋg*; 366. *tsog*: 367. *ts'og*; F. 32. *tsiet*: 33. *ts'iet*; 214. *tswəŋ* and *ts'wət*; 246. *tsjwət*: 245. *ts'jwəŋ*.

ts ~ dz:

B. 178. *tsjəg*: 181. *dzjəg*; 378. *tsəŋg*: 379. *dzjəŋg*; F. 89. *tsjěn*: 91. *dzjěn*; 122. *tsjwəŋ*: 123. *dzjwəŋ*; 214. *tsjwəŋ*: 215. *dzjwəd*.

ts ~ dz':

B. 132. *tsjəŋg*: 133. *dz'jəŋg*; 176. *tsəg*: 177. *dz'əg*; 205. *tsəŋg*: 206. *dz'əŋg*; 219. *tsəŋg*: 222. *dz'əŋg*; 256. *tsjəŋg*: 258. *dz'jəŋg*; 295. *tsjəŋg*: 297. *dz'jəŋg*; 343. *tsjōg*: 344. *dz'jōg*; 353. *tsjəg*: 354. *dz'jəg*; 378. *tsəŋg*: 380. *dz'əg*; 516. *tsjung*: 517. *dz'jung*; F. 34. *tsjəŋ*: 35. *dz'jəŋ*; 27. *tsjan*: 30. *dz'iat*; 64. *tsjwəd* and *dz'jwət*; 72. *tsăn*: 73. *dz'ân*; 108. *tswəŋ*: 111. *dz'wət*; 352. *tsjěn* and *dz'jěn*.

ts ~ tʃ:

B. 93. *tsjəŋg*: 94. *tsjəŋg*; 176. *tsəg*: 179. *tsjəg*; K. 7. *tsəm*: 8. *tsjəm*.

ts ~ tʃ':

B. 172. *tsuk*: 173. *tʃ'ük*; 284. *tsōg*: 283. *tʃ'ōg*.

ts ~ s:

B. 238. *tsog*: 241. *sjōg*; 667. *tsōg*: 668. *sōg*; F. 279. *tswəd*: 282. *sjwəd*; K. 14. *tsam*: 15. *sam*.

ts ~ ʃ:

B. 238. *tsog*: 240. *sjōg*; 521. *tsjōk*: 527. *sjōk*; K. 66. *tsjəm*: 67. *sjəm*.

ts ~ ʃ':

B. 259. *tsjok*: 262. *sjok*; 285. *tsjog*: 291. *sjog*; 364. *tsjōk*: 368. *sjōk*.

ts ~ z:

B. 372. *tsəŋg*: 371. *zjəŋg*; K. 66. *tsjəm*: 68. *zjəm*.

ts' ~ dz:

B. 495. *ts'jōg*: 497. *dzjōg*.

ts' ~ dz':

B. 221. *ts'əŋg*: 222. *dz'əŋg*; 296. *ts'jəŋg*: 297. *dz'jəŋg*; 319. *ts'jog*: 320. *dz'jog*; F. 65. *ts'wər* and *dz'wər*; 131. *ts'wər*: 130. *dz'wər*; 166. *ts'wət* and *dz'jwəd*; 210. *ts'wən*: 211. *dz'wən*; 325. *ts'jər*: 324. *dz'jər*.

ts ~ tʃ:

B. 168. *ts'jək*: 167. *tʃək*.

ts' ~ tʃ':

F. 60. *ts'jěn*: 61, 62. *tʃ'jěn*; 223. *ts'jwən*: 226. *tʃ'jwən*.

ts' ~ dz':

B. 319. *ts'jog*: 321. *dz'jōg*.

ts' ~ s:

B. 365. *ts'juk*: 370. *suk*; 383. *ts'jog*: 384. *sjog*; F. 26. *ts'ăn*: 37. *sən*; 332. *ts'jwən*: 333. *swən*; K. 75. *ts'am*: 74. *səm*.

ts' ~ ʃ:

K. 75. *ts'am*: 76. *sjəm*.

ts' ~ ʃ':

B. 168. *ts'jək*: 185. *sjak*.

ts' ~ z:

B. 383. *ts'jog*: 385. *zjōg*.

dz ~ tʃ:

B. 181. *dzjəg*: 180. *tsjəg*.

dz ~ tʃ':

B. 181. *dzjəg*: 170. *tʃ'jək*.

dz ~ s:

F. 271. *dzjwən*: 280. *sjwən*; 286. *dzjər*: 287. *sjər*.

dz ~ ʃ:

B. 493. *dzjuk*: 500. *sjuk*; F. 125. *dzjwəd*: 127. *sjwəd*.

dz ~ ʃ':

B. 671. *dzjōg*: 672. *sjōg*; K. 46. *dzjəp*: 45. *sjəp*.

dz ~ z:

B. 450. *dzjak*: 454. *zjəg*.

dz' ~ tʃ:

B. 177. *dz'əg*: 179. *tsjəg*; K. 82. *dz'jəp*: 84. *tʃəp*.

dz ~ tʃ':

B. 162. *dz'jəŋg*: 163, 164. *tʃ'jəŋg*; 458. *dz'jək*: 459. *tʃ'ək*.

dz ~ dz':

B. 320. *dz'jog*: 321. *dz'jōg*.

dz' ~ s:

B 621. *dz'jog*: 622. *sjog*; 673. *dz'äk*: 674. *sjak*.

dz' ~ s:

B 162. *dz'jang*: 184. *sjang*; K 55. *dz'jap*: 56. *sjap*.

ts ~ ts':

B 167. *ts'ek*: 166. *ts'ek*.

ts ~ s:

B 666. *tsög*: 668. *sög*.

ts' ~ s:

B. 316. *ts'jang*: 322. *säng*.

ts' ~ s:

B 391. *ts'jang*: 393. *sjang*.

ts' ~ s:

B 164. *ts'jang*: 184. *sjang*.

dz' ~ s:

B 80. *dz'jông*: 84. *sjông*; 467. *dz'jæg*: 469. *sjæg*.

s ~ s:

B 241. *sjög*: 240. *sjög*; 504. *siög*: 503. *šög*; K 74. *səm*: 76. *sjəm*.

s ~ s:

B 286. *sjang*: 287. *sjang*; 293. *sjog*: 289. *sjok*; 552. *sjog*: 553. *sjog*; F 48. *sjər*: 49. *sjər*.

s ~ z:

B 384. *sjog*: 385. *zjög*; F 144, 145. *sjat*: 146. *zjad*.

s ~ s:

B 500. *sjuk*: 499. *sjuk*.

s ~ z:

K 67. *sjəm*: 68. *zjəm*.

p ~ p':

D 91. *päk*: 92. *p'äk*; 104. *p'ek*: 105. *p'iek*; 138, 139. *pjog*: 141. *p'jog*; 186. *pung*: 187. *p'jung*; H 12. *pjwät*: 11. *p'wät*, 14. *p'jwäd*; 21. *pjər*: 22. *p'jər*; 31. *pwän*: 32, 33. *p'wän*; 152. *pian*: 153. *p'jan*.

p ~ b':

D 30. *pwäng*: 31—35. *b'wäng*; 38. *piëng*: 39. *b'ieng*; 46. *piäng*: 47. *b'iäng*; 59. *päk*: 57, 58. *b'äk*; 84. *piëng* and *b'ieng*; 117. *pög*, 116. *pög*: 118, 119. *b'ög*; 122. *pwæg*: 123, 124. *b'wæg*; 130. *piëg*: 129. *b'ëg*; 138, 139. *pjog*: 142. *b'jog*; H 20. *pjər* and *b'jər*; *b'jät*; 38. *pjwän* and *b'jwän*; 39. *pjät* and *b'jät*; 56. *pjwän*: 54. *b'jwän*; 81. *pjwər*: 82. *b'jwər*; 84. *pjwät*: 85. *b'jwät*; 115. *pjët*: 113. *b'jën*; 120. *pjwät*, 126. *pjwäd*: 128. *b'jwər*; 150. *pjwän*: 151. *b'jwər*.

p' ~ b':

D 97. *p'jung*: 98. *b'jung*; 105. *p'iek*: 106. *b'iek*; 114. *p'jwang*: 115. *b'jwak*; 137. *p'jog*: 135. *b'jök*; 141. *p'jog*: 142. *b'jog*; 150. *p'ög*: 151. *b'jog*; 155. *p'jök*: 154. *b'jök*; 181. *p'jog*: 182. *b'jög*; H 29. *p'jan*, 30. *p'jan*: 27. *b'jan*; 77. *p'jwän*: 78. *b'jwän*.

It is easily seen that whereas some of the alternations in these four series are quite rare, others are extremely common and regular and can be said to be some of the principal instruments of the Chinese language in word derivation. As particularly important and normal I wish to point out two:

The alternation of unaspirated surd and aspirated sonant: *t ~ d'*, *k ~ g'*, *ts ~ dz'*, *p ~ b'*;

The alternation of aspirated surd and aspirated sonant: *t' ~ d'*, *k' ~ g'*, *ts' ~ dz'*, *p' ~ b'*.

We have to take up next a very intricate question: whether these four series of initials can be proved to alternate with certain other initials not yet discussed, and whether some of these latter initials have alternations between themselves. There are here six questions which have to be answered. Is there an etymological connection between:

1. The *k* series and the laryngeal explosive ';
2. The *k* series and *χ*;
3. The *k* series and *ng*;
4. The *t* series and the *ts* series;
5. The *p* series and *m*;
6. *n*, *n'* and *l*.

The first four of these questions I think must decidedly be answered in the affirmative; of the last two the good examples are so few as to leave room for doubt:

k etc. ~ :

A 1. *kjäng*: 19. 'jäng; 60. *g'wäng*: 69. 'wäng; 186. *kjäng*: 201. 'jang; 245. *kung*: 249. 'ung; 259. *küng*, 260. *g'üng*: 265. 'ung; 266. *giwang*: 273. 'wäng; 328. *g'jög*: 329. 'jog; 353. *kjog*: 354. 'jog; E 1. *kwän* and 'wät; 10. *k'jwan*: 30. 'wän; 37. *g'wen*: 49. 'wän; 114. *k'wän*: 121. 'wän; 117. *g'jwät*: 123. 'jwät; 189. *giwän*: 192. 'jwän; I 1. *gjam*: 11. 'jam; 2. *g'jem*: 12. 'em.

k etc. ~ χ:

A 64. *g'ung*: 66. *χung*; 76. *g'wäng*: 87. *χwäng*; 80. *k'jung*: 88. *χjung*; 140. *kjwang*, 141. *g'jwang*: 152. *χwäng*; 215. *k'üng*: 222. *χjung*; 307. *kjök*: 308. *χjök*; 362. *kiög*: 364. *χjög*; E 32. *kân*: 40. *χân*; 73. *kjät*: 78. *χjät*; 105. *g'jan*: 109. *χjän*; 129. *kian*, 130. *g'ian*: 135. *χian*; 167. *giwän*: 168. *χiwän*; 174. *k'iad*: 175. *χjät*; I 38. *k'jap*: 39. *χjap*; 77. *g'ap*: 80. *χjap*.

k etc. ~ ng:

A 250. *käng*: 257. *ngäng*; E 2. *g'wän*: 29. *ngwän*; 79. *kân*, 80. *kan*: 86. *ngan*; 128. *k'än*, 129. *kian*: 137. *ngen*; 138. *giwän*: 142. *ngjän*; 189. *giwän*: 190. *ngiwän*;

234. g'jət: 235. ngjət; 307. kwät: 319. ngwät; 318. kər and ngər; I 40. gjam: 42. ngjam; 63. k'jam: 66. ngjam.

t etc. ~ ts etc.:

B 1. d'iang: 5. s'iang; 17. d'jag: 19. sjag; 70. d'jang: 83. sjang; 69. tang: 83. sjang; 101. t'jeng: 110. sjeng; 106. t'jag: 111. sjag; 151. tjak: 165. tsjak; 153. tək: 167. tsək; 157. t'jēg: 174. ts'jēg; 203, 204. tang: 205. tsang, 206. dz'ang; 230. tük: 231. dz'ük; 237. t'og: 238. tsog; 264. t'ang: 286. siang; 271. t'ak: 288. sjak; 278. t'og: 293. sjog; 306. t'iang, 307. t'iang: 316. ts'iang; 312. t'og: 319. ts'og; 320. dz'og; 314. t'og, 315. d'og: 321. dz'og; 330. t'ang: 334. sjeng; 333. t'jak: 335. sjak; 342. d'og: 343. tsog, 344. dz'og; 358. tieng, 359. d'ieng: 360. ts'ieng; 397. t'ag: 400. sjak, 401. sjag; 398. d'og: 402. zjog; 428. d'ak: 428. dz'ag; 429. t'ag: 431. dz'ag; 446. djək: 449. siek; 465. d'ag, 466. d'ag: 467. dz'ag, 469. sjag; 485. d'og: 495. ts'og; 532. d'ag: 540. zjag; 543. t'ung: 547. dz'ung; 557. t'og: 558. sōg; 560. tiog, 559. djog: 561. dz'og; 562. d'ok: 565. siog; 600. t'og: 601. sōg; 630. djək: 633. sjēg; 670. t'og: 671. dz'og, 672. sjog; F 2. d'iwən: 9. dz'iwən; 46. t'ən and s'ən; 50. t'ian: 52. s'ian; 55. t'ien: 56. sjēn; 63. tswən: 67. s'wən; 83. t'jēn: 87. tsjēn; 112. t'ian: 114. dz'ian; 118. d'iwən: 122. ts'iwən, 123. dz'iwən; 119. d'iwət: 127, 128. s'iwət; 129. t'wər: 131. ts'wər; 130. dz'wər; 133. d'wət: 137. ts'wət; 192. d'jēn: 196. sjēn; 290. t'wən: 291. s'iwər; 327. d'iwət: 328. dz'iwət; 329. d'wən: 333. swən; 344. d'wər: 345. dz'wən; K 3. d'iam: 5, 6. tsjam; 9. t'iam: 7. tsam, 8. tsjam; 16, 17. d'iap: 19. dz'ap; 26. d'em: 27. dz'jem; 28. d'am: 31. sjam; 40. d'am: 44. sjam; 41. d'am and dz'jem; 62. t'iam: 64. tsjam.

p etc. ~ m:

D 3. b'ung: 12. mung; 100. pāk: 103. māk; H 64. b'iwən: 66, 67. mwən; 71. b'iwən: 72. mwən; 75. p'iwən: 76. m'iwən; 84. p'iwət: 90. m'iwət.

n, n' ~ l:

C 49, 50. n'og; 48. n'og: 51. liog; G 7. n'iat: 14. l'iat; 23. n'ian: 17. l'iwən.

The medial (intercalary, subordinate) vowels

I shall design here the word type without *j*, *i*, *w* (type *kān* etc.) by 0. The theoretically possible alternations are the following:

1. 0 ~ *j*; 2. 0 ~ *i*; 3. 0 ~ *w*; 4. 0 ~ *iw*; 5. 0 ~ *iw*; 6. *j* ~ *i*; 7. *j* ~ *w*; 8. *i* ~ *w*; 9. *i* ~ *iw*. Most of them are well represented:

0 ~ *j*:

A 4. g'wāng: 6. g'iwang, 7. g'iwāng; 8. kēng: 1. k'jāng; 32. k'og: 31. k'jōk; 66. xung; 67. x'ung; 76. g'wāng: 77. k'iwang; 83. g'eg: 84. g'jag; 89. xāk: 90. x'āk; 98. kog: 100. g'og; 103. ngāng: 105. ngiang; 134. k'āng: 135. k'jāng; 143, 144. kwēg: 145. k'iwēg; 149. kog: 150. k'og; 153. kāng: 155. k'jāng; 156. kwāng: 158. g'iwēng; 172. kāng: 175. g'jok; 176. kwək: 177. g'iwək; 184. kāng, 185. kāng: 186. g'iwēng; 187. k'iang; 190. k'ung: 191. k'ung; 196. kog: 197. k'og; 209. kwāng: 212. g'iwēng;

213. k'ung: 216. k'jung; 246. k'og; 247. g'jog; 250. kāng: 252. k'iang; 257. ngāng: 258. ngiang; 276. g'wāng: 277. g'iwang; 278. g'wāk: 279. k'iwak; 288, 289. 'ək: 292. 'jək; 302. kog: 305. k'jog; 318. k'ək; 320. k'eg: 316. k'jāk; 332. g'ag: 333. g'ag; 336. g'eg: 337. g'jag; 365. g'og: 366. g'jog; B 29. d'ak: 30. t'jak; 34. t'ung: 39. t'jung; 46. d'ang: 48. d'iang; 69. tang: 70. d'jeng; 69. tang: 75. tjak; 71. tung; 72. t'ung; 92. tsang: 94. ts'iang; 150. t'ak: 151. tjak; 166. ts'ək: 168. ts'jək; 176. tsag, 177. dz'ag: 178. ts'jag, 181. dz'jag, 179, 180. ts'jag; 210. d'ang: 213. t'ag; 264. t'ang: 265. d'iang; 276, 277. d'og: 280. djog; 284. tsog: 285. ts'jog; 290. sog: 292. s'jog; 311. d'og, 310. tog: 313. djog, 312. t'og; 318. ts'og: 319. ts'jog; 322. sāng: 323. sjak; 355. sēng: 356, 357. sjēng; 370. suk: 365. ts'juk; 372. tsāng: 371. z'iang; 378. tsāng: 379. dz'iang; 403. tāng, 405. d'ang: 407, 408. t'iang; 417. d'og and d'jog; 424. t'og: 426. t'jog; 459. ts'ək: 458. dz'jak; 463. ts'eg: 462. ts'jag; 465. d'ag: 466. djag; 470. d'ang: 471. d'iang; 480. d'og: 485, 486. d'jog; 551. sōg: 553. sjog; 588. tog: 589. t'og: 601. sōg: 600. t'og; 614. tōg: 612, 613. t'og; 673. dz'ak: 674. sjak; 675. tsək: 676. ts'jak; 691. d'og: 693. d'jog; C 1. lak: 2. l'ag; 5. nāk: 6. n'jak; 28. glag: 25. g'iang; 34. nōg: 35. n'og; 52. lāng: 53. l'iang; 70. log: 71. l'og; 72. nōg: 73. n'og; D 31—35. b'wāng: 36. b'iwāng; 45. p'ang: 47. b'iang; 53, 54. b'og: 56. b'jog; 67. māng, 70. m'ang: 68. m'iwang; 86. p'ung: 87. p'jung; 126. p'ang: 127, 128. b'jāng; 129. b'eg: 130. p'jēg; 148. p'og: 149. p'jog; 150. p'og: 151. b'jog; 152. b'og: 153. b'jog; 164. mōg: 165. m'og; 186. p'ung: 187. p'jung; E 1. kwān, 2. g'wān, 3—7. g'wan: 8. k'iwān, 9. g'iwān, k'iwān, 12. g'iwān; 19. kwān: 22. g'iwān; 25. g'wār: 28. g'iwār; 32. kān and g'jan; 37. g'wār: 39. g'iwār; 46, 47. xwār: 44, 47. x'iwār; 53. kwān: 54. k'iwān; 74. ked: 75. k'jed; 95. 'an: 96. 'ian; 106. kat: 108. k'iat, g'iat; 120. kwät, 119. k'wät: 117. g'iwät; 122. 'wat: 123. 'iwät; 132. kwān: 133. k'iwān; 140. g'wad: 139. g'iwät; 154. 'wān, 156. 'wan: 158. 'iwān, 161. 'iwār; 185. g'ān: 186. g'jān; 226. k'ān, 228. g'ān: 230. g'jān; 231. k'at: 232, 233. g'iat; 300. k'ān: 302. g'jan; 312—314. kwād, 307. kwät: 315. k'iwād; 319. ngwät and ngiwät; F 19. d'wān and t'iwān; 63. tswān: 64. ts'iwād; 74. d'ān: 75. t'ian; 166. ts'wät and dz'iwād; 180. twār: 181, 182. t'iwār, 183, 184. d'iwār; 185. t'ān, 186. d'ān: 188. t'ian, 187. t'ian, 189—191. d'ian; 214. tswān and ts'iwān; 214. tswān, ts'wät: 215. dz'iwād; 216. twān: 217. t'iwān; 233. ts'wār: 234, 235. s'iwān, 236. s'iwād; 259. d'ān: 262, 263. d'ian; 279. tswād: 282. s'iwād; 283. t'ān, 284. d'ān: 285. d'ian; 299. tān: 301. t'ian; 308. swān: 309. s'iwār; 316. d'at: 317. d'iat; 318. tān: 319. t'ian; 333. swān: 332. ts'iwān; 343. d'wār: 342. d'iwād; G 1. nan: 2, 3. n'ian; 25. lāt: 27, 28. l'iat; H 10. pwāt, 11. p'wāt: 12. p'iwāt, 14. p'iwād; 24. p'wār: 23. p'iwār; 26, 27. b'ān: 27, 28. b'ian; 66, 67. mwān: 69. m'iwār; 79. b'wät: 81. p'iwār; 83. pwät: 84. p'iwāt, 87. p'iwār; 125. p'jād: 126. p'iwād; 155. mwān and m'iwān; I 8. 'am: 9, 10. 'iam; 12. 'em: 13, 14. 'jem; 15—18. 'am: 19, 20. 'jam; 31. kap, 34. g'ap: 39. x'jap; 43. x'ap: 44, 45. x'jap; 50. 'ap: 51. 'iap; 62. k'am: 63. k'jam; 64. ngam: 65. ngiam; 77. g'ap: 80. x'jap; 83. k'am: 84. k'jam; K 1. tsām: 5, 6. tsjam; 7. tsam: 8. ts'jam; 28. d'am: 29. d'jam; 36. tsām: 38. dz'iap; 40. d'am: 41. d'iam; 42. d'am: 43. d'jam; 57. d'am: 58. t'iam; 74. sam: 76. sjam; 81. dz'ap: 82, 83. dz'ap; 87. n'ap: 90. n'jap.

0 ~ i:

A 133. g'eg: 132. g'ieng; 196. kog: 198. kiog; 303. g'og: 306. kiog; 346. g'og: 347. kiog; B 103. tók: 104. d'iók; 159. tog: 160. tiog; 153. tēk: 152. tiek; 235. d'ók: 236. d'iók; 480. d'óg: 484. d'ióg; 503. šóg: 504. sióg; C 12. log: 13. liog; 34. nóg: 36. niog; D 104. pēk: 105. p'iek; E 84. kwād: 83. kiwat; 89. k'wad: 88. kiwat; 106. kat: 107. k'iat; 128. k'ân: 129. kian; 178. 'ân, 179. 'an: 180, 181. 'ian; 203, 204. k'ar: 205. k'iar; 224. ken: 225. kien; 305. kât; 311. g'âd: 309. k'iat, 316, 317. k'iad; 330. 'at: 331. 'ian; F 307. ser and siar; 326. dz'er: 324. dz'iar; 350. tsed: 351. tsiar; G 11. glân: 12, 13. glian; I 21. g'am: 27. kiap; 31. kap, 32—34. g'ap: 35. kiap, 37. g'iap; 60. g'ap: 59. k'iap; 83. k'am and k'iam; K 32, 33. d'am: 34. d'iam; 60. d'ap: 61. d'iap.

0 ~ w:

A 20. g'äng: 21. g'wäng; 50. g'jäng: 49. g'jwang; 51. g'äng: 52. g'wäng; 73. kjäng: 77. k'jwang; 147. k'jæg: 148. kjwæg; 202. 'jēng: 203. 'jwēng; 206. k'äng: 207. k'wäng; 331. kek: 330. k'wák; 335. g'jæg: 334. g'jwæg; D 24, 25. mæk: 27. mwæg; 37. b'äng: 35. b'wäng; 40. b'ang: 42. b'wæg; 43. mjäng: 44. mjwang; 121. pæk: 122. pwæg; E 45. χiar; 42. χian: 46, 48. χiwær; 52. k'ian: 55. k'iwän; 79. kân, 80. kan: 81. g'wän; 99. k'an: 100. k'wän; 111. k'an: 112. g'wät; 128. k'ân: 132. kwân; 142. ngiän, 143. ngian: 139. giwät, 138. giwän; 153. 'jän: 158, 160. 'jwän; 185. g'än: 187. kwan; 265. 'jēn: 266. 'jwän; 268. 'jad: 270. 'iwäd; 291, 292. g'ian: 293, 294. giwän; 305. kât, 311. g'âd: 307. kwät, 312, 313. kwäd; F 41. tsjan: 43. tsjwan; 112. tjan: 113. djwan; 160. tân: 161. d'wän; 259. d'an: 265, 266. d'wän; 261. tjan: 267. tjwan; 302. djian: 303. tjwan; G 1. nan: 4, 5. nwän; 7. njat: 8. njwat; H 21. pjær: 23. p'iwær; 26, 27. b'än: 31. pwän, 32. p'wän; 68. mjen: 69. mjwän; I 38. k'jap and k'jwäb; 77. g'ap: 78. g'wäb; 85. tæp: 86. twäb; K 87. næp: 89. nwäb.

0 ~ iw:

A 20. g'äng: 22. giwang; 109. ngēg: 110. ngiwæg; 243. g'äng: 244. k'jwang; E 40. χân: 41. χiwän; 128. k'ân: 133. kjwan; 300. k'ân: 301. k'iwän; 305. kât, 311. g'âd: 308. giwät, 315. kjwäd; F 163. tât: 164. tjwat; 259. d'an: 269. d'jwan.

0 ~ iw:

A 8. këng: 9, 10. kiweng, 11, 12. g'iweng.

j ~ i:

A 58. giwäng: 57. g'iweng; 129. kjäng: 130. kieng; 192. kjäg: 193. g'ieg; 197. kjog: 198. kiog; 350. 'iög: 349. 'iog; 352. 'iög; 354. 'iög: 356. 'iög; 363. giog; 364. xiög: 362. kiög; B 54. tjäng: 53. d'ieng; 248. tjog; 253. fjog: 245. tiok; 302—304. dz'jäng: 305. dz'iek; 340. d'jäng: 341. tieng; 485. d'jög: 484. d'iög; 559. djog: 560. tiög; 579. djog: 582. t'iog; 592. djog: 593. d'iog; 598. djög: 599. t'iog; 605. djok; 607. t'jog: 606. d'iog; 689. djog: 688. d'iog; C 35. njog: 36. niog; D 38. pjäng: 39. b'ieng; 84. pjäng and b'ieng; E 108. kjat, g'jat: 107. k'iat; E 220. 'jar: 221. 'iar; F 114. dz'jan: 117. ts'iar; 148. djær and t'iar; 176. t'jēt: 174. d'ien; 248. djad: 249. d'iad; 286. dzjær: 287. siær; 315. tjēt and tiet; 314. tiēn and t'ien; 353.

djēt and d'iet; G 31. ljäd: 32. liær; H 21. pjær: 22. p'iar; 30. p'ian: 29. p'ian; 153. p'jan: 152. pian; I 29. g'jam: 37. g'iap; 84. k'jäm: 83. k'iam.

i ~ w:

A 1. kjäng: 3. kwäng; 73. kjäng: 76. g'wäng; 315. k'jak: 317. k'wäk; E 52. k'jan: 53. kwân; 142. ngiän, 143. 'ngian: 140. g'wad; 153. 'jän: 154. 'wän, 156. 'wan; 186. g'jän: 187. kwan; F 105. twät: 106. d'wät: 104. f'jat, 103. d'jat; 209. tsjan: 210. ts'wän, 211, 212. dz'wan; 261. tjan: 266. d'wän; 311. djän, d'jän: 312. t'wän; G 2, 3. njan: 4, 5. nwän; H 21. pjær: 24. p'wær; 27. b'jan, 30. p'jan: 31. pwän, 32. p'wän; 45. b'jan: 48. pwän; 68. mjen: 66, 67. mwän; 144—146. b'jad: 143. b'wad.

i ~ w:

A 93. g'ieng: 94. g'wäng; E 129. kian: 132. kwân; 309. k'iat, 316, 317. k'iad: 307. kwät, 312—314. kwäd; G 32. liær: 33. lwær; H 22. p'iar: 24. p'wær; 29. p'ian: 32. p'wän; 89. miat: 88. mwät.

i ~ iw:

E 129. kian: 133. kjwan; 210. kiær: 211. g'jwer; F 30. dz'iat: 31. dz'jwat; 281. siær: 278. dzjwän; H 22. p'iar: 23. p'jwær.

The examples given are sufficient to show that the alternations 0 ~ i, 0 ~ w, j ~ i, and quite particularly the first one (type kân ~ kian), are among the fundamental means of the Chinese language for creating derivatives from one and the same word stem.

The principal vowels

By alternations of all the vowels of the Archaic Chinese phonetic system the language has created an *Ablaut* system which is extremely rich and varied, and it is in this respect a true sister language of Tibetan, in which such an *Ablaut* plays a predominant part. I shall exemplify first the alternations of the different varieties of the same principal vowel (\hat{a} : a : \check{a} : σ : \hat{o} : \acute{o} : \check{e} : e : \check{u} : u), and then the alternations of the different principal vowels.

 \hat{a} ~ a :

For the very numerous cases of type \hat{a} : ja ($kân$: $kian$ etc.) see alt. 0 ~ \check{a} above. Furthermore:

E 2. g'wän: 3—7. g'wan; 79. kân: 80. kan; 121. wän: 122. 'wat; 124. kwän: 125. g'wan; 154. 'wän: 156. 'wan; 178. 'ân: 179. 'an; 252. 'ân: 254. 'at; 333. kwän: 334. g'wan; F 210. ts'wän: 211, 212. dz'wan; G 4, 5. nwän: 1. nan; H 136. pwät: 137. b'wat; I 71. glâm: 69. klam; K 1. tsâm: 2. dz'am.

 \hat{a} ~ \check{a} :

A 76. g'wäng: 73. kjäng; 134. k'äng: 135. k'jäng; 184. käng: 185. käng; 207. k'wäng: 209. kwäng; 206. k'äng; 250. käng; 257. ngäng; 323. 'äk, 'äg: 324. 'äg; D 35. b'wäng: 37. b'äng; 67. mäng: 70. mäng; 91. päk: 92. p'äk; 126. päng: 127, 128. b'jäng; 168. päk: 169. päk; 226. k'ân, 227. g'ân: 228, 229. g'än, 230. g'jän;

305. *kāt*, 312—314. *kwād*: 307. *kwāt*, 315. *kjwād*; F 73. *dz'ân*: 72. *tsân*; H 10. *pwāt*: 12. *pjwāt*; I 47. *k'am*: 48. *g'am*.

a ~ ä:

A 6. *giwang*: 7. *giwäng*; 22. *giwang*: 20. *g'äng*; 49. *g'iwang*: 50. *g'jäng*; 77. *k'iwang*: 73. *kjäng*; 168. *kjang*: 170. *kjäng*; 253. *g'iang*: 254. *g'jäng*; 279. *kjwak*: 278. *g'wäk*; B 48. *d'jang*: 46. *d'äng*; E 13. *giwan* and *giwän*; 56. *g'iwän*: 55. *k'iwän*; 108. *g'iat* and *kjät*; 143. *ngjan*: 142. *ngjän*; 161. *'jwar*: 160. *'jwän*; 280. *'jwan*: 281. *'jwän*; F 37. *san*: 26. *ts'än*; H 27. *b'jan* and *b'än*.

ö ~ o:

A 124. *kög*: 122, 123. *kog*; B 235. *d'ög*: 237. *t'og*; 283. *ts'ög*: 285. *tsjog*; 551. *şög*: 553. *şjog*; C 34. *nög*: 35. *njog*; D 148. *pög*: 149. *pjog*; 164. *mög*: 165. *mjog*.

ō ~ ô:

A 124. *kög*: 121. *g'ök*; 340. *kög*: 342. *kög*; 340, 341. *g'ög*: 343. *g'ög*; 339. *g'ök*.

ō ~ ô:

A 305. *kjög*: 306. *kiog*; 340. *g'ög*: 345. *k'ög*; B 235. *d'ök*: 236. *d'iök*; 283. *ts'ög*: 284. *tsög*; 503. *şög*: 504. *siög*; 666. *tsög*: 667. *tsög*; 668. *sög*.

o ~ ô:

A 113. *ngiog*: 108. *ngök*; 122, 123. *kog*: 121. *g'ök*; 218. *g'og*: 221. *kög*; D 52. *b'og*; 49. *b'ok*: 53, 54. *b'ög*; 151. *b'jog*: 150. *p'ög*; 153. *b'jog*: 152. *b'ög*.

o ~ ô:

A 197. *kjog*: 199. *kjög*; 301. *k'og*: 300. *k'ög*; 302. *kog*: 303. *g'ög*; 347. *kiog*: 348. *kiög*; 349. *'iog*: 352. *'iög*; 354. *'jog*: 356. *'iög*; 363. *giog*: 362. *kiög*; B 248. *tjog*; 253. *tjög*: 255. *tjög*; 273. *tjök*: 274. *tjök*; 275. *đjök*; 280, 281. *đjog*: 276, 277. *d'ög*; 285. *tsjog*: 284. *tsög*; 312. *t'jog*; 313. *đjog*: 314. *t'jög*; 315. *d'jög*; 319. *ts'jog*; 320. *dz'jog*: 321. *dz'jög*; 366. *tsog*: 367. *ts'ög*; 456. *sjog*: 452. *sjök*; 559. *đjog*: 560. *tiög*; 588. *tog*: 589. *tjög*; 691. *d'og*: 692. *d'ög*; C 48. *njog*: 49, 50. *njög*; 70. *log*: 71. *ljög*; D 181. *p'jog*: 182. *b'jög*.

ô ~ ô:

A 121. *g'ök*: 125. *k'jög*; 344. *k'ög*: 345. *k'ög*; D 53, 54. *b'ög*: 56. *b'jög*; 117. *pög*: 118, 119. *b'ög*.

ě ~ e:

For the numerous cases of this alternation see alt. 0 ~ ĭ and 0 ~ i above.

ũ ~ u:

A 36. *k'ük*: 37. *kuk*; 215. *k'üng*: 214. *k'ung*; 268. *kjüng*: 270. *k'juk*; B 42. *d'üg*: 41. *d'uk*; 123. *tük*: 125. *t'juk*; 115. *d'üng*: 116. *tjüng*; 626. *t'üng*: 625. *t'ung*; D 86. *püng*: 87. *pjüng*; 90. *b'üng*: 94. *p'uk*; 101, 102. *b'üg*: 98. *b'jüng*; 135, 136. *b'jük*: 137. *p'jüng*.

a ~ e:

A 1. *kjäng*: 8. *käng*; 6. *giwang*. 7. *giwäng*: 11, 12. *g'iweng*; 52. *g'wäng*: 53. *kiweng*; 91. *käng*: 93. *g'iang*; 115. *xiang*: 117. *xieng*; 134. *k'äng*; 135. *k'jäng*: 136.

g'eng; 184. *käng*, 185. *käng*: 188. *kieng*; 207. *k'wäng*, 209. *kwäng*: 212. *giwäng*; 240. *kjang*: 241. *k'iwäng*; 253. *g'iang*, 254. *g'jäng*: 255. *kjäng*; B 5. *şjang*: 6. *şjög*; 48. *d'jang*: 53. *d'ieng*; 46. *d'äng*, 44. *t'äng*: 54. *tjäng*; 108. *şjang*: 110. *şjäng*; 136. *d'äng*: 138. *d'ieng*; 151. *fiak*: 154. *t'iek*; 265. *điang*, 264. *t'äng*: 266. *tieng*; 338. *ts'äng*: 339. *ts'ieng*; 391. *ts'jang*: 392. *ts'jäng*; 405. *d'äng*, 407, 408. *fiang*: 410. *đieng*, 412. *t'ieng*; 444. *điak*: 445. *đjök*; 458. *dz'jak*: 459, 460. *ts'ök*; 462. *tsjag*: 403. *tsög*; 529. *d'äk*: 531. *tök*; 660. *điak*: 661. *đjök*; C 58. *liang*: 59. *ljäng*, 60. *lieng*; D 1. *b'äng*: 2. *päng*; 6. *mäng*: 9. *mieng*; 31. *b'wäng*: 38. *pjäng*, 39. *b'ieng*; 183. *p'iwang*: 184. *p'jäng*; E 9. *g'iwän*, 12. *giwän*, 13. *giwän*: 15, 16. *g'iwän*; 34. *g'ian*: 36. *g'iwän*; 52. *k'ian*: 57. *kjän*, 58. *g'ien*; 63. *kwät*: 64. *kiet*; 86. *ngan*: 87. *ngiän*; 117. *g'iwät*: 118. *g'iwät*; 232, 233. *g'iat*: 234. *g'jät*; 252. *'än*: 253. *'jän*; 254. *'at*: 255. *'jät*; 268. *'jad*: 269. *'jäd*; F 30. *dz'iat*: 32. *tsiet*, 33. *ts'iet*; 54. *tän*: 55. *tjän*; 88. *dz'ian*: 89, 90. *tsjän*; 175. *t'ät*: 176. *t'jät*; 186. *d'än*: 188. *t'jan*, 189. *đian*: 192. *d'jän*, 194. *đjän*; 201. *t'ät*: 200. *d'iet*; 218. *t'än*: 219, 220. *tjän*; 271. *dzjwän*: 276, 277. *dzjwän*; 334. *şjan*: 335. *şjän*; 346. *d'iad*: 347. *đjät*; G 7. *njat*: 9. *njät*; 50. *liat*: 51. *ljät*; H 1. *p'iwän*: 2. *p'ien*; 29. *p'ian*, 30. *p'jan*: 37. *pien*; 46. *pwän*, 45. *b'jan*: 47. *pien*; 73. *b'iwän*: 74. *p'jän*; 123. *piad*: 124. *pjäd*; 152. *pian*: 154. *pjän*.

a ~ a:

A 29. *käng*: 30. *kög*; 73. *kjäng*: 78. *kjäng*; 92. *g'jäng*: 114. *xiäng*; 153. *käng*, 155. *kjäng*: 163. *kjök*; 169. *kjäng*: 172. *käng*, 175. *g'jök*; 229. *kwäng*: 231. *g'wäng*; 257. *ngäng*: 258. *ngjäng*; B 64. *điang*: 70. *d'jäng*; 265. *điang*, 264. *t'äng*: 267. *tjäng*; 335. *şjak*: 336. *şjök*; 406. *tjäng*: 411. *täng*; 662. *d'jak*: 663. *đjök*; C 24. *liang*: 26. *ljäng*; 56. *näng*: 57. *njäng*; D 31. *b'wäng*: 40. *b'äng*, 42. *b'wäg*; 168. *päk*, 169. *päk*: 170. *pjök*; E 1. *kwän*, 2. *g'wän*, 3—7. *g'wän*, 12. *giwän*, 9. *g'iwän*, *k'iwän*, 13. *giwän*: 19. *kwän*, 17. *k'wän*, 22. *giwän*, 21. *kjwän*; 47. *xiwar* and *xiwät*; 53. *kwän*, 54. *kjwän*, 55. *k'iwän*: 60. *kwän*, 61. *k'wän*; 63. *kwät*: 67. *kwät*; 72. *g'iat*: 73. *kjät*; 117. *g'iwät*, 116. *k'iwät*: 117. *g'iwät*, 120. *kwät*, 119. *k'wät*; 130, 131. *g'ian*: 134. *g'jän*; 143. *ngjan*, 142. *ngjän*: 139. *giwän*; 140. *g'wad*, 139. *giwät*: 141. *giwad*; 250. *xiwän*: 251. *xiän*; 259. *'jwän*: 260. *'iwän*; 263. *giwän*: 264. *g'iwän*; 280. *'jwan*, 281. *'jwän*: 282. *'jwän*; 300. *k'än*, 302. *g'ian*: 303. *g'än*, 304. *kjän*; 307. *kwät*, 308. *giwät*: 310. *giwät*; 314. *kwäd* and *kjäd*; 319. *ngwät*, *ngiwät* and *ngwät*; 320. *ngiäd*: 321. *ngjäd*; 325. *giwän*: 326. *giwän*; 332. *g'jän*: 331. *kjän*; F 1. *đjwan*: 2. *đjwän*; 88. *dz'ian*: 95. *siän*; 114. *dz'jan*: 115. *dz'wän*; 152. *dz'wäd*: 153. *dz'iwäd*; 158. *şjwad* and *şjwät*; 161. *d'wän*: 162. *d'wän*; 210. *ts'wän*, 211. *dz'wän*: 214. *tswän*, 213, 214. *tsjwän*; 228, 229. *tjän*: 230, 231. *tjän*; 271. *dzjwan*: 278. *dzjwän*; 310. *tän*: 311. *đjän*, *d'jän*; 337. *ts'jwad*: 338. *swäd*; G 15, 16. *liar*: 17, 18. *ljwän*; 29, 30. *liäd*: 49. *ljäd*; H 1. *p'iwän*: 3, 4. *pjwän*; 12. *pjwät*, 14. *p'iwäd*: 13. *p'iwät*, 15. *p'iwäd*; 31. *pwän*, 32. *p'wän*, 27. *b'än*, *b'jan*: 38. *pjwän*, *b'iwän*; 40. *b'iwät*: 41. *b'iwät*; 58, 59. *b'wäd* and *b'wät*; 73. *b'iwän*: 75. *pjwän*; 88. *mwät*, 89. *miät*: 90. *mjwät*, 91. *mjwäd*; 92. *man*: 93. *mwän*; 122. *pjad*: 125. *pjäd*; 148. *b'iwän*: 149. *b'iwän*; I 4. *g'äp*: 5. *käp*; 8. *'äm*, 9, 10. *'jam*: 15—18. *'äm*, 19, 20. *'jäm*; 21, 22. *g'äm*: 24—26. *g'äm*; 27. *kiap*: 28. *g'äp*; 47. *k'äm*: 49. *k'jäm*; 60. *g'äp*, 59. *k'iap*: 61. *g'jap*; 64. *ngam*, 65. *ngiam*: 66. *ngjäm*; 74. *g'iap*: 77. *g'äp*; K

1. tsám, 2. dz'am, 5. tsjam; 7. tsam, 8. tsjam; 3. djam; 4. tjam, 9, 10. tjam; 20. tjam; 23. tjam; 36. tsám; 37. ts'jam; 38. dz'jam; 39. səp; 40. d'am, 41. djam; 43. djam; 57. d'am, 58. tjam; 59. d'am; 64, 65. tsjam; 66. tsjam; 72. dz'am; 73. dz'jam; 77. dz'am; 78. ts'jam.

a - e:

A 184. káng; 189. g'weng; 229. kwáng; 230. g'weng; 330. k'wák; 331. kek; E 9. k'jwan, 12. gjwen; 84. kwád, 83. kiwat; 82. g'wet; 124. kwán, 125. g'wan; 127. gjwen; 128. k'an, 129. kian; 137. ngen; 191. 'jám; 193. 'jen; 236. g'wát; 237. g'wet; I 8. 'ám; 12. 'em; 9. 'jam; 13, 14. 'jem; 21, 22. g'am; 23. g'em; 40. gjam; 41. g'em; 60. g'ap, 59. k'iap; 61. g'jep; 72. kiam; 73. g'em; 74. g'iap; 75. g'ep; K 20. tjam; 22. tjam; 24. sjam; 25. sem.

a - o:

A 106. ngák; 108. ngók; 120. g'ák; 121. g'ók; 239. g'áng; 242. kóng; B 165. tsjak; 187. sjok; 265. djang, 264. t'áng; 269. djông; 272. tjak; 273. t'ók; 288. sjak; 292. sjók; 306. t'jang, 307. f'jang; 308. t'jông; 416. tjak; 420. t'ók, 417, 419. d'jók; 450. dzjak, 454. zjag; 452. sjók, 456. sjog; 518, 519. tsjak; 521. tsjók; 585. f'jak; 586. d'jók; C 3. njang; 4. nong; D 18. mág; 21. móg; 160. mág; 161. mjók; 162, 163. mág; 164. móg, 165. mjog.

a - u:

A 14. xák; 15. xiuk; 20. g'áng; 25. g'ung; 51. g'áng; 54. kung; 73. kjäng, 77. k'jwang; 79. kjung, 80. k'jung; 92. g'jäng; 95. kung; 169. kjäng; 173. g'jüng; B 46. d'äng, 44. t'äng; 56. tung; 119. t'ák; 123. tük; 120. d'ák; 124. d'ük; 130. d'äng; 131. d'ung; 141. tjang; 143. tjung; 151. tjak; 155. tük; 198. táng; 199. d'ung; 228. d'ák; 230. tük; 361. ts'äng; 362. ts'ung; 405. d'äng, 407, 408. tjang; 414. djung; 406. tjang; 413. d'ung; 498. sák; 500. sjuk, 499. sjuk; 507. tjak; 509. d'juk; D 1. b'äng; 3. b'ung; 6. mǎng; 12. mung; 46. pjäng; 48. p'jung; 62. pjäng; 63. p'jung; 79. mǎng; 81. mǎng; 83. b'jwang; 87. pjung; 89. b'äng; 90. b'ung; 92. p'ák; 94. p'uk; 95. pjäng; 97. p'jung, 98. b'jung; 178. mág; 180. mjü.

e - e:

B 101. t'jeng; 102. d'eng; E 64. kiet; 69. gjwet; 225. kien; 224. ken.

e - a:

A 145. kjwäg; 148. kjwäg; 288—291. 'ék; 293. 'jak; 296. kiek; 298. kjak; 334. g'jwäg; 335. g'jäg; 336. g'äg; 337. g'jäg; B 10. fjeng; 11. d'jäng; 20. fjeng; 21. d'jak; 27. d'jeng; 28. f'jäng; 77. d'ieg; 79. d'äg; 232. dz'jäg; 233. tsjäg; 266. tieng; 267. fjäng; 394, 395. tjäg; 396, 397. tjäg; 445. djäk; 447. d'ieg; 448. d'äg; 468. sjäg; 469. sjäg; 510, 511. d'ieg; 513. tjäg; 630. djäg; 631. tjäg; 633. sjäg; 632. tsjäg; C 64. lieng; 65. ljäng; E 36. g'jwen; 37. g'wän; 57. kjän, 58. g'jen; 60. kwän, 62. k'wän; 64. kiet; 67. kwät; 118. g'iwet; 120. kwät, 119. k'wat; 214, 215. 'jén; 216. 'jän; 265. 'jén; 266. 'jwän; 283. 'én; 284. 'äd; F 89. tsjén; 95. siän; 121. dzjwän; 123. dzjwän; 232. d'ien; 231. tjan; 276. dzjwän; 281. siän; 288. d'iet; 289.

t'iad; 305. sjén; 306. siän; 320. tsjén; 321, 322. ts'ian; H 74. p'jén; 75. pjwän; 115. pjät; 117—119. pjwät; 116. pjät; 120, 121. pjwät; 124. pjät; 125. pjät, 126. pjwät; 141. pjät; 142. pjwät.

e - o:

A 96. k'jäg; 99. k'jög; 109. ngäg; 113. ngiog; 143, 144. kwäg, 145. kjwäg; 149. kog, 150. kjög; 193—195. g'ieg, 192. kjäg; 197. kjög, 198. kiög, 199. kjög; B 58, 59. fjäg; 61. d'jög; 85. djäng; 89. f'jög; 147. djäng; 148. fjög; 174. ts'jäg; 182. tsög; 209. sieng; 208. sog; 261. siek; 262. sjök; 331. d'jäng, 330. t'jäng; 332. d'jög; 479. d'ieg; 486. d'jög; 578. djäg; 579. djög; D 129. b'äg; 131. b'ög.

e - u:

A 129. kjäng, 130. kieng; 131. g'ung; 210, 211. k'ien; 214. k'ung, 215. k'ung; 264. 'äng; 265. 'ung; 283. g'ieg; 284, 285. güg; B 8. fjäng; 12. tung; 54. tjang; 56. tung; 85. djäng, 88. djäng; 90. djung; 112. tieng; 115. d'ung; 113. fjäng; 116. tjung, 118. djung; 154. t'iek; 155. tük; 229. tiek; 230. tük; 232. dz'jäg; 231. dz'ük; 375. t'ien; 376. ts'ung; 410. djäng; 414. djung; 442. tsjäng; 443. ts'ung; 520. tsjök; 523. tsjuk; C 31. lieng; 32. lung; D 2. päng; 3. b'ung; 8, 9. mieng; 11, 12. mung; 28. mieng; 29. mung; 173, 174. mäg; 175. mug.

e - a:

A 83. g'äg; 84. g'jäg; 230. g'weng; 231. g'wäng; E 20. k'jwen; 22. gjwän; 74. käd, 75. kjäd; 76, 77. kjäd; 137. ngen; 134. g'jän; 182. g'en; 183. k'wän; 275. g'jen, 276. kjer; 277. kjär; F 307. ser and siär; 326 dz'er; 324. dz'iar; H 68. mjen; 66, 67. mwän, 69. mjwän; I 12. 'em, 13, 14. 'jem; 15—18. 'äm, 19, 20. 'jam; 23. g'em; 25. g'am; 61. g'jep and g'jap; 75, 76. g'ep; 77. g'ap; K 22. tjam; 23. tjam; 26. d'em; 28. d'am, 29. d'jam; 27. dz'jem; 31. sjam.

e - o:

A 16, 17. xiäg; 18. xiög; 97. k'jäg; 99. k'jög; 101. g'jög; 138. xiäg; 139. xög; 147. k'jäg; 150. kjög; B 2. djäg; 3. fjög; 106. t'jäg; 107. t'jög; 176. tsäg, 177. dz'äg, 179. tsjäg; 183. tsjög; 247. f'jäg; 253, 254. fjög; 267. fjäng; 269. djông; 300. djök; 301. djök; 382. dzjäg; 383. ts'jög; 384. sjög, 385. zjög; 401. sjäg; 402. zjög; 501. sjäg; 502. sog; 513. tjäg; 515. d'jög; 532. d'jög; 533. djög; 537. ts'äg; 538. ts'ög; 570. d'äg; 571. tog; 587. tjäg; 588. tog; 589. fjög; 597. djäg; 598. djög; 619. f'jäg; 620. tög; 623. f'jäg; 624. f'jög; 644. tsjäg; 645. tsög; 647. tsjäg; 650. dz'ög; D 145. p'wäg; 146. p'ög.

e - u:

A 78. kjäng; 79. kjung; 172. käng; 173. g'jüng; 267. kwäng; 268. kjüng; 326. kjäk; 327. giuk; 368. g'iwäg; 367. kjüg; B 411. täng; 413. d'ung; 470. d'äng, 471. djäng; 472. t'ung; 505. djäng; 506. fjung; 542. fjäng; 543. fjung; 603. d'äng; 604. djung; 652. tsjak; 653. sjuk; 684. d'äk; 685. d'uk; C 61. ljäng; 62. ljung; D 10. mäng; 11, 12. mung; 122. pwäg, 123, 124. b'wäg; 125. b'jüg; 133, 134. b'wäk; 135, 136. b'jük; 179. mwäg; 180. mjüg; 188. b'wäg and b'üg.

o ~ u:

A 43. 'ok: 44. 'ūk; 63. kōng; 64. g'ung; B 89. t'jōng; 90. djung; 103. tók, 104. d'iók; 105. t'juk; 114. d'jōng; 117. t'jung; 122. t'jók; 123. t'úk; 216. d'óng; 217, 218. t'ung; 259. tsjok; 246. t'juk; 269. d'jōng; 270. djung; 369. sjók; 370. suk; 364. tsjók; 365. ts'juk; 389. tóng; 390. tung; 475. t'jok; 477. t'juk; 508. d'iók; 509. d'juk; 521. tsjók; 522. ts'jók; 523. tsjuk; 594. d'jók; 596. djuk; C 66. nōng; 67. njung; D 4. p'jók; 5. b'juk; 49. b'ok; 51. puk; 185. p'jōng; 187. p'jung.

Combined alternations

We now revert to the question posed on p. 90 above. Is it reasonable to combine words which offer, not one alternation but two or more? Let us take the third example given there: E 93. g'át »how»: 94. k'jár »how». Semantically the combination is very good; but we have to accept no less than four alternations, concerning every element of the two words. We have attested above the indubitable existence of the four alternations: g' ~ k' (very common); 0 ~ j (very common); á ~ ə (very common); t ~ r (quite certain and fairly common); are we then authorized to pose the affinity of the two words »how»: g'át: k'jár, which supposes those four alternations?

Theoretically, I should say that we are; but I want to emphasize that here, as in all linguistics, the conclusiveness of the argumentation depends upon the question whether we can find many parallel examples, showing the same combination of alternations. If we can, then I think nobody can deny the correctness of our deductions. That is why I wish to give here some fairly extensive examples of double alternations (in order to simplify matters I limit the demonstration to two elements: principal vowel and final consonant):

Alternations a ~ e and ng ~ k ~ g (ang ~ ek, ang ~ eg, ak ~ eng, ak ~ eg):

B 407. t'jang: 415. djék; C 9. njang: 11. nēk; A 140. k'iwang: 145. k'iwēg; 186. k'iang: 192. k'jēg; B 5. sjang: 6. sjēg; 48. d'jang: 58. t'jēg; D 127, 128. b'jāng: 129. b'ēg; 130. pjēg; B 333. t'jak: 330. t'jēng; 335. sjak: 334. sjēng.

Alternations a ~ ə and ng ~ k ~ g (ang ~ ək, ang ~ əg, ak ~ əg, ag ~ əng):

A 155. k'jāng: 163. k'jak; 168. k'jang; 169, 170. k'jāng: 175. g'jak; B 427. d'jang: 428. d'jak; A 73. k'jāng: 84. g'jag; 92. g'jāng: 97. k'jag; 135. k'jāng: 137. g'jag; B 1. d'jang: 2. djag; 66. d'jang: 79. d'ag; 108. sjang: 111. sjag; 162. dz'jang: 177. dz'ag; 210. d'ang: 214. djag; 243. t'jang: 247. t'jag; 381. dz'jang: 382. dz'jag; 399. sjang: 401. sjag; 427. d'jang: 429. t'jag; 535. ts'jang: 540. zjag; 639. sjang: 640. sjag; B 97. djak: 99. djag; 119. t'ak: 126. t'jag; 444. djak: 448. d'ag; 498. sák: 501. sjag; 507. t'jak: 513. t'jag; 637. t'ak: 638. d'ag; B 207. dz'ag: 206. dz'ang; 416. t'jag: 411. t'ang; D 18. mág: 10. m'ang.

Alternations a ~ o and ng ~ k ~ g (ang ~ ok, ang ~ og, ak ~ og, ag ~ ok):

A 118. k'ang: 121. g'ók; 201. 'jang: 205. 'jok; 250. k'ang: 256. k'ók; B 265. d'jang: 273. t'jok; 275. d'jók; 286. sjang; 287. sjang: 289. sjok; C 16. l'ang: 19. liok

24. liang: 27. liok; D 45. p'ang: 49. b'ok; A 118. k'ang: 122, 123. kog; 186, 187. k'iang: 197. k'jog; 199. k'jók; B 1. d'jang: 3. t'jók; 48. d'jang: 61. d'ióg; 242. d'jang: 250—252. djog; 265. d'jang: 280. djog; 278. t'jók; 307. t'jang: 312. t'jog; 314. t'jók; 361. ts'ang: 367. ts'óg; 381. dz'jang: 385. zjók; 399. sjang: 402. zjók; 407. t'jang: 418. d'jók; 406. t'jang: 420. t'jók; 440. d'ang: 441. tog; 554. t'jang: 557. t'óg; C 14. liang: 15. liog; 16. l'ang: 20, 21. liog; 69. l'ang: 70. log; 71. l'jók; D 6. m'ang: 20. mog; 45. p'ang: 53, 54. b'óg; 46. p'jāng: 55. pjog; 62. p'jāng: 66. p'jog; 67. m'ang; 70. m'ang: 71. m'jog; 79, 80. m'ang: 82. m'jog; 127, 128. b'jāng: 131. b'óg; A 120. g'ak: 122, 123. kog; 124. k'óg; B 119. t'ak: 127. t'óg; 165. ts'jak: 183. ts'jog; 271. t'ak: 279. t'jók; 272. t'jak: 278. t'jók; 288. sjak: 292. sjók; 323. sjak: 319. ts'jog; 335. sjak: 337. sjók; 450. dz'jak: 456. sjog; 581. dz'ak: 583. ts'jog; B 454. z'jag: 452. sjók.

Alternations a ~ u and ng ~ k ~ g (ang ~ uk, ak ~ ung, ag ~ ung):

A 266. g'iwang: 271. g'juk; B 554. t'jang: 556. d'uk; D 89. b'ang: 94. p'uk; A 90. x'jāk: 88. x'jung; B 120. d'ak: 116. t'jung; 119. t'ak: 115. d'ung; D 91. p'ak: 90. b'ung; 100. p'ak: 97. p'jung; 98. b'jung; D 18. m'ag: 11. mung.

Alternations e ~ ə and ng ~ k ~ g (eng ~ ek, eng ~ eg, ek ~ eg):

A 159. g'ieng: 162. k'ak; B 8. t'jēng: 13. t'jak; 53. d'ieng; 54. t'jēng: 57. djak; 68. tieng: 74. tag; A 136. g'ēng: 137. g'jag; B 101. t'jēng: 106. t'jag; 110. sjēng: 111. sjag; 355. sēng; 356, 357. sjēng: 354. dz'jag; 353. ts'jag; 445. djēk: 448. d'ag; 520. ts'jēk: 524. dz'jag; 531. tēk: 532. d'jag.

Alternations e ~ o and ng ~ k ~ g (eng ~ ok, eng ~ og, ek ~ og, eg ~ ok):

A 202. 'jēng: 205. 'jok; B 101. t'ieng: 104. d'iók; 112. tieng: 122. t'jók; A 8. k'ēng: 13. kog; 61. g'ieng: 65. g'óg; 93. g'ieng: 102. k'jók; 210, 211. k'ieng: 220. k'jog; B 53. d'ieng; 54. t'jēng: 61. d'ióg; 101. t'jēng: 107. t'jog; 112. tieng: 127. t'óg; 340. d'jēng; 341. tieng: 342. d'jók; 412. t'ieng: 418. d'jók; C 44. lieng: 45. l'óg; B 154. t'iek: 159. tog; 239. siek: 241. sjók; 415. djēk: 418. d'jók; 642. d'iek: 643. d'jók; 658. djēk: 659. djog; C 39. liek: 43. l'jók; D 15—17. miek: 21. m'óg; 159. miek: 161. m'jog; A 109. ng'ēg: 108. ng'ók; B 510. d'ieg: 508. d'iók; 563. d'jēg: 562. d'iók; 578. djēg: 576. djok.

Alternations e ~ u and ng ~ k ~ g (ek ~ ung, eg ~ ung, eg ~ uk):

B 520. ts'jēk: 516. ts'jung; D 15, 16. miek: 11. mung; A 24. k'ēg: 25. g'ung; 193. g'ieg: 191. k'jung; B 58. t'jēg: 56. t'ung; D 88. b'jēg: 87. p'jung; B 479. d'ieg: 477. t'juk; 510. d'ieg: 509. d'juk.

Alternations ə ~ o and ng ~ k ~ g (əng ~ ok, əng ~ og, ək ~ og, əg ~ ok):

B 267. t'jang: 274. t'jók; 298, 299. d'jang: 301. d'jók; 470. d'ang; 471. d'jang: 475. t'jok; 603. d'ang: 605. djok; C 26. liang: 27. liok; B 411. t'ang: 417. d'óg; 470. d'ang; 471. d'jang: 483, 486. d'jók; 528. d'jang: 533. d'jók; 603. d'ang: 606. d'jog; D 10. mang: 21. m'óg; A 162. k'ak: 166. kog; 326. k'jak: 328. g'jók; B 57. djak: 61. d'ióg; 317. ts'jak: 319. ts'jog; 320. dz'jog; 321. dz'jók; 336. sjak: 337. sjók; 474. t'jak: 483. d'jók; 539. sjak: 541. sjók; 569. tak: 571. tog; 572. ts'jak; 573. dz'jók;

C 22. *l̥jək*: 23. *log*; B 106. *t'jæg*: 104. *d'io̯k*; 126. *t'jæg*: 122. *t̥jōk*; 179. *t̥jæg*: 187. *sjok*; 329. *sjæg*: 328. *sjōk*; 352. *t'æg*: 350. *d̥jōk*; 597. *d̥jæg*: 594. *d̥jōk*; D 172. *b'wæg*: 171. *p̥jōk*.

Alternations *a ~ u* and *ng ~ k ~ g* (*əng ~ uk, əng ~ ug, əg ~ ung, əg ~ uk*):

D 40. *b'əng*: 41. *p'jūk*; 132. *pəng*: 135. *b'jūk*; A 181. *g'əng*: 182. *k̥jūg*; D 132. *pəng*: 137. *p'jūg*; A 84. *g'jæg*: 80. *k'jūng*, 79. *k̥jūng*; 97. *k'jæg*: 95. *kūng*; B 126. *t'jæg*: 115. *d'ūng*; 329. *sjæg*: 326. *s̥jūng*; 524. *d̥jæg*: 516. *t̥jūng*, 517. *d̥jūng*; 628. *t'jæg*, 629. *t'jæg*: 626. *t'ūng*, 625. *t'ung*, 627. *tūng*; 654. *tsæg*: 655. *šūng*; B 106. *t'jæg*: 105. *t̥jūk*; 126. *t'jæg*: 123. *tūk*, 125. *t'jūk*; 513. *t̥jæg*: 509. *d'jūk*; 597. *d̥jæg*: 596. *d̥jūk*; D 42. *b'wæg*: 41. *p'jūk*.

Alternations *o ~ u* and *ng ~ k ~ g* (*ok ~ ung, og ~ ung, og ~ uk, ok ~ ug*):

A 41. *kōk*: 40. *g'ung*; 128. *χok*: 127. *χung*; B 76. *tōk*: 72. *t̥jūng*; 122. *t̥jōk*: 115. *d'ūng*; 328. *sjōk*: 326. *s̥jūng*; 605. *d̥jōk*: 604. *d̥jūng*; A 65. *g'ōg*: 64. *g'ung*; 101. *g'jog*: 95. *kūng*; 220. *k'jog*: 213. *k'ung*, 216. *k'jūng*; 221. *kōg*: 214. *k'ung*; 225. *χjog*: 222. *χjūng*; B 127. *tōg*: 115. *d'ūng*; 225. *d'ōg*, 226. *t'ōg*: 223, 224. *d̥jūng*; 417. *d'ōg*, 417, 419. *d'jōg*: 413. *d'ūng*; 494. *tsjōg*: 490. *tsung*; 481. *t'ōg*: 472. *t'ung*; 606. *d'jog*, 607. *t'jog*: 604. *d̥jūng*; D 21. *mōg*: 11. *mung*; 55. *p̥jog*: 48. *p'jūng*; 66. *p'jog*: 63. *p'jūng*; 74. *mog*: 73. *mūng*; 82. *mjog*: 81. *mūng*; A 272. *kjōg*: 270. *k'jūk*; 328. *g'jōg*: 327. *g̥jūk*; B 107. *t'jog*: 105. *t̥jūk*; 127. *tōg*: 123. *tūk*, 125. *t'jūk*; 159. *tog*, 160. *tiōg*: 155, 156. *tūk*; 253, 254. *t̥jog*: 246. *t̥jūk*; 367. *ts'ōg*: 365. *ts'jūk*; 486. *d'jōg*: 477. *t̥jūk*; 515. *d'ōg*: 509. *d'jūk*; 538. *ts'og*: 536. *tsūk*; 550. *dz'ōg*: 549. *dz'ūk*; 557. *t'ōg*: 556. *d'ūk*; C 42, 43. *ljōg*: 40. *luk*; A 280, 281. *kjōk*: 284, 285. *g̥jūg*.

Alternations *a ~ e* and *n ~ t ~ d* (*an ~ et, ad ~ et, at ~ en*):

E 230. *g'jān*: 234. *g'jēt*; 252. *ān*: 255. *jēt*; F 346. *d'jad*: 347. *t̥jēt*; 297. *tsat*: 296. *dz'jēn*.

Alternations *a ~ ə* and *n ~ t ~ d ~ r* (*an ~ ət, an ~ əd, an ~ ər, at ~ ən, at ~ əd, at ~ ər, ad ~ ən, ad ~ ət, ad ~ ər*):

E 53. *kwān*: 67. *kwət*; 259. *jwān*: 261. *jwət*; F 107. *ts'wan*: 111. *dz'wət*; 132. *d̥jwan*: 133. *d'wət*; H 111. *p'jwān*: 120, 121. *p̥jwət*; E 302. *g'jan*: 314. *k̥jəd*; F 210. *ts'wān*: 215. *dz̥jwəd*; H 112. *p̥jwān*: 126. *p̥jwəd*; E 1. *kwān*, 2. *g'wān*, 3. *g'wan*: 25, 26. *g'wər*; 40. *χān*: 45. *χjər*; 90. *g̥wān*: 92. *g̥wər*; 135. *χian*: 136. *χjər*; 149. *kwān*, 150. *g'wān*: 152. *g̥wər*; 157. *wān*: 162. *wər*; 199. *χān*: 200. *χjər*; F 27, 28. *tsjan*: 34. *tsjər*, 35. *dz'jər*; 172. *twān*: 180. *twər*; 304. *tsjan*: 306, 307. *sjər*; G 1. *nan*: 10. *njər*; H 45. *b'jan*: 52. *p̥jər*; E 63. *kwāt*: 60. *kwən*, 61, 62. *k'wən*; 139. *g̥jwāt*: 138. *g̥jwən*; 184. *k̥jwāt*: 183. *k'wən*; 305. *kāt*: 303. *g'ən*; F 109. *tswāt*: 108. *tswən*; 164. *t̥jwāt*: 162. *d'wən*; H 39. *p̥jat*, *b'jat*: 38. *p̥jwən*, *b'jwən*; 136. *pwāt*: 135. *pwən*; E 72. *g'jat*: 76. *k̥jəd*; 139. *g̥jwāt*: 141. *g̥jwəd*; 244. *kiat*: 245. *kəd*; 305. *kāt*: 314. *k̥jəd*; 319. *ng̥jwāt*: 321. *ng̥jəd*; G 26. *lāt*, 27. *ljat*: 31. *ljəd*; H 11. *p'wāt*, 12. *p̥jwāt*: 15. *p'jwəd*; 114. *piat*: 125. *p̥jəd*; E 91. *g̥jwāt*: 92. *g̥jwər*; 93. *g'āt*: 94. *k'jər*; 305. *kāt*: 318. *kər*; F 4. *t̥jwāt*: 6. *d̥jwər*; 30. *dz'iat*: 34. *tsjər*, 35. *dz'jər*; 257.

sjat: 258. *sjər*; E 24. *g̥jwad*: 22. *g̥jwən*; 140. *g'wad*: 138. *g̥jwən*; 311. *g'ād*: 303. *g'ən*; F 279. *tswād*: 278. *dz̥jwən*; E 103. *kād*: 102. *k'jət*; 315. *k̥jwād*: 310. *g̥jwət*; F 134. *t'wād*: 133. *d'wət*; 158. *sjwad* and *sjwət*; H 14. *p'jwād*: 13. *p'jwət*; H 58, 59. *b'wād* and *b'wət*; 122. *p̥jad*: 117, 118. *p̥jwət*; E 24. *g̥jwad*: 28. *g̥jwər*; 103. *kād*: 104. *g'jər*; 247. *kād*: 248. *k'ər*; F 4. *t̥jwad*: 6. *d̥jwər*; 22, 23. *t̥jad*: 24, 25. *t'jər*; 39. *d̥jwad*: 40. *t̥jwər*; 93. *tsjad*: 94. *tsjər*.

Alternations *e ~ ə* and *n ~ t ~ d ~ r* (*en ~ əd, en ~ ər, et ~ ən, et ~ əd, et ~ ər*):

E 283. *ēn*: 284. *əd*; H 97. *m̥jēn*: 108. *m̥jəd*; 113. *b'jēn*: 125. *p̥jəd*; E 214. *jēn*: 217. *jər*; F 89. *tsjēn*: 94. *tsjər*; 98. *tsjēn*: 99. *tsjər*; 196, 197. *šjēn*: 198. *sjər*; 305. *sjēn*: 306, 307. *sjər*; G 37, 38. *ljēn*: 39. *ljər*; H 18. *b'jēn*: 21. *p̥jər*, 22. *p'jər*; 47. *pien*: 52. *p̥jər*; 95. *m̥jēn*: 110. *miər*; F 53. *d'iet*: 50. *t'jən*; 288. *d'iet*: 289. *t'iad*; E 273. *k'jēt*: 274. *kiər*; F 21. *t̥jēt*: 25. *t'jər*; 32. *tsiet*, 33. *ts'iet*: 34. *tsjər*, 35, 36. *dz'jər*; 169. *d'jēt*: 170. *t̥jēr*; 176. *t'jēt*: 178. *tiər*; 200. *d'iet*: 202, 203. *t̥jər*; 237. *d'jēt*: 238. *d'jər*; 349. *dz'jēt*: 351. *tsjər*; H 19. *p'jēt*: 22. *p'jər*.

I have quoted my materials so extensively in order to prove, by these ample series of parallel cases, that we are perfectly justified in operating with combined alternations. Hence the examples on p. 90 above: *k'ung*: *χjog*; *d̥jang*: *tōk*: *dæg*: *g'āt*: *k'jər*; *ng̥jān*: *g'wad*; *sān*: *dz'wər* are far from being so impossible as they look at first sight. They fall within series of well-established alternations, and there is in principle nothing against considering them as being polar extremes within large and richly varied word families.

Final remarks

There are two more questions which should be touched upon before finishing this preliminary investigation of Chinese word families.

One of them is this: are all the materials adduced here homogeneous, i. e. do they belong to one and the same language, one Archaic dialect? If not, if there are certain words which come, so to speak, from a side-track, which have been incorporated in literature by picking up dialectal words outside the main branch of the language and in their dialectal phonetic garb, then this would necessarily disturb our circles and endanger our results. I must frankly point out that in a few cases there is a certain risk of such a source of error. Indeed, I have inserted in my tables half a dozen words which the ancient sources directly indicate as being dialect words (such are B 496, B 530, F. 243, H 9). But on the whole this risk is very small, since I have operated mainly with the most common words of the language (practically all of them are such as are to be found in Soothill's little Pocket Dictionary).

The second question concerns the grammatical nature of the alternations. We have seen thousands of examples in which the language by their aid has formed parallel words for the same notion or phonetically more or less differentiated words for kindred notions. But do the alternations not sometimes serve as

expressions for purely grammatical functions in a narrower sense? They certainly do, but this is an extremely complicated topic to which I hope to revert in another work. I shall point out here, merely as suggestive examples, a series of cases, in which our alternations studied above are expressions for different parts of speech or similar grammatical distinctions.

- B 517. *tsjung* a follower (noun): 517. *dz'jung* to follow (verb);
 A 340. *kōg* a school (noun): 340. *g'ōg* to study (verb);
 D 122. *pwæg* back (noun): 123, 124. *b'wæg* to turn the back (verb);
 B 345. *tieng* («a fixer») anchor (noun): 347. *d'tieng* to fix (verb);
 B 353. *tsjæg* child, son (noun): 354. *dz'jæg* to breed, beget (verb);
 E 271. *kân* shield (noun): 272. *g'an* to ward off (verb);
 H 38. *pjwæn* to divide (verb): 38. *b'jwæn* a part (noun);
 B 134. *tjông* middle, centre (noun): 135. *d'jông* the middle one (adj.);
 B 191. *tjang* to become long (verb): 191. *d'jang* long (adj.);
 B 248. *tjog* dawn (noun): *d'jog* («the matutinal one», adj. =) morning ceremony, audience;
 B 649. *tsôg* early morning (noun): 650. *dz'ôg* black (adj.);
 E 32. *kân* dry (adj.): 32. *g'ian* (heat and light:). Heaven (noun);
 E 129. *kian* to see (active): 129, 130. *g'ian* to be seen, appear (passive);
 F 325. *ts'iar* (equal:) mate, wife (noun): 324. *dz'iar* equal (adj.);
 H 152. *pian* side (noun): 153. *p'ian* oblique (adj.);
 K 45. *sjæp* moist, wet (adj.): 46. *dzjæp* marsh (noun);
 F 85. *tjěd* to go to (verb): 86. *tjěd* to cause to go to (causative verb to the preceding);
 F 96. *t'jwæt* to come out, go out (verb): 97. *t'jwæt* to eliminate, degrade (causative verb to the preceding);
 B 445. *djěk* to change (verb): 445. *djěg* (changeable:) easy (adj.);
 A 323. *'âk* bad (adj.): 323. *'âg* to hate (verb);
 F 127, 128. *sjwæt* to lead (verb): *sjwəd* leader (noun);
 F 341. *sjwat* to speak (vb. intrans.): *sjwad* to speak to, to address (vb. trans.);
 B 29. *d'âk* to measure (verb): 29. *d'âg* a measure (noun);
 B 428. *d'jæk* to eat (verb): 428, 431. *dzjæg* food (noun);
 D 154. *b'jök* to return (verb): 154. *b'jög* again (adv.);
 A 229. *kwâng* wide (adj.): 232. *k'wâk* to widen (verb);
 E 139. *g'iwāt* to say, said (vb. pres., past.): 138. *g'iwæn* to have said (perfect);
 B 552. *sjog* small (adj.): 551. *sōg* small quantity (noun);
 A 129. *kjěng* neck (noun): 130. *kieng* to behead (verb);
 E 142. *ngjăn* to talk (verb): 143. *ngjan* a saying (noun);
 H 138. *b'wât* base, foot, root (noun): 137. *b'wat* to uproot (verb);
 B 355. *sěng* to bear (verb): 356. *sjěng* (maternity:) clan (noun), 357. *sjěng* innate qualities (noun);
 F 216. *twæn* solid, firm: 217. *tjwæn* (to make solid:) inculcate (verb);
 G 7. *njat* hot (adj.): 8. *njwat* to burn, to heat (verb);

H 83. *pwæt* not (general): 84. *pjwæt* not willing, not able (modal sense): 87. *pjuar* is not (with a noun for predicate): 90. *mjwæt* don't (imperative): 91. *mjwəd* not yet (perfective).

K 90. *njap* to enter (vb. trans. and intrans.): 87, 88. *nəp* to introduce (to cause to enter, causative): 89. *nwəb* the interior (noun).

Notes

- 1 In the present paper Arch. means Archaic Chinese, the language of the Shī king, and Anc. means Ancient Chinese, the language of the Ts'ie yün, time of the Swei dynasty.
- 2 The typographical device, always used in my earlier works, of indicating palatal explosives thus: *t'*, *d'* etc. is inconvenient, since the apostrophe is easily confused with the aspiration mark, and is particularly clumsy in conjunction with it, e. g. *d''jang*. I therefore replace it, in the present article, by a bow over the consonant: *t̄*, *d̄*.
- 3 The 7th character not in the Shī, yet belonging to this category.
- 4 In T'ang time *sjjěd-jwęi*.
- 5 The phonetic series 𠄎 is very enigmatic. Itself Anc. *nzię* < Arch. *nia*, the word had no final consonant. But on the one hand it is used as *kia tsie* for 𠄎 Arch. *njæg* and its derivates 𠄎 Anc. *mjię* is used for 𠄎 *mjię* < *mjěg*, which all points to final guttural; on the other hand it is phonetic in 𠄎 Anc. *niei* < *niar* and 𠄎 Anc. *nzię* < *niar* with dental final. To say, with Tuan Yü-ts'ai, that in Chou time it belonged to cat. 15 (-r) but in Han time to cat. 16 (-g) is a poor expedient. Very likely we have here several distinct series confused at a very early epoch.
- 6 They are of course on the whole very uncertain; on p. 84 Siam *k'ao* is given as equivalent to Chin. 𠄎, on p. 86 Siam. *k'ug* as equivalent to the same word!
- 7 When I speak of the age of the hie sheng characters, I should express myself more precisely. Many of the hie sheng characters of later ages were written in early Chou time without radicals, i. e. they were properly speaking only *kia tsie* characters to which later on specializing radicals were added. From the linguistic point of view it is of course immaterial whether the «phonetic» was used alone or whether it was written with an elucidating signific («radical»).
- 8 It must be remembered that it is not a question here of a fluctuation between *jwək* and *juk*, such as in Pekinese, where 'to learn' can be read both *hüe* and *hiao* and *hüo*, 'horn' both *küe* and *kiao* and *küo* through a mixing of dialects. Here there are certain words which have exclusively Anc. *jwək* and certain others which have exclusively *juk*.
- 9 There would seem to be an important exception to this rule. The Anc. *âu*, *au*, *jäu*, *ieu*, *jäu* of categories I and II interchange, in the hie sheng characters, not only with Anc. *uok*, *juk*, which they should do, in accordance with the Shī rime system of the table above, but also in some cases with Anc. *-uk* (III), which they should not, see my Shī king Researches p. 152 (table). But this is not so bad as it would seem. Against an overwhelming number of contacts with Anc. *uok*, *juk*, there are, in the table, only 6 cases of contact with *uk*; 5 of these are *puk*, *p'uk*, *muk* — evidently the labial initial has here confused an earlier *puok* or such-like. Moreover, of the 6 cases only 2 are characters existing in Han time or earlier. So the general rule is very safe.
- 10 The series 𠄎 Anc. *spng* should be expected to be Arch. *säng* and rime in the *-ang* category. But it rimes quite regularly in the *äng-eng* group, which shows that an Arch. *ěng* here has irregularly passed over to the Anc. *vng* rime.
- 11 The word 72. Anc. *nai*, Arch. *næg* I have studied in my article «The pronoun *küe* in the Shu king» (Göteborgs Högskolas Arsskrift 1933). In classical script 72. serves

regularly for two words, Anc. *nái* 'then, thereupon' and Anc. *nái* 'your'. In the former sense the bronze inscriptions mostly have another character, yet 72. sometimes serves also in this sense of 'then' in Archaic script as well, e. g. in the O hou ting inscr. (K'i ku shí ki kin wen shu k 2, p. 7).

B. Schindler, in *Asia Major* 1933, has published a kind of »criticism» of my above-mentioned article. It is really discouraging to find that he studies Arch. grammatical particles by adducing examples right and left from all kinds of texts without discrimination and without suspecting an important fact which I proved a decennium ago (On the authenticity and nature of the Tso chuan): that the use of the grammatical particles was not at all the same in all Arch. texts but that marked differences existed, based on different dialects. Moreover, a good part of his Shu king examples are drawn from the *spurious* Shu king chapters!

COGNATE WORDS IN THE CHINESE PHONETIC SERIES

Bernhard Karlgren

Source: *Bulletin of the Museum of Far Eastern Antiquities* 28, 1956, 1-18.

The fact that the Chinese monosyllabic words are not »isolated» units, each one unaffinite with all the rest, but that they often form groups of two or several, or even many, which are cognate, i. e. different aspects of one and the same word stem, was already recognized by the scholars of the 19th century, and the problem of such »word families» was taken up for examination by A. Conrady and others. Even a student who is not linguistically trained and who knows the Chinese words only in their modern phonetic garb will easily recognize the fact that, for instance, 看 k' a n 'to see' and 見 kien 'to see' and 觀 k u a n 'to see' must be cognate words, or that 不 p u 'not' and 弗 f u 'not' are affinite, that 吾 w u 'I, we' and 我 w o 'I, we' are allied, or that 死 s i 'to die' and 尸 s h i 'corpse' must be variants of one word stem. In the BMFEA 5 (1933) I published a paper: Word Families in Chinese, in which I took up this theme for more comprehensive treatment. At that time I was able to go much further than the early sinologues could do, thank to the fact that the pronunciation of the Chinese words in early Chou time, »Archaic Chinese», had been reconstructed by linguistic methods in its essential features. Phonetic similarities revealing real and reliable affinities, which are quite obscured in the modern readings of the words, owing to phonetic changes in the lapse of two and a half millennia, made it possible to establish large groups of words which may be suspected of being cognate (»word families»). My list was, of course, only tentative: in a great many of the cases adduced the affinity is obvious and undeniable, in other cases it is only probable or even merely possible and it was left to future research to determine which of the stem alternations proposed could be proved. Even so, a considerable number of alternations were represented by so many safe examples (e. g. those treated under A - D below) that they could be stated to be established facts. A small selection of such alternations have again been recorded by me in my popular book *The Chinese Language, an Essay on its Nature and History* (N. Y. 1949, pp. 79-95); a most important result in this context was the fact

that many of the said alternations implied different grammatical functions (e. g. 度 *d'āk 'to measure', verb: same char. *d'āg 'a measure', noun).

In the present paper I shall revert to this question from a different point of view and on a limited scale. The question I wish to pose is this: did the Chinese literary men of early Chou time ever feel and realize that two or several such affinite words really did belong together, were cognate, were different aspects of »one and the same word»? To a limited extent we are in a position to answer this question thanks to the peculiar nature of the Chinese script. The inventors of the graphs sometimes revealed how they felt in this respect.

In a great many cases they either had no such feeling or did not trouble to express it by the aid of the graphs they composed. Such is, for instance, the first example given above: when they wrote *k'ân 看 but *kian 見 and *kwân 觀,¹ three characters that are quite dissimilar, they give no hint as to whether they felt those words to be cognate or not. But in a considerable number of other cases they indicated quite unmistakably that they were perfectly aware of the affinity of the words concerned. A fine example of this is the word 度 adduced above. They had one word *d'āk 'to measure' and another word *d'āg 'a measure', and the script inventors evidently realized their affinity and wrote them both with the same character: 度. When they had *piwən / piuən / fen 'to divide' and *b'iwən / b'iuən / fen 'a part, a share', they emphatically indicated that they were two variants of »one and the same word» by writing them both 分.

Examples like these are simple and undubitable, but from them we can proceed to somewhat more complicated cases. To begin with, some general principles have to be made clear.

When we have a »phonetic series» like this: 牙 *ngā / nga / y a 'tooth': 芽 *ngā / nga / y a 'a sprout': 訝 *ngā / nga- / y a 'to welcome, receive', it looks at first sight as if the second and third characters are composed in exactly the same way: the second char. 'sprout' consists of »grass» as »radical» (sense determinator) and *ngā 'tooth' as phonetic and, similarly, the third character 'to welcome' consists of »speak» as radical and *ngā 'tooth' as phonetic. Yet this is quite erroneous. In the former case 芽 *ngā 'sprout' is (etymologically) the same word as *ngā 'tooth' (the sprouts being »teeth» shooting forth from the soil). The 牙 in 芽 is not a »phonetic» but the fundamental, primary graph, the same as 'tooth', and when the word, in one of its variants of sense, means the »teeth» on the soil, the original graph 牙 has merely been elucidatingly enlarged by the addition of »grass» on top. The case 訝 is quite different. Here the character 牙 *ngā has been borrowed (kia tsie) to signify the homophonous word *n g ā 'to welcome' – the two are in no way cognate; and when it has become too confusing to have 牙 in both these meanings there has been added, in the second case, a radical »to speak» in order to distinguish them. In this example, then, we have a *real* case of one radical and one phonetic.

It is now important to remember that the addition of radicals – whether as elucidating enlargements added to the primary graph, as in 芽, or as real distinguishing sense indicators added to phonetic-loan characters, as in 訝 – is on the whole a comparatively late phenomenon. The invention of the radical trick was made

quite early, as a few cases in Yin and early Chou inscriptions show, but it was only rarely applied in the early part of the Chou dynasty. In fact, radicals occur with some frequency only in the last centuries of the Chou era. There are still today a number of examples in which radicals were never added: 來 *lāg / lāi / l a i 'a kind of wheat' (Shī king) was borrowed for *lāg / lāi / l a i 'to come', and to this day 'to come' is still written 來 without any distinguishing addition. In the bronze inscriptions of the early Chou centuries this phenomenon (borrowed characters, kia tsie, without radicals) is almost the rule: 者 serves for 諸, 隹 for 唯, 乎 for 呼, 女 for 汝 (so often in the classical texts as well), 古 for 故 etc. The addition or non-addition of radicals is therefore, from our point of view in this paper, quite immaterial: if there is a radical, there are great chances that it was not there originally but was added in late Chou time or (sometimes) even in Han time.

Let us see what this important fact implies for the purpose of our investigation. Reverting to our series *ngā / nga / y a above we may take it for granted that at an early stage 牙 alone served both for *ngā 'tooth' and for *ngā 'sprout' and for *ngā 'to welcome', without any additional radicals; in other words that 牙 had its elucidating (specializing) »grass» and 訝 its distinguishing element »to speak» added later on. The problem, from our point of view, is then to decide whether 牙 in 芽 was, not a phonetic, but really the primary graph itself – in which case the script masters felt *ngā 'tooth' and *ngā 'sprout' to be one and the same word – or else it was merely a kia tsie phonetic loan for the word *ngā 'sprout' (just as 牙 for 訝 was merely a phonetic loan) – in which case they did not realize the stem identity of *ngā 'tooth' and *ngā 'sprout'. Our criterion can here only be an affinity of meaning sufficiently obvious to convince us that the identity was conceived and expressed by the use of the same character 芽, just as *piwən 'to divide' and *b'iwən 'a share' were expressed by the use of the same character 分. If we are sufficiently cautious, we can very well find a long series of cases of this »identity» type, as will be shown below. It will suffice to state here that we need not consider the existence of a radical in the modern compound character as decisive. The case 牙 'tooth' and 芽 'sprout' (primarily 牙 'tooth' and 芽 'sprout') is in principle quite identical with the case 分 'divide' and 份 'share'.

We may, however, take one further step. We have three characters: 付 *piu / piu- / f u 'to deliver' and 附 *b'iu / b'iu- / f u 'to attach' to adjoin' and 駟 *b'iu / b'iu- / f u 'additional horse' (to a team). The 付 *piu 'deliver' is here obviously a typical loan character (kia tsie) for both words *b'iu, it has no stem affinity with them. But the very fact that the same phonetic (kia tsie) 付 was used both for *b'iu 'to adjoin' and for *b'iu 'additional horse' is highly significant. The latter two are evidently one and the same word, in different variants of meaning. When the script masters borrowed 付 'to deliver' both for *b'iu 'to adjoin' (later filled out into 附) and for *b'iu 'additional horse' (later filled out into 駟), it seems evident that they felt the two *b'iu to be one and the same word, or, let us say, two variants of the same stem. Here again we draw the conclusion: when two words in the orthodox script have the same phonetic and when their meaning unequivocally indicates stem affinity, we conclude that their affinity has been felt and realized by the script masters, irrespective of the different distinguishing radicals applied at a later date.

After these considerations of a general nature, let us pass on to a selection of illustrating examples. We may first dispose of the cases belonging to the category *ngâ: *ngâ discussed above (identity of two words). Most of them are so obvious² that there is no need to make a list of them: any reader of the *Grammata Serica* (a new edition of which, with tones recorded, is at present in the press) will after a rapid perusal find scores of such obvious instances. But we had better quote a few examples in which the etymological identity of the two members of a pair is not quite so self-evident: it shows the acumen of the ancient Chinese script masters in realizing their identity and hence placing them together in the script:

1. *ngia / ngjiē- / y i right, righteous: 2. *id.* (i. e. same reading and with the same tone) to determine what is right, to discuss, a judgment;
3. *kâ / ka / k i a house, family: 4. *id.* (to get a house:) to marry (said of a woman);
5. ko / kuo: / k u drum: 6. *id.* blind (»a drummer«): the blind were made musicians);
7. *g'o / yuo- / h u intertwining, interlacery: 8. *id.* railings, fence;
9. *tân / tân / t a n single, simple: 10. *id.* unlined garment;
11. *xo / xuo: / h u tiger: 12. *id.* a tally (tiger-shaped);
13. *dian / jän / y e n extend, spread out: 14. *id.* (a »spread«) a mat;
15. lian / liän / l i e n in a row, consecutively: 16. *id.* rippling waves;
17. *dz'jwan / dz'jwän / t s' ü a n complete, faultless: 18. *id.* (faultless:) one-coloured sacrificial animal;
19. *g'wan / ywan / h u a n turn round, return: 20. *id.* a ring;
21. *mjwän / mjwän- / w a n extended, drawn out: 22. *id.* creeping plant;
23. *d'jat / ä'jät / c h' e penetrate: 24. *id.* (penetrable:) limpid;
25. *liat / liät / l i e divide, separate, distribute: 26. *id.* divide, tear apart;
27. *kwät / kuät / k u o to bind, tie: 28. *id.* a hair knot;
29. *kwäd / kuäi- / k u e i put together, to add up: 30. *id.* joining point of the ends of a belt;
31. *liad / liäi- / l i sharp, piercing, cruel: *id.* epidemic, 33. *id.* a stinging insect;
34. *b'iad / b'jüi- / p i damage, spoil, worn out: 35. *id.* to spoil, to ruin, 36. *id.* to kill, to die;
37. *g'iwän / yiwän / h ü a n dark-coloured, black: 38. *id.* (darkened:) troubled sight;
39. *jien / jien / y i n to rest upon, lean upon, rely upon etc.: 40. *id.* (what is leaned on:) a mat (the primary graph depicts a man outstretched on a mat);
41. *g'wän / ywän- / h u n latrine: 42. *id.* soiled, disorderly;
43. 44. *xiwän / xjuän / h ü n smoke, fume, fragrance: 45. *id.* merit;
46. *dz'jät / dz'jät / t s i (to be pained by:) to hate: 47. *id.* jealous;
48. *jwät / ts'juät / c h' u go out, bring out: 49. *id.* expel, degrade;
50. *d'jwät / dz'juät / s h u road, path: 51. *id.* (»to path«:) go along, follow, bring along, transmit;
52. *dz'jwäd / zwi- / s u e i to progress, go along, follow: 53. *id.* channel, path, tunnel;
54. *kjar / kjei / k i small: 55. *id.* delicate spring, fine mechanism;

56. *mjär / mji / m e i (margin of the eye:) eyebrow: 57. *id.* margin of a stream;
58. *g'ep / yäp / h i a accord with, unite, assemble: 59. *id.* sacrifice to the ancestors unitedly, collectively;
60. *kwäk / kwäk / k u o outer wall of a city: 61. *id.* outer coffin;
62. *sjäk / sjäk / s i o of old, formerly, yesterday: 63. *id.* (old meat:) dried meat;
64. *säng / säng / s h e n g to live: 65. *id.* (living creature:) (sacrificial) animal;
66. *mieng / mieng / m i n g dark, darkened: 67. *id.* shut the eyes;
68. *dz'äg / dz'äi / t s' a i (mental resources:) ability, talent: 69. *id.* stuff, material, disposition, 70. *id.* (economical resources:) wealth, valuables;
71. *giüg / jju- / y u right hand, on the right: 72. *id.* to assist;
73. *pög / päu / p a o to wrap, contain: 74. *id.* womb;
75. *kung / kung / k u n g work: 76. *id.* achievement, 77. *id.* to work at, enterprise etc.
78. *d'ung / d'ung / t' u n g bring together, join, assemble: 79. *id.* (mixture:) bronze;
80. *mung / mung / m e n g to cover: 81. *id.* (covered eyes:) blind.

From the preceding categories, in which it is obvious that the early script masters realized the etymological identity, we shall pass on to some more interesting categories, in which the two members are not phonetically identical (the tone inclusive, as in the case *ngâ) but show a phonetic contrast.

A simple category is here, first, the one in which the stem variation consists exclusively in a change of tone. A well-known example is 好 where the character read *xóg / xáu: / h a o (rising tone) means 'fine, good' and read *xóg / xäu- / h a o

1. 義 2. 議 3. 眾 4. 嫁 5. 鼓 6. 替 7. 互 8. 桓 9. 單 10. 禪 11. 虎 12. 琥 13. 延 14. 筵 15. 連 16. 漣 17. 全 18. 痊 19. 遠 20. 環 21. 環 22. 蔓 23. 微 24. 澈 25. 列 26. 裂 27. 括 28. 髻 29. 會 30. 禮 31. 厲 32. 癩 33. 蠟 34. 敝 35. 弊 36. 斃 37. 玄 38. 眩 39. 囚 40. 茵 41. 困 42. 涸 43. 蕪 44. 蕪 45. 勳 46. 疾 47. 嫁 48. 出 49. 黜 50. 術 51. 述 52. 遂 53. 隧 54. 幾 55. 機 56. 眉 57. 湄 58. 洽 59. 裕 60. 鄣 61. 榔 62. 昔 63. 腊 64. 生 65. 牲 66. 冥 67. 瞑 68. 才 69. 材 70. 財 71. 右 72. 佑 73. 包 74. 胞 75. 工 76. 功 77. 攻 78. 同 79. 銅 80. 蒙 81. 蒙

(falling tone) means 'to love'. In this category as well, the early scribes undoubtedly felt that they had to do with one and the same »word« (word stem). The instances of this stem variation are very numerous, and we shall cite a sufficiently extensive list to show its importance:

82. *tsâ / tsâ: / t s o left, to the left: 83. *tsâ / tsâ- / t s o to assist;
84. *ka / ka / k i a to add, apply: 85. *ka / ka- / k i a (to apply horses to:) to yoke;
86. *ngia / ngjiē- / y i right, righteous: 87. *ngia / ngjiē / y i proper demeanour;
88. *ko / kuo: / k u ancient: 89. ko / kuo- / k u anterior, *ci-devant*, premise, cause;
90. *ts'wâ / ts'wâ- / t s' o to cut: 91. ts'wâ / ts'wâ: / t s' o to cut small;
92. *kjo / kjwo / k ü to sit down: 93. *kjo / kjwo- / k ü to squat;

94. *t'jo / ts'jwo- / c h' u to dwell, to place: same char. *t'jo / ts'jwo- / c h' u a place;
 95. *njo / n'jwo- / n ü woman: same char. *njo / n'jwo- / n ü to give a wife to;
 96. *slju / s'ju- / s h u number: same char. *slju / s'ju- / s h u to count;
 97. *dju / zju- / s h u tree: same char. *dju / zju- / s h u to plant, place upright;
 98. *ts'ju / ts'ju- / t s' ü to take: same char. and 98. *ts'ju / ts'ju- / t s' ü to take wife;
 100. *pju / pju- / f u deliver: 101. *pju / pju- / f u (the delivery place:) repository;
 102. *ân / ân / a n peace, tranquil: 103. *ân / ân- / a n to tranquillize, repress;
 104. *d'ân / d'ân / t' a n shoot pellets at: same char. *d'ân / d'ân- / t a n pellet;
 105. *nân / nân / n a n difficult: same char. *nân / nân- / n a n difficulty;
 106. *kwân / kuân / k u a n cap: same char. *kwân / kuân- / k u a n to cap, put a cap on;
 107. *kân / kân / k i e n interstice, interval: same char. *kân / kân- / k i e n find a crevice, find fault with;
 108. *djan / zjan- / s h a n good: 109. *djan / zjan- / s h a n delicacies, cooked food, and 110. *djan / zjan- / s h a n (make good:) to repair;
 111. *d'jwan / d'jwân / c h' u a n to transmit: same char. *d'jwan / d'jwân- / c h u a n (what has been transmitted:) a record;
 112. *tjwan / t'jwân / c h u a n turn round, transfer, remove: 113. *tjwan / t'jwân- / c h u a n (transferring, transmitting place:) relay (of post);
 114. *giwân / jiwân- / y ü a n far, distant: same char. *giwân / jiwân- / y ü a n to keep far from, leave;
 115. *d'ien / d'ien / t' i e n field: same char. *d'ien / d'ien- / t i e n to cultivate the land;
 116. *d'jên / jên- / y i n to pull: 117. *d'jên / jên- / y i n strap for pulling carriage;
 118. *d'jên / d'jên / c h' e n set forth, arrange: same char. *d'jên / d'jên- / c h e n battle array;
 119. *dzjên / dzjên- / t s i n exhaust, consume: 120. *dz'jên / dz'jên- / t s i n ashes, combusted;
 121. *pjên / pjên / p i n guest: 122. *pjên / pjên- / p i n guest receiver, to welcome;
 123. *dzjwên / zjwên / s ü n all round, a round, a decade (of days): 124. *dzjwên / zjwên- / s ü n go everywhere, all round;
 125. *g'an / ɣan- / h e n oppose, refractory: 126. *g'an / ɣan- / h e n to hate, displeased;
 127. *ts'wân / ts'wân- / t s' u n thumb, inch: 128. *ts'wân / ts'wân- / t s' u n to measure;
 129. *mjwân / mjwân / w e n to hear: same char. *mjwân / mjwân- / w e n to be heard, fame;
 130. *g'jan / g'jan- / k i n near: same char. *g'jan / g'jan- / k i n to be near to;
 131. *sian / sien / s i e n before: same char. *sian / sien- / s i e n to go before, precede;
 132. *kjar / kjei / k i small: same char. *kjar / kjei- / k i few, (how few:) how many;
 133. *jar / jei / y i clothes: same char. *jar / jei- / y i to wear;
 134. *ljwâr / ljwi / l e i to wind around, be attached to (as a liana): 135. *ljwâr / ljwi- / l e i climbing plant;
 136. *pjwâr / pjwêi / f e i it is not: 137. *pjwâr / pjwêi- / f e i not;
 138. *tiâr / tiei / t i root, base, foundation, 139. *id.* bottom: 140. *tiâr / tiei / t i to lower;
 141. *d'iar / d'iei- / t i younger brother: same char. *d'iar / d'iei- / t i (younger-brotherly:) respectful towards elder brothers;

142. ts'iar / ts'iei / t s' i consort, wife: same char. *ts'iar / ts'iei- / t s' i to give wife to;
 143. *d'iar / d'ei / c h' i to tarry, slow: same char. *d'iar / d'ei- / c h i to wait;
 144. *p'jüm / p'jung / f e n g (wind:) air, tune: 145. *p'jüm / p'jung- / f e n g to chant, recite;
 147. *säm / sâm / s a n three: same char. *säm / sâm- / s a n thrice;
 146. *tâm / tâm / t a n to carry on the shoulder: same char. *tâm / tâm- / t a n burden;
 148. *iäm / jäm / y i n northern side, shade, darkness: same char. *iäm / jäm- / y i n to shelter;
 149. *iäm / jäm- / y i n to drink: same char. *iäm / jäm- / y i n to give to drink;
 150. *šjäm / šjäm / s h e n deep: same char. *šjäm / šjäm- / s h e n depth;
 151. *njäm / n'jäm / j e n to carry, sustain: same char. *njäm / n'jäm- / j e n burden;
 152. *säng / säng / s a n g (loss:) mourning, burial: same char. *säng / säng- / s a n g to lose;
 153. *d'iang / d'iang / c h' a n g long: same char. *d'iang / d'iang- / c h a n g length, measure of length;
 154. *d'iang / d'iang- / c h a n g staff: same char. *d'iang / d'iang- / c h a n g (have for staff:) lean on;
 155. *täng / täng / t a n g to be equal to, rank with, to match: same char. *täng / täng- / t a n g suitable;
 156. *d'iang / z'iang- / s h a n g up, above: same char. *d'iang / z'iang- / s h a n g to rise;
 157. *ts'iang / ts'iang / t s i a n g to bring, take, lead: same char. *ts'iang / ts'iang- / t s i a n g leader;
 158. *dz'äng / dz'äng / t s' a n g to store: same char. *dz'äng / dz'äng- / t s a n g a store;
 159. *njäng / n'jäng / j a n g to thrust aside, expel: 160. *njäng / n'jäng- / j a n g to cede, withdraw, yield;
 161. *z'iang / j'iang- / y a n g to nourish: same char. *z'iang / j'iang- / y a n g to support (sc. parents);
 162. *liang / liang- / l i a n g two, a pair: same char. *liang / liang- / l i a n g (a two-wheeler:) carriage;
 163. *liang / liang / l i a n g a measure: same char. *liang / liang- / l i a n g to measure;
 164. *giwang / j'iwang / w a n g king: same char. *giwang / j'iwang- / w a n g to be king, to rule;
 165. *käng / k'ong / k e n g to change: same char. *käng / k'ong- / k e n g again;
 166. *g'äng / ɣong / h i n g to walk, a road, to act: same char. *g'äng / ɣong- / h i n g action;
 167. *kiäng / k'ivng- / k i n g boundary, limit: same char. *kiäng / k'ivng- / k i n g end, in the end;

82左83佐84加85駕86義87儀88古89故90坐91姓92居93踞94處95
 女96數97樹98取99娶100付101府102安103按104穿105難106冠107開108善
 109膳110結111傳112轉113傳114遠115田116引117第118陳119盡120燼121履122
 價123旬124徇125很126很127寸128付129聞130近131先132後133衣134纒135壽
 136非137匪138氏139底140低141弟142妻143遷144風145韻146擔147三148陰149
 飲150深151任152喪153長154杖155蓄156上157將158藏159攘160讓161養162兩

168. **piǎng* / *piǎng*- / p i n g to hold, grasp: 169. **piǎng* / *piǎng*- / p i n g a handle;
 170. **giwǎng* / *jiwǎng*- / y u n g long: 171. **giwǎng* / *jiwǎng*- / y u n g (to draw out long:) to chant;
 172. **kǐěng* / *kǐng*- / k i n g reverent, respectful: 173. **kǐěng* / *kǐng*- / k i n g (to overawe:) to warn, admonish;
 174. **dǐěng* / *zǐǎng*- / c h' e n g to load, to fill: same char. **dǐěng* / *zǐǎng*- / s h e n g (loaded full:) ample, abundant;
 175. **tǐěng* / *tǐǎng*- / c h e n g straight, correct, regulate: same char. **tǐěng* / *tǐǎng*- / c h e n g (regulating:) first (sc. month), and 176. *id.* (a correction:) a punitive expedition;
 177. **d'ieng* / *d'ieng*- / t' i n g stick, staff: 178. **d'ieng* / *d'ieng*- / t' i n g stalk, stem;
 179. **t'ieng* / *t'ieng*- / t' i n g to hear: same char. **t'ieng* / *t'ieng*- / t' i n g to listen to, obey;
 180. **tǐěg* / *tǐ*- / c h ĩ to know: same char. **tǐěg* / *tǐ*- / c h ĩ knowledge, wisdom;
 181. **jǎng* / *jǎng*- / y i n g to respond, correspond, conform: same char. **jǎng* / *jǎng*- / y i n g (conforming to what it should be:) ought, of right;
 182. *śjǎng* / *śjǎng*- / s h e n g to vanquish, surpass: same char. **śjǎng* / *śjǎng*- / s h e n g equal to, capable of;
 183. **t'jǎng* / *t'jǎng*- / c h' e n g to weigh: same char. **t'jǎng* / *t'jǎng*- / c h' e n g (balancing:) equal to, corresponding to;
 184. **d'jǎng* / *d'jǎng*- / c h' e n g to mount, ascend; same char. **d'jǎng* / *d'jǎng*- / s h e n g (what is mounted:) carriage, and (what is set up, recorded:) records, annals;
 185. **ts'əg* / *ts'əi*- / t s' a i to cull, pluck: same char. **ts'əg* / *ts'əi*- / t s' a i (what is culled for incomes:) appanage, and 186. **ts'əg* / *ts'əi*- / t s' a i (culled herbs:) vegetables;
 187. **lǎg* / *lǎi*- / l a i to come: same char. **lǎg* / *lǎi*- / l a i (cause to come:) attract, stimulate;
 188. **tjōng* / *tjūng*- / c h u n g middle, centre: same char. **tjōng* / *tjūng*- / c h u n g to hit the centre, to hit;
 189. **djōg* / *zjəu*- / s h o u to receive: 189 b. **djōg* / *zjəu*- / s h o u to hand over, give;
 190. **śjōg* / *śjəu*- / s h o u to keep, to guard: same char. **śjōg* / *śjəu*- / s h o u territory in somebody's guard, fief;
 191. *ts'og* / *ts'əu*- / t s' a o to grasp, hold: same char. **ts'og* / *ts'əu*- / t s' a o (what is held on to:) purpose, intent;
 192. **log* / *lāu*- / l a o toil: same char. **log* / *lāu*- / l a o (acknowledge somebody's toil:) to recompense;
 193. **sjog* / *sjəu*- / s i a o little, small: 194. **sjog* / *sjəu*- / s i a o (to be a miniature of:) similar to one's father, to take after the father;
 195. **mjog* / *mjəu*- / m i a o small, minute: 196. **mjog* / *mjəu*- / m i a o (infinite, incomprehensible:) mysterious, marvellous;
 197. **tjog* / *tjəu*- / c h a o bright: 198. **tjog* / *tjəu*- / c h a o to shine on;
 199. **djūng* / *iwong*- / y u n g to use, employ: 200. **djūng* / *iwong*- / y u n g to use, employ;

201. **d'jūng* / *d'iwong*- / c h u n g heavy: same char. **d'jūng* / *d'iwong*- / c h' u n g double;
 202. **tjūng* / *tjūng*- / c h u n g seed, different kinds of grain: same char. **tjūng* / *tjūng*- / c h u n g to sow;
 203. **dz'jūng* / *dz'iwong*- / t s' u n g to follow: same char. **dz'jūng* / *dz'iwong*- / t s' u n g follower;
 204. **b'jūng* / *b'iwong*- / f e n g to receive: 205. **b'jūng* / *b'iwong*- / f e n g (what is received:) salary.

In the following categories the answer to our principal question (whether the early script masters had a feeling of the affinity of two or more »words») is not so self-evident:

A. Stem variation consisting in an alternation of tenuis and aspirated media as initial

206. **kia* / *kjĕ*- / k i odd (number): same char. **g'ia* / *g'jĕ*- / k' i strange, extraordinary;
 207. **pwo* / *pwo*- / p u to eat: 208. **b'wo* / *b'uo*- / p u to have food in the mouth;
 209. **kjwo* / *kju*- / k ü frightened glance, anxious: 210. *g'jwo* / *g'ju*- / k ü to fear;
 211. **pjwo* / *pju*- / f u (»father»:) second part of honorific words, e. g. Kia-fu: same char. **b'jwo* / *b'ju*- / f u father;
 212. **kju* / *kju*- / k ü (complete:) all: 213. **g'ju* / *g'ju*- / k ü provide, make complete, complete;
 214. **tju* / *tju*- / c h u to prop up, support: 215. **d'ju* / *d'ju*- / c h u pillar;
 216. **kân* / *kân*- / k a n shield: 217. **g'ân* / *g'ân*- / h a n protect, ward off;
 218. **twân* / *twân*- / t u a n a slice of dried meat: 219. **d'wân* / *d'wân*- / t u a n torn to slices;
 220. **pwân* / *puân*- / p a n half: 221. **b'wân* / *b'wân*- / p a n (cleaving:) dividing bank;
 222. **kân* / *kân*- / k i e n interstice, space between: same char. **g'ân* / *g'ân*- / h i e n (interstice in time:) leisure;
 223. **kjwan* / *kjwân*- / k ü a n to roll: same char. *g'jwan* / *g'jwân*- / k' ü a n curved;
 224. **tjwan* / *tjwân*- / c h u a n transmitting place, relay (of post etc.): same char. **d'jwan* / *d'jwân*- / c h' u a n to transmit;

163. 量 164. 王 165. 更 166. 行 167. 竟 168. 秉 169. 棟 170. 承 171. 詠 172. 敬 173. 警 174. 盛 175. 正 176. 征 177. 廷 178. 廷 179. 聽 180. 知 181. 應 182. 勝 183. 稿 184. 乘 185. 采 186. 菜 187. 來 188. 中 189. 受 189b. 授 190. 守 191. 操 192. 勞 193. 小 194. 肖 195. 少 196. 妙 197. 昭 198. 照 199. 用 200. 庸 201. 重 202. 種 203. 從 204. 率 205. 倭
 206. 奇 207. 鋪 208. 哺 209. 瞿 210. 瞿 211. 父 212. 俱 213. 具 214. 柱 215. 柱 216. 干 217. 杆 218. 般 219. 段 220. 半 221. 畔 222. 間 223. 卷 224. 傳 225. 見 226. 會 227. 良 228. 很 229. 分 230. 絕 231. 絕 232. 比 233. 皆

225. *kian / kien- / k i e n to see: same char. *g'ian / yien- / h i e n (to be seen:) to appear, conspicuous;
 226. *kwād / kuāi- / k u e i (addition:) account: same char. *g'wād / yuāi- / h u e i assemble, collect;
 227. *kən / kən- / k e n refractory, obstinate: 228. *g'an / γən- / h e n oppose, quarrelsome;
 229. *piwən / piuan / f e n to divide: same char. *b'iwən / b'juən- / f e n part, share;
 230. *kjar / kjei / k i near: 231. *g'jar / g'jei / k' i (nearest to the capital:) Royal domain;
 232. *piar / pji- / p i combine, unite, compare: same char. *b'jar / b'ji- / p i assemble, go together with;
 233. *ker / kái / k i e all: 234. *g'er / γái / h i e in harmony;
 235. *tsjār / tsie / t s i defame, slander: 236. *dz'jār / dz'ie / t s i a defect, fault;
 237. *tsjam / tsjäm / t s i e n to moisten, to flow to: same char. *dz'jam / dz'jäm: / t s i e n dropwise, gradually;
 238. *klijam / kjäm: / k i e n to control, restrict: 239. *g'lijam / g'jäm: / k i e n restrict, frugal;
 240. káp / káp / k i a to press between, pinchers: 241. *g'áp / γáp / h i a (pinched:) narrow;
 242. *kiap / kiep / k i e (pinchers:) chopsticks: 243. *g'iap / γiep / h i e press under the arm;
 244. *kəp / kəp / k o (shutter:) gate: 245. *g'əp / γəp / h o to join, unite, to shut;
 246. *tjang / tjang: / c h a n g to grow tall, grown up, senior: same char. *d'jang / d'jang / c h' a n g long, tall;
 247. *pāk / pvk / p o (the white-haired one:) eldest, chief: 248. *b'āk / b'vk / p o white;
 249. *tsjāk / tsjāk / t s i to walk reverently: same char. *dz'jāk / dz'jāk / t s i to trample;
 250. *tsjäng / tsjäng: / t s i n g a well: 251. *dz'jäng / dz'jäng: / t s i n g a pitfall, pit;
 252. *piäng / piäng- / p i n g grieved: 253. *b'jäng / b'jäng- / p i n g distress, suffer, sickness;
 254. *kəg / kai / k i e to unloosen: same char. *g'əg / γai: / h i e (unloosened:) remiss, lax, careless;
 255. *piək / piäk / p i ruler: same char. *b'jək / b'jäk / p i law;
 256. *tsjək / tsjäk / t s i spine: 257. *dz'jək / dz'jäk / t s i emaciated;
 258. *piəg / pjiə / p e i low: 259. *b'jəg / b'jiə: / p e i low;
 260. *kiweng / kiweng / k i u n g outlying parts, far from the city: 261. *g'iweng / γiweng: / h i u n g distant;
 262. *tiek / tiek / t i principal wife: 263. *d'iek / d'iek / t i an equal, a match, opponent;
 264. *tieg / tiei- / t i sovereign, God: 265. *d'ieg / d'iei- / t i sacrifice to the highest Spirit;
 266. *tieg / tiei / t i bank, dyke: 267. *d'ieg / d'iei / t' i bank, dyke;
 268. *tsəng / tsəng / t s e n g to accumulate, double: 269. *dz'əng / dz'əng / t s' e n g in two storeys or layers, double;

270. *tsəg / tsəi- / t s a i to load: same char. *dz'əg / dz'əi- / t s a i load;
 271. *pwəg / puāi- / p e i the back: same char. *b'wəg / b'uāi- / p e i to turn the back on;
 272. *kijəg / kji / k i a full fixed time: *g'jəg / g'ji / k' i a stipulated time, to expect;
 273. *tsjəg / tsi: / t s i child: 274. *dz'jəg / dz'i- / t s i to breed;
 275. *kəg / kái- / k i e to guard against, warn: 276. *g'əg / γái: / h i e to overawe, frighten;
 277. *tjōng / tjuŋ / c h u n g middle: 278. *d'jōng / d'juŋ- / c h u n g (the middle one:) the 2nd of brothers;
 279. *kōng / käng- / k i a n g descend: same char. *g'ōng / γäng / h i a n g submit;
 280. *pōg / páu / p a o to wrap: 281. *b'ōg / b'áu: / p a o to embrace, carry in the arms;
 282. *piók / piuk / f u double: 283. *b'jók / b'juk / f u return, recommence, repeat;
 284. *kijóg / kiəu: / k i u to twist: 285. *g'jóg / g'jəu / k' i u long and curved, horn-shaped;
 286. *tsjóg / tsjəu: / t s i u wine, spirits: 287. *dz'jóg / dz'jəu / t s' i u wine-master;
 288. *kijog / kiäu / k i a o proud, arrogant: 289. *g'jog / g'jäu / k' i a o high;
 290. *tjog / tju / c h a o morning: same char. *d'jog / d'jäu / c h' a o (morning ceremony:) audience;
 291. *tsjog / tsjäu / t s i a o to roast, burn: 292. *dz'jog / dz'jäu / t s' i a o firewood;
 293. *kijung / kijwong: / k u n g to join the hands: same char. *g'jung / g'jwong- / k u n g together, all;
 294. *kijog / kiäu- / k i a o well-sweep: same char. *g'jog / g'jäu / k' i a o cross-bar;
 Further the following numbers below: 295:296; 334:335; 345:346; 357; 358:359; 468; 475:476.

The examples are surprisingly numerous, and many of them are so striking that there can be no doubt that the early literary men clearly felt the affinity between the members of each word pair and that they therefore expressed it in the script they created. They must have had quite as real a feeling for the affinity between 分 *piwən 'to divide' and (same char.) *b'iwən 'a share' as an ordinary Englishman has for the connection between 'to bind' and 'a bond', between 'clean' and 'to cleanse', between 'to lose' and 'lost'. The addition (mostly at a later date) of various radicals is indeed of no consequence and cannot invalidate our conclusion. The same conclusion may be drawn in regard to all the categories studied below.

B. Alternation of final tenuis and final media

295. *kât / kât / k o to cut: 296. *g'ād / γái- / h a i to hurt, damage;
 297. *sât / sât / s h a to kill: same char. *sād / sái- / s h a i to diminish, reduce;
 298. *k'iat / k'iet / k' i e to cut: 299. *k'iād / k'iei- / k' i script notches;
 300. *šjwat / šjwät / s h u o to speak: same char. šjwad / šjwäi- / s h u e i to exhort;
 301. *piwät / piwät / f a to throw out, send forth: 302. *piwäd / piwäi- / f e i cast aside;

303. *kiet / ki et / k i e to tie, knot: 304. *kied / kiei- / k i hair-knot;
- 234 籍 235 警 236 戒 237 漸 238 檢 239 儉 240 夾 241 狹 242 挾 243 挾 244 醫 245 合 246 長 247 伯
248 白 249 踏 250 井 251 奔 252 丙 253 病 254 解 255 解 256 齊 257 痛 258 卑 259 痺 260 同 同
261 洞 262 女 263 散 264 蒂 265 蒂 266 提 267 堤 268 普 269 屠 270 戴 271 背 272 期 273 子 274 字
275 戒 276 馮 277 中 278 仲 279 降 280 包 281 抱 282 複 283 復 284 4 糾 285 角 286 酒 287 苗 288
馬 289 喬 290 朝 291 焦 292 樵 293 共 294 高 295 害 296 害 297 殺 298 鋸 299 契 300 說 301 發 302
305. *f'jwət / ts'juət / c h' u to go out, bring out: same char. *f'jwəd / ts'wi- / c h' u e i to bring out, take out;
306. *sljwət / sjuət / s h u a i to lead: same char. *sljwəd / swi- / s h u a i leader;
307. *tjəp / tsjəp / c h ĩ to seize, grasp: 308. *tjəb / tsi- / c h ĩ bird of prey, to seize a prey;
309. *d'āk / d'āk / t o to measure: same char. *d'āg / d'uo- / t u a measure;
310. *'āk / 'āk / o bad: same char. *'āg / 'uo- / w u (to find bad:) to detest, hate;
311. *χāk / χək / h o to scare: same char. *χāg / χa- / h i a to scare;
312. *d'jāk / dz'jāk / s h ĩ to shoot: same char. *d'jāg / dz'ja- / s h ê to shoot;
313. *'ək / 'ek / o a defile, a pass: same char. *'ēg / 'ai- / y a i a defile, a pass;
314. *tsək / tsek / t s ê to demand payment, to exact: same char. *tsēg / tsai- / c h a i debt;
315. *djək / jək / y i to change: same char. *djēg / i- / y i (changeable:) easy;
316. *tsjək / tsjək / t s i collect, accumulate: same char. *tsjēg / tsjē- / t s i to put in stack, stack, hoard;
317. *g'wək / gwək / h u o to delineate: same char. *g'wēg / gwai- / h u a to draw, a design;
318. *sək / sək / s ê to block, a pass: same char. *səg / s̄ai- / s a i frontier pass;
319. *'jək / 'jək / y i to keep in mind, remember: 320. *'jəg / 'i- / y i to think;
321. *pjūk / pjūk / f u happiness, blessing: 322. *pjūg / piəu- / f u rich, wealth;
323. *b'jūk / b'jūk / f u to lie prostrate: same char. *b'jūg / b'jəu- / f u to hatch;
324. *kōk / kuk / k u to announce: same char. *kōg / k̄au- / k a o to announce;
325. *tjōk / tsjūk / c h u to pray, prayer-master: same char. *tjōg / tsjəu- / c h o u to curse;
326. *sjōk / sjūk / s u to lodge the night: same char. *sjōg / sjəu- / s i u (the sun's lodging-stations:) mansions, groups of constellations, parts of the zodiac;
327. *b'jōk / b'jūk / f u return, repeat, recommence: same char. *b'jōg / b'jəu- / f u repeatedly, again;
328. *kōk / kāk / k ü e to awake: same char. *kōg / kau- / k i a o to awake;
329. *g'ōk / γāk / h ü e to learn: 330. *g'ōg / γau- / h i a o to teach;
331. *'jok / 'jak / y ü e to bind, restrain: same char. 'jog / j̄au- / y a o bond, contract;
332. *tsjok / tsjak / t s ü e torch: same char. *tsjog / tsjəu- / t s i a o to burn;
333. *d'ōk / d'āk / c h o to wash: same char. *d'ōg / d'au- / c h a o to wash clothes.
- Further 341:342; 352:353; 401:402; 414:415; 418:419; 428:429; 459:460; 478:479; 484; 486:487; 492.

C. Alternation of the vowels *â : a : ă*

334. *ka / ka / k i a good, excellent: 335. *g'â / γâ- / h o congratulate;
336. *'ân / 'ân / a n peace, peaceful, tranquil: 337. *'an / 'an- / y e n peace, peaceful;
338. *ngiän / ngion / y e n to speak: 339. *ngian / ngiän- / y e n to condole;
340. *kwân / kuân- / k u a n to pass a string through, string together, bound together, intimate with: same char. *kwan / kwan- / k u a n intimate with, familiar with;
341. *kât / kât / k o to cut: 342. *kad / kai- / k i e to castrate;
343. *klam / kam / k i e n to see, inspect: 344. *glâm / lâm- / l a n to see;
345. *tsâm / tšäm- / c h a n to cut off: 346. *dz'âm / dz'âm / c h a n Abschnitt, a short while;
347. *g'äng / gwng / h i n g to walk, go, street: same char. *g'äng / yäng / h a n g row of marching men;
348. *kljäng / kjng- / k i n g bright: 349. *gljäng / ljäng- / l i a n g enlighten;
350. *g'wāk / gwək / h u o to catch, get: 351. *g'wāk / gwāk / h u o to reap;
352. *'ag / 'a- / y a inferior, second: 353. *'āk / 'āk / o bad.
- Further: 357; 358:359; 360; 361:362; 370:371; 372:373; 414:415; 422:423; 426:427; 428:429; 434:435; 466:467; 504:505; 514:515.

D. Alternation of forms with and without medial *j*

354. *ngu / ngɤu- / o u match, vis-a-vis: 355. *ngju / ngju- / y ü to meet;
356. *ts'u / ts'ɤu- / t s' o u to cause to run: same char. *ts'ju / ts'ju- / t s' ü to run, hasten to;
357. *kân / kân / k a n dry (warmed in the sun): same char. *g'jan / g'jän / k' i e n heaven (sunny);
358. *d'wân / d'uân / t' u a n round: 359. *tjwan / tjwän- / c h u a n to turn round;
360. *mwân / muân- / m a n (drawn out:) distant, unlimited: same char. *mjwän / mjwän- / w a n extended, long;
361. *ngâd / ngâi- / a i (cut off:) end, to end: 362. *ngiäd / ngiwi- / y i (to cut:) to mow;
363. *lwän / luän / l u n to assort, select: 364. *ljwän / ljuän / l u n class, category;
365. *tswät / tsuät / t s u (moriturus:) soldier: same char. *tsjwät / tsjuät / t s u to die;
366. *nəp / n̄ap / n a to bring in: 367. *njəp / nj̄əp / j u to enter;
368. *dz'əp / dz'äp / t s a brought together, mixed: 369. *dz'jəp / dz'jəp / t s i to come together, assemble;
370. *ngäng / ngäng / a n g high, to lift high: 371. *ngiang / ngiang- / y a n g to lift the face;
372. *nāk / nāk / n o to agree, say yes: 373. *njak / nj̄jak / j o to agree, conform to, like;
374. *səng / svng / s h e n g to bear, be born, live: 375. *sjäng / sjäng- / s i n g innate nature, life.
- Further: 391:392; 407:408; 422:423; 424:425; 426:427; 428:429; 434:435; 438:439; 452:453; 512:513; 514:515; 535:536; 540:541.

E. Alternation of voiceless aspirate and voiced aspirate as initial

376. *ts'ju / ts'ju: / t s' ü to take: 377. *dz'ju / dz'ju- / t s ü to bring together, collect;
 378. *ts'ian / ts'ian: / t s' i e n shallow: 379. *dz'ian / dz'ian: / t s i e n thin, shallow;
 380. *k'jwan / k'jwän / k' ü a n to bend, curved: 381. *g'jwan / g'jwän / k' ü a n (rolled hand:) fist;
 382. *ts'jwan / ts'jwän / t s' ü a n healed, restored: 383. dz'jwan / dz'jwän / t s' ü a n complete, whole;

廢 303 結 309 警 305 出 306 帥 307 報 308 警 309 度 310 惡 311 嚇 312 射 313 院 314 貴 315 舅 316
 積 317 盡 318 塞 319 意 320 意 321 福 322 富 323 伏 324 告 325 祝 326 宿 327 復 328 覺 329 學
 330 歎 331 約 332 火 333 濯 334 嘉 335 賀 336 安 337 晏 338 言 339 啞 340 貫 341 割 342 屠 343 監
 344 覽 345 斬 346 暫 347 行 348 景 349 亮 350 獲 351 獲 352 丑 353 惡 354 偶 355 遇 356
 趣 357 乾 358 團 359 轉 360 曼 361 艾 362 火 363 掄 364 倫 365 卒 366 內 367 入 368 雜
 369 集 370 仰 371 仰 372 諾 373 若 374 生 375 性 376 取 377 聚 378 澆 379 儻 380 卷 381

384. *p'wân / p'uân- / p' a n to cleave, divide, separate: 385. *b'wân / b'uân- / p a n to separate, dividing bank between fields;
 386. *t'ād / t'ai- / t' a i great: 387. *d'ād / d'ai- / t a great;
 388. *k'ien / k'ien / k' i e n to pull: 389. *g'ien / yien / h i e n (the thing that is pulled:) bow string;
 390. *p'jwäm / p'jwäm- / f a n to overflow, inundate: same char. *b'jwäm / b'jwäm- / f a n to flow out, disperse;
 391. *k'wat / k'uat / k' u cave, hole: 392. *g'jwat / g'jwat / k ü to excavate, dig a hole;
 393. *t'iar / t'iei / t' i (sequence of steps:) staircase: 394. *d'iar / d'iei- / t i sequel, sequence, order;
 395. *ts'iar / ts'iei / t s' i (the counterpart, of equal standing:) consort, principal wife: 396. (the Arch. graph of which had the same upper part as 395) *dz'iar / dz'iei / t s' i equal, uniform;
 397. *p'jök / p'juk / f u to turn round: 398. *b'jök / b'juk / f u to return;
 399. *t'jög / t'jäu / c h' o u take out, pull out: 400. *d'jög / d'jäu- / c h o u (the outcome:) descendants;
 401. *t'iog / t'ieu- / t' i a o to sell grain: 402. *d'io / d'iek / t i to buy grain;
 403. *p'jung / p'jwong: / f e n g to hold with both hands: 404. *b'jung / b'jwong: / f e n g to hold with both hands.

F. Alternation of tenuis and voiceless aspirate as initial

405. *pwâ / puâ: / p o to walk lame: 406. *p'wâ / p'uâ / p' o slanting, oblique, partial;
 407. *kio / kiwo / k ü chariot, carriage: 408. *k'o / k'uo- / k' u storehouse for chariots, arsenal;

409. *pwân / puân- / p a n half: 410. *p'wân / p'uân- / p' a n to cleave;
 411. *k'jwan / k'jwän: / k ü a n to roll: same char. *k'jwan / k'jwän / k' ü a n crooked, rolled up;
 412. *kiwat / kiwet / k ü e to cut off: 413. *k'iwat / k'iwet / k' ü e to break, splinter, defective;
 414. *k'jap / k'jap / k i e (to take away:) to rob, plunder: 415. *k'jab / k'jwo- / k' ü to go away, take away;
 416. *kwâng / kwâng: / k u a n g wide: 417. *k'wâng / k'wâng: / k' u a n g (the wide parts:) the wilds;
 418. *pâk / pâk / p o wide, ample: 419. *p'âg / p'uo- / p' u great, vast;
 420. *k'jung / k'jung / k u n g bow: 421. *k'jüng / k'jüng / k' i u n g vaulted, vault.

G. Alternation of media and voiced aspirate as initial

422. *djan / jän / y e n extend, stretch out: 423. *d'ân / d'ân: / t a n extend, make great;
 424. *g'jwan / j'jwän / y ü a n round: 425. *g'wan / ywan / h u a n ring;
 426. *g'jwän / j'jwän / y ü a n dragging slowly: 427. *g'wän / ywän: / h u a n slow, slack, remiss;
 429. *d'jwat / j'wät / y ü e glad, rejoice: 428. *d'wäd / d'uäi- / t u e i merry;
 430. *d'jien / j'ien: / y i n to pull, lead: 431. *d'jien / d'jien: / c h e n rope by which cattle are led;
 432. *d'jar / zi- / s h i to see: 433. *d'jar / dz'i- / s h i (to cause to see:) to show, sign, signalize;
 434. *d'jam / jäm / y e n to blaze: 435. *d'am / d'am / t' a n aflame;
 436. *d'jög / j'äu / y ü to come out from, from: 437. *d'jög / d'jäu- / c h o u (outcome:) descendants;

H. Alternation of media and tenuis as initial

438. *g'jwäk / j'jwäk / y ü territory, state: 439. *kwäk / kwäk / k u o state;
 440. *d'jök / z'jak / s h a o a ladle: 441. *t'jök / t'jak / c h o to ladle;
 442. *d'jög, d'jög / z'jäu-, d'jäu- / s h a o, c h a o to summon: 443. t'jög / t'jäu / c h a o to summon;
 444. *d'juk / z'jwok / s h u to be attached to, belong to: same char. *t'juk / t'jwok / c h u to attach.

I. Alternation of media and voiceless aspirate as initial

445. *g'jan / jän: / y e n to flow out, overflow, go to excess: 446. *k'jan / k'jän / k' i e n exceed, excess, fault;
 447. *djan / jän / y e n extend, stretch out: 448. *t'jan / t'jän / c h' a n long (sc. beams);
 449. *d'jög / j'äu / y u to come out from, from: 450. t'jög / t'jäu / c h' o u to take out, pull out.

K. Alternation of *o* and *â* as principal vowel

451. **ko* / *kuo*: / k u merchant: same char. **kâ* / *ka*- / k i a price;
 452. **ngio* / *ngiwo*: / y ü to withstand, a match, opponent: 453. **ngâ* / *nga*- / y a to meet;
 454. **nglök* / *ngâk* / y ü e music: same char. **glâk* / *lâk* / l o joy, rejoice.
 Further: 512:513.

L. Alternation of *ə* and *ɛ* as principal vowel

457. **g'ap* / *γâp* / h o to join, combine, collect: 458. **g'ep* / *γăp* / h i a sacrifice to ancestors unitedly, collectively;
 455. **k'am* / *k'âm* / k' a n pit: 456. **g'em* / *γăm*- / h i e n to fall into a pit.
 Further: 461:462; 463:464;

M. Alternation of forms with and without medial *i*

459. **kwad* / *kwai*- / k u a i to divide: 460. **kiwat* / *kiwet* / k ü e to cut off;

拳382 奎383 全384 判385 畔386 大太387 大388 牽389 弦390 汜391 窟392 掘393 梯394 第395 妻396 齋397 覆398 復399 抽400 冑401 罽402 罽403 捧404 牽405 跋406 頗407 車408 廬409 半410 判411 巷412 決413 缺414 劫415 去416 廣417 曠418 博419 寡420 弓421 穹422 延423 誼424 圍425 環426 爰427 爰428 兗429 說430 引431 緝432 覓433 示434 災435 災436 由437 冑438 域439 國440 勺杓441 勺酌442 召443 招444 屬445 行446 懲447 延448 延449 由450 抽451 賈452 禦453 御454

461. **dz'iar* / *dz'iei* / t s' i equal, uniform: 462. **dz'er* / *dz'ai* / c h' a i equals, class;
 463. **siar* / *siei*: / s i to wash: same char. **ser* / *šai* / s h a i to sprinkle, cleanse;
 464. **d'am* / *d'am* / t' a n extend, spread: 465. **d'iam* / *d'iem*: / t i e n (a »spread«): a mat;
 466. **kâp* / *kăp* / k i a to press between, pinchers: 467. **kiap* / *kiep* / k i e (pinchers:) chopsticks.
 Further: 495; 504:505.

N. Alternation of forms with medial *j* and medial *i*

468. **dz'iar* / *dz'iei* / t s' i equal, uniform, even: same char. **tsjar* / *tsi*- / t s' i hemmed (even) lower edge of garment;
 469. **kjäng* / *kjäng*: / k i n g neck: 470. **kieng* / *kieng*: / k i n g to cut the neck;
 471. **tjäng* / *tjäng*- / c h e n g straight, correct, regulate: 472. **d'ieng* / *d'ieng*- / t i n g (to put straight:) to fix, settle;
 473. **njäg* / *nzi* / e r child: 474. **ngieg* / *ngiei* / n i young and weak;

475. **piäng* / *piäng*- / p i n g combine two, both: 476. **b'ieng* / *b'ieng*: / p i n g side by side;
 477. **b'jäng* / *b'jäng* / p' i n g to screen off, remove: same char. **b'ieng* / *b'ieng*: / p i n g a screen;
 478. **sjäg* / *siäg*- / s i to give: 479. **siek* / *siek* / s i to give;
 480. **k'iwäg* / *k'iwäg*: / k' u e i a stride, distance covered by moving one leg: 481. **k'iweg* / *k'iweg* / k' u e i crotch of a man's legs.
 Further: 493:494.

O. Alternation of forms with and without medial *w*

482. **njat* / *nziät* / j ê hot: 483. **njwat* / *nziwät* / j o to burn;
 484. **nâp* / *nâp* / n a to bring in: same char. **nwâb* / *nuâi*- / n e i the interior;
 485. **g'äng* / *γwng* / h e n g crosspiece, crosswise: same char. **g'wäng* / *γwäng* / h u n g to plow crosswise;
 486. **pâk* / *pâk* / p e i (the back side:) north: 487. **pwäg* / *puâi*- / p e i the back, posterior part.
 Further: 520:521.

In the following groups we find an interchange between dentals and palatals (*t*: *t'* etc.) and between dentals and supradentals (*ts*': *ts'*).

P, a. Alternation of dental and palatal tenuis as initial

488. **tjat* / *tjät* / c h ê (breaking through:) penetrating, perspicacious: 489. **tjat* / *tjät* / c h ê to break, decide;
 490. **tjäd* / *tjäd* / c h i (to cause to come:) to convey, transmit, bring about: 491. **tjäd* / *tjäd* / c h i to come;
 492. **tjäd* / *tjäd* / c h i a pledge, a security given, a hostage: same char. **tjät* / *tjät* / c h i substance, substantial matter;
 493. **tiok* / *tiok* / t i bright, brilliant: 494. **tjok* / *tjok* / c h o to burn, brilliant;

P, b. Alternation of dental and supradental affricate as initial

495. *ts'a* / *ts'a* / c h' a to diverge, discrepancy: same char. **ts'ia* / *ts'ie* / t s' i of different length;
 496. **ts'jën* / *ts'jën* / t s' i n near, close: 497. *ts'jën* / *ts'jën*- / c h' e n inner coffin (nearest to the body);
 498. **dz'jap* / *dz'jap* / t s i to bring together, hold together: 499. *tsjap* / *tsjap* / c h i to collect;

Q. Alternation between palatal tenuis and dental media aspirata as initial (cf. A above)

500. *t̥jo / t̥jwo / c h u many all: 501. *d'jo / d'jwo / c h' u to collect;
502. *t̥jog / t̥jəu / c h o u circle, cycle, all round: 503. *d'jog / d'jəu / c h' o u to bind round, wrap round.

R. Alternation of dental tenuis and palatal voiceless aspirate as initial (cf. F above)

504. *tā / tā / t o much, many: 505. *t'ia / t's'ie: / c h' i large, extravagant.

S. Alternation of palatal media and dental media aspirata (cf. G above)

506. *d̥jəg / z̥i- / s h i to wait upon: 待 *d'əg / d'əi: / t a i to wait;

T. Alternation of dental media and palatal tenuis, or vice versa, as initial (cf. H. above)

507. *djök / juk / y ü to nourish: same char. *t̥jök / t̥juk / c h u rice gruel;
508. *d̥ju / z̥ju / s h u to kill: 509. *t̥ju / t̥ju / c h u to punish, to kill;
510. *d̥jo / z̥jwo- / s h u place, position: 511. *t̥jo / t̥jo- / c h u place, position.

U. Alternation of palatal media and dental voiceless aspirata as initial (cf. I above)

512. *d̥iā / z̥iā: / s h ê Spirit of the Soil: 513. *t'ō / t'uo: / t' u earth soil.

To sum up, the alternations Q, R, S, T, U are additional examples of the same kinds of stem variation as those we studied under A, F, G, H, I above.

V. Alternation of nasal and tenuis as final consonant

514. *kân / kân / k a n knock against, attack: 515. *kiat / kiät / k i e to accuse;
516. *gliang / liang- / l i a n g to rob: same char. *gliak / liak / l i ü e to rob;

455 培 456 陪 457 合 458 恰 459 决 460 决 461 濟 462 濟 463 洒 464 覃 465 簾 466 夾 467 挾 468 濟 469 頸 470 頸 471 正 472 定 473 兒 474 悅 475 泔 476 併 477 屏 478 賜 479 錫 480 陸 481 奎 482 熬 483 藪 484 內 485 衡 486 北 487 背 488 折 489 折 490 致 491 至 492 贊 493 的 494 灼 495 差 496 親 497 標 498 輯 499 載 500 諸 501 儲 502 周 503 綢 504 多 505 侈 506 侍 507 鬻 508 殊 509 誅 510 署 511 著 512 社 513 土 514 干 515 訖 516 掠 517 廣 518 揆 519

517. *kwāng / kwāng: / k u a n g wide: 518. *k'wāk / k'wāk / k' u o to widen, enlarge;
519. *mieng / mieng / m i n g dark, darkness: same char. *miek / miek / m i to cover;
520. *piām / piām: / p i e n to diminish: 521. *piwāp / piwāp / f a to lack, exhaust;
522. *ts'am / ts'am: / t s' a n to hold in the mouth: same char. *tsəp / tsəp / t s a to bite.

X. Alternation of n and r as final consonant

523. *b'jan / b'jēn: / p' i n female: same char. *b'jər / b'ji: / p i female;
524. *siən / sien: / s i e n to wash: same char. *siər / siei: / s i to wash;
525. *xiwān / xiwān: / h ü a n to sun, to dry in the sun: same char. *xiwār / xiwiē: / h u e i sunlight;
526. *nān / nān- / n a n difficulty, disaster: same char. *nār / nā / n o to expel malign influences.

So far the fairly rational and regular alternations. Besides those, we find a number of more curious cases which should not be passed in silence. A few examples will illustrate this:

527. *gwia / jwiē / w e i to make: 528. *ngwia / ngwiē- / w e i to fake, spurious;
529. *k'jo / k'jwo / k' ü ruins, waste: same char. *xiō / xiwo / h ü empty;
530. *xmək / xək / h e i black: 531. *mək / mək / m o black, ink;
532. *pliām / piām: p i n g rations: 533. *bliām / liām: / l i n granary;
534. *ts'am / ts'am: / t s' a n three, triad: same char. *siam / siām / s h e n (the triad star: Orion);
535. *g'əp / γāp / h o to join, unite: 536. *xiəp / xiəp / h i united, harmonious;
537. *d'jāk, d'jäg / d'jāk, d'jā- / s h i, s h ê to shoot: 538. *dzjäg / zjā- / s i e archery hall;
539. *d'jək / d'jək / s h i to eat: same char. *dzjög / zi- / s i food;
540. *t̥jög / t̥jəu: / c h o u broom: 541. *sög / säu: / s a o to sweep;
542. *sjog / sjäu: / s i a o small: 543. *sjög / sjäu: / s h a o few, a little;
544. *tsög / tsäu: / t s a o flea: 545. *sög / säu / s a o to scratch;
546. *sjək / sjək / s h i to know: same char. *t̥jög / t̥si- / c h i to remember, to record.

The conclusion to be drawn from the series of examples adduced above is clear: the early script masters had a surprisingly good idea of which variants in sound constituted natural alternations within one word-stem: they realized that a *tān* and a *d'an* could be »one and the same word« varied within clearly defined limits, and they expressed this knowledge in their choice of graphs. This evidence, furnished by the very Archaic Chinese scholars who lived in the early Chou era, offers strong support to our conclusion that the stem variations studied under A—X above (of which Q—U are mere corollaries to A and F—I) may be considered safely attested alternations in the Archaic Chinese language.

冥 520 賤 521 之 522 噲 523 挾 524 洗 525 烜 526 蕪 527 為 528 偽 529 虛 530 黑 531 墨 532 粟 533 粟 534 參 535 合 536 翁 537 射 538 榭 539 食 540 帚 541 掃 542 小 543 少 544 垂 545 擿 546 識

Notes

- 1 In the following pages the Archaic forms are given in italics with an asterisk, the Ancient forms in italics without asterisk, and the modern Mandarin forms in spaced Roman letters. The tones in Anc. Chin. are indicated by a colon for the shang sheng (rising tone), by a hyphen for the k'ü sheng (falling tone) and by the absence of a tone mark for the p'ing sheng (even tone): 姑 **ko / kuo / ku*¹: 古 **ko / kuo / ku*²: 故 **ko / kuo-* / k u⁴.
- 2 E. g. 四 **sjər / si-* / s i 'four'; 驃 **sjər / si-* / s i 'team of four horses'; 參 **ts'am / ts'əm / ts'a n* 'a triad'; 駢 **ts'am / ts'əm / ts'a n* 'team of three horses'; 員 **giwan / jiwän / y ü a n* 'round'; 圓 **giwan / jiwän / y ü a n* 'round'; etc.

DERIVATION BY TONE-CHANGE
IN CLASSICAL CHINESEG. B. Downer¹Source: *Bulletin of the School of Oriental and African Studies, University of London* 22, 1/3, 1959, 258-90.

I. Introduction

Since Karlgren's 'Word families' first drew attention to the existence of large groups of cognate words in classical Chinese,² efforts have been made to define more closely the principal phonetic contrasts involved, and to find semantic relationships that would correspond regularly to the phonetic contrasts.³ Karlgren himself came to the conclusion that in general it was impossible to find any regular semantic or grammatical correlations with the phonetic correspondence, and that Archaic Chinese showed only the last vestiges of a former inflectional system.⁴

With the material at our disposal, such a conclusion is probably inevitable for the majority of phonetic contrasts between cognate words. However, there is one contrast which, because of the large number of examples of it, has given better results. This is tonal contrast, where two cognate words differ only in tone, e.g.

好 °*χâu* 'to be pretty'; *χâu*° 'to love'⁵

including those cases where a *ruhsheng* word contrasts with the *chiuhsheng* corresponding to it by *shyesheng* 諧聲 rules, e.g.

惡 'ák 'to be evil'; 'uo° 'to hate'

In fact, in most cases of tonal contrast, one member of the pair has the *chiuhsheng*; this is so regular that in this article 'tonal contrast', unless otherwise specified, will refer to contrast between *pyng*, *shaang*, or *ruh* on the one hand and *chiuh* on the other. This kind of contrast has been studied by Jou Tzuumu and Jou Fahgau, who have shown that certain grammatical and semantic contrasts are regularly associated with the tonal contrast.⁶ Both writers also included another phonetic contrast: contrasting voiceless and voiced initial, as in 見 *kien*° 'to see'; *yien*° 'to appear, to show'. Neither, however, gave a satisfactory explanation for the role

played by the *chiuhsheng* in tonal contrasts; in fact, Jou Tzuumu does not seem to have recognized the special nature of the *chiuhsheng* there. Jou Fahgau gave a 'phonetic' explanation for the occurrence of the *chiuhsheng*, saying that certain tones tended to 'interchange' 通用. This does not explain why the tonal contrast should be accompanied by a regular semantic contrast.⁷

In the present writer's opinion, Wang Lih has found the solution to this problem. He interprets tonal contrast as a system of word-derivation, with words in *pyng*, *shaang*, and *ruh* as basic forms, and the corresponding *chiuhsheng* words as derived.⁸ Indeed, this explanation was given long ago for a few words by Maspero,⁹ and more recently by Haudricourt,¹⁰ and seems to be implicit in some remarks of Jou Tzuumu as well as in Jou Fahgau's arrangement of words,¹¹ although neither stated it explicitly. The over-all effect of the pairs of cognate words listed by Wang Lih is quite convincing, and the solution he offers seems to cover the facts as known.

Nevertheless, sufficient doubtful points remain to justify yet another study of the problem. First, the criteria for determining which of a pair of cognates is 'basic' and which 'derived' have never been discussed. Second, the dating of this derivation-system can with profit be gone into again, and the place it occupies in the general history of the Chinese language can be discussed. Third, previous studies have chiefly relied on traditional dictionary definitions for the semantic side of the problem. As a preliminary step, it seems advisable to find a homogeneous source for the *chiuhsheng* readings, and to tie down the definitions to the uses found in actual texts. For this purpose, an obvious choice is Luh Derming 陸德明, whose collection of readings, *Jingdean shyhwen* 經典釋文¹² has the advantages of being early in date (seventh century A.D.), of quoting extensively from earlier commentators, and of providing a large number of readings. An examination of his readings reveals a surprisingly large number of cognate words with minimal *chiuh*/non-*chiuh* contrast, and an examination of the way in which Luh used the contrasting forms reveals a rather more complicated picture of the semantic side of the contrast, and forces one to query some of the conclusions of earlier writers in this field. Finally, a list is given of the clearest examples of *chiuhsheng* derivation, as found in Luh Derming's works. As, however, it can be shown that *chiuhsheng* derivation was not confined to his usage, but was a general feature of early Chinese, examples from other writers are also included.

II. The nature of the so-called 'tonal contrast'

Among the words in a family of apparently cognate words, we may suspect, *a priori*, that some are dialect forms that have entered the standard language (and, as such, are probably very hard to detect). Where, however, it is possible to show that regular phonetic relationships correlate with regular semantic contrasts, it is legitimate to assume that we are dealing with related forms from a homogeneous dialect.

The material presented in the lists on pp. 152-72 easily satisfies this requirement. In Groups A to G we have large numbers of pairs of words which share a common

phonetic contrast and a common semantic contrast of a general nature. There is no reason to doubt that we are dealing with cognate forms which have been differentiated internally, within a homogeneous dialect. Wang Lih and others, however, have gone further and suggested that it is possible to explain the occurrence of these forms historically by assuming that in each pair of words, the non-*chiuh* member is a basic form, while the *chiuhsheng* member is a derivative. The reasons for this assumption have never been made explicit. The present writer shares this assumption, and suggests that justification for it may be found in the following points.

- (1) The shapes of the characters bear out the theory. In most cases it is clear that the character is constructed to represent the meaning of the basic (non-*chiuh*) word. This is especially obvious in the characters of Groups A and B. Note also that where one member of a pair has an extra radical added, it is usually the *chiuh* member.
- (2) The above point suggests that the makers of characters regarded the non-*chiuh* form as basic. This is confirmed by Sheu Shenn's 許慎 definitions in the *Shuowen* 說文, which give the 'basic' meaning of the character (in Sheu Shenn's opinion). In most cases, this is the meaning of the non-*chiuh* member.¹³
- (3) Luh Derming, too, takes the non-*chiuh* member as the regular reading (marked *rutzyh* 如字), the *chiuh* reading presumably being a special case (and therefore specially marked).¹⁴
- (4) The fact that most of the *chiuhsheng* readings have, with time, been dropped from the standard reading pronunciation, as well as from the colloquial language, suggests that we are dealing with a morphological phenomenon which was always recognized as a special case, and that in time it had outlived its usefulness.
- (5) The use of special *chiuhsheng* forms in certain disyllabic expressions (Group H) with apparently no change in meaning, can only be explained as a remnant of some morphological process, by which the *chiuhsheng* was used in phrase-forming.
- (6) In many cases, but especially in Groups A and B, general linguistic experience supports this contention; it seems 'natural' that in these groups the non-*chiuh* forms should be basic, the others derived from them. Note too that the English translations often agree with the Chinese in the distribution of basic and derived (or secondary) forms. Such an impression, based chiefly on translation-meaning, is almost useless by itself, but in conjunction with the other reasons is not without value.

In the end, it is the number of examples that can be found that determines the acceptability of the theory. With over 200 pairs of words showing phonetic and semantic regularity, the present writer believes we have sufficient examples to accept the theory that in early Chinese, the *chiuhsheng*, unlike other tones,¹⁵ had a special function, to create derived words, and that the special nature of these *chiuhsheng* words was realized by early writers, probably up till the time of Luh Derming.

Nevertheless, some problems remain. It may be asked whether, with many other cognates existing, it is possible to posit a one-to-one correspondence between *chiuh* and non-*chiuh* forms? Why pair 教 *γau*° 'to teach' with 學 *γāk* 'to learn' and not with 教 *kau*° 'to teach'? Or 去 *k'jwo*° 'to leave' with 去 *k'jwo*° 'to get rid of', and not with 祛 *k'jwo*° 'to exorcise'? While in both cases the latter form is almost certainly cognate, the fact that the pairs here chosen as examples of tonal contrast are written with the same character (or one close to it) shows that, at least in Hann times, when writing settled into its present form, a closer connexion was felt between the members of each pair than with the other words. This argument hinges on the date at which one assumes the tonal contrast to have been a living feature of the language.

It might be objected that it is curious that one morphological feature (*chiuhsheng*) should have such diverse semantic functions as changing nouns from verbs and vice versa, changing transitive verbs to intransitives and vice versa, etc. This objection has already been disposed of by Karlgren (speaking of other sound-changes), who pointed out that this is a common phenomenon found in many languages.¹⁶ Nevertheless, some doubts may remain, especially if *chiuhsheng* derivation is regarded as something akin to word-formation in Indo-European and other language-families. The present writer holds the opinion that with our present knowledge of Classical Chinese, it is better to regard *chiuhsheng* derivation not as a remnant of a former inflectional system of the Indo-European type, but simply as a system of derivation and nothing more. When new words were needed, they were created by pronouncing the basic word in the *chiuhsheng*. The grammatical regularity found in many cases would then be in a way fortuitous, being the result not of grammatical inflection, but of the need to create new words. This is a very 'mentalist' explanation, but if an explanation for features of an ancient language such as this is being sought, it is unavoidable.

There are, however, other possibilities. A multiple origin for the phenomenon is not out of the question. The presence of *chiuhsheng* forms as the first element in certain compounds suggests that it might once have been used in a subordinating capacity.¹⁷ Another possibility is that the *chiuhsheng* found in these words is the relic of a former suffix, since dropped. This has been suggested by Haudricourt for a few words,¹⁸ and is quite plausible; but with our present knowledge all explanations for the origin of the derivation-system are purely conjectural.

A few words must be said about those characters which seem to show *chiuhsheng* derivative forms, but in which no perceptible distinction in meaning can be found.¹⁹ Quite large numbers of these are to be found. Assuming that in these cases we have not simply missed the semantic distinction, these contrasting forms must be ascribed to differences of dialect (of either spatial or temporal nature),²⁰ although it is possible that once the derivational process has been established, parallel forms might be created by analogy, without change in meaning. An interesting feature of these characters is that in most cases the modern reading is the *chiuhsheng* form, the non-*chiuh* form having become obsolete. This contrasts with real *chiuhsheng* derivation where it is usually the *chiuh* member that is now lost.

Naturally, it is not claimed that all *chiuhsheng* words are derivative forms. Only a small proportion of the total number can be shown to be so: the majority are basic forms. For instance, there is no evidence to show that words such as 面, 賤, 卦, or 大 were ever anything but *chiuhsheng*.²¹ Therefore, under the rubric '*chiuhsheng*' there are in fact two morphologically different kinds of words, (a) those like 大, etc., basically *chiuhsheng* words, and (b) words like 好, etc., which are *chiuhsheng* by derivation from words of other tones.

This raises the question of what method, if any, was used to form derived words from basically *chiuhsheng* words.

A likely answer is that in this case the ancient language had recourse to voiced/voiceless initial alternation. This is the only other alternation, besides *chiuh*/non-*chiuh* contrast, which occurs in considerable numbers. A few examples found in the *Lijih* and *Tzuoojuann* are:

見 <i>kien</i> °	to see	<i>γien</i> °	to be seen; to show
繫 <i>kiei</i> °	to attach, tie	<i>γiei</i> °	to be attached
壞 <i>kwǎi</i> °	to destroy	<i>γwǎi</i> °	to be destroyed
敗 <i>pwai</i> °	to defeat, to ruin	<i>b'wai</i> °	to be defeated, ruined
背 <i>puǎi</i> °	the back	<i>b'uǎi</i> °	to turn the back on
葬 <i>tsǎng</i> °	to bury	<i>dz'ǎng</i> °	a grave (<i>L. Tarncong</i> , j.2.2a (659) (reading by Shyu Moh)

This voiced/voiceless alternation is not confined to words with *chiuhsheng*.²² Examples with other tones are also to be found.

The semantic relationships between the voiced/voiceless forms seem in general to be identical with those found in *chiuhsheng* derivation. Moreover, in many cases, there seem to be some grounds for taking the voiceless form as basic.

There are also some examples of words with both *chiuhsheng* derivation and voiced/voiceless contrast, e.g.:

糶 <i>d'iek</i>	to buy grain	糶 <i>t'ieu</i> °	to sell grain ²³
分 <i>pjuən</i>	to separate	份 <i>b'juən</i> °	a share ²⁴
割 <i>kât</i>	to cut	害 <i>γâi</i> °	to injure ²³
感 <i>kâm</i>	to move, affect	憾 <i>γâm</i> °	to be resentful

From the point of view of *chiuhsheng* derivation these examples seem to be perfect semantically, but it is difficult to account for the incidence of voiced and voiceless initials. It seems that here there is only alternation, no system of derivation being demonstrable.

III. The date of *chiuhsheng* derivation

The pairs of tonally-contrasted words in the lists on pp. 152–72 may be roughly divided into two groups: those (the majority) in which the two members are usually written with the same character, and the few that are written with different characters. No problem is caused by the latter group, whose validity has never been questioned. However, especially since the rise of the study of historical phonology in the sixteenth century A.D., many scholars such as Guh Yanwu 顧炎武, Chyan Dahshin 錢大昕, Duann Yuhsair 段玉裁, and others have agreed that the tonal distinctions in the former group of characters were late in date, probably the creations of teachers of the fifth and sixth centuries A.D.²⁵

This contention is not supported by the facts. Even if no other information was available, it is inherently unlikely that if these distinctions were in fact the creations of late pedants they would have been accepted by the majority of scholars. Yet, to give only a few examples of Tang times and earlier, the principle of semantic distinction by tone-contrast was accepted by Yan Jytuei 顏之推,²⁶ by Luh Fahyan 陸法言²⁷ and the compilers of rime-books that succeeded him, and by Jang Shoujye 張守節.²⁸ Moreover, the statement that these distinctions were created by teachers suggests that these are special pronunciations to be used in reading the classics. In fact, the phenomenon was not confined to classical readings. Non-classical examples occur quite early, for which there would be no pedants' tradition to follow;²⁹ and it has recently been demonstrated that the Tang poets regularly observed the *chiuhsheng* distinction semantically in many words in poetry.³⁰ These facts, and the occasional survival of *chiuhsheng* derivatives in modern dialects, formed on the same principles as the learned forms, such as Pekinese³¹

磨 <i>mo</i>	to grind	<i>moh</i>	(1) a mill (2) to mill
瓦 <i>woa</i>	a tile	<i>wah</i>	to tile
泥 <i>ni</i>	mud	<i>nih</i>	to daub on mud
鑽 <i>tzoan</i>	to drill	<i>tzuann</i>	a drill
搨 <i>shan</i>	to fan	扇 <i>shann</i>	a fan
牽 <i>chian</i>	to drag, draw	緣 <i>chiann</i>	a two-rope, a halter

suggest not that the Six Dynasties' pedants were creating new and eccentric pronunciations, but that their readings simply reflected a feature of ordinary speech, already existing.

On *a priori* grounds, therefore, the assumption that tonal contrast appeared late in the history of the language is not very satisfactory. Now, however, Jou Tzuumu has demonstrated convincingly that many of these *chiuhsheng* distinctions were in existence in Hann times.³² This pushes back the date of their first appearance a few centuries. One can go further, for there is no reason for supposing that the system

of deriving words by tone-change was a creation of that time; the Hann dynasty is merely the earliest time in which we may expect to find explicit statements about the pronunciation of words.³³ In fact, there is additional evidence as to the date of the sound-change. This is the evidence afforded by the phonological relationships between *ruhsheng* words and their *chiuhsheng* derivatives. In the lists of words on pp. 152–72, the following words in which the basic form is *ruhsheng* occur:³⁴

Basic form	Derived form
E.1. 告 <i>kôk/kuok</i>	<i>kôg/kâu</i>
G.3. 復 <i>b'îôk/b'îuk</i> (similarly A.54, A.57, B.39, D.10, H.15)	<i>b'îôg/b'îûu</i>
C.7 足 <i>tsjuk/tsiwok</i> (similarly A.64)	<i>tsjûg/tsjû</i>
A.28 責 <i>tsëk/tsek</i> (similarly A.62)	<i>tsëg/tšai</i>
A.61 獲 <i>g'wăk/γwëk</i>	獲 <i>g'wăg/γwə³⁵</i>
A.14 度 <i>d'âk/d'âk</i> (similarly C.14)	<i>d'âg/d'uo</i>
A.40 鑿 <i>dz'âk/dz'âk</i>	—/dz'âu ³⁶
F.1 覺 <i>kôk/kâk</i> (similarly C.19, H.7)	<i>kôg/kau</i>
A.48 削 <i>sjok/sjak</i>	<i>sjog/sjäu</i>
A.24 縛 <i>b'îwak/b'îwak</i>	—/b'îua ³⁷
F.8 射 <i>d'îâk/dz'îâk</i> (similarly A.30, C.6, C.10)	<i>d'îâg/dz'îa</i>
A.29 積 <i>tsjêk/tsjâk</i> (similarly A.35)	<i>tsjêg/tsjê</i>
A.31 織 <i>îjak/tšjak</i> (similarly C.11, E.5)	<i>îjag/tši</i>
A.16 滌 <i>d'îôk/d'iek</i>	<i>d'îôg/d'ieu</i> (as 條)
A.45 塞 <i>sak/sak</i>	<i>sag/sâi</i>
D.3 渴 <i>k'ât/k'ât</i>	<i>k'âd/k'âi</i>
C.8 出 <i>t'iwət/tš'iuët</i> (similarly A.53)	<i>t'iwəd/tš'wi</i>
C.2 乞 <i>k'jət/k'jət</i>	<i>k'jəd/k'jêi</i> (as 气)
A.67 列 <i>liat/liät</i>	例 <i>liad/liäi</i>
A.7 結 <i>kiet/kiet</i>	繫 <i>kied/kiei</i>
A.20 納 <i>nâp/nâp</i> (similarly D.6)	內 <i>nwâb > nwəd/nuâi³⁸</i>
A.32 執 <i>tšap/tšjap</i>	<i>tšab/tši</i>

In almost every instance the phonological relationship between the basic and derived forms in the Archaic readings fits the Archaic *shyesheng* system, going back to Chyn 秦 or earlier times.³⁹

The present writer's view is that although the appearance of *chiuhsheng* derivation cannot be dated with precision, the likelihood is that it took place in late Archaic, possibly Chyn, times. Indeed, it may be the latest of the morphological processes of word-derivation in the Archaic language, since it occurs in the early commentaries in such large numbers and with such regular semantic correlation, in this way markedly different from most other phonetic contrasts, which may represent remnants of earlier derivational processes, their productive life long past.⁴⁰ In Hann times the system of *chiuhsheng* derivation was still very much alive, and used much more extensively than in Luh Derming's time five centuries later. After the Hann dynasty, a progressive loss of the *chiuhsheng* forms may be seen. In Swei and T'ang, many readings were still current, but others survived only as special readings to be used in classical texts. This is suggested by the special attention drawn to them by scholars of the time (such as those mentioned above),⁴¹ and by the special mention accorded them by Luh Derming in the Introduction to his *Jingdean shyhwen*. By Song times so few of the *chiuhsheng* readings survived that concern was felt for their preservation, as may be seen from the publication of special lists and notations of them that took place then.⁴² Ju Shi's 朱熹 commentaries, which appeared at this time, gave very few of the *chiuhsheng* forms that are to be found in Luh Derming's work. At the present day, only a handful of the variant pronunciations occur in the reading of non-classical texts.

IV. Luh Derming's use of *chiuhsheng* derivation

The categories into which the examples of *chiuhsheng* derivation are arranged in the lists on pp. 152-72 are chosen primarily to illustrate the derivative nature of the tonal contrast. They are notional categories, corresponding to well-known grammatical distinctions found in many languages, and in most cases are probably valid for Classical Chinese, although no rigorous grammatical analysis of this language has yet been made. These categories are as follows:

A. Basic form verbal—derived form nominal

This is the commonest kind of derivation. From the basic verbs are derived nouns of agency,⁴³ nouns of means,⁴⁴ nouns denoting the results of acts,⁴⁵ abstract nouns,⁴⁶ and so on. An interesting group is found in Nos. A.1, A.5, A.17, A.49, and A.60. With these the derived form is regularly used when followed by the amount measured, e.g.⁴⁷

壘厚一丈高二丈

'The earthworks were 10 feet thick and 20 feet high'

B. Basic form nominal—derived form verbal

Most of the denominative verbs are transitive, though a few intransitives occur. Note that fully half of the characters are ideographs (*jiyshyh* 指事, *shianqshyng* 象形, and *hueyyih* 會意) representing the basic meaning—an argument for derivation as opposed to mere contrast.

C. Derived form causative

In addition to the usual kind of causative verb, this category includes a well-defined sub-group of words, in which the basic form signifies 'receiving' and the derived form 'giving' of some kind.⁴⁸

D. Derived form 'effective'

This group is rather hard to define. The principal feature that the characters have in common is that in each of the derived members there is action on an object. This is clear enough when the basic member is intransitive, the derived form transitive; when both basic and derived members are transitive, the difference lies in the fact that the basic form refers to a specific act, whereas the derived form is used to denote the effect this act has on the (usually personal) object. I have therefore tentatively given the label 'effective' to cover this group.

Some of the pairs of words are only dubiously placed in this category. In fact, the boundaries between this group and the Groups C and E are somewhat nebulous.

E. Derived form with restricted meaning

In this group the derived form has a more specialized meaning than the basic form. A few honorifics are placed here too. Many of the derived words are notionally reminiscent of the derived intensive and meditative verbs of the Indo-European languages.⁴⁹ Again, some words in the two previous groups could have been placed here.

F. Derived form passive or neuter

This group is quite well-defined notionally, and seems to be the converse of Group C.

G. Derived form as adverb

This category contains five examples of the derived form used adverbially. The basic form is verbal.

H. Derived form used in compounds

This group is very interesting. In most cases there seems to be no semantic distinction involved. This is especially true of the examples in which the derived form is the first word in the compound. Where the derived word is the last element of the

compound, it could have been entered in one of the other groups if it had occurred alone. Where, however, the first is the derived form, the lack of semantic distinction suggests that the *chihsheng* was used (at least in some cases) to show subordination.

The examples of *chihsheng* derivation presented in the lists do not by any means exhaust the number of cases to be found. Generally speaking, the principle used in selecting characters for inclusion in the lists was to pick out those with unequivocal readings and meanings. This was not always possible, so in some cases words with alternative readings for the derived form are given. Since Luh Derming includes readings by earlier commentators, these are probably mostly due to real differences of interpretation of the text concerned. There are, however, grounds for believing that the tradition of *chihsheng* derivation was obsolescent by Luh's time.⁵⁰ This probably accounts for those cases where Luh prefers the basic form, but notes that earlier commentators have *chihsheng* readings.⁵¹ This is in contrast to those cases of characters used in their basic sense, when no reading is usually given at all. There remain some characters, not in the lists, which are noted by Luh in so many different ways, or with so many alternative pronunciations, that I have been unable to disentangle the functions of the *chihsheng* readings, and have left them for later work.⁵² Other omissions from the lists were caused by insufficient evidence of the semantic distinction. An example is the character *kiem* 兼, which in one phrase only⁵³ is noted as having a variant pronunciation with *chihsheng*. Since other occurrences of the character with apparently the same meaning are given no variant, an explanation of this reading must await study of other texts.

There remains a substantial body of characters with two regular readings, differing only in tone, in which no perceptible difference of meaning occurs. A few examples are given below.

壽	old age, long life	° <i>ziəu</i> , <i>ziəu</i> °	C, <i>Yiin</i> 11, comm., j.4.12b (888)
互	mutually	° <i>ɣuo</i> , <i>ɣuo</i> °	L, <i>Wangjyh</i> , comm., j.4.9b (687)
園	park ⁵⁴	<i>jiuk</i> ('old reading'), <i>jiəu</i> °	C, <i>Jau</i> 9, <i>Jing</i> , j.45.1a (1109)
淡	mild, insipid	° <i>d'am</i> , <i>d'am</i> °	L, <i>Jongyong</i> , j.16.15a (832)
錫, 賜	to give	<i>siek</i> , <i>sie</i> °	C, <i>Wen</i> 1, <i>Jing</i> , j.18.1b (951)
釀	to club together for drinks	<i>g'jak</i> , <i>g'jwo</i> °	L, <i>Liichih</i> , j.7.18b (726)
罽	small net	° <i>juət</i> , <i>jwət</i> °	L, <i>Wangjyh</i> , j.4.7a (686)
搖	to shake	° <i>iču</i> , <i>iču</i> °	L, <i>Sangdahjih</i> , comm., j.13.14b (803)
閉	to shut, close	<i>piet</i> , <i>piei</i> °	C, <i>Cherng</i> 8, j.26.12a (999)

迭	in turn, alternately	<i>d'iet</i> , <i>d'iei</i> °	L, <i>Liyyunn</i> , j.7.8a (721)
屨	to pull up	<i>kjwət</i> , <i>kjwäi</i>	C, <i>Shiang</i> 19, j.34.5a (1044)
斃	to fall down	<i>b'jät</i> , <i>b'jät</i> °	L, <i>Yuehling</i> , j.5.18b (702)
蚋	mosquito	<i>nziwät</i> , <i>nziwäi</i> °	L, <i>Yuehling</i> , j.5.18b (702)
匄	to beg	<i>kät</i> ('old reading'), <i>kät</i> °	C, <i>Jau</i> 16, j.47.10b (1126)

These have already been discussed. More extended work may reveal semantic distinctions here, too.

In assigning names to the categories in the lists, an effort has been made to avoid as far as possible grammatical terms implying syntactic uses. In the absence of a grammatical analysis of Classical Chinese, the use of such terms would be meaningless, and could in fact invalidate the thesis of this article. Even terms such as 'transitive' and 'intransitive', without rigorous definition, can only mislead, although they would be very welcome in discussing the uses of derived words in Groups C, D, and E. For instance, it would be very tempting to take 遠 °*jiwon* (basic form)⁵⁵ as intransitive, *jiwon*° (derived form) as transitive; but, like many words of its kind, the basic form may also be used transitively, meaning 'to regard as distant', as in Mencius' 不遠千里而來. However, even if a satisfactory grammatical analysis of Classical Chinese existed, it is doubtful if *chihsheng* derivation could be treated at the grammatical level, except only incidentally. Even 'noun' and 'verb', as word classes, are dubious terms, although they have been used as labels of the categories in the lists, *faute de mieux*. For instance, B.1 家 *ka* (basic form) is usually nominal, and the derived form *ka*° is usually verbal; but the basic form is occasionally verbal too:

待西施毛嬙而爲配,則終身不家矣

'If you wait for a Shishy or Mauchyang to be your wife, you will never be married'.⁵⁶

In some cases the derived form has (notionally) both nominal and verbal uses. Although it is possible to imagine an evolution

simple verb > derived verb > noun

as in D.15 to cause > to send on mission > envoy,

in other cases it is equally plausible to suggest

simple verb > derived noun > derived verb

as in E.3 to line up > line of battle > to form line of battle.

In fact, there is no evidence to support either of the suggested evolutions. If the former seems more likely in some cases, the latter in others, the decision is probably influenced by the translation-meaning of the words. Another possible treatment of such forms is to assume that the two uses of the derived form are simply two aspects of one word-class. This would probably be overambitious at this stage. Accordingly all such forms have been arbitrarily placed in the lists in the appropriate place for the derived verbal, except where there seems to be only a remote connexion between the verbal and nominal notionally, in which case they have been listed twice.

Many other uses of the *chiuhsheng* derivatives might be noticed. The use of tonal contrast in at least two cases⁵⁷ to distinguish honorific from humble verbs may be a relic of a former, more widespread phenomenon. It may also be connected with the use of derived forms as passives, which, by an evolution not unknown elsewhere, eventually acquired a connotation of status-differentiation.⁵⁸ The use of the basic form both as verb and as 'classifier' in the case of A.21 and A.22,⁵⁹ and the use of the basic form as verb and 'number' in the case of A.52,⁶⁰ in all three cases in contrast to the derived form, which is nominal, suggests that a more extended survey of Luh's use of *chiuhsheng* derivation, and of his readings in general,⁶¹ would be of great value for the understanding of Classical Chinese grammar.

Lists⁶²

Group A. Basic form verbal—derived form nominal

1. 高	˩kâu	to be high	kâu°	height C, Yiin 1, comm., j.2.10a (879)
2. 監	˩kam	to oversee C, Shiuian 7, j.22.3b (976)	kam°	an overseer L, Wangjyh, j.4.4b (684)
3. 過 (see also D.2)	˩kuā	to pass C, Juang 10, j.8.13b (903) C, Shi 16, <i>Jing</i> , j.14.8a (929)	kuā°	a fault, excess
4. 觀 (see also C.1, H.3)	˩kuān	to look at	kuān°	a view, mound, tower C, Shiuian 12, j.23.10b (894) L, Liyunn, j.7.1a (717)
5. 廣	°kwāng	to be wide	kwāng°	(1) width C, Juang 28, comm., j.10.8a (942)

					"	(2) troop, cohort C, Shiuian 12, j.23.6b (981)
6. 經, 徑	˩kieng	to pass through C, Cherng 13, comm., j.27.9a (1005)	kieng°		"	(1) a path (2) diameter
7. 結	kiet	to tie	髻 kiet°			C, Yiin 1, comm., j.2.10a (879) knot in hair, 'bun' C, Shiang 4, comm., j.29.14b (1019)
8. 卷	°k'wän	to roll up L, Sangdahjij, comm., j.13.1b (796)	k'wän°			a roll, volume
9. 騎 (see also H.4)	˩g'jiē	to ride	g'jiē°			rider L, Chiulii, j.1.16a (650)
10. 研	˩ngien	to grind	硯 ngien°			inkstone
11. 擔	˩tām	to carry C, Jau 7, comm., j.44.6b (1106)	tām°			a burden, load C, Shiang 2, comm., j.29.4b (1015)
12. 登	˩tāng	to mount	鐙 tāng°			stirrups
13. 張 (see also F.4)	˩t'iang	to stretch, extend	t'iang°			(1) tent (2) net
14. 度	d'āk	to measure L, Wangjyh, j.4.10a (688)	d'uo°			measurement, ruler L, Wangjyh, j.4.10a (688)
15. 彈	d'ān	(1) to fillip L, Yuehjih, j.11.6b (774)	d'ān°			crossbow
		"				(2) to shoot (a crossbow) C, Shiuian 2, j.21.5b (672)
16. 滌	d'iek	to wash, cleanse	d'ieu°			stables (Shyu Moh) L, Chiulii, comm., j.1.28a (657) L, Jiautehsheng, j.8.6a (731)
17. 長	˩d'iang	to be long	d'iang°			length L, Tarnngong, j.2.7a (663)

18. 傳	ˊd'iwän	to transmit	ˊd'iwän°	a record
19. 難	ˊnân	to be difficult	nân°	difficulty, hardship C, Hwan 5, comm., j.6.9a (893)
20. 內, 納	nâp	to bring in	nuâi°	inside
21. 把	°pa	to grasp	pa°	handle L, Chiulii, comm., j.1.13a (648) L, Shawyi, comm., j.10.18a (767)
22. 乘, 柄	°piwng	to grasp	piwng°	Handle C, Jau 7, j.44.8a (1106)
23. 封	ˊpiwng	to enfeof	piwng°	feof (Shyu Moh) <i>Shujing, Tsayjong-jy minq</i> (SBBY ed.), j.17.2a (187)
24. 縛	b'iwak	to bind	b'iuä°	bonds (‘old reading’) C, Jau 4, j.42.15b (1096) C, Juang 9, comm., j.8.11b (903)
25. 飯	°b'iwon	to eat L, Chiulii, j.1.11b (646) L, Tarncong, j.2.13b (667)	餼 b'iwon°	food (see Luh's note (645) to L, Chiulii, j.1.11a)
26. 縫	ˊb'iwong	to mend, stitch C, Shi 26, j.16.4a (940)	b'iwong°	a seam in cloth L, Shen'i, comm., j.18.15b (851)
27. 磨	ˊmuä	to grind	muä°	grindstone
28. 責	tsek	to exact, demand payment	債 tsai°	debt
29. 積	tsjak	to pile up, amass	tsie°	hoard, stores C, Shi 33, j.17.8a (949) C, Shiang 5, j.30.3a (1020)
30. 炙	tsjak	to roast L, Liyunn, j.7.3b (719)	tsia°	roast meat C, Ai 15, j.59.12b (1199)

31. 織	tsjak	to weave	tsi°	L, Chiulii, j.1.10b (645) patterned cloth L, Yuhtzao, j.9.5b (750) L, Shawyi, comm., j.10.13a (764)
32. 執	tsjap	to pick up, catch (see also H.8)	tsi°	gift, offering L, Tarncong, j.3.16a (680)
33. 采, 採	°ts'ai	to pluck, pick	采 ts'ai°	herbs
34. 操	°ts'au	to grasp, hold L, Chiulii, j.1.3b (640)	ts'au°	principles
35. 刺	ts'jak	to prick, stab (see also D.11)	ts'ie°	thorn
36. 稱	°ts'jang	to name, to claim L, Chiulii, j.1.3b (no note by Luh)	ts'jang°	appellation C, Yiin 1, comm., j.2.13b (880) L, Chiulii, comm., j.1.3b (640)
37. 處	°ts'iwu	to live at, dwell	ts'iwu°	place C, Shi 25, comm., j.16.2b (939)
38. 吹	°ts'wie	to blow	ts'wie°	music L, Yuehling, j.5.21a (703) L, Yuehling, j.5.28a (707)
39. 裁	ˊdz'ai	to cut (cloth)	dz'ai°	cut, fashion L, Sangdahjih, j.13.9b (801)
40. 鑿	dz'äk	to bore, drill	dz'au°	a hole Joulii 周禮, Kaogongjih 考工記 (SBBY ed.), j.39.10a (535)
41. 藏	ˊdz'ang	to hide, store	dz'ang°	storehouse C, Shi 24, j.15.8b (936) L, Huenyih, j.20.3b (864)

42. 乘	dz'jəŋ	to ride	dz'jəŋ°	chariot C, Yiin 1, j.2.11a (879)
43. 粟	dz'ju	to collect, gather	dz'ju°	(1) collection, stores C, Shiang 9, j.30.18a (1024) " (2) masses, group C, Cherng 13, j.27.7b (1004)
44. 坐	dz'uā	to sit	dz'uā°	seat C, Shiang 27, comm., j.38.6a (1064)
45. 塞	sək	to block C, Shi 20, j.14.13a (931)	səi°	border, frontier C, Juang 28, j.10.7b (911)
46. 算	suān	to count, reckon	suān°	a tally
47. 思	si	to think	si°	thought C, Shiang 29, j.39.7b (1070) C, Jau 1, comm., j.41.14b (1087)
48. 削	sjak	to pare L, Chiulii, j.1.12b (647)	sjaü°	dagger L, Shawyi, j.10.18a (767)
49. 深	sjəm	to be deep	sjəm°	depth L, Tarngong, j.3.17a (680)
50. 收	sjəu	to gather, receive	sjəu° (altern.)	harvest C, Wen 2, comm., j.18.5a (952) L, Yuehling, j.5.20b (703)
51. 守 (see also F.12, H.14)	sjəu	to guard, maintain	sjəu° 狩"	(1) governor C, Shi 24, j.15.9a (936) (2) territory L, Wangjyh, j.4.5a (685) cf. also Mencius, Liang Hueywang B, 巡狩者巡所守也

52. 數	sjiu	to count	sjiu°	number C, Yiin 5, j.3.12b (884)
53. 帥, 率	sjuēt	to lead	swi°	leader, marshal C, Shiang 10, j.31.3a, no note by Luh C, Ai 17, j.60.5a (1202)
54. 宿	sjuk	to stay overnight	sjəu°	celestial 'mansion' C, Jau 10, j.45.6b (1111)
55. 上	zjang	to ascend	zjang°	above, top C, Cherng 16, j.28.4b (1008)
56. 樹	zju	to stand up, set upright, to plant	zju°	tree L, Jihyih, j.14.14a, no note by Luh
57. 畜 (see also H.15)	xjuk	to rear, raise C, Shiuau 4, j.21.12a (975)	xjəu°	farmyard animal C, Shi 19, j.14.12a (931) L, Yuehling, j.5.10a (698)
58. 含	γəm	to hold in the mouth	哈, 哈 γəm°	pearl put in mouth of corpse C, Wen 5, Jing, j.19a.1a (955)
59. 號	γəu	to call, cry C, Cherng 7, comm., j.26.8b (997) L, Chiulii, j.1.27a (656)	γəu°	(1) title, appellation C, Shi 26, comm., j.16.3b, no note by Luh " (2) slogan, command L, Yuehjih, j.11.20a (781)
60. 厚	γəu	to be thick	γəu°	thickness L, Yuehling, comm., j.5.22b (704)
61. 獲	γwek	to catch, get	獲 γwa°	trap L, Jongyong, j.16.2a (826)

62. 畫	<i>ɣwək</i>	to draw, demarcate C, Shiang 4, j.29.13b (1018)	<i>ɣwai°</i>	picture
63. 行 (see also D.18)	<i>ɣwŋg</i>	to walk, proceed; to practise, carry out	<i>ɣwŋg°</i>	action, behaviour C, Shiang 2, comm., j.29.3b (1015)
64. 欲	<i>iwok</i>	to want, desire	<i>iw°</i> (alternative reading)	lust <i>L, Chiulii,</i> j.1.1a (637) <i>L, Shyuejih, comm.,</i> j.11.3b (773)
65. 緣, 沿	<i>iwän</i>	to follow, go along C, Wen 10, j.19a.13a (960)	<i>iwän°</i>	rim, border <i>L, Yuehjih,</i> j.11.6b (779)
66. 量	<i>liang</i>	to measure C, Yiin 11, j.4.13b (888)	<i>liang°</i>	measurement, amount C, Yiin 3, comm., j.3.1a (881)
67. 列	<i>liät</i>	to arrange in line	<i>liäi°</i>	usage, rule
68. 論	<i>luən</i>	to discuss	<i>luən°</i>	theory C, Pref., j.1.15b (877)
69. 染	<i>°nziäm</i>	to dip, dye C, Shiuan 4, j.21.10b (974)	<i>nziäm°</i>	kind of cloth <i>L, Liyyunn, comm.,</i> j.7.4a (719)

Group B. Basic form nominal—derived form verbal

1. 家	<i>ka</i>	family	<i>ka°</i>	to marry (of a woman)
2. 間	<i>kän</i>	space between	<i>kän°</i>	to be (or place) between C, Yiin 3, j.3.4a (881)
3. 膏	<i>käu</i>	grease; richness C, Pref., j.1.7b (876)	<i>käu°</i>	to grease; to enrich <i>L, Neytzer,</i> j.8.15a (737) C, Shiang 19, j.34.24 (1043)
4. 棺	<i>kuän</i>	coffin	<i>kuän°</i>	to encoffin C, Shi 28, j.16.10a (942)

5. 冠	<i>kuän</i>	cap	<i>kuän°</i>	to cap (manhood ceremony) C, Shi 9, <i>Jing</i> comm., j.13.4b (921)
6. 魚	<i>ngiwo</i>	fish	<i>ngiwo°</i>	to fish ⁶³
7. 中 (see also H.6)	<i>tjung</i>	middle	<i>tjung°</i>	(1) to hit the middle C, Cherg 16, j.28.5a (1008) " (2) to be of middle length <i>Shujing, Yaudean</i> (135)
8. 種	<i>tjwong</i>	seed, kind C, Shi 33, comm., j.17.9a (950)	<i>tjwong°</i>	to plant <i>L, Liyyunn,</i> j.7.11a (722)
9. 道	<i>d'äu</i>	road, way	<i>d'äu°</i>	to lead the way C, Yiin 5, j.3.15b (884)
10. 弟	<i>d'iei</i>	younger brother	<i>d'iei°</i>	to act as a younger brother should act <i>L, Liyyunn,</i> j.7.7a (721)
11. 蹄	<i>d'iei</i>	hoof	<i>d'iei°</i>	to trample?; to kick? <i>L, Yuehling, comm.,</i> j.5.13a (699)
12. 田	<i>d'ien</i>	field	<i>d'ien°</i>	to work fields <i>Shy, Chyifeng,</i> 'Fuutyan' 甫田 (257)
13. 泥	<i>nei</i>	mud	<i>nei°</i>	to stick, adhere to
14. 女	<i>njwo</i>	daughter	<i>njwo°</i>	to give a daughter in marriage C, Hwan 11, j.7.6a (896)
15. 賓	<i>piën</i>	guest	<i>piën°</i>	to receive guests; to pay respects to <i>L, Liyyunn,</i> j.7.5b (720)
16. 氷	<i>piəng</i>	ice	<i>piəng°</i>	to freeze, congeal <i>Tarngshu</i> 唐書, <i>Wei</i> <i>Sychian juann</i> 章思謙傳: 澌酒氷須
17. 風	<i>piung</i>	wind	<i>piung°</i>	(1) to blow on (used of the wind)

			<i>Shuoyeuan</i> 說苑, <i>gweyder</i> 貴德: 以春風風人
		”	(2) to rumour, to satirize <i>Shy, guanjiu</i> pref. (202)
18. 帆	◦ <i>b'jwəm</i> sail	<i>b'jwəm</i> °	to raise wind by fanning? C, <i>Shiuan</i> 12, comm., j.23.10a (983)
19. 旁	◦ <i>b'wāng</i> side	<i>b'wāng</i> °	to be or go beside C, <i>Ai</i> 27, comm., j.60.13b (1209)
20. 名	◦ <i>mǎng</i> name	命 <i>miǎng</i> °	to name C, <i>Hwan</i> 2, j.5.11a (891) C, <i>Wen</i> 11, j.19b.2a (961)
21. 文	◦ <i>mǐuən</i> marks, literature	<i>mǐuən</i> °	to gloss over <i>L, Tarngong</i> , j.2.2a (659)
22. 左	◦ <i>tsá</i> left (side)	佐 <i>tsá</i> °	to assist C, <i>Yiin</i> 6, comm., j.4.2a (885) C, <i>Shiang</i> 10, j.31.7b (1027)
23. 子	◦ <i>tsi</i> child, son	<i>tsi</i> ° (Shyu Moh)	(1) to treat as a child <i>L, Jongyong</i> , j.16.8b (829)
		<i>tsi</i> °	(2) to act as a child <i>L, Yuehjih</i> , j.11.23a (784)
24. 枕	◦ <i>tsjəm</i> pillow	<i>tsjəm</i> °	to pillow oneself on C, <i>Shi</i> 28, j.16.15a (945)
25. 妻	◦ <i>ts'iei</i> wife	<i>ts'iei</i> °	to give as wife C, <i>Yiin</i> 7, j.4.4a (886)
26. 先	◦ <i>sien</i> before, front	<i>sien</i> °	to put first C, Pref., j.1.6b (875) <i>L, Yuhtzao</i> , j.9.11a (753)

27. 首	◦ <i>šjɛu</i> head	<i>šjɛu</i> °	to point head towards <i>L, Tarngong</i> , j.2.7b (664)
28. 衣	◦ <i>jěi</i> clothing	<i>jěi</i> °	(1) to wear (clothes) <i>L, Yuehjih</i> , comm., j.11.22b (783)
		”	(2) to clothe C, <i>Min</i> 2, j.11.7a (915)
29. 麾	◦ <i>χjwiɛ</i> banner	<i>χjwiɛ</i> °	to wave (alternative C, <i>Yiin</i> 11, reading) j.4.12b (888)
30. 下	◦ <i>ɣa</i> below	<i>ɣa</i> °	to put down, lower C, <i>Jau</i> 25, comm., j.51.9b (1098)
31. 後	◦ <i>ɣɛu</i> behind	<i>ɣɛu</i> °	to put afterwards C, Pref., j.1.6b (875) <i>L, Yuhtzao</i> , j.9.11a (753)
32. 環	◦ <i>ɣwan</i> circle, ring	<i>ɣwan</i> ° (Shyu Moh)	(1) to encircle C, <i>Shiang</i> 10, j.31.6b (1026)
		環 <i>ɣwan</i> °	(2) to encircle oneself with, put on C, <i>Cherng</i> 2, j.25.6a (991)
33. 鹽	◦ <i>jäm</i> salt	<i>jäm</i> °	to salt, pickle <i>L, Neytzer</i> , j.8.24b (744)
34. 油	◦ <i>jɛu</i> oil	<i>jɛu</i> °	to oil, anoint Tsay <i>Shiang</i> 蔡襄, <i>Charluh</i> 茶錄 (Song period), 珍膏油其面 64
35. 右	◦ <i>jiɛu</i> right (side)	佑 <i>jiɛu</i> °	to assist C, <i>Shiang</i> 10, j.31.6b (1026) C, <i>Shiang</i> 10, j.31.7b (1027)
36. 雨	◦ <i>jiu</i> rain	<i>jiu</i> °	to rain (transitive: as, 'to rain grain')

37. 王	<i>jɿwang</i>	king	<i>jɿwang</i> ^o	C, Yiin 9, <i>Jing</i> , j.4.8a (886) to be king; to be king of C, Cherng 2, j.25.8a (992)
38. 耳	^o <i>nɿzi</i>	ear	耳 <i>nɿzi</i> ^o	to cut off the ears <i>Shujing, Kanggaw</i> (SBBY ed.), j.14.4a (179)
39. 肉	<i>nɿziuk</i>	meat, flesh	<i>nɿziəu</i> ^o	to be fleshy, rich (chiefly used of music) <i>L, Yuehjih</i> , j.11.14a (778) <i>L, Yuehjih</i> , j.11.24a (784)

Group C. Derived form causative

1. 觀	<i>kuân</i>	to look at (see also A.4, H.3)	<i>kuân</i> ^o	to show C, Jau 5, j.43.8a (1101) <i>L, Yuehling</i> , j.5.8a (697)
2. 乞	<i>k'jət</i>	to beg	<i>k'jei</i> ^o	to give <i>Jinshu</i> 晉書, <i>Shieh An</i> <i>juann</i> 謝安傳 ⁶⁵
3. 近	^o <i>g'jən</i>	to be near <i>L, Chiulii</i> , comm., j.1.10b (645)	<i>g'jən</i> ^o	to approach C, Hwan 2, comm., j.5.9b (891)
4. 沈	<i>d'jəm</i>	to sink	<i>d'jəm</i> ^o	to drown, immerse C, Cherng 11, j.27.1b (1001) C, Shiang 18, j.33.6b (1040)
5. 買	^o <i>mai</i>	to buy	賣 <i>mai</i> ^o	to sell
6. 借	<i>tsjäk</i>	to borrow <i>L, Wangjyh</i> , comm., j.4.10a (687)	<i>tsja</i> ^o	to lend ⁶⁶ C, Juang 18, comm., j.9.8b (907)
7. 足	<i>tsjwok</i>	to be sufficient	<i>tsju</i> ^o	to complete, to form C, Shiang 11, comm., j.31.9a (1027)

8. 出	<i>ts'juət</i>	to emerge (see also H.10)	<i>ts'wi</i> ^o	to put out (alternative) C, Pref., j.1.13b (876)
9. 齊	<i>dz'iei</i>	to be level	<i>dz'iei</i> ^o	to put in equal proportions C, Jau 20, j.49.7b (1136) <i>L, Chiulii</i> , comm., j.1.27a (657)
10. 藉	<i>dz'jäk</i>	to borrow <i>L, Wangjyh</i> , j.4.10a (687)	<i>dz'ja</i> ^o	to lend
11. 識	<i>sjäk</i>	to know, recognize	幟 <i>si</i> ^o	(1) to show, mark <i>L, Tarngong</i> , j.3.4a (674) " (2) banner C, Shiuan 12, comm., j.23.3b (980)
12. 善	^o <i>zjän</i>	to be good	繕 <i>zjän</i> ^o	to repair C, Yiin 1, j.2.11a (879)
13. 受	^o <i>zjəu</i>	to receive	授 <i>zjəu</i> ^o	to give
14. 惡	<i>'äk</i>	to be evil	<i>'uo</i> ^o	to hate
15. 飲	^o <i>jəm</i>	to drink	<i>jəm</i> ^o	to give to drink C, Hwan 16, j.7.12b (898)
16. 陰	<i>'jəm</i>	to be dark	廡, 蔭 <i>jəm</i> ^o	to give shelter C, Wen 7, j.19a.7a (958)
17. 好	^o <i>χäu</i>	to be pretty	<i>χäu</i> ^o	to love
18. 享, 饗	^o <i>χiang</i>	to enjoy <i>L, Chiulii</i> , comm., j.1.1b (638)	<i>χiang</i> ^o	to feast; to present C, Cherng 12, j.27.4a (1002) <i>L, Chiulii</i> , j.1.24b (655)
19. 學	<i>γäk</i>	to learn	教 <i>γäu</i> ^o	to teach <i>L, Tarngong</i> , j.3.21a (682)

20. 和	<i>yuá</i>	to be harmonious	<i>yuá°</i>	to harmonize: to rime C, Jau 12, j.45.17b (1115)
21. 永	<i>°jwɔŋ</i>	to be long, eternal	詠 <i>jwɔŋ°</i>	to lengthen (words); to sing <i>Shujing, Shuenndean 彙典</i> (SBBY ed.), j.3.15b (141)
22. 遠	<i>°jwɔn</i>	to be far, distant	<i>jwɔn°</i>	to keep at a distance C, Min 2, comm., j.11.6b (915)
23. 來	<i>lái</i>	to come	徠, 勸 <i>lái°</i>	to cause to come; to encourage C, Min 1, comm., j.11.1b (913)
24. 勞	<i>láu</i>	to toil; merit	<i>láu°</i>	to recompense C, Hwan 5, j.6.6b (893)
25. 任	<i>°nziəm</i>	to undertake, sustain	<i>nziəm°</i>	(1) to employ C, Yiin 3, comm., j.3.3b (881) <i>L, Tzy-i</i> , comm., j.17.12a (839)
			"	(2) job, official position

Group D. Derived form 'effective'

1. 禁	<i>kjəm</i>	to overcome	<i>kjəm°</i>	to prohibit
2. 過	<i>kuá</i>	to pass	<i>kuá°</i>	to exceed, surpass C, Yiin 1, j.2.10a (879) <i>L, Tzengtzy Wenn</i> , j.6.5a (710) <i>L, Dahjuann</i> , j.10.10a (773)
3. 渴	<i>k'át</i>	to be thirsty	渴 <i>k'át°</i>	to long for C, Jau 1, j.41.10a (1085)
4. 仰	<i>°ngiang</i>	to face upwards	<i>ngiang°</i>	to look up to, hope for (Shyu Moh) C, Shiang 19, j.34.2a (1043)

5. 語	<i>°ngiwo</i>	to speak, to speak of	<i>ngiwo°</i>	to tell C, Yiin 1, j.2.12a (879)
6. 答	<i>táp</i>	to respond to (a greeting, etc.)	對 <i>tuái°</i>	to reply (a person)
7. 聽	<i>°t'ieŋ</i>	to listen to C, Cherng 5, j.26.4b (996) <i>L, Dahjuann</i> , j.10.9b (762)	<i>t'ieŋ°</i>	to obey C, Shi 24, j.15.9b (937)
8. 分	<i>°piuən</i>	to divide	<i>piuən°</i>	to distribute, give relief C, Shi 1, j.12.2b (916) C, Jau 14, j.47.2a (1122)
9. 奉	<i>°b'iwɔŋ</i>	to hold in the two hands <i>L, Chiulii</i> , j.1.5b (641)	<i>b'iwɔŋ°</i>	to present C, Shi 33, j.17.8b (949)
10. 祝	<i>tšjuk</i>	to pray, prayer master <i>L, Jihyih</i> , comm., j.14.8a (807)	<i>tšju°</i>	to curse C, Cherng 17, j.28.11b (1011)
11. 刺	<i>ts'jäk</i>	to stab, prick C, Shiang 28, j.38.15a (1068)	<i>ts'ie°</i>	(1) to kill C, Shi 28, j.16.7b (941)
	(see also A.35)		"	(2) to attack, satirize C, Juang 31, <i>Jing</i> comm., j.10.10b (912)
12. 將	<i>°tsjang</i>	to lead; to send off	<i>tsjang°</i>	(1) to lead, be in command of C, Shiuann 2, j.23.2b (980)
			"	(2) a general C, Juang 10, <i>Jing</i> , j.8.12b (903)
13. 取	<i>°ts'ju</i>	to take	娶 <i>ts'ju°</i>	to marry (a woman) <i>L, Chiulii</i> , j.1.9b (644)
14. 從	<i>°dz'iwɔŋ</i>	to follow (see also H.11)	<i>dz'iwɔŋ°</i>	to be in attendance <i>L, Chiulii</i> , j.1.5b (641)

15. 使	° <i>si</i>	to use, cause <i>L, Chiulii</i> , j.1.20a (653)	<i>si</i> °	(1) to send on a mission <i>L, Chiulii</i> , j.1.26a (656) " (2) ambassador <i>C, Wen 10</i> , j.19a.13a (960)
16. 施	° <i>siε</i>	to put into practice <i>C, Shi 24</i> , j.15.11b (937)	<i>siε</i> °	to bestow alms <i>L, Jihyih</i> , j.14.14b (810)
17. 喜	° <i>xi</i>	to be glad	<i>xi</i> ° (Shyu Moh)	to like, enjoy <i>Jouyih</i> 周易, 蹇 hexagram (91)
18. 行 (see also A.63)	° <i>ɣvng</i>	to walk, proceed; to put into practice	<i>ɣvng</i> °	to patrol <i>C, Shiang 31, comm.</i> , j.40.9a (1078) <i>C, Dinq 5</i> , j.55.1a (1169)
19. 回	° <i>yuai</i>	to return	<i>yuai</i> °	to go around, go by way of <i>C, Shiang 18</i> , j.33.8a (1042)
20. 遺	° <i>iwi</i>	to lose, abandon, leave behind <i>L, Jihyih</i> , j.14.15b (810)	<i>iwi</i> °	to leave to, give <i>C, Wen 6</i> , j.19a.5a (956)
21. 與	° <i>iwo</i>	to be with	<i>iwo</i> °	to take part in <i>C, Pref.</i> , j.1.10a (876) <i>C, Yiin 1, Jing comm.</i> , j.2.7a(878)
22. 援	<i>jiwon</i>	to draw, pull	<i>jiwon</i> °	to help
23. 爲	<i>jiwε</i>	to do, make, be	<i>jiwε</i> °	to be for, on behalf of
24. 臨	° <i>liam</i>	to overlook, be on the brink of	<i>liam</i> °	(1) to mourn <i>C, Shiang 12</i> , j.31.13a (1029) " (2) mourning chamber <i>L, Chiulii</i> , j.1.15b (650)
25. 令	° <i>liang</i>	to cause <i>C, Pref.</i> , j.1.7a (875)	<i>liang</i> °	to command <i>C, Shi 9</i> , j.13.7a (922)

Group E. Derived form with restricted meaning

1. 告	<i>kuok</i>	to tell (superiors) <i>L, Chiulii</i> , j.1.4a (640)	° <i>kau</i>	to announce (to inferiors) <i>L, Liiyunm</i> , j.7.3a, no note by Luh
2. 輕	° <i>k'iang</i>	to be light (in weight)	<i>k'iang</i> °	to be careless <i>C, Yiin 9</i> , j.4.8b (887) <i>C, Shiang 18</i> , j.33.7b (1041)
3. 陳	° <i>d'ien</i>	to line up, arrange	<i>d'ien</i> °	(1) to line up in battle order <i>C, Juang 11</i> , j.9.1a (903) <i>C, Wen 2</i> , j.18.6b (953) " (2) line of battle
4. 少	° <i>siäu</i>	to be few	<i>siäu</i> °	to be young
5. 憶	° <i>jak</i>	to remember	° <i>i</i>	(1) to think " (2) thought, idea
6. 呼	° <i>xuo</i>	to call, name	<i>xuo</i> °	to cry out <i>C, Yiin 11</i> , j.4.12b (888) <i>L, Chiulii</i> , j.1.5b (641)
7. 厭	° <i>iäm</i>	to be satisfied, replete	° <i>iäm</i>	to be oversatisfied, tired of <i>C, Jau 13</i> , j.46.5a (1119) <i>C, Min 1</i> , j.11.1b (913)
8. 橫	° <i>ɣwvng</i>	to be horizontal, cross-wise	<i>ɣwvng</i> °	to be cross-grained, hard to deal with <i>C, Jau 25, comm.</i> , j.51.4a (1145)
9. 養	° <i>iang</i>	to bring up, nourish	<i>iang</i> °	to take care of <i>C, Wen 18</i> , j.20.7a (968)
10. 引	° <i>ien</i>	to draw, drag	<i>ien</i> °	(1) to pull coffin ropes

				<i>L, Tzengtzyy Wenn,</i> j.6.10a (711)
			"	(2) ropes for pulling hearse
				<i>L, Tarncong,</i> j.3.1b (673)
11. 歛	° <i>ljäm</i>	to cover	<i>ljäm</i> °	to dress a corpse <i>C, Yiin 1, Jing</i> comm., j.2.7b (878)
				<i>L, Tarncong,</i> j.3.11a (677)
12. 如	° <i>nzjwo</i>	to resemble, be like	<i>nzjwo</i> °	to be as good as <i>C, Shi 4,</i> j.12.8a (918) <i>C, Ai 11,</i> j.58.11b (1192)

Group F. Derived form passive or neuter

1. 覺	<i>käk</i>	to be conscious of, to make clear		<i>kau</i> °	to awake <i>C, Cherng 10,</i> j.26.15b (1001)
					<i>C, Wen 4,</i> j.18.12a (955)
2. 去	° <i>k'jwo</i>	to get rid of	<i>k'jwo</i> °	to leave <i>L, Yuhtzao, comm.,</i> j.9.5b (750)	
					<i>C, Pref.,</i> j.1.12a (876)
3. 知	° <i>tię</i>	to know	智 <i>tię</i> °	(1) to be wise <i>C, Wen 2,</i> j.18.8a (953)	
			"	(2) knowledge	
4. 張	° <i>tiang</i>	to stretch, draw	脹 <i>tiang</i> °	to be stretched, distended <i>C, Cherng 10,</i> j.26.15b (1001)	
		(see also A.13)			
5. 治	° <i>d'i</i>	to govern	<i>d'i</i> °	(1) to be well- governed <i>L, Dahshyue,</i> j.19.9b (858)	
			"	(2) government	
6. 動	° <i>d'ung</i>	to move	慟 <i>d'ung</i> °	to be moved emotionally <i>Luenyeu, Shianjinn,</i> 子哭之慟	

7. 聞	° <i>mjuän</i>	to hear; to smell	<i>mjuän</i> °	(1) to be heard; to be smelt <i>C, Hwan 6, comm.,</i> j.6.10b (894) <i>C, Wen 15,</i> j.19b.12b (965)
			"	(2) reputation <i>C, Shiuan 8, Jing</i> comm., j.22.4a (976)
8. 射	<i>dž'jäk</i>	to shoot at <i>C, Hwan 5,</i> j.6.6b (893) <i>C, Shiuan 10,</i> j.22.7b (977)	<i>dž'ja</i> °	to practise archery <i>L, Chiulii,</i> j.1.20a (653)
9. 散	° <i>sän</i>	to scatter, release <i>L, Yuehjih,</i> j.11.22a, no note by Luh	<i>sän</i> °	(1) to be loose <i>L, Tzengtzyy Wenn,</i> j.6.9b (711)
			"	(2) sinecure
10. 傷	° <i>šjang</i>	to wound, injure	<i>šjang</i> °	to mourn <i>L, Chiulii,</i> j.1.15a (649)
11. 勝	° <i>šjang</i>	to overcome <i>C, Shiang 6, comm.,</i> j.30.3b (1020) <i>C, Jau 12, comm.,</i> j.45.20b (1117)	<i>šjang</i> °	to be victorious <i>L, Shawyi,</i> j.10.14b (764) <i>L, Yuehjih,</i> j.11.9b (776)
12. 守	° <i>šjäu</i>	to guard, maintain (see also A.51, H.14)	<i>šjäu</i> °	to be guarded, careful <i>C, Jau 27,</i> j.52.10b (1154)
13. 登	° <i>žjäng</i>	to fill <i>C, Shiuan 11, comm.,</i> j.22.9a (978)	<i>žjäng</i> °	to be full, abundant <i>L, Wangjyh, comm.,</i> j.4.3b (684)
14. 離	° <i>ljie</i>	to separate <i>L, Shyuejih,</i> j.11.1b, no note by Luh	<i>ljie</i> °	(1) to leave <i>L, Tarncong,</i> j.2.10a (665)
			"	(2) to be different from <i>L, Chiulii,</i> j.1.2b (639)

Group G. Derived form as adverb

1. 更	<i>kəŋg</i>	to change	<i>kəŋg°</i>	again; even more
2. 並	<i>b'ieng</i>	to place side by side	<i>b'ieng°</i>	together, even, also
3. 復	<i>b'juk</i>	to return	<i>b'jəu°</i>	again
		<i>L, Yuehjih,</i>		<i>C, Yiin 1,</i>
		<i>j.11.22a (783)</i>		<i>j.2.9b (879)</i>
4. 三	<i>sām</i>	three	<i>sām°</i>	thrice
			(alternative reading)	<i>C, Juang 10,</i>
				<i>j.8.13a (903)</i>
5. 有	<i>jəu</i>	to have, exist	<i>又 jəu°</i>	moreover, also

Group H. Derived form used in compounds

1. 巧	<i>k'ao</i>	to be clever, crafty	淫巧 <i>jəm k'ao°</i>	extravagant toys
				<i>L, Yuehling,</i>
				<i>j.5.8b (697)</i>
2. 遣	<i>k'jān</i>	to send	遣車 <i>k'jān° ts'ja</i>	carriage for carrying sacrifices to the grave
				<i>L, Tarngong,</i>
				<i>j.3.7a (675)</i>
			遣奠 <i>k'jān° d'ien°</i>	sacrificial food
				<i>L, Liyyunn, comm.,</i>
				<i>j.7.3a (718)</i>
3. 觀	<i>kuān</i>	to see, regard	觀臺 <i>kuān° d'ai</i>	observation tower
	(see also C.1, A.4)			<i>C, Shi 5,</i>
				<i>j.12.10a (919)</i>
4. 騎	<i>g'jiē</i>	to ride	騎賊 <i>g'jiē° dz'ək</i>	mounted bandits
	(see also A.9)			<i>C, Shiuan 12, comm.,</i>
				<i>j.23.3b (980)</i>
5. 迎	<i>ŋiəŋg</i>	to go to meet	親迎 <i>ts'jēn ngiəŋg°</i>	to meet a bride
	<i>L, Yuehling,</i>			<i>C, Juang 1, Jing</i>
	<i>j.5.2b, no note</i>			<i>comm.,</i>
	by Luh			<i>j.8.1b (900)</i>
				<i>L, Chiulii, comm.,</i>
				<i>j.1.30a (659)</i>
6. 中	<i>tjəŋg</i>	middle	中分 <i>tjəŋg° pjəŋ</i>	to divide in the middle
	(see also B.7)			<i>C, Shiang 14, comm.,</i>
				<i>j.32.5b (1031)</i>

			夜中 <i>ja° tjəŋg°</i>	in the middle of the night
			(alternative reading)	<i>C, Juang 7, Jing,</i>
				<i>j.8.8a (901)</i>
7. 濯	<i>d'ək</i>	to wash	濡濯 <i>nuān° d'au°</i>	dirty water left from washing
		<i>C, Shiang 21,</i>		<i>L, Sangdahjih,</i>
		<i>j.34.7a (1045)</i>		<i>j.13.6a (798)</i>
8. 執	<i>tjəp</i>	to grasp, catch	擊獸 <i>tji° sjəu°</i>	hunting-beasts, fierce beasts
	(see also A.32)			<i>L, Chiulii,</i>
				<i>j.1.16a (650)</i>
9. 親	<i>ts'jēn</i>	to love	親家 <i>ts'jēn° ka</i>	relatives by marriage (in <i>Goangyunn</i>)
10. 出	<i>tj'juēt</i>	to emerge	出日 <i>tj'wi° nziēt</i>	the rising sun
	(see also C.8)			<i>Shujing, Yaudean (135)</i>
			(alternative reading)	
11. 從	<i>dz'iwəŋg</i>	to follow	從母 <i>dz'iwəŋg° mǐəu</i>	mother's sisters
	(see also D.14)			<i>L, Tarngong,</i>
				<i>j.2.16a (668)</i>
			從弟 <i>dz'iwəŋg° d'iei</i>	cousins
				<i>C, Jau 29,</i>
				<i>j.51.9b (1147)</i>
12. 生	<i>ʂəŋg</i>	to give birth; to be born	雙生 <i>ʂəŋg° ʂəŋg°</i>	twins
			(alternative reading)	<i>C, Jau 11, comm.,</i>
				<i>j.45.10b (1112)</i>
13. 燒	<i>ʂjəu</i>	to burn	燒石 <i>ʂjəu° zjək</i>	cooking-stones
				<i>L, Liyyunn,</i>
				<i>j.7.3a (718)</i>
14. 守	<i>ʂjəu</i>	to guard, maintain	守臣 <i>ʂjəu° zjēn</i>	officer-in-charge
	(see also A.51, F.12)			<i>C, Juang 14, comm.,</i>
				<i>j.9.5a (905)</i>
			守心 <i>ʂjəu° ʂjəm</i>	sense of tradition
				<i>C, Shiuan 12, comm.,</i>
				<i>j.23.13a (985)</i>

			守犬 <i>šju</i> ^o	watch-dog
			^o <i>k'iwən</i>	<i>L, Shawyi,</i> j.10.17b (766)
15. 畜	<i>xiuk</i>	to raise (animals)	畜牧 <i>xiu</i> ^o <i>məu</i> ^o	herding
(see also A.57)			(alternative	C, Jau 9, comm.,
			reading)	j.45.3b (1110)
牧	<i>muk</i>	to herd ⁶⁷		

Notes

1 Abbreviations:

<i>BMFEA</i>	<i>Bulletin of the Museum of Far Eastern Antiquities, Stockholm.</i>
<i>CYYY</i>	<i>Bulletin of the Institute of History and Philology, Academia Sinica.</i>
<i>MSLP</i>	<i>Mémoires de la Société de Linguistique de Paris.</i>
<i>YCJ</i>	<i>Yenching Journal.</i>

- 2 B. Karlgren, 'Word families in Chinese', *BMFEA*, No. 5, 1933.
 3 Other work in this field includes: H. Maspero, 'Préfixes et dérivation en chinois archaïque', *MSLP*, xxiii, 1935; Yu Miin 俞敏, 'Word derivation in Archaic Chinese through the annexing of the suffix 'd'', *YCJ*, No. 34, 1948, 29-48; B. Karlgren, 'Cognate words in the Chinese phonetic series', *BMFEA*, No. 28, 1956.
 4 Karlgren, *The Chinese language*, New York, 1949, 96, 97. Maspero too came to this conclusion (op. cit., 327), and so, later, did Yu Miin. See *Shiannday hanyeu yeufaa* 現代漢語語法, pt. 1, Peking, 1954, p. 32, by Luh Tzongdar 陸宗達 and Yu Miin.
 5 Unless otherwise stated, throughout this paper words are given in Karlgren's Ancient Chinese transcription, as found in his 'Grammata Serica recensa', *BMFEA*, No. 29, 1957. Tone is indicated by a small circle placed at the corner of the reconstructed form thus:

<i>shaang</i>	<i>chiuh</i>
	^o X ^o
<i>pyng</i>	°

No sign is needed for *ruhsheng* words, which are always characterized by a final stop consonant.

- 6 Jou Tzuumu 周祖謨, 'Syhsheng byeyih shyhlih' 四聲別義釋例. Originally in *Fuwen Shyuejyh* 輔仁學誌, xiii, 1-2, 1945. I have seen only the reprint in his *Hannyeu inyunn luennwenjyi* 漢語音韻論文集, Shanghai, 1957. Jou Fahgau 周法高, 'Notes on Chinese grammar', *CYYY* (Taiwan), No. 24, 1953, 197-212.
 7 Jou Fahgau (op. cit., 211), who treats the *ruh/chiuh* and *pyng, shaang/chiuh* contrasts separately, explains the appearance of *chiuhsheng* in both contrasts by assuming that in Archaic Chinese *chiuh* and *ruh* differed in final but were alike in tone, whereas *chiuh, pyng*, and *shaang* differed in tone but were alike in final; thus, *pyng, shaang*, and *ruh* all tended to 'interchange' with the *chiuhsheng*. This does not explain why *pyng* and *shaang* do not interchange in the same way.
 8 Wang Lih 王力, *Hannyeu shyygao* 漢語史稿, Peking, 1958, pp. 213 ff.

- 9 Maspero, op. cit., p. 327, n. 1.
 10 A. Haudricourt, 'Comment reconstruire le chinois archaïque', *Word*, x, 2-3, 1954, 364.
 11 e.g. Jou Tzuumu, op. cit., p. 54, under *yeu* 與; the *shaangsheng* member is taken as 'basic pronunciation' 本音, the *chiuh* as 'modified pronunciation' 轉音.
 12 Not all his readings were used, only those in the *Lijih* 禮記 with Jenq Shyuan's 鄭懸 commentary, and in the *Chuenchiou* and *Tzuoojuann* 春秋左傳, with the commentary of Duh Yuh 杜預.
 13 Examples may be seen conveniently in Wang Lih's lists (op. cit., pp. 213 ff.).
 14 The marking of non-*chiuh* members as regular is probably connected with the fact that the *chiuh* readings generally were becoming obsolescent in Luh's time. See below, p. 148.
 15 An exception, in another context, seems to be the occurrence of tones in final particles. See Kennedy, 'A re-examination of the Classical pronoun forms *ngu* and *ngo*', *CYYY*, xxviii, 1, 276, 277.
 16 See *The Chinese language*, 96. A good example is to be found in Modern Japanese, where verbs ending in *-eru* are intransitive/passive when the simple verb is transitive (e.g. *miru-mieru, toru-toreru, yaku-yakeru, kiru-kireru*, etc.), and transitive/causative when the simple form is intransitive (e.g. *komu-komeru, tatu-tateru, aku-akeru, iru-ireru*, etc.); thus analogous to Groups C and F of *chiuhsheng* derivation. (See the lists on pp. 281-3 and 287-8.)
 17 See Group H, and below, pp. 149-50.
 18 op. cit., 364. Maspero, op. cit., 326, has suggested the influence of a prefix to account for the change in tone. This seems less likely.
 19 See below, pp. 150-51.
 20 This is especially likely in the last four examples on p. 151, which belong to the anomalous *chiuhsheng* rimes in the *Chiehyunn* 切韻. There is abundant evidence (from the poets' use of rimes) that the words of these rimes retained their final stop right down to the Six Dynasties. See Wang Lih, *Nanbeichaur shyren yonqyunn kao* 南北朝詩人用韻考, pp. 49-53, in his collection *Hannyeu-shyry luennwen jyi* 漢語史論文集, Peking, 1958.
 21 The last two, according to *shyesheng*, etc., had final stop consonant in Archaic Chinese. It is necessary to posit some difference from other syllables with final stop; one way is simply to project the tone back into Archaic Chinese. See also below, p. 148, n. 39.
 22 For longer lists, showing examples from all tones, see Karlgren, 'Cognate words in the Chinese phonetic series', *BMFEA*, No. 28, 1956, 9.
 23 For the relationships between these finals, see below, p. 147.
 24 Compare the simple *chiuhsheng* derivative *piuan*^o 'to give relief' (D.8, p. 165).
 25 For references to Guh and Chyan see Jou Tzuumu, op. cit., 51, 52, and Jou Fahgau, op. cit., 197. Duann Yuhtsair's attitude is clear from his remarks in his *Shuowen jietzyh juh* 說文解字注 under the characters 好, 食, etc.
 26 *Yanshyh jiaashynn* 顏氏家訓.
 27 Introduction to the *Chiehyunn*.
 28 Introduction to the *Shyyjih jenqyih* 史記正義.
 29 e.g. C.2.
 30 See Wang Lih, *Hannyeu shyliuhshyue* 漢語詩律學, Shanghai, 1958, pp. 133-42.
 31 All examples may be found in Luh Jyhwoei 陸志偉, *Beeijinghuah dan'intysr tsyrhuyue* 北京話單音詞詞彙, Peking, 1956.
 32 Jou Tzuumu, op. cit., 52 ff.
 33 Jou Tzuumu, on this evidence, concluded that the derivation process began in Hann times (op. cit., 52). Jou Fahgau (op. cit., 209) has already pointed out the *non sequitur* involved.

- 34 The Archaic and Ancient readings are taken from *Grammata Serica*. In the few cases where *Gram. Ser.* does not include the derived form, the *chiuhsheng* pronunciation may be seen in homonyms.
- 35 *Gram. Ser.*, No. 784, notes that several characters in this series are irregular in Ancient Chinese. Here the derived form is regular, the basic form is irregular.
- 36 There seems to be no comparable form from which to adduce the Archaic reading.
- 37 This reading, also found in the *Goangyunn* 廣韻, seems very aberrant in the *Chiehyunn* system.
- 38 Karlgren reconstructs an Archaic labial semivowel in the *chiuh* form of A.20 and D.6. This is also found in a few other similar pairs (not included because of the irregular initials):

泣 <i>k'ljap/k'jap</i>	to weep	淚 <i>ljwəd/ljwi</i>	tears
立 <i>gljap/ljap</i>	to stand	位 <i>gjwəd/jwi</i>	position

In all these cases it is possible to take the labial semivowel in the form ending in *-d* as the last trace of an original final labial stop, and thus not reconstruct the semivowel in the original form, i.e. *nəb > nwəd/nuəi*.

However, the labial semivowel does not survive as a trace of the original labial stop in all cases, as A.32 shows. Whether its occurrence is random or whether it can be determined from other data remains to be seen. (Note the occasional appearance in Mandarin of a *herkoou* 合口 vowel in a few words, as the only trace of an Ancient final labial consonant, e.g. 尋 *shyun*, 淋 *liun*, 入 *ruh*.)

- 39 The writer realizes that the ascription of *chiuhsheng* derivation to Archaic times raises the difficulty that in the cases listed above the contrast, according to Karlgren's reconstruction, is not between tones but between voiced and voiceless final stops. This would not affect the argument for a system of derivation, but would add to the complexity of the phonological description of it. However, the writer believes that even in Archaic times these words may be better explained as cases of tonal contrast, but reserves discussion of this problem to a later article.
- 40 See e.g. the lists in Karlgren, *The Chinese language*. Another indication of the relative lateness of *chiuhsheng* derivation is found in the use of the same character for both simple and derived forms, where other pairs of cognate words are usually written with different characters.
- 41 See above, p. 146.
- 42 The fullest lists may be found in the *Chyunjing inbiann* 群經音辨 by Jea Changchaur 賈昌朝 (finished by *Baoyuan* 2 寶元, A.D. 1039), really a collection of characters with two or more readings, taken from the *Jingdean shyhwen*. Other lists of these words, from the Song and Yuan periods, are to be found in the *Iayunn shyhyi* 押韻釋疑, compiled by Ouyang Derlong 歐陽德隆, revised by Gwo Jenqjii 郭正己 in *jeatzyy* year of *Jiingding* 景定 (A.D. 1264). See especially the Introduction. Also in the *Chueijiann luh* 吹劍錄 (全編), by Yuwen Baw 俞文豹, Peking, 1958, p. 75.
- 43 e.g. A.9, A.2, and A.51 (1).
- 44 e.g. A.10, A.15, A.42.
- 45 e.g. A.7, A.31, A.29, and A.50.
- 46 e.g. A.19, A.47, and A.64.
- 47 *C(huenchiou Tzuojuann)* Ai 1, comm., j.57.1b (1180).
- 48 C.2, C.5, C.6, C.10, and C.13.
- 49 cf. Latin *jaciō/factō, volō/volitō*, etc.
- 50 See above, p. 147.
- 51 i.e. those marked 'alternative reading' or 'Shyu Moh' in the lists.
- 52 e.g. 折解要~約斷.
- 53 或兼職焉 'They might combine their functions', *L, Neytzer*, comm., j.8.14a (735).

- 54 Jou Tzuumu, in another context, takes the *ruhsheng* reading (given by Shyu Moh) as an artificial reading to agree with a rime. In the *Chuenchiou* reference, however, there are no riming words involved, so the reading is probably legitimate. See his *Tarngbeen Maushy'in juannren kao* 唐本毛詩音撰人考 (p. 1 in his *Hannyeu inyunn luennwenjyi*).
- 55 C.22.
- 56 *Hwainantzyy*, j.11, p. 13b (SBBY edition).
- 57 E.1 and E.9. The *Chyunjing inbiann* (see above, p. 148, n. 42) has many more examples.
- 58 Japanese is an example.
- 59 e.g. *C*, Jau 27, j.52.10a (1154), (also commentary), where both words are used in their basic tone as 'handful'.
- 60 e.g. *C*, Jau 16, j.47.11b (1126), where it means 'several'. Here modern usage differs from Luh's.
- 61 Many of his readings are very puzzling. The character 樂, for example, is often given the reading *ngāk* when it would seem that the meaning is clearly 'joy', not 'music'.
- 62 The references are to be read as follows:

L—*Lijih Jenqjuh* 禮記鄭注 (SBBY edition), followed by name of the chapter, *jiuann* and page numbers.

C—*Chuenchiou Tzuojuann jienqyih* 春秋左傳正義 (SBBY ed.), followed by reigning duke and year, *jiuann* and page.

Comm.—in the commentary.

Jing—in the *Chuenchiou*, not the *Tzuojuann*.

The figure in brackets refers to the page number of the *Jingdean shyhwen* (TSJC ed.). Other references are given in full.

Where the usage seems regular, I have generally given only one reference. In more problematical cases, two or three references may be given. When both members of a pair lack references, it may be taken that the contrast is commonly found in all texts, i.e. it is part of general Chinese.

'Alternative' means that Luh gives both basic and derived form. 'Shyu Moh' indicates a reading of Shyu Moh's 徐邁 quoted by Luh.

The characters in each group are arranged in order of the traditional 36 *tzyhmuu* 字母.

- 63 See references in Jou Tzuumu, 'Syhsheng byeyih shyhlih', p. 52.

64 In the *Wuchaursheaushuo dahguan* 五朝小說大觀, Bk. 336 (Shanghai, 1926).

65 See Jou Tzuumu, op. cit., p. 65.

66 See also Koong Yiingdar's 孔穎達 comment on this passage (same reference).

67 *Grammata Serica* gives *mjuk* for this character, following the *Chiehyunn*. Luh Derming in the above reference says it is pronounced like 目, which seems to agree with the *Chiehyunn*. However, elsewhere (e.g. *L, Wangjyh*, j.4.3b (684)) he says it is pronounced like 木 *muk*. This would agree better with the derived word.

TONES AND PROSODY IN MIDDLE CHINESE AND THE ORIGIN OF THE RISING TONE

Mei Tsu-lin

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The purpose of this paper is to show that the rising tone¹ developed through the loss of a final glottal stop, and to discuss two related topics: the phonetic features of the four tones in Middle Chinese and the criterion for the Level-Oblique distinction. A brief review of the current theories seems a convenient point at which to begin.

One of the statements often made about the Chinese language is that tonal distinctions are intrinsic to its morphemes. But “the Chinese language” is too inclusive a term, and the question naturally arises as to whether at every stage of its long history Chinese had a tonal system similar to those exemplified in its modern dialects. From Middle Chinese on, the answer is quite clear. All modern dialects have tones composed of pitch and contour. From the fact that in the seventh and eighth centuries tonal difference was utilized to simulate the length contrast in Sanskrit, and the additional fact that a ninth-century Buddhist work describes the four tones in terms of pitch and contour and length (see below), we know that the tones of Middle Chinese were composed of these three features. Old Chinese, however, poses a more serious problem. It is known that in the *Book of Odes* rhyming words show a strong tendency to belong to the same tone-category.² But this only tells us that Old Chinese words fall into three or four categories and that these categories are intimately related to the four tones of Middle Chinese; it tells us very little about the phonetic basis of these categories in Old Chinese. (Hence the non-committal term “tone-category.”) If one makes the further assumption that tonal contrast is an intrinsic characteristic of the language, not derivable from any non-tonal contrast, one can of course conclude that tones are coeval with the Chinese language. Tung T’ung-ho, for example, has stated, “Ever since the beginning of the Chinese language, we not only distinguish tones, but [we find] a tonal system not much different from the four tones of Middle Chinese.”³

This prevalent view was challenged in 1954 by Haudricourt.⁴ He proposed that, as in Vietnamese, the Chinese tonal system developed in historical times through the loss of certain final consonants. The departing tone of Middle Chinese corresponds to the *hoi* and *nga* tones of Vietnamese, which, as Maspero has shown, are reflexes of an earlier *-h* representing an original *-s*.⁵ Moreover, some Chinese words in the departing tone were borrowed into Vietnamese as early as the Han dynasty, at a time when the *hoi* and *nga* tones were presumably still represented by an *-s*: 義 **ngia/ngjie*, Viet. *nghia* (*nga*); 𪛗 **mâg/muo*, Viet. *ma* (*hoi*).⁶ Arguing from this fact and from analogy, Haudricourt then interprets morphological derivation in Old Chinese involving the departing tone as alternation between a final *-s* and its absence. For example, he posits *dâk* 𪛗 for the verbal form “to measure,” and *dâks* for the nominal form “a measure”; *âk* 𪛗 for the adjectival form “bad,” and *âks* for the transitive verbal form “to dislike.” (The second member of these pairs is in the departing tone.) This idea was taken up by Forrest, who equates the reconstructed *-s* of Old Chinese with the *-s* suffix of Classical Tibetan,⁷ and Pulleyblank in 1963 provides further evidence in the form of foreign words ending in *-s* whose Chinese transcriptions, dated the third century A.D., are in the departing tone—in his theory, *-s* < *-ts*.⁸

In the same 1963 paper, Pulleyblank proposes antecedents for two other tones: *-fi* and *-δ* for later level tone, and *-ʔ* for later rising tone. In his view, Old Chinese has no open syllables. And having reconstructed *fi* and *δ* as initial phonemes, he reasons that by symmetry they are also likely to occur in final position. Thus a level tone syllable, open in Middle Chinese, has *-fi* or *-δ* in Old Chinese depending on whether it shows contact with a velar or dental final consonant. Pulleyblank’s reason for connecting *-ʔ* and later rising tone is mainly based upon analogy with Vietnamese. There is, he argues, a high degree of parallelism between the Vietnamese and Chinese tonal systems. The steady accumulation of evidence for the *-s* theory suggests that specific analogies may even be valid. Now, since the *sac* and *nan̄g* tones of Vietnamese developed through the loss of an earlier *-ʔ*, it is quite likely that the Chinese rising tone was similarly derived. Pulleyblank also cites transcriptions of foreign words as evidence, but they are few in number and not uniformly convincing.

Argument from analogy is at best suggestive, and without testimony from more direct sources, the theory will remain as one of the many possibilities. Fortunately, three kinds of evidence can now be presented: modern dialects, Buddhist sources bearing upon Middle Chinese, and old Sino-Vietnamese loans.

Several dialects of the southeastern coastal area preserve a glottal stop in the rising tone, and the Buddhist sources indicate that the rising tone of Middle Chinese is high, short, and level. Our thesis, then, is that the final glottal stop of Old Chinese is retained intact in the coastal dialects and developed into a high and short syllable in Middle Chinese. We know from acoustic studies that a syllable is high and short if it ends in a voiceless stop, low and long if it ends in a voiced stop, and medium in pitch and duration if it is open.⁹ It is also reasonable to assume that when a final stop is lost, the tonal features are retained as reflexes. Therefore, if the final glottal stop (which is voiceless) indeed existed in Old Chinese, its descendant should have precisely the features we said the rising tone did have in Middle Chinese.

The dialects that have a final glottal stop in the rising tone are: Wen-chou 温州 of Chekiang, P'u-ch'eng 浦城 and Chien-yang 建陽 of Fukien, Ting-an 定安 and Wen-ch'ang 文昌 of Hainan Island.¹⁰ In Ting-an, the glottalization is so pronounced that the final nasals in this tone sound as if they are followed by a homorganic stop. As to the pitch level of the rising tones, Chien-yang and Ting-an are low (both being 21), Wen-ch'ang has a high one (*yang-shang*) and a low one (*yin-shang*), but P'u-ch'eng is high, and Wen-chou is high in the sense that both of its rising tones are higher than the other tones in the same register, thus:

Wen-chou	L	R	D	E	P'u-ch'eng	L	R	D	E
<i>yin</i>	44	45	42	23	<i>yin</i>	35	55	12	43
<i>yang</i>	31	24	11	12	<i>yang</i>	24	54	11	

P'u-ch'eng is adjacent to Chien-yang, both situated at the northwest corner of Fukien. Wen-chou is at the extreme southeast of Chekiang, about two hundred miles away from P'u-ch'eng. Since Hainan Island is small, this gives us altogether two or three non-adjacent areas. Except for Wen-chou, which has been classified as Wu, the others are Min dialects, and the generally accepted view that Min branched off directly from Old Chinese makes it easy to understand why the final glottal stop turns up in these dialects but hardly anywhere else.

I should now explain how the features of the rising tone in Middle Chinese are ascertained. Contrast in length is a phonetic feature of Sanskrit, and several Buddhist works, written between the seventh and ninth centuries, recommended ways to represent this contrast. In I-ching's *Nan-hai chi-kuei nei-fa chuan* 義淨南海寄歸內法傳¹¹ the method suggested is as follows: "The twenty-five characters, 脚 etc., mentioned above and the eight characters following them—thirty-three characters altogether—are called the first group [*varga*]. They should all be read in the rising tone. Do not just look at the characters and pronounce them in the level, departing, and entering tones."¹² The fact that the thirty-three characters all represent Sanskrit short syllables (*ka*, *k'a*, *ga*, *g'a*, etc.) and that each of the four tones appears at least once in this set of characters makes I-ching's meaning clear: when representing Sanskrit short syllables, all characters are to be pronounced in the rising tone, irrespective of the tones they are originally in.

I-ching's statement is also corroborated by the transcriptional practice recorded half a century later but almost certainly used at the time of I-ching. Eight pairs of the Sanskrit basic syllabary—*a*, *ā*, *i*, *ī*, *u*, *ū*, *r*, *ṛ*, *l*, *ḷ*, *e*, *āi*, *o*, *āu*—show the most prominent contrast in length. But in several Buddhist texts, both members of a pair are represented by the same character, with the length contrast indicated by some other means. Of special interest to us are the texts which introduce subscripts to specify the desired tone. In all five texts that use this method, whenever the shortness of a Sanskrit syllable is simulated via a tone subscript, the subscript invariably consists of *shang* or *shang-sheng* "rising tone." The attached table,

listing the transcriptions of the first four pairs of Sanskrit basic syllabary, will illustrate what I mean.

This table is adapted from Lo Ch'ang-p'ei 羅常培, 梵文鄂音五母之 藏漢對音研究, CYYY 3(1931), after p. 276, which lists transcriptions in nineteen texts. Lo's table also appears in Chou Fa-kao, 中國語文 論叢, after p. 22. Several of these texts are discussed in Mabuchi Kazuo (see citation in note 14 below), I, p. 36ff. The first two items, not directly relevant to our discussion, are included for the sake of comparison. (Consult table on p. 180.)

The conclusion to be drawn is that the rising tone of Middle Chinese, because of its shortness, is thought to be the most appropriate equivalent for the Sanskrit short syllable. Later, we shall return to consider why the above interpretation is more plausible than the one proposed by Chou Fa-kao, that is, the Level tone is long and the Oblique tones are short.¹³

A second source of information on Middle Chinese tones is the *Hsi-t'an tsang* by the Japanese monk, Annen, written in the year 880 A.D.;¹⁴ in fact it is the most valuable record now extant. Annen's work contains a description of the tones in four traditions successively brought back to Japan. The oldest of these, reflecting the pronunciation of the early eighth century, is most relevant for our purpose.

... Of the two readings that originally came to us in Japan, that of Piao was as follows: the level tone was level and low, with both the light and the heavy [allotones]; the rising tone was level and high, with only the light but not the heavy; the departing tone was slightly drawn out, with no [distinction between] the light and the heavy; the entering tone stops abruptly, having neither the inner nor the outer; the level tone [carried by syllables] with nasal or lateral initials was indistinguishable from the heavy [allotone]; and the heavy [allotone] of the rising tone was no different from the departing tone.

Let me defer a more complete exegesis to a later section and for the present concentrate on what Annen says about the rising tone. The key phrases are 平聲直低... 上聲直昂, which I have translated as "the level tone is level and low... the rising tone is level and high." *Chih*, literally "straight," can refer to a level contour or a rising contour with a constant slope. But *p'ing-sheng* means "level tone." Hence *chih* in the first phrase means "level" and should mean the same in the second phrase. *Ti* means "low" and *ang*, its antonym in this context, means "high."

Ti and *ang* also occur as antithetical terms in lines 38–39: 入有 輕重, 重低輕昂. Later we shall see that *ch'ing* "light" means the allotone induced by voiceless initials, and *chung* "heavy," the allotone induced by voiced initials. In modern dialects such as Wu, the first is low and the second is high. The fact that *ti* and *ang* mean "low" and "high" in this context confirms the interpretation given in the last paragraph. On the other hand, even if *ang* means "rising" our theory still

	a	ā	i	ī	u	ū	ɿ	ʮ
1. 大般泥洹經 Taishō 376; A. D. 417	短 阿	長 阿	短 伊	長 伊	短 憂	長 憂	聲	聲
2. 文殊師利問經 Taishō 468; A. D. 502-556	阿	長 阿	伊	長 伊	憂	長 憂	聲	長 聲
3. 文殊問經(不空譯) Taishō 469; A. D. 746-774	阿 上	阿 引去	伊 上	伊 引去	鳩 上	汙 引去	唱	唱 引上
4. 瑜伽金剛頂經釋字母品 (不空譯) Taishō 880; A. D. 746-774	阿 上	阿 引去	伊 上	伊 引去	鳩	汙 引	哩	哩 引去
5. 智度論 Taishō 2132; A. D. 780-804	短 阿 上聲短呼	長 阿 依聲長呼	短 伊 上聲	長 伊 依聲長呼	短 瓠 上聲	長 瓠 長呼	訖 里	訖 梨
6. 慧琳一切經音義 Taishō 2127; A. D. 788-810	穰	啊 去聲兼引	賢 伊字上聲	縷 去聲兼引	鳩	汙	乙 上聲	乙 去聲引
7. 空海悉曇字母釋義 Taishō 2701; A. D. 803-835	阿 上聲呼	阿 去聲長引呼	伊 上聲	伊 去聲長引呼	鳩	汙 長聲	哩 彈去呼	哩 彈去聲引呼

holds, since a rising contour can also be interpreted as the reflex of an earlier glottal stop.

Annen did not discuss the length of the rising tone in Piao's reading. But later when he went on to describe the pronunciation of Chin and Cheng (two traditions that came to Japan after Piao), he said something quite interesting. "The rising tone [in Cheng's pronunciation] has the light and heavy [allotones]; . . . the heavy is like the heavy [allotone] of Chin's rising tone, without, however, the abrupt

articulation (不突呼之)" (lines 30, 34, 35). The last phrase implies that the rising tone was short for Chin, but its heavy allotone did not have this feature for Cheng. In other words, Annen's account also tells us that the rising tone is short in a certain Chinese dialect, probably the Wu dialect corresponding to Go-on.

Our third source of information is the Japanese tradition of *bombai* 梵唄—Sanskrit psalmody transliterated into Chinese, and brought over in this form to Japan, probably during the T'ang dynasty. The tradition prescribes explicit rules for the pronunciation of the tones, although these rules are not always followed in actual recitation. Since the history of the transmission of *bombai* has not been traced as clearly as we might wish, this evidence needs to be handled with caution. On the other hand, the report on the rules of the Shingon sect, given in the *Hobogirin*, is the clearest and most complete description of a tonal system which may reflect the T'ang pronunciation.¹⁵

- (1) The level tone is level and relatively low; words having this tone are chanted in the 1st, 2nd, 3rd (or 4th) degree; (2) the rising tone is the highest and the shortest; it is chanted in the 5th or 6th degree; (3) the departing tone is characterized by a prolonged rise of the voice, either from the 4th to the 5th degree or from the 5th to the 6th degree, (4) as for the entering tone for words ending in a consonant, it is short and forced and chanted with a drop, either from the 6th to the 5th degree or from the 5th to the 4th degree.

Some remarks about the reliability of these sources and their interrelationship are now in order. As we shall soon see, Annen describes several developments that are well authenticated by modern dialect data and other philological sources. His reliability is beyond reasonable doubt; the problem lies mainly in understanding his terminology. The equivalence between shortness and the rising tone, deduced from I-ching's statement and the five Buddhist texts, also seems to be on firm ground. And now, what we learned from these sources is confirmed by the *Hobogirin* statement: "The rising tone is the highest and shortest; it is chanted in the 5th or 6th degree," which further implies a level contour. In addition, the *Hobogirin* describes the level tone the same way that Annen did, low and level. Such convergence of evidence not only enhances our confidence in the *bombai* tradition, but also increases the likelihood that Annen and I-ching were talking about similar dialects.

In using Buddhist sources to argue for our thesis, we of course had to assume that the features of the MC rising tone thus ascertained are relevant, but this assumption needs to be examined. Let us consider the question of date. If the hypothesized glottal stop was lost early and the date of our sources is late, the case is unfavorable. For in that event, there would be ample time for the features of the rising tone to change—from the immediate reflexes of the lost glottal stop to those of a much later date. I-ching's work is 690-692 A.D. and Piao's reading is probably early eighth century, both fairly late for the study of tones in their primordial state.

On the other hand, among the hypothesized final consonants, the glottal stop is the only one preserved in some modern dialects, and this fact seems to indicate that its disappearance from the other OC or MC dialects was of a relatively late date.

No matter how the problem of date may be eventually decided, it does not affect our argument based upon shortness. The fact that the length contrast is sub-phonemic in all modern dialects implies that this contrast tends to disappear in time; specifically, a long tone and a short tone, when left to themselves, would both gravitate towards a non-distinctive length. Hence, from the fact that the rising tone is short in the seventh century, we can infer that it has been short up to the presumed disappearance of the final glottal stop and beyond.

A third kind of evidence consists of old Sino-Vietnamese loans. In Sino-Vietnamese (Chinese words borrowed into Vietnamese during the T'ang dynasty), MC initials and tones uniquely determine the resultant Vietnamese tones in the following way.¹⁶

	level	rising	departing	entering
voiceless	bang	hoi	sac	sac
voiced	huyen	nang	nang	nang
nasals and laterals	bang	nga	nang	nang

This scheme, however, does not hold for the old Sino-Vietnamese loans (words borrowed into Vietnamese during the Han dynasty). Here the rising tone behaves as follows:

	rising
voiceless	sac
voiced	nang
nasals and laterals	sac

According to Haudricourt's theory, the *sac* and *nang* tones of Vietnamese originated from the loss of a final glottal stop. This is shown by the fact that the final glottal stop is still preserved in many dialects of the Palaung-Wa group.¹⁷

fish	<i>ka?</i> (Khmu, Riang)	<i>ca</i> (VN, <i>sac</i> tone)
leaf	<i>hla?</i> (Khmu) <i>la?</i> (Riang)	<i>la</i> (VN, <i>sac</i> tone)
dog	<i>so?</i> (Khmu, Riang)	<i>cho</i> (VN, <i>sac</i> tone)
rice	<i>rənko?</i> (Khmu), <i>ko?</i> (Riang)	<i>gao</i> (VN, <i>nang</i> tone)

He also points out that this could be deduced from internal evidence, since these two tones were the only ones noted for words which preserved the final stops *-c*, *-t*, *-p*.

Since the rising tone corresponds to the *sac* and *nang* tones in old Sino-Vietnamese loans and at the time of borrowing these two VN tones had a final glottal stop, it is reasonable to infer that the Chinese rising tone also had a final

glottal stop at that time. The following list, whose Chinese entries are all in the rising tone, will illustrate what has been said in the last few paragraphs.

	S-V (<i>hoi</i>)	Old S-V (<i>sac</i>)	S-V (<i>hoi</i>)	Old S-V (<i>sac</i>)
軟	tram	chem	點	diêm
圭	chu	chua	紙	chi
卷	quyên	cuôn	府	dê
感	cam	cam	種	chung
錦	câm	gâm		giông
	S-V (<i>nang</i>)	Old S-V (<i>nang</i>)	S-V (<i>nga</i>)	Old S-V (<i>sac</i>)
箏	bô	ba	舞	vu
市	thi	cho	藕	ngâu
舅	cyu (? ,nga)	câu	瓦	ngoa
			染	nhiêm
				nhuôm

A further point to be noted is that the development of a tone from a final glottal stop is not an altogether uncommon phenomenon. The case for Vietnamese has just been summarized above. The high tone of Modern Burmese, which corresponds to *-?* in Ching-p'ò (景頗, also called Kachin), is probably derived in a similar manner.¹⁸ In the Lolo dialect of Lahu (a branch of Lolo-Burmese), according to Matisoff, the "high rising tone" developed through glottal dissimilation, that is, first *?*—*?* and then *?*—*?* with a "high rising tone."¹⁹ Closer to home, we may cite the fact that in many Chinese dialects *-p*, *-t*, *-k* first collapsed into *-?*, and when *-?* disappeared, it left behind a pitch-and-contour tone.

So far the following evidence has been presented to support the thesis that the rising tone developed through the loss of a final glottal stop. First, in five dialects of the southeastern coastal area, the rising tone has a final glottal stop. Especially noteworthy is the dialect of Ting-an, in which rising tone syllables end in a nasal sound as if they were followed by a homorganic stop—a fact not easily explained by the contrary hypothesis that the glottal stop was a secondary development. Secondly, Buddhist sources indicate that the rising tone in Middle Chinese had the features short and high, where high means either a level high pitch or a rising contour. We know from acoustic studies that a syllable is high and short if it ends in a voiceless stop. Thus, if the final glottal stop indeed existed in Old Chinese, its reflex should have precisely the features short and high in Middle Chinese. Thirdly, in old Sino-Vietnamese loans, the rising tone corresponds to the *sac* and *nang* tones, which, according to Haudricourt's theory, were derived from a final glottal stop. Finally, it was pointed out that the development of a tone from a glottal stop had occurred in several Southeast Asian languages.

The evidence from Min dialects and from old Sino-Vietnamese loans both point to the Han dynasty as the time when the final glottal stop was still preserved. The situation is, however, much less clear for the pre-Han period. According to Chang Jih-sheng, whenever the rhyming words in the *Book of Odes* belong to both the rising and entering tone categories, the rhyme-categories involved invariably end

in a velar, specifically *-ək*, *-əg*, *-ok*, *-uk* in Karlgren's reconstruction (之入, 之陰, 宵入, 侯入; Karlgren's Category 19, 20, 25, 30).²⁰ By this, Chang means that (a) the *Book of Odes* has rhymes predominantly in the entering tone category (*-ək*, *-ok*, or *-uk*) which also include words in the rising tone category (respectively *-əg*, *-og*, or *-ug*), and rhymes predominantly in the rising tone category (*-əg*) which also include words in the entering tone category (*-ək*), and (b) these rhyme categories are the only ones in which the rising and entering tone categories co-occur. Since *-k* is phonetically similar to *-ʔ*, it is tempting to regard Chang's observation as indicating that the rising tone had *-ʔ* during the *Shih ching* period. However, complication sets in because there is no general agreement on the tone of a character in OC, nor on the rhyme scheme of a given poem. A close examination of Chang's examples yields only eight clear-cut cases—too few to support our thesis.

The existence of *-ʔ* is even more uncertain in the case of Sino-Tibetan. On the one hand, studies in acoustic phonetics and Southeast Asian languages both seem to indicate that tones are developed from segmental features. On the other hand, we are as yet unable to establish correspondences for tones in the Sino-Tibetan family, nor can we find any final consonants in the Tibetan cognates of Chinese rising tone words, for example, "five," OC ɲo 五, Written Tibetan 𑄎𑄣; "nine," OC *kiŋ* 九, WT *dgu*; "bitter," OC *k'o* 苦, WT *k'a*. Hence in the absence of further evidence, it seems best to regard the existence of *-ʔ* in the pre-Han period as probable but not proven. The ultimate origin of *-ʔ* must be left open; it could have developed from some other consonant(s) or from prosodic features.

The next item on our agenda is to consider Annen's statement. I shall present the text and a translation first. The exegetical notes follow immediately after.

(安然悉曇藏卷五(大正新修大藏卷八,頁四-四))

- 1 ...我日本國元傳二音:
表則平聲直低,
有輕有重,
上聲直昂,
5 有輕無重,
去聲稍引,
無重無輕,
入聲徑止,
無內無外,
10 平中怒聲與重無別,
上中重音與去不分。

... Of the two readings that originally came to us in Japan, that of Piao was as follows: the level tone was level and low, with both the light and the heavy [allotones]; the rising tone was level and high, with only the light [allotone] but not the heavy; the departing tone was slightly drawn out, with no [distinction between] the light and heavy [allotones]; the entering tone stopped abruptly, having neither the inner nor the outer; the level tone carried by syllables with nasal or lateral initials was indistinguishable from [one having] the heavy [allotone]; and the heavy [allotone] of the rising tone was no different from the departing tone.

- 金則聲勢低昂
與表不殊
但以上聲之重
15 稍似相合
平聲輕重,
始重終輕,
呼之為異,
唇舌之間,亦有差升。
20 承知之末,
正法師來,初習洛陽,
中聽太原,
終學長安,
聲勢大奇。
25 四聲之中,各有輕重
平有輕重,
輕亦輕重,
輕之重者,
金怒聲也。
30 上有輕重,
輕似相合
金聲平輕,上輕,
始平終上呼之;
重似金聲上重,
35 不突呼之。
去有輕重,
重長輕短。
入有輕重,
重低輕昂。

The reading according to Chin did not differ from that of Piao with respect to pitch and contour. However, [Chin's] heavy [allotone] of the rising tone was somewhat like a combination of the light and heavy [allotones] of the level tone, beginning with the heavy and ending with the light. Enunciating them makes the difference. In the process of articulating [Chin's rising tone] there is also a differential rise.

At the end of the Ch'eng-ho era (847), the Reverend Cheng came, having first learned the Lo-yang dialect, then listened to the T'ai-yüan dialect, and finally studied the Ch'ang-an dialect. The pitch and contour have become quite strange. Each of the four tones has the light and heavy [allotones].

The level tone has the light and heavy [allotones]. The light is further [distinguished into] the heavy and the light. The heavy of the light corresponds to the tone carried by the syllables with nasals and lateral initials in Chin's reading. The rising tone has the light and heavy [allotones]; the light [allotone] is like combining the light [allotone] of the level tone and the light [allotone] of the rising tone in Chin's reading, beginning with the level tone and ending with the rising tone; the heavy [allotone] is like the heavy [allotone] of Chin's rising tone, without, however, the abrupt articulation. The departing tone has the light and heavy [allotones]; the heavy is long and the light is short. The entering tone has the light and heavy [allotones]; the heavy is low and the light is high.

- 40 元慶之初，
 聽法師來，久住長安
 委搜進士，
 亦遊南北，
 熟知風音
 45 四聲皆有輕重著力
 平入輕重
 同正和上，
 上聲之輕，
 似正和上上聲之重
- 50 上聲之重
 似正和上平輕之重；
 平輕之重，
 金怒聲也；
 但呼著力為今別也，
 55 去之輕重，
 似自上重；
 但以角引為去聲也，
 音響之終，
 妙有輕重；
 60 直止為輕，
 稍昂為重；
 此中著力，亦怒聲也。

The four transmitters of Chinese readings were referred to by their abbreviated names. Their identity, insofar as can be determined, is as follows. 表 is probably a corruption of 袁, the surname of Yüan Chin-ch'ing 袁晉卿, a Chinese savant of phonology who went to Japan in 735 at the age of eighteen or nineteen; 金 is probably Kim Ye-sin 金禮信, a Korean and transmitter of Go-on; 正 is Issei 惟正, whose itinerary of travel and date of return coincide remarkably with Ennin's, and hence he probably belonged to the same mission; 聰 is Chisō 智聰.²¹ The text as punctuated in the *Taishō* differs from ours at two places: a full stop after 合 in line 15 and also after 平輕 of line 32. I have followed Mabuchi and others in making the emendations.

Whenever a modern dialect has both the voiced-voiceless distinction in the initials and the *yin-yang* (high-low) distinction in one or more of its tones, the voiced initials in general co-occur with the *yang* tone, and the voiceless initials with the *yin* tone. The nasal and lateral initials belong to the *yang* group for the level, departing, and entering tones; this is a fact true for all Chinese dialects. The behavior of these initials in the rising tone, however, varies from dialect to dialect; in some dialects they belong to the *yin* group (such as Mandarin), and in others (such as Cantonese and Wu), they belong to the *yang* group. The noteworthy exception is Kan-on, in which the nasal and lateral initials of *both* the rising and entering tones belong to the *yin* group.

With these facts as background, we can now turn to an examination of lines 10-11, which I have translated: "the level tone carried by syllables with nasal and lateral initials (平中怒聲) was indistinguishable from [one having] the heavy [allotone]; and the heavy [allotone] of the rising tone was no different from the departing tone." The term *nu-sheng* was used by Annen in another place to refer to the two voiced series of Sanskrit: *g, j, d, ḍ, b* and *gh, jh, dh, ḍh, bh*. But in this context, as Arisaka has pointed out, it refers to the nasal and lateral initials of MC.²² We know that Sanskrit voiced initials were transliterated by MC nasal initials. And since the dialect described here is Kan-on, Annen probably intended to call attention to the fact that whereas the nasal and lateral initials belong to the *yin* group for the rising and entering tones, these initials belong to the *yang* group for the level tone. Thus, his first statement describes the co-occurrence of voiced initials (including nasals and laterals) and the *yang* level tone. His second statement refers to the merger of the voiced rising tone with the departing tone—a fact we also know from the following sources: (1) in many modern dialects the same development has taken place, (2) words in these two tones sometimes rhyme in the poetry of Po Chü-i and Yüan Chen,²³ and (3) Li P'ei 李潛 complained at the end of the ninth century that the distinction between these two tones in the *Ch'ieh yün* is based upon the peculiarities of the Wu dialects, the implication being that this distinction was no longer maintained in his standard Lo-yang dialect.²⁴

Given a system in which the two contrasts voiced-voiceless and *yin-yang* (high-low) regularly co-occur, we can regard the first as the determining feature and the second as the determined feature. In other words, a tone is regarded as consisting of two allotones whose selective realization is conditioned by voicing. This explains why in the translation the word "allotone" is sometimes inserted after "light" or "heavy."

Annen's account is arranged according to the order of transmission of the four readings, which also seems to imply that the proliferation of tones follows a definite sequence: splitting occurs first in the level tone, then in the rising tone, and finally in all tones, thus yielding successively five tones for Piao, six for Chin, and eight for Cheng and Ts'ung. Upon closer analysis, this view is implausible, for once the voiced rising tone was merged with the departing tone (which Annen stated for the first reading, Piao's), the rising tone had no voiced initials and could no longer split into two allotones under the condition of voicing. A more plausible view is this: in the common ancestor of Piao's dialect and Chin's dialect, splitting took place in

Piao's but not in Chin's; and as Annen implied by his repeated comparisons, the six tones of Chin developed successively into the eight tones of Cheng and Ts'ung.

The five-tone system of Piao, with two allotones in the level tone, is typical of Mandarin dialects before the disappearance of the entering tone; so is the merger of the voiced rising tone and the departing tone. The relation of the other three dialects described by Annan to modern dialects is less certain. The six-tone system of Chin is rarely encountered nowadays. The eight-tone system of Cheng and Ts'ung bears some resemblance to Cantonese and Proto-Hakka, but no positive identification can be made on the basis of our present knowledge.

In a recent article, Chou Fa-kao pointed out that the three entering tones of Cantonese can be explained in terms of two pairs of oppositions: voiced versus voiceless and *nei-chuan* 內轉 versus *wai-chuan* 外轉, which oppose short vowel against long vowel.²⁵ The voiced initials give rise to *yang-ju* (lower entering tone). For the *yin-ju*, developed from voiceless initials, the tone is *hsia yin-ju* (the lower of the upper entering tone) if the final belongs to *wai-chuan*, and *shang yin-ju* (the upper of the entering tone) if the final belongs to *nei-chuan*. This theory throws some light upon lines 8-9: 入聲徑止, 無內無外. What these lines say is that in Piao's dialect, the entering tone is short and the distinction between *nei* (short vowel) and *wai* (long vowel) is neutralized.

There are several terms and passages which resist my exegetical efforts. I shall list them with brief comments. Line 19 says either that the vowel is affected by the tone or that the rising contour extends all the way to the (initial) segment successively articulated by the lip and the tongue, whatever that means. Lines 14-17 and lines 31-33: these are statements that describe a tone, X, as a combination of tone Y and Z. The most plausible explanation is that Annen was trying to approximate these tones (X) with rising contour by specifying their end points; it is less plausible that tone X begins with a level contour (tone Y) and then jumps to another level contour (tone Z). If so, lines 14-17 and 31-33 show that Annen has a standard phraseology for contoured tones. Since he did not use it for Piao's rising tone, that tone is probably high and level, as we have argued. Lines 45, 54, 62: the meaning of the term 著力 is unclear. Line 57: the term 角引 can be explained in two ways. One, *yin* means "prolong, draw out" and *chiao* is its modifier; and here *chiao* is either a corruption or refers to a note in the musical scale. Two, *chiao yin* as an established compound, is a technical term borrowed from musical terminology.²⁶ But in either case, the meaning cannot be determined with greater precision.

Let us now form a synthetic picture of the four tones, using Annen's account of Piao's reading as the primary source and the rest as supplementary evidence.

- (1) Level tone: long, level, and low, with a higher and a lower allotone. The first feature is inferred from the tradition associated with the monk I-ching.
- (2) Rising tone: short, level, and high, its lower allotone having merged with the departing tone.
- (3) Departing tone: slightly drawn out and hence longish. This feature is described both by Annen and the *Hobogirin*.
- (4) Entering tone: short.

The above summarizes what I think can be reasonably inferred from the evidence now available. It will be noted that I have not included the pitch and contour of either the departing tone or the entering tone, although the *Hobogirin* has something to say about both. The entering tone is high according to the *Hobogirin* and according to our theory that a voiceless final stop induces a high pitch. This is almost certainly true, reliable but until more evidence becomes available, it seems prudent to suspend our judgment. In the case of the departing tone, I should like to mention a plausible, if not conclusive, argument for believing that the *Hobogirin* is essentially right. If the rising tone and the departing tone are respectively 55 and 45 as the *Hobogirin* says, then under the assumption that a voiced initial lowers the pitch of the initial segment, say, from 5 to 4, the merger of the voiced rising tone into the departing tone immediately follows as a kind of phonetic corollary.

A word also needs to be said about the "drawn out" articulation of the departing tone. Four texts in the previously presented table—the earliest dated 746-774—have 引去, 去聲長引, 去聲兼引, "drawn out departing tone," "departing tone lengthily drawn out," "departing tone also drawn out" as subscripts for characters simulating Sanskrit long syllables. If the departing tone is intrinsically and unambiguously long, why is it necessary to add the redundant instruction "drawn out" or "lengthily drawn out"? The explanation we propose is that by mid or late eighth century, in some dialects and for some speakers, the departing tone had lost its longishness, and the subscripts are there to make sure that the departing tone is pronounced in the conservative fashion. There are other reasons for believing in this explanation: in Piao's pronunciation, the departing tone is described as "slightly drawn out" (Piao went to Japan in 735); the length contrast in Chinese tends to get neutralized; and if Old Chinese indeed has an -s, it may have left a long and contoured syllable as its reflex.

There are many other kinds of evidence that bear upon this problem, the most important being the data on modern dialects. But in the absence of a generally accepted theory that classifies and explains diachronic regularities of tone change, the comparative method cannot be applied, and consequently, the dialect data must be temporarily held in abeyance.²⁷ The second kind of evidence consists of the formulas in which scholars and monks from the T'ang dynasty on record their observed or inferred impressions of tones. The two earliest ones are of some value.²⁸

平聲哀而安, 上聲厲而舉, 去聲清而遠, 入聲直而促。

平聲平道莫低昂, 上聲高呼猛烈強, 去聲分明哀遠道, 入聲短促急收 藏。

These two formulas confirm that the level tone is level, the rising tone is high, and the entering tone is short. The third kind of evidence sometimes used is the names of these four tones.²⁹ But clearly, these slippery terms can hardly lead us to any firm conclusions. It is also sometimes said that the Chinese phonetic terms tend to be their own exemplars, but that *shang* (rising tone, "up, high") is an exception. Hence the character should be read in the rising tone, and in this reading, it means

"to go up, to rise."³⁰ Here the explanation could be that *shang* was originally in the rising tone, but because of its voiced initial (MC *z-*), later shifted to the departing tone. The fourth kind of evidence consists of *Kan-on syōmyō* 漢音聲明, the Japanese tradition of reading the sutras in the Kan-on pronunciation (which is somewhat different from *bombai*, chanting Sanskrit psalmody). Rai Tsutomu, who made a detailed study of this tradition, came to the conclusion that (a) since the tones are intertwined with the musical setting, their phonetic values cannot always be extracted, and (b) but insofar as the values can be determined, they coincide with what Annen said in the *Hsi-t'an tsang*.³¹

I shall now discuss, as promised, Chou Fa-kao's thesis that the Level tone is long and the Oblique tones are short (see note 13 above). The evidence, according to him, consists of the following three kinds. (1) In Hsüan-ying's 玄應 *I ch'ieh ching yin-i* 一切經音義 (ca. A.D. 649), seven pairs from the Sanskrit syllabary (*a, ā, i, ī*, etc.) are represented thus: long always corresponds to Level and short to Oblique; among the latter, three characters are rising (衰, 塿, 理) and one is entering (豈). (2) In I-ching's work, thirty-three short syllables are represented by Oblique tone characters. (This we discussed earlier, pointing out that all thirty-three are to be pronounced in the rising tone.) In addition, six pairs (*ka, kā, ki, kī*, etc.) are represented thus: long always corresponds to Level, and short to Oblique; of the latter, two characters are rising (枳, 矩), two are departing (計, 告), and one is entering (脚). (3) When the length contrast affects the meaning of a pair of Sanskrit words, it is reflected in Chinese transliterations by means of tonal differences. Four pairs are cited.

Long	Short
a. <i>śāriputra</i> 奢利富多囉	<i>śarīra</i> 舍梨子
b. <i>śīla</i> 尸羅	<i>śīla</i> 試羅
c. <i>puruṣāḥ</i> 補嚕沙	<i>puruṣaḥ</i> 補嚕灑
d. <i>puruṣāḥ</i> 布路沙	<i>puruṣaḥ</i> 布路殺

The tones of the relevant characters are: level, 奢, 梨, 尸, 沙, all representing long syllables; rising, 灑, departing, 舍, 試, entering, 殺, are representing short syllables.

The issue is whether shortness is supposed to be represented by the rising tone only or by all Oblique tones. Thus an Oblique character not in the rising tone would count as a vote for Chou's thesis if it also represented a short syllable. I-ching's statement that "they should all be read in the rising tone. . . ." disqualifies in one fell swoop all thirty-three characters as votes for Chou's thesis. The rest of Hsüanying and I-ching combined only yields four syllables that fulfill the above qualification, two each in the departing tone and the entering tone. Of these, three in I-ching's list are suspect; since the character 脚 appears in both the thirty-three character set and the six pair set, I-ching's statement almost certainly is meant to apply to all the characters concerned. As for (3), the *Kuang yün* has another

reading for 舍 in the rising tone, and 灑 is in the rising tone anyway. This leaves only three votes for Chou's thesis.

While the evidence is insufficient, Chou's thesis may still be true, for in order to simulate the length contrast, the Oblique tones need not be short, but only shorter than the Level tone, and from the available evidence, this indeed seems to be the case. (Level is the longest; departing is the next longest; rising and entering are short.) Furthermore, the reason why the other Oblique tones are regarded as inappropriate simulators of the Sanskrit short syllable may be other than the fact that they are not short enough; the entering tone may have been disqualified by its final stop, and the departing tone by its dynamic contour. In other words, the only clear conclusion to be drawn from Chou's data is that the rising tone is short. The remaining issues will have to be left undecided for the present.

We are now drawn inexorably to a consideration of the Level-Oblique distinction in prosody. And my aim here is not so much to offer a solution but rather to delineate the issues and suggest some ways to approach them.

By the time of Shen Ch'üan-ch'i 沈佺期 (650-ca. 715) and Sung Chih-wen 宋之問 (656-712), the Level-Oblique distinction is firmly established in prosodic practice. Earlier, Shen Yüeh (441-513) and his friends had theorized about the use of four tones in poetry, but it has yet to be shown that any of the Six Dynasty poets consistently applied the Level-Oblique distinction in their poetry. The period between 500 and 650 might then be conveniently regarded as the focal point of our problem.

In order to find out why and how the four tones became classified into two prosodic categories, we need to consider three questions: (1) How were the four tones pronounced at that time? This we do not know exactly, but Piao's reading (early eighth century) seems to be the only firm base for extrapolation. (2) Which phonetic features did the poets pay attention to? This is an important point, but one often neglected in discussions on prosody. (For example, the length contrast is present in modern English, but except for a few experimental poets, never used in poetry.) It is perhaps significant that in the key texts on literary criticism of this period, there is clear mention of the high-low contrast, but never, as far as I know, of the long-short contrast.³² (3) What tonal patterns can we find in Proto-Recent Style poetry, that is, poems written between 500 and 650? In what follows, I shall suggest some questions that we can put to that yet unexplored corpus.

The Level-Oblique distinction is based either on length or on pitch; these two features are the leading candidates by common consensus. Poets around Shen Yüeh's time apparently operated with four prosodic categories, that is, the four tones. Later there are only two. The process of change may have been gradual or sudden. Thus, we have altogether four models to consider.

- (1) Sudden change based upon long-short: The evidence against it are (a) the long-short contrast is not mentioned in literary criticism, and (b) the departing tone, by our extrapolation, must be fairly long around the sixth and seventh centuries.

- (2) Sudden change based upon high-low. The stumbling block is our ignorance concerning the precise pitch and contour of the departing and entering tone. The *Hobogirin* has something to say about both, and our phonetic theory predicts that the entering tone should be high. But these considerations are too conjectural as the basis for further inference.
- (3) Gradual change based upon long-short. There would be an intermediate stage where the level and departing tones are grouped together as long and the rising and entering tones as short. As the departing tone gradually loses its longishness, it migrates into the short (Oblique) category.
- (4) Gradual change based upon high-low. The intermediate stage would consist of a low category, the level tone; a high category, the rising and departing tones; and a category consisting of the entering tone by itself.³³ Then, by fiat or by convention, the entering tone is included in the high category. The fact that the voiced rising tone and the departing tone have merged no later than Piao's time points to their similarity in pitch and contour. Since the rising tone is high, so is the departing tone; this seems to be the main consideration in favor of this model.

One of the functions of prosody is to define how the various slots are to be filled by prosodic categories, and what a study of Proto-Recent Style poetry can tell us is whether its prosodic categories consist of (L) and (R, D, E) as in (1) and (2), or (L, D) and (R, E) as in (3), or (L), (R, D), and (E) as in (4). My favorite model is (4), but at present this view is based upon nothing more reputable than a hunch.

The conclusions of this paper are these: on the basis of Annen's account, the tonal system of Middle Chinese around the eighth century is found to be (1) level tone: long, level, and low; (2) rising tone: short, level, and high; (3) departing tone: longishness about to be lost and probably high in pitch and rising in contour; and (4) entering tone: short, with uncertain pitch and contour. Annen also allows us to infer that the proliferation of tones under the condition of voicing follows a definite sequence, whose intermediate stages may represent the ancestors of several modern dialects; also that the merger of the voiced rising tone with the departing tone has already been accomplished by the late eighth century.

Reasons have been stated for the thesis that the rising tone of Middle Chinese developed through the loss of a final glottal stop: -ʔ is a feature in several coastal dialects, the rising tone of MC is short and high, and in old Sino-Vietnamese loans, the rising tone corresponds to the *sac* and *nang* tones, at a time when these tones presumably had -ʔ. It also seems probable that one reason why the Six Dynasty poets were so fascinated by the four tones was that the loss of final consonants, according to our conjecture, was not completed until a fairly late date—late enough so that those poets were excited by its novelty. (They could have been aware of this novelty if they had also known some dialects that still preserved the final consonants.) As the tonal system evolved further, it made possible the emergence of the Level-Oblique distinction, and the remaining problem is to find out how exactly that happened.³⁴

Notes

- 1 As we shall see, the so-called rising tone is high and level in Middle Chinese. A more appropriate term might be the "high tone." But I bow to convention and continue to use this self-incriminating expression.
- 2 See 段玉裁, "古四聲說," 江有誥, 唐韻四聲正; 周祖謨, "古音有無上去二聲辨," 問學集 (Peking, 1966), pp. 32–80; George Kennedy, "Tone in Archaic Chinese," in T. Y. Li, ed., *Selected Works of George Kennedy* (New Haven, 1964), pp. 135–150; Chang Jih-sheng 張日昇, "試論上古四聲," in *The Journal of the Institute of Chinese Studies of the Chinese University of Hong Kong* 1(1968).113–170. Chang computes, for each tone-category X, the ratio in the *Odes* between the occurrences of characters rhyming with characters also in X and the total occurrences of characters in X appearing as rhymes (the latter includes cases where characters in X rhyme with characters in non-X), thus: level 85%, rising 76%, departing 54%, entering 85%.
- 3 董同龢, 中國音韻史, p. 183.
- 4 A. G. Haudricourt, "Comment reconstruire le chinois archaïque," *Word* 10(1954). 351–364, and "De l'origine des tons en Vietnamien," *JA* 242(1954).68–82.
- 5 H. Maspero, "Etudes sur la phonétique historique de la langue annamite: les initiales," *BEFEO* 12(1916).102.
- 6 Tone marks for Vietnamese are usually omitted; when necessary, VN tones are indicated by their names in parentheses.
- 7 R. A. D. Forrest, "Les occlusive finales en Chinois archaïque," *Bulletin de la Société de Linguistique de Paris* 55(1960).228–239.
- 8 E. G. Pulleyblank, "The consonantal system of Old Chinese, Part II," *AM* 9(1962). 206–265.
- 9 These facts are well established for English. See House and Fairbanks, "The influence of consonant environment upon the secondary acoustic characteristics of the vowels," and Peterson and Lehiste, "Duration of syllable nuclei in English," both in Ilse Lehiste, ed., *Readings in Acoustic Phonetics* (M.I.T. Press, 1967). Peterson and Lehiste noted that the postvocalic consonant has the greatest influence upon the duration of the preceding vowel, and the determining feature is the voiced-voiceless contrast. Recent studies seem to show, although not conclusively, that the correlations are linguistic universals. See Burckhard Mohr, "Intrinsic fundamental frequency variation: π & π₁," and Matthew Chen, "Vowel length variation as a function [± voice] of the following consonant," respectively in the June and July 1968 issues of the mimeographed *Monthly Internal Memorandum of the Phonology Laboratory of the University of California, Berkeley*.
- 10 Wen-chou is based upon 漢語方言調查 (Peking, 1964), p. 9, note 5; see also 鄭振尚芳, "溫州音系," 中國語文 1(1964).28–60; Wen-ch'ang on Hashimoto Mantarō 橋本萬太郎, "海南語の聲調體系," 東京支那學報 7(1961).35–52, and 梁敏剛, "海南方言中的喉塞音," 中國語文 6(1964).463–465; Ting-an on Yamaji Enji 山路園次 and Matsutani(?) Masa 松谷雅, 海南島語會話 (Tokyo, 1931), p. 5; P'u-cheng and Chien-yang on Jerry Norman's field notes collected on Taiwan, which will be presented as part of his doctoral dissertation at the University of California, Berkeley.
- 11 The key passage cited below does not appear in the standard version, I-ching's *Nan-hai* . . . (*Taishō*, No. 2125), but is quoted, with explicit mention of the title, by Annen in his *Hsi-t'an tsang* (*Taishō*, No. 2702, Vol. 84, p. 380a). I have followed Chou Fa-ko in assuming that the passage quoted by Annen was written by I-ching. For bibliographic details on Annen and Chou, see notes 13 and 14 below.
- 12 The text and its preceding context are as follows: 脚住伽囉機者棟社經陀訶茶? [Morohashi, No. 25043] 摩哆池陀但那羅巨婆梵摩名五五二十五, 字名便攝 . . . 野 囉囉婆捨迦婆訶訶義 (末後二字不入其數) 右脚 等二十五字并下八字, 總有三十三字名初章, 皆須上聲讀之, 不可看其, 字而為平去入也。
- 13 周法高, "說平仄," *CYYY* 13(1948).153–162, and "佛敎東傳對中國音韻學之影響," 中國語文論叢 (Taipei, 1963), pp. 21–50, esp. pp. 22–24. Chou's view seems to have been accepted by Tamaki

- Ogawa 小川環樹, 唐詩概論 [= Yoshikawa and Ogawa, eds., 中國詩人選集 17, Tokyo, 1958], p. 102, and by Pulleyblank, "The Chinese name for the Turks," *JAOS* 85(1965).122, note 5.
- 14 安然, 悉曇藏 (*Taishō*, No. 2702), p. 414b. Scholars who have studied this passage include Arisaka Hideyo 有坂秀世, "悉曇藏所傳の四聲について," 國語音韻史の研究 (2nd edition, Tokyo, 1957), pp. 591-599; Iida Toshiyuki 飯田 利行, 日本に残存せる中國近世音の研究 (Tokyo, 1955), pp. 69-76; Mabuchi Kazuo 馬淵利夫, 日本音韻史の研究 (Tokyo, 1962), p. 335ff., which lists other Japanese studies; Chou Tsu-mo 周祖謨, "關於近代方言中四聲讀法的一些資料," 問學集, 1 (Peking, 1966), pp. 494-500. The text, a translation and exegetical notes are presented in a later section of this article. It will be apparent that I have benefited much from the Japanese scholars.
- 15 S. Levi, J. Takakusu, and P. Demieville, eds., *Hobogirin*, fascicule 1-11 (Tokyo, 1929-1930), p. 107.
- 16 H. Maspero, *op. cit.*, p. 95.
- 17 Haudricourt, "De l'origine des tons en Viêt-namien," *JA* 242(1954).80-81.
- 18 This was pointed out to me by Dr. La Raw Maran of M.I.T., a native speaker of Kachin.
- 19 James Matisoff, "Glottal dissimilation and the Lahu high-rising tone: a tonogenetic case-study," *JAOS* 90(1970). 13-44.
- 20 Chang Jih-sheng, the article cited in note 2.
- 21 Identification is based upon the works cited in note 14, especially Iida's study.
- 22 Arisaka, the article cited in note 14.
- 23 The example of Po Chū-i's "Ch'ang-hen ko" has been discussed in Chou Tsu-mo, *op. cit.*, p. 495 and in Wang Li 王力 漢語史稿, 1 (Peking, 1957), p. 21. Hsü Shihying recently raised the question, rather inconclusively I think, whether such cases represent linguistic change or prosodic laxity. See 許世瑛, "論長恨歌與琵琶行用韻," 淡江學報 4(1965).1-12; "論元稹蓮宮詞用韻," 台灣大學文史哲學報 15(1966).397-406.
- 24 李涪, 切韻刊誤, quoted in Chou Tsu-mo, *op. cit.*, p. 496.
- 25 周法高, "論切韻音," *The Journal of the Institute of Chinese Studies of the Chinese University of Hong Kong*, 1(1968).89-112.
- 26 Li Shan's commentary to the *Wen-hsüan* cites 沈約, 宋書 卷 90 [Morohashi, No. 12418] (vertical harp) 宮引第一, 商引等二, 徵引第三, 羽引等四, 古有六引, 其宮引本第二, 角引本第四也。並無歌有絃管存聲不足故闕二曲。(*Wen-hsüan*, ch. 28, commentary under 謝靈運, 會吟行。Here *chiao yin* is clearly the name of a melody or tune. Chou Fa-kao, who cited this passage for a different purpose, also showed that a number of phonological or prosodic terms (such as 平調 and 側調, later Level and Oblique) were first used in musical contexts (*CYYY* 13[1948].154-155).
- 27 Some promising work in developing feature analysis for tones and applying it to synchronic phonology has been done by William S. Y. Wang, "Phonological features of tones," *International Journal of American Linguistics* 33.2(1967).93-105, and by Cheng Chin-chüan 鄭錦全, 官話方言的聲調徵性跟連調變化, 大陸雜誌 33(1966).102-108.
- 28 The first is by Ch'u Chung 處忠 in 元和韻譜 (806-827), now lost, and the second by a monk of the Ming dynasty, Chen-k'ung 真空 in 玉鑰匙歌映, both cited, among other places, in Wang Li, *Chung-kuo yin-yün hsüeh*, p. 100.
- 29 B. Karlgren, "Tones in Archaic Chinese," *BMFEA* 32(1960).113-142.
- 30 The earliest instance is probably a *fan-ch'ieh* spelling in the 經典釋文 (583-589) where under 象曰翼上於天 (易經, 需卦), we find 上時掌反, 干雲云升也。The lower *fan-ch'ieh* character, 掌 is in the rising tone. The date for *Ching-tien shih-wen* is based upon Lin T'ao 林藻, 陸德明的經典釋文, 中國語文 113 (February, 1962).132-136.
- 31 顏惟勳 漢音の聲明とその聲調 言語研究 17-18(1951).1-46.
- 32 For high-low, I have in mind the famous statement in Shen Yüeh's 沈約, 謝靈運傳: 欲使宮羽相變, 低昂互節, 若前有浮聲, 則後須切聲 (*Sung shu* 67.43a). As Arisaka has suggested, *ch'ing* and *chung* in the following statement probably also mean the high and

- low allotones: 欲廣文路, 自可清濁皆通, 若資知音, 即須, 輕重有異 (切韻序). What I have said about the absence of clear statements on long-short is of course subject to modification.
- 33 This hypothesis is in part motivated by the observation by Chou Fa-kao and others that the text of 維摩經講經文, discovered at Tun-huang, bears the notations 平, 側, 斷, which could mean "Level (low)," "Oblique (high)," and "Cut-off (entering)." See Chou, *CYYY* 13(1948).154.
- 34 This paper was begun during 1967-1968, when I was with the Chinese Linguistics Project of Princeton University. I am especially indebted to Jerry Norman, Mantaro Hashimoto, and Bruce Brooks for their suggestions and encouragement.

SOME NEW HYPOTHESES CONCERNING WORD FAMILIES IN CHINESE*

E. G. Pulleyblank

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It has long been apparent that Old Chinese had sets of words which were related in meaning and similar, but not identical, in sound. B. Karlgren conjectured that such 'word families' represented the relics of morphological processes but concluded that it was impossible to reconstruct what these processes had been. Advances in the reconstruction of Old Chinese allow us to see the nature of at least some of these processes. The best established affix is (a) the suffix *-s, which left its reflex in Middle Chinese as the departing tone. One may also recognize: (b) prefix *h-*, cognate to Tibetan *ha-čhung*, giving rise to alternations of voiced and voiceless obstruent initials, (c) prefix *s-, (d) prefix *r-. There were also (e) ablaut between close and open vocalic nucleus (ə/a), (f) alternation between accent on the first half or the second half of the syllable. More remote word family relationships, which cannot easily be accounted for by such morphological processes, may reflect a stage in which there were uniconsonantal root morphemes which could combine to form syllabic units. Comparisons are made to Northwest Caucasian and Indo-European.

The recognition of cognate relationships among the so-called 'isolating' morphemes of Chinese goes back a long time, but as with so many other aspects of Chinese language studies, the problem received a new definition from the work of Bernhard Karlgren and is still commonly thought of in terms which he used to describe it. In his seminal article 'Word Families in Chinese' (1934) Karlgren gathered together a large number of sets of apparently cognate words. He designated these words which seemed to be related both in sound and meaning by the term 'word families'. He classified the phonetic alternations, as they appeared in his 'Archaic Chinese' reconstruction under a number of headings but did not attempt to analyze the nature of the morphological processes involved. In *The Chinese Language* (1949) he isolated three of the commonest alternations, but, noting that the same alternation sometimes derived nouns from verbs and

sometimes derived verbs from nouns, he concluded that the situation as found at the earliest accessible period must already have been the result of a long evolution and held out little hope of being able to discover the original underlying morphological processes. A further contribution was made in the article 'Cognate words in the Chinese phonetic series' (1956).

While we are still far from being able to achieve the ultimate goal of analyzing the processes which have given rise to word families in a thoroughgoing way, some progress, has been made. Karlgren at first ignored the question of tone in this matter. It is, however, in that area that the first solid breakthrough has been achieved. A frequent alternation in word pairs is that between the 'departing tone' and some other tone, 'level', 'rising', or 'entering'. Several scholars have had the idea that this might involve a regular morphological process. The first thorough treatment, however, was no doubt that of Downer (1959), who collected a large body of examples of such tonally related word pairs from Lu De-ming's 陸德明 *Jing-dian shiwen* 經典釋文 (Collected Commentaries on the Classics, early 7th century) and classified them into eight categories according to the semantic alternations involved.

While the variety of these shifts—verb to noun, noun to verb, causative formation, passive or neuter formation, etc.—is somewhat disconcerting, Downer was able to show quite convincingly that in general the non-departing tone form must be regarded as basic and the departing tone form as derived. As far as the phonetic aspect of the matter was concerned, Downer was content to regard the process involved simply as a change of tone. It is probable that he had the 'change tones' (變音) of Cantonese in mind. This might be satisfactory for the change of level or rising tone to departing tone, as in 王 'king' (level tone), 'to be king (of)' (departing tone), or 好 'good' (rising tone), 'love' (departing tone), but is less convincing when the basic tone was the entering tone, as in 惡 'bad' (entering tone, ending in -k), 'hate' (departing tone, no consonantal final). Though words with final stop consonants are conventionally treated in Chinese as belonging to a distinct *ru-sheng* or departing tone, this is clearly something different from what is meant by 'tone' as a term in modern phonetic theory. In other words, the change from entering tone to departing tone necessarily involved a change in final segmental phoneme, not merely in pitch or contour. (This may have been true of other Middle Chinese 'tones' as well but is most obvious in the case of the *ru-sheng*.)

An alternative phonetic explanation had, in fact, already been suggested by Haudricourt (1954 (1) and (2)) who had shown that in Vietnamese the corresponding tone to Chinese departing tone could be derived from a final *-h, going back to an earlier *-s, on the basis of cognates in Mon-Khmer languages. Haudricourt further suggested that the same had been true of Chinese and furthermore that *-s had been a derivative suffix in Chinese.¹

Since that time evidence has accumulated from a variety of sources giving support to Haudricourt's conjecture. On the one hand one can compare the role of departing tone derivation in Chinese with that of the suffix -s of Classical Tibetan.² In Tibetan -s is a suffix which (1) sometimes characterizes the perfect of verbs, as in *byas*, perfect of *hyed-pa* 'to make', or *dbyugs*, perfect of

dbyug-pa 'to throw', (2) sometimes appears in the present, as in *hgebs-pa*, perf. *bkab*, 'to cover', (3) sometimes appears in nouns derived from verbs, as in *gos* 'clothing' from *hgo-ba* 'to wear'. There is even a parallel phonetic evolution in the fact that lost final *-s* has given rise to a sharply falling tone in the Lhasa dialect. From quite a different angle it has been shown (Pulleyblank 1961) that there is clear evidence of the survival of a final sibilant in certain rhymes in Chinese as late as the third or fourth century A.D. in transcriptions of non-Chinese place names and in the earliest strata of Buddhist translations. Examples of the former are: (1) 都賴 EMC³ *to-laj* < **ta-las*, for the name of the River Talas in Central Asia (*Han shu* 70.6b), (2) 彌 彌 EMC *kiāj*-*ppin* < **kias-pin* for Kaśpīr* = Kashmir, cf. Greek *Káspeira* (*Han shu* 96A.23a), (3) 對馬 EMC *toj-mar* < **tos-* for Tsushima, earlier **Tusima*, (*San-kuo chih*, *Wei-chih* 30.44a). Examples of the latter are: (1) 舍衛 EMC *ciar-wiej* < **wias*, for Prakrit **Ś(r)avas-* = Sanskrit *Śravasti*, (2) 彌羅 彌 EMC *pa-la-naj* < **-nas*, for Prakrit **vārānaz(i)* = Sanskrit *Vārānasī*, (3) 三昧 EMC *sam-moj* < **sammās* for Prakrit **samād(i)* = Sanskrit *samādhi*. These Prakrit forms are taken from Bailey 1946 who, it is interesting to note, already conjectured a relation between the final glide of Chinese *-i* diphthongs and the representation of foreign sibilants or dental fricatives, without, however, noting that in all cases the syllables involved had the departing tone. Further examples of the same kind are given in Pulleyblank 1961-62. All these examples come from rhymes where Karlgren reconstructed *-d* in his Archaic system and wherever such words occur in transcriptions down to about A.D. 300 or a little later, one finds that the final sibilant is relevant to the interpretation (though, of course, there are cases in which the foreign original cannot be identified).

This convergence of evidence from a variety of quite independent directions makes it extremely probable that we are on the right track and that not only is the departing tone, as a tone, derived from a final sibilant in Chinese, as in Vietnamese, but also, as a morphological category, it represents an **-s* suffix cognate to the *-s* of Classical Tibetan. The identification of Chinese **-s* with Tibetan *-s* is extremely important, for it opens up for the first time a clear possibility of relating Chinese and Tibetan not merely by isolated lexical correspondences but by morphological paradigms in the manner of Indo-European. It also encourages us to look for other Chinese cognates among Tibetan affixes and to be more confident in using Tibetan as a typological model for reconstructing Old and proto-Chinese.

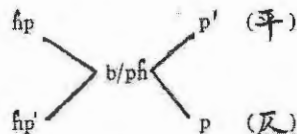
Another promising possibility of recognizing the cognate of a Tibetan affix in Chinese is in the rather common alternation in Chinese between voiced ('muddy') and voiceless initials. The frequency of such alternations has already been noted by Karlgren and others. As in the case of *qu-sheng* derivation, the alternation of voiced and voiceless initials is associated with a variety of semantic differences. One common type has a transitive verb with voiceless initial contrasting with an intransitive or stative verb with voiced initial, as in the following examples (readings are those of LMC as given in Pulleyblank 1970-71):

見	<i>kjian</i>	'to see',	<i>xhjian</i>	'to be seen, appear' (=現)
敗	<i>pjaj</i>	'to defeat',	<i>phjaj</i>	'to be defeated, go to ruin'
襪	<i>p'ij</i>	'to cover oneself with',	<i>phij</i>	'to be covered'
壞	<i>kwaj</i>	'to destroy',	<i>xhwaj</i>	'to be destroyed, collapse'
解	<i>kjaj</i>	'to release',	<i>xhjaj</i>	'to be released, relaxed'
		<i>kjaj</i>	<i>xhjaj</i>	'to bind', 'to be bound'
屬	<i>tsryok</i> (< * <i>tj-</i>)	'to attach, instruct' (屬)		
		<i>srhyok</i> (< * <i>dj-</i>)		'to be attached, belong to'
折	<i>tsriat</i> (< * <i>tj-</i>)	'to bend (tr.), to break'		
		<i>srhiat</i>		'to bend (intr.)'
張	<i>trian</i>	'to stretch',	<i>trhian</i>	'long' (cf. 長 <i>trian</i> 'to grow')
增	<i>tsəŋ</i>	'to add, to double',	<i>tsɦəŋ</i>	'in two stories, double'
擠	<i>kjap</i>	'to squeeze',	<i>xhjap</i>	'narrow'
覆	<i>fuk</i> (< * <i>p'-</i>)	'to overturn, repeat'	<i>fhuk</i>	'to return'
		<i>triak</i>		'to place',
		<i>trhiak</i>		'to belong to a place'
		<i>kiam</i>		'to control, restrict',
		<i>khiam</i>		'restricted, frugal'
		<i>kjəŋ</i>		'to send down',
		<i>xhjəŋ</i>		'to submit'

We may compare this with the function of the Tibetan *ha-c'uy* or 'voiced *h*' prefix, which is particularly associated with the formation of intransitive verbs, e.g. *hgrib-ba* 'grow dim' from *grib* 'shadow', *figrogs-pa* 'be associated with' from *grogs* 'friend, associate'. Phonetically, it is very plausible to suppose that the so-called 'muddy' initials of Middle Chinese, that is the voiced stops and fricatives, could have arisen out of a voiced *h*- prefix in Old Chinese. The 'muddy' initials, which Karlgren reconstructed as voiced aspirates rather than simply voiced sounds, are phonetically voiceless stops and fricatives followed by voiced aspiration in the Wu dialects and are best analyzed in that way also in Late Middle Chinese. The evidence for Early Middle Chinese (pre-T'ang and 7th century) would favor, rather, fully voiced sounds but this may reflect a dialectal difference rather than an earlier stage of the same dialect.

This theory of the origin of the 'muddy' initials can, I believe, account for a peculiarity of the Min dialects which has led some scholars to postulate a four-way stop distinction for proto-Min (and by extension for proto-Chinese). In Mandarin the old 'muddy' stops are partly represented by voiceless aspirates, partly by voiceless nonaspirates, but there is a perfectly regular rule depending on tone. Other dialects which have lost the old 'muddy' initials do not necessarily agree with Mandarin as between aspirates and nonaspirates but, apart from Min, they are alike in having a regular rule to determine which is found. In Min, however, we find aspirate and non-aspirate reflexes, with no regard to tone.⁴ This could be accounted for if we supposed that in Old (or proto-) Chinese there were only voiceless nonaspirates and aspirates, *p*, *p'*, etc., and that the *h*- prefix could occur before either. This would correspond to the situation in Tibetan where, although there are three types of stop initial - *b*, *p*, *p'*, etc. - the voiceless nonaspirates and aspirates are in complementary distribution with respect to their occurrence after prefixes, and the nonaspirates occurring as free

initials without prefixes, mostly in particles, onomatopoeic formations, loanwords, etc., appear to be of secondary origin. Hence Chinese *p* and *p'* would correspond to Tibetan *b* and *p'* and Chinese *hp*, *hp'* would correspond to Tibetan *hb*, *hp'*. In the type of Chinese which was ancestral to both Early and Late Middle Chinese (that is, the standard languages of the pre-T'ang and T'ang periods) and to the majority of modern dialects *hp* and *hp'* must be presumed to have merged as *b* or *ph*, giving rise to Mandarin *p'* (level tone) and *p* (oblique tones) when the clear-muddy distinction was replaced by one of tone register, thus:



In Min, on the other hand, there was no merger. The clear-muddy distinction was replaced by one of tonal register as in the other dialects but the original distinction between nonaspirate and aspirate was maintained, thus:



It may be possible to test this hypothesis for Min if we can find cases where the modern form agrees with the form we should expect from morphological considerations. Since only genuinely colloquial material is relevant for this purpose, examples are not too easy to find. One interesting case is, however the word 被 'to be covered' which appears in colloquial Min forms with initial *p'*. As we have seen above, this word appears to be a derivative with 'muddy' initial of a word with initial *p'* meaning 'to cover oneself'. This is the more significant in that words with original voiceless aspirate initials are considerably rarer than those with voiceless nonaspirate initials. Other words with Middle Chinese initial *ph* which appear in Min with *p'* and can plausibly be connected with cognates with original *p'* are 帆 'sail' (cf. 汎 'to float') and 浮 'to float' (cf. 浮 'raft'). Such cases, where the morphological pattern is less clear, are less probative, unfortunately, since there is evidence that, both in Chinese and Tibetan, alternation between aspirate and nonaspirate initials could also occur in derivational processes.

The *h*-prefix in Tibetan occurs in verbs related to nouns, such as in *hk'ur-ba* 'to carry', cf. *k'ur* 'burden, load', or *hbyug-pa* 'to smear, anoint', cf. *byug-pa* 'unguent, salve'. It can also occur with nouns, e.g. *hk'ar-ba* 'staff' (and many others), and in places where there would seem to be a free variation between prefixed and unprefixed forms, as in *t'al-ba* or *ht'al-ba* 'to pass by', *bol* or *hibol* 'cushion, mattress'. Sometimes it is retained throughout the verbal inflection, as in *hibraṅ-ba* 'to bear, bring forth', perf. *hibraṅs*, imper. *hibroy*. In other words, though it sometimes seems to have a clear function, in other cases whatever function it may have had has become obscured. This is also true of the Tibetan suffix *-s*. This may be compared with the versatility of both the *qu-sheng* derivation and the clear-muddy

alternation in Chinese, with which a number of patterns of semantic differentiation can be associated but to which one cannot assign a single definite meaning that will cover all cases. It seems probable that common Sino-Tibetan originally had various affixes with rather generalized semantic connotations which were specialized in various ways in the daughter languages.

Among other affixes that we should certainly look for in Chinese on the model of Tibetan is a prefix *s-* to match the suffix *-s*. Tibetan *s-* is one of the formatives with a rather clearly defined function, making causatives out of transitives and transitives out of intransitives. There have been various suggestions in the past about an *s-* prefix in Old Chinese, mostly simply from the phonetic point of view. Thus Yakhontov (1960) proposed that *s-* was responsible for devoicing nasals in such *xie-sheng* alternations as: 許 EMC *hiə* 'allow', 年 EMC *ɲə* 'cyclical sign'; 態 EMC *t'əj* 'attitude', 能 EMC *neŋ*, 'be capable of', also read *nəj*; 荒 EMC *hwaŋ* 'waste, desolate', 亡 EMC *muəŋ* 'disappear'. Unfortunately this conflicts with rather good evidence from early Tai loans that the cyclical sign 年 had initial *sy-* in Old Chinese (Li 1945), indicating that *s-* before nasals was simply dropped, without bringing about devoicing.

Earlier Tung T'ung-ho (1948) had suggested reconstructing voiceless nasals *ɲ*, *ɳ*, *ŋ* to account for the type of alternation noted by Yakhontov and in 1962 I proposed aspirates *mh-*, *nh-*, *ɲh-*, extending the same reconstruction to the liquids also to account for alternations like: 體 EMC *t'ej* 'body', 禮 EMC *lej* 'ceremony'; 脫 EMC *tw'at*, 說 EMC *dwaj*, 說 EMC *ɕwiet*, 悅 EMC *ɟwiet*. In the first of these examples I reconstructed *lh/l* and in the second *ɬ / θ*, but I recognized that Chinese *l* corresponded to Tibetan *r* and that the phoneme I reconstructed as *ɬ* corresponded to Tibetan *l*. I would now revise the Old Chinese reconstructions to *rh > t'(r)*, *r > l*, and *lh > t'/ɕ*, *l > d/j* (sometimes *z*). (The palatalization of *l* to *j* or *z* and *lh* to *ɕ* occurred under the same conditions that led to the palatalization of dental stops and *n* between Old and Middle Chinese.)

Classical Tibetan does not have voiceless or aspirated nasals but it does have *hr* and *lh*, as well as *sr*, *sl* and *zl*, and there are some very good cognates between Tibetan *lh* and Chinese *lh* as reconstructed by internal evidence. The following examples were already noted in Pulleyblank 1962 (pp. 116-7):

脫 EMC *t'wat* < **lhwat* 'strip off, take away', Tibetan *lhod-pa* 'loose, relaxed', cf. also Burmese *hlwat* 'to free, release'. One may also compare the colloquial Cantonese *lāt* (with upper tone register) which preserves the liquid initial.

鐵 EMC *t'et* 'iron' < **lhet* < **lhək*, Tibetan *lčags* **lhy-*, cf. Common Tai *l'ək*. (On the final palatal in Old Chinese see Pulleyblank 1971b.)

In Tibetan it would appear that the causative prefix *s-* could occur before both *l*, giving orthographic *zl*, and *lh*, giving orthographic *sl*. This is shown if we compare *zlog-pa* 'cause to return', derived from *ldog-pa*, perf. *log* 'return', with *slad-pa* from *lhad* 'mixture, alloy'. The root in *ldog-pa* clearly begins with *l*, as found

in the perfect, and *ld-* in the present is no doubt for **hl*. Compare *hđr* < **hr*, as proposed by F. K. Li (1959). It is true that we also have *slog-pa* 'turn' (trans.), but there are good indications that *l* and *lh* could alternate in word families, just as unaspirated and aspirated stops could sometimes alternate, in which case *slog-pa* could be derived from and unattested **lhod-pa*. Note that *lod-pa* and *glod-pa* are given as alternative forms of *lhod-pa* and in Chinese also the corresponding word family has words that imply **l* as well as **lh*: 賒, read *đwat* (= 奪 'snatch, rob') as well as 賒, 賒 *đwjet* 'pleased', 賒 *đwaj* < **lwats* 'glad', etc.

Though Yakhontov's theory of Old Chinese *s-* cannot be accepted, there are no doubt other places where one can look for traces of *s-* clusters in Old Chinese. In my 1962 article I suggested a number of possibilities of this kind (pp. 126ff.) where Middle Chinese sibilants appear in *xie-sheng* series of other categories. Specifically causative meaning does not show itself in many of these cases. The best example (not quoted in 1962) is perhaps: 𪛗 EMC *zi* 'feed; food', from 𪛗 EMC *ziək* 'eat'. On the correction of Karlgren's *dz'* to *z* see Pulleyblank 1962, p. 68. This initial sometimes seems to be an alternative to Middle Chinese *j* as the palatalized form of Old Chinese *l* but the conditions under which one or the other appears are not clear. Note that Middle Chinese *j* itself seems to have had the phonetic value of a palatal fricative in early Buddhist transcriptions and that in Middle Chinese double readings in *j* and *z* are quite common. The character 𪛗 itself has a reading *ji* in the sense of a proper name. We may tentatively reconstruct the Old Chinese forms as **lək* and **slək*s respectively. The derivative in its attested form has *-s* suffix as well as *s-* prefix. Possibly there were originally two forms, **slək* 'feed' and **slək*s 'food'.

In Chinese word formation there are also two very good examples of what appears to be an *-r-* infix associated with causative meaning: 𪛗 EMC *tri* 'cause to arrive', from 𪛗 EMC *tçi* < **t-* 'arrive'; 𪛗 EMC *tr'wit* 'expel' from 𪛗 EMC *tç'wit* 'go out'. This could well reflect an original *r* prefix which has left its trace as retroflexion of the following dental initial. In Tibetan *r* is a verbal prefix. From morphologically related sets like the following it would appear to have an active, intensifying meaning: *rlog-pa* 'overthrow, pervert', cf. *ldog-pa* 'change, turn away, return', etc.; *rlug(s)-pa* 'purge', cf. *lug-pa* 'give way, fall down'; *rbad-pa* 'incite', cf. *hbad-pa* 'endeavor, exert oneself'; *rdeb(s)-pa*, also *rdab-pa*, 'throw down to the ground', cf. *hdebs-pa* 'throw, strike'; *rgyong-ba* 'extend, stretch', cf. *yans-pa* 'wide, broad, large', also *rkyong-ba* 'stretch, extent'. In Chinese there are certainly many other examples of **r* as an affix in word building besides the two cited above but I shall reserve a further discussion for another occasion.

Another morphological alternation found in Tibetan which can be paralleled in Chinese, as I have shown elsewhere, is close/open vowel alternation or ablaut.⁵ If my interpretation is correct, the alternation between forms with close nuclear vowel *-ə-* and open nuclear vowel *-a-* was associated with a semantic alternation which can be called 'extrovert' vs. 'introvert' and which can be paralleled both phonologically and semantically in Northwest Caucasian languages such as Kabardian and in Indo-European 'qualitative ablaut'. A good example, in

Chinese, in addition to those discussed in my previous article, is the alternation found between 合, Early Middle Chinese *həp* < **hkəp*, 'join, shut' and 𪛗, Early Middle Chinese *kaj* < **kaps*, 'cover'. 𪛗 also has a reading *kəp* as a surname and occurs as a loan character for 𪛗, Early Middle Chinese *həp*. This word *həp* itself, also written 𪛗, occurs in pre-Han and Han texts meaning either 'leaf of a door' or 'to shut'. Thus there is no doubt that these words are all etymologically related. They are no doubt cognate to Tibetan *hgebs-pa*, perf. *bkab*, fut. *dgab*, imper. *k'ob* 'to cover', cf. also *gab-pa* 'to hide, conceal oneself', *k'eb*s 'covering', *hk'eb-pa*, perf. *k'eb*s, 'to cover, spread over', *sgab-pa*, 'secondary form of *hgebs-pa*'.

Yet another kind of alternation in the vocalism which Karlgren has drawn attention to is, in his terms, between words 'without and with an intercalary *i*'.⁶ I have argued elsewhere that Karlgren's *i*, characteristic of Grade III of the rhyme tables according to his Middle Chinese reconstruction, was not a segmental phoneme in Old Chinese but arose secondarily between Old and Middle Chinese out of an earlier prosodic feature of some kind. In my new Middle Chinese reconstruction Grade III *yod* disappears altogether and is replaced by a vocalic *-i-* (*he-kou -iu-* = *-y-*) for Late Middle Chinese of the rhyme tables and by vocalic *-i-*, *-i-* or *-u-* in Early Middle Chinese of the *Qie yun*. Let us suppose that in Old Chinese syllables consisted of two morae with an accent either on the first or second mora, and that the accented mora was replaced by a close front, central or back vowel depending on the surrounding consonantism. We should then have (writing the two morae of each nucleus as repetitions of the same element):

Cəə- → Ciə-	Cəə́- → Cəi-	Cáa → Cia-	Caá → Cai-
C'əə → C'ia-	C'əə́ → C'ai-	C'áa → C'ia-	C'aá → C'ai-
Cʷəə- → Cʷuə-	Cʷəə́ → Cəu-	Cʷáa → Cʷua-	Cʷaá → Cau-

(where, phonetically, *-iə- -iə- -uə-* would be realized as [i] [i] [u], *-əi- -əi- -əu-* as [y] [e] [o], *-ia- -ia- -ua-* as [iə] [ie] [uə], and *-ai- -ai- -au-* as [a] [ɛ] [o]). A simpler notation which will be adopted hereafter is to indicate accent on the first mora by a grave accent *-à-*, accent on the second mora by an acute accent *-á-*. Such a schema would account for the way in which the *Shi jing* rhyme groups became split up in Middle Chinese. For example this will explain very readily how the character 𪛗 can have such divergent EMC readings as *tçiak* and *kew*. In the *Shi jing* words with this phonetic belong in the category which is reconstructed as *-ok*, *-og* by Karlgren and which I would revise to *-aq*, *-əβ* < *-aŋ* (i.e. an uvular fricative) (Pulleyblank 1971b). We may now reconstruct the two readings of the character as *kjəq* > *kjiaq* > *tçiak* and **kjáyq* > */kaiwʔ/* [k ɛ wʔ] > */kəiw/* [kəw]. Note that in the first case the medial *j* causes the palatalization of the initial while in the second case it causes the palatalization of the final. Cf. also 𪛗 EMC *kek* < **kjáq*, *kew* < **kjáqs*. A fuller discussion of the way in which this hypothesis accounts for the development of the Middle Chinese rhymes will be given elsewhere.

The kind of morphological alternation that is found in Chinese which involves the presence or absence of Karlgren's *yod* is also better accounted for by a

prosodic feature than by a segmental interpretation. This is particularly clear in the case of alternative forms of grammatical particles such as: 焉 EMC *ʔan* 'how, where', 焉 EMC *ʔian* 'how, where'; 于 EMC *uo* < **hwa* 'to, in, at', 于 EMC *hɔ* < **hwa* 'to, in, at'. These are indistinguishable in meaning and differ, if at all, in the particular collocations, probably determined by prosodic considerations, in which they occur. Slightly less synonymous are: 乃 EMC *nəj* < **nəʔ* 'then, thereupon; your', 而 EMC *nji* < **nə* 'then; your'. The latter seems to differ from the former chiefly in being an unstressed form. Note also such pairs as 某 EMC *mak* '(there is) no one', 無 EMC *muo* < **mə* 'there is no . . .'; 孰 EMC *hɥək* '(there is) some one', 有 EMC *uɥ* < **hwaʔ* 'there is . . .'. In other cases we have synonymous variants of the same lexical item: 織 EMC *pen* < **pjan*, *pjien* < **pjan* 'weave', 軒 EMC *kan*, *kian* 'rice gruel', 缸 EMC *hwan*, *huan* < **hwàn* 'badger' (also *hwan*), 推 EMC *t'oj*, *tɕ'wi* 'push', 崖 EMC *ner* < **nrəj*, *nie* < **nrəj*, 'river bank' 樓 EMC *ləw*, *luo* 'hunchback', 貓 EMC *marw* < **mrəw*, *miew* < **mrəw* 'cat', 貓 EMC *bɔ-bək* **bá-bək* or *buo-buwk* < **bà-bək* 'crawl'. It is noteworthy that many of these words have an onomatopoeic or expressive flavour that would help to account for the variation in accentuation which we posit as the source of the phonetic differentiation.

There are, of course, also many cases where this type of phonetic alternation goes with a variation in meaning, e.g. 諾 EMC *nak* 'assent', 若 EMC *njiak* 'be like, thus, so', 傍 EMC *baŋ* 'side', 方 EMC *puan* 'direction, region'. Further study will no doubt reveal patterns of semantic contrast between such related forms.

Of relevance to the proposed phonetic interpretation is the fact that this kind of variation is one of the commonest distinctions between totally unrelated words written with the same character; e.g. 於 *ʔɔ* < **ʔá* 'ah!', 於 *ʔə* < **ʔà* 'in, at, to'.

This hypothesis can only be adumbrated briefly here. What correlate, if any, could be found in Tibetan is not yet clear.

The various morphological processes that have been discussed and other similar processes of affixation, etc., can certainly account for a great deal of the 'word family' phenomenon. There are, however, other cases of apparently cognate relationships that seem to require a quite different and more radical type of explanation. In collecting his word families Karlgren was quite strict in insisting that the items should all have finals of the same kind. Tōdō Akiyasu, whose etymological dictionary (1963) is an attempt to develop the 'word family' concept both more fully and more rigorously, is even stricter and insists that one should confine oneself to the same *Shi jing* rhyme category.

We have already discussed one kind of cognate relationship which goes beyond the rhyme categories, namely that involved in close/open ablaut. This is still within the limits of similar final consonants. There are, however, many other cases of apparent word family relationships that go quite outside even this restriction. One can easily find sets of words with the same initial consonant and closely similar meanings but quite different finals that are at least as plausible as the word families collected by Karlgren and Tōdō.

Thus, besides the ablaut pair 嗣 *zi* 'succeed, inherit', 續 *zi* 'succession, inheritance' (= 序, 叙 'arrange in order, succession'), we have 續 *zuok* 'continue'.

Besides 譚 *dəm* 'talk about', 談 *dam* 'talk; conversation', we have 道 *daw* 'talk about' (*Laozi*, Mencius, *Xunzi*). Besides 合 *həp* 'join', 闔 *həp* 'shut', etc., we have 合 *hɥəj* < **-as* 'join, meet', 和 *hɥa* < **-al* 'harmony'. Besides 脫 *t* 'wat' < **lhwət* 'take off', 說 *ɕwiet* < **lhwət* 'explain', 說 *ɕwiet* < **lwət* 'pleased, etc.', we have 釋 *ɕiek* < **lhək* 'release, explain', 悅 *ɕiek* < **lək* 'pleased', 舍 *ɕiaŋ* 'release', 諭 *juo* 'understand, illustrate by an example', 愉 *juo* 'pleasant, enjoy', 偷 *t'əw* 'steal'. Here are some other examples of the same kind. (Above forms and those below are EMC).

- 苦 *k'ɔ* 'bitter, suffering', 困 *k'on* 'distress, trouble' 酷 *k'ɔk* 'cruel'
 閑 *hiern* 'leisure', 暇 *hiəp* 'leisure'
 下 *hiəp* 'descend', 降 *hɔŋ* 'submit', 降 *hɔŋ* 'descend'
 回 *hioj* 'turn, return', 還 *hiun* 'revolve', 圓 *wien* 'circle', 丸 *hiwan* 'ball', 還 *hiwarn*, *zwien* 'return, turn round', 圍 *uj* 'surround', 衛 *wiəj* 'guard', 旬 *zwin* 'cycle of ten days', 營 *ɕwien* 'surround, encamp', etc. (This is only a selection among the words with the general notion of 'round, revolve' that begin with Middle Chinese *hw*, *zw*, *u*, etc., pointing to Old Chinese **hw*.)
 紆 *ʔuo* 'bent, crooked', 枉 *ʔuan* 'bent, crooked', 委 *ʔwie* < *-al* 'bend, fall, hang down', 偻 *ʔuo* 'bent body, hunchback', 腕 *ʔwan* 'wrist', 苑 *ʔuan* 'supple', 隈 *ʔoj* 'a bend, nook', 蠕 *ʔwen*, *ʔwien* 'to crawl as a caterpillar, soft, bending', 蝮 *ʔwak* 'caterpillar', 縈 *ʔwien* 'wind, entwine'. This group may be related to the last in **hw*.
 柔 *njuw* 'soft', 弱 *njiak* 'weak', 懦 *njuo*, *nwà* 'weak, timid', 孺 *njuo* 'child', 軟 *njwien* 'supple', *nwan* 'weak', etc. - cf. also 餽 *njim* 'thoroughly cooked, overdone', 軟 *njim* 'soft'.
 比 *pji* 'set side by side, compare', *pji*, *bji* 'alongside, go together with', 譬 *p'ie* < **-ks* 'for example', 併 *pji* 'combine', 並 *ben* 'side by side', 邊 *pen* 'side, edge', 遍 *pen* 'on all sides', 偏 *p'jien* 'one-sided', 方 *puan* 'direction, side, compare', 傍 *baŋ* 'side'.
 縈 *lwij* 'bind, wrap round', 縈 *liw*, *lew* 'bind round, wrap', 縈 *luw*, *kjiw* 'tie round, strangle', 縈 *lwini* 'woof, twist a cord, envelop'.
 降 *lew* 'fat round the intestines', 降 *lwit* 'fat round the intestines'
 憊 *loj*, *lwij* 'exhausted', 勞 *law* 'toil, weary'
 厄 *nrij* 'near, close', 昵 *nrit* 'intimate, familiar; glue' (= 昵), 狃 *nruw* 'be familiar with, treat with contempt', 粘 *nriem* 'to glue, stick to'.
 愧 *nrij* 'ashamed', 慚 *nruwk* 'ashamed', cf. also 羞 *suw* 'shame' and 恥 *tr'i* 'shame' with 耳 *nji* as phonetic.

It would be easy to multiply examples of this kind indefinitely. One may think, for example, of all the words beginning with *m* which have such meanings as 'cover, dark, blind, hidden, confused', or words beginning with *k'* that mean 'cut' or 'beat'. Especially in cases like this one is tempted to seek refuge in the rather vague concept of 'sound symbolism'. Yet we find this same sort of thing in the case of grammatical particles which are hardly likely to be affected by such

influences. Thus among the negatives beginning in *m*, which must surely all be related to one another, we find: 無 *muo*, 勿 *mut*, 亡 *muaj* 美 *mak*, 罔 *muaj*, 未 *mij* < *-s, 微 *muj* < *-l, 莫 *met*, 未 *mat*, 靡 *mie* < *-al?. First personal pronouns beginning with *ŋ* include 吾 *ŋa* **ŋá*, 我 *ŋá* < **ŋál?*, 伊 *ŋaj*. Among other words meaning 'like, so' we have: 如 *njiá*, 而 *nji*, 乃 *naj*, 若 *njiak*, 爾 *njie*, 奈 *naj* < *-as. Such sets of grammatical words have been studied to a certain extent. The tendency has been to try to account for them in terms of 'fusion', that is, as resulting from the combining of two morphemes in one syllable. That such fusions existed has long been recognized in such cases as 諸 *-之* or *-之於*. In other cases, where particles, though monosyllabic, are clearly bimorphemic in meaning, e.g. 焉 'in it', 然 'like it', the fusion explanation seems plausible even though it is impossible to identify the second of the two fusion elements as an independent form. Compare also the pronominal particles all ending in *-k* and all used to specify the subject: 孰 *ŋwək* 'some one', 莫 *mak* 'no one', 孰 *dzuwk* 'which one', perhaps, also 各 *kak* 'each'. It is tempting to isolate a morpheme *-k* and to say that these words have been formed by adding it to 有 *wv* 'there is', 無 *muo* 'there is not', 誰 *dzwij* 'who', 舉 *kiá* 'all' (cf. also 俱 *kuo* 'all', 皆 *kerj* 'all', etc.). But is this 'fusion' or is it a more intimate kind of word formation that would be better described as composition?

What is, at any rate clear is that there is no clear demarcation line between particles and 'full' words in this respect. For example, as Karlgren noted, the verb 諾 *nak* 'assent' is clearly cognate to 若 *njiak* 'like' included in the above list. Another similar case is 克 *k'ək* which means 'to conquer' but is also used in early texts as a verbal auxiliary 'to be capable of'. It must be cognate to 可 *k'á* (< *-al?) 'is possible'. Other related words are no doubt 堪 *k'am* 'to be capable of, bear', and 肯 *k'əj* 'consent to'. Furthermore 克 *k'ək* is also used in the sense of 'to carry', a word which must surely be cognate to 荷 *ha* 'carry', which has 可 *k'á* as its phonetic.

The idea that we may have to look for meaningful elements below the level of the syllable will no doubt seem startling. There may however be parallels in other languages which will help to make the suggestion more plausible.

One of the fascinating features of the Northwest Caucasian languages, to which reference has already been made in connection with the close/open ablaut, is the extreme transparency of their word formation. In Kabardian as described by A. H. Kuipers (1960) the great majority of words are made up of unisegmental morphemes either singly or in combination. Segments in turn consist only of a single consonant or one of a limited variety of possible consonant combinations plus a following vowel, or better, feature of syllabicity. And since there are only two possibilities for the latter—close and open—and the alternation between them has a morphological function, defining the extrovert/introvert opposition, the morphemes are in effect defined by their consonantism. Kabardian has a very large number of distinct consonants but even so single consonants and their possible combinations only yield about 200 unisegmental morphemes (many of which, of course, have more than one meaning). From this limited stock longer words are built up by transparent processes of compounding. Many notions for which more familiar languages have simple,

unanalyzable, words are expressed in this way. Thus 'tear' is 'eye-water', 'finger' is 'hand-nose', 'joy' is 'heart-good', and so on.

In Indo-European too it looks very much as if there may once have been uniconsonantal roots. As reconstructed by comparative philologists, the 'roots' of Indo-European consist predominately of two consonants separated by a vowel which is mostly *e*. The vocalism of Indo-European seems to have been similar to that in the Northwest Caucasian languages, that is, for any syllable there were two possibilities in an ablaut relation to one another. These alternating vowels are usually reconstructed as *e* and *o* but were probably close vs. open, i.e. *ə* and *a*, rather than front vs. back. Because of the ablaut relationship of the two vowels (which, incidentally, can also be defined semantically as introvert/extrovert) the roots are defined by the consonants and have the form C-C. When one looks further into the question, however, one often finds that even many of these simple roots look as if they were related to one another. For example, S. Pokorny's etymological dictionary of Indo-European lists a large number of roots beginning with *u-*, all of which have the meaning 'to turn': (1) *uā-* (= *ueH-* according to the laryngeal theory), with extensions in *-g-* (Latin *vagor*), *-k-* (Latin *vacillo* 'vacillate'), *-r-* (Latin *vārus* and *varius* 'various'), *-t-*; (2) *uei-*, with extensions in *-b-*, *-d-*, *-g-*, *-ġ(h)-*, *-k-*, *-l-* (Eng. *wily*), *-m-*, *-n-*, *-p-*, *-r-* (Eng. *wire*), *-s-*, *-t-* (Eng. *withy*); (3) *uek-*, *uenk-* (Latin *convexus*); (4) *uel-* (Latin *volvo*), with extensions in *-d-* (German *wälzen*), *-g-*, *-is-*, etc.; (5) *uendh-* (Eng. *wind*); (6) *ueng-* (Eng. *winch*); (7) *uengh-*; (8) *uer-*, with extensions in *-b-* (Eng. *warp*), *-d-*, *-(n)g-* (Eng. *wrench*), *-(n)ġh-* (Eng. *wring*), *-(n)k-*, *-m-* (Eng. *worm*), *-p-*, *-t-* (Latin *vector*), and also *-i-* with various further extensions in *-n-*, *-zd-*, *-ġ-*, *-k-*, *-p-* (Eng. *wreath*); (9) *ues-*. To these may be added certain roots in *su-*, since *s-* can be a prefix in Indo-European: (1) *suei-*, with extensions in *-b-*, *-d-*, *-g-*, *-k-* (Eng. *sway*), *-p-* (Eng. *swift* from Old English *swifan* 'turn'); (2) *sueng-* or *suenk-* (Eng. *swing*). It looks as if the basic meaning of 'turning' was expressed in the single consonant *u*, which was then extended by additional elements.

If we suppose that Sino-Tibetan too once had uniconsonantal roots which were then extended by additional elements which defined their meaning more precisely, we can see how the 'word family' situation would have arisen. In the course of time what had once been transparent compounds would have become fixed, unanalyzed expressions and phonetic changes would have gradually obscured the connections leaving only the tantalizing hints that we can discern today. I am not suggesting that we are yet in a position to unravel the tangled strands. Much more progress will have to be made in recovering the history of the individual Sino-Tibetan languages and in comparing them with one another before that becomes even thinkable, and perhaps we shall never reach that stage—so much of the evidence has been irretrievably lost. Nevertheless I think it may be interesting and worthwhile to try to imagine how things might have been and to set up, in tentative and speculative ways, heuristic models to guide our researches. It has become more respectable than it was a few years ago to ask fundamental questions about the nature and origins of language.

Meanwhile I hope that I have shown that progress in understanding Chinese historical phonology is already leading to new insights into the morphology of Old Chinese and that, conversely, study of the morphology will help in putting historical phonology on surer footing.

Notes

- * This is a revised version of a paper entitled 'Word Families in Chinese: A Reconsideration' which was presented at the 28th International Congress of Orientalists in Canberra, January 1971 and published in preprint form in *Unicorn* 9 (Jan. 1972) 1-19.
- 1 Zhou Fagao (1962), who discusses previous studies both on *qusheng* derivation and on 'clear/muddy' alternation at some length, dismisses Haudricourt's hypothesis as 'rather odd' (未见有确定性, p. 20 n. 1). This is typical of a fairly widespread attitude that cannot conceive of Chinese as ever having had features that are not found in modern dialects. But if one takes seriously the probability of a genetic relationship between Chinese and Tibetan, it is obvious that Chinese must once have had such features. The only question is how long ago and in what manner they were lost.
 - 2 Forrest (1960) noted the functional correspondence of Tibetan *-s* and the alternation between Chinese *-k, -t, -p* and *-g, -d, -b* (as reconstructed by Karlgren) and proposed, like Haudricourt, as **-s* suffix for Chinese. He did not, however, take into account the question of tone.
 - 3 Reconstructed forms in this article are given either as Early Middle Chinese EMC (Sui dynasty) or Late Middle Chinese LMC (Middle and Late Tang). For the latter see Pulleyblank 1970-71. The new reconstruction of Early Middle Chinese will be published shortly.
 - 4 Yuan 1960, pp. 259-60.
 - 5 Pulleyblank 1963, 1965 (1) and (2).
 - 6 Karlgren 1949, p. 92.

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SOME FURTHER EVIDENCE REGARDING OLD CHINESE -s AND ITS TIME OF DISAPPEARANCE

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In 1962 I published some evidence based on Han and early post-Han transcriptions to show that Chinese still had a sibilant final in certain departing tone rhymes at that period. I can now add some still later examples which bring the date down to the beginning of the sixth century, at least in the south. As will be shown below, the transcription evidence is also supported by contemporaneous rhyming practice, which still allowed contacts between Middle Chinese -j' < -s and -t.

The value of cross-linguistic evidence for historical reconstruction of pronunciation is well recognized in European studies. When, for example, we find the Greek letter ϕ transcribed in Latin first by *p* or *ph* but later as *f*, there is little doubt that the change reflects a shift in Greek pronunciation and can help us date that shift. One cannot, of course, draw inferences like this in a mechanical way. Otherwise one might make the contradictory inference that because the Greeks from the beginning transcribed Latin *f* as ϕ , ϕ was already a fricative at that time. We have, as in all types of historical investigation, to judge each piece of evidence in the light of all the other relevant evidence. In particular we have to take into account the over-all phonological systems of the languages concerned at the time in question. When we do this, it becomes clear that, since in the earlier stage Greek had no labial fricative the aspirated stop ϕ [ph] was simply the closest sound available to transcribe *f* (Allen, 1968, 20).

The same principles have to be applied in the case of Chinese and have indeed been so applied, sometimes skilfully, sometimes not, by scholars in the past. Unfortunately, any use of transcription evidence seems to be in disrepute in some quarters. This is no doubt partly because the philological problems involved are unfamiliar territory for many linguists. It is also, however, due to exaggerated and sweeping doubts that have been expressed about the validity of this kind of material. In particular it is said that using Buddhist transcriptions is a risky business since these are likely to be based on Central Asian Prakritic forms rather than

Classical Sanskrit (Karlgren, 1954, 226). This is perfectly true. What is not true is that the fact that Prakrit rather than Sanskrit was the basis of many early Buddhist transcriptions prevents us from being able to control our material. A good deal is known about Prakrits and specifically about the north-west Indian Prakrit, called Gāndhārī by H. W. Bailey, which was spread into Central Asia by the expansion of the Kuṣāṇa empire and became the vehicle for Buddhist missionary activities in the Far East (Bailey, 1946; Brough, 1962).

It is ironical, for example, that Professor Karlgren was prepared to argue that the transcription of Sanskrit *dhyāna* by *ch'an* 禪 EMC *dzien* (Karlgren *zjān*) was a justification of his reconstruction of a stop initial \tilde{d} - in Archaic (Old) Chinese as the source for Ancient *z-*, while rejecting as irrelevant the massive evidence brought forward by Lo Ch'ang-p'ei (1931) showing that the Middle Chinese 'tongue up' (*she-shang*) initials were used to represent Indian retroflex stops. The Chinese transcription for *dhyāna* was undoubtedly based on a Prakrit form in which *dhy-* had been palatalized to *jh-* or *j-* (cf. Pali *jhāna*, Gāndhārī *jāna*, *jana*; Brough, 1962). On the other hand, not only is the dental/retroflex distinction well maintained in Prakrit, as in modern Indian languages, but the transcription practice which Lo discovered is consistently maintained up to T'ang times when Sanskrit had long since replaced Prakrit as the language of Buddhism in the Far East. Unfortunately Karlgren's rejection of Lo's hypothesis that the 'tongue up' initials were retroflex rather than palatal led to its being largely forgotten for many years. It has now been revived and is receiving a belated acceptance (Pulleyblank, 1962-3; see also Li, 1971). The evidence of Sino-Vietnamese, which, for example, has retroflex *tr-* for the first of the 'tongue up' initials (Karlgren's \tilde{t}) as well as for the first of the retroflex affricates (Karlgren's *tš-*) but palatal *ch-* for the corresponding palatal affricate (Karlgren's *tš-*) was also ignored by Karlgren and other scholars.

It would not be fair to regard the delay in recognizing the correctness of Lo's hypothesis as entirely wilful and arbitrary. The revision of the palatal stops to retroflex stops has far-reaching implications for the whole system of Middle Chinese reconstruction and neither Karlgren nor any other scholar at the time was prepared to work out these implications (Pulleyblank, 1970-1). Nevertheless it is a pity that the awkward counter-evidence was merely swept under the carpet and a still greater pity that the rejection was turned into a blanket dismissal of transcription evidence of all kinds.

The use of transcription evidence is certainly fraught with difficulties; but so are all methods employed in historical reconstruction of pronunciation. One can only put together all the evidence, whether derived from internal reconstruction of the system underlying the rhyme tables and rhyme dictionaries, from rhymes in poetry, from comparisons of dialects and cognate languages, or from any other source and, using the best available linguistic theory, try to build the most coherent and consistent picture possible. We know at the outset that the evidence will never be sufficient to solve all our problems: All the more reason why we should not deliberately refuse to consider any category of material that may help.

The theory that the departing tone originated in a final -s in Chinese is a good example of one in which theoretical, comparative, and philological arguments

combine to give a happy solution to many otherwise unco-ordinated facts. First put forward by A. G. Haudricourt in 1954, it was based primarily on the analogy of the tonal system in Vietnamese, where the corresponding tone can be shown by comparisons with Mon-Khmer to come from a final *-h*, earlier *-s*. Haudricourt also noted that his hypothesis would allow one to explain cognate pairs like 好 EMC *haw* 'good', *haw* 'love', or 惡 EMC *ʔak* 'bad', *ʔo* 'hate' of which there are many in Chinese, as reflecting a suffix *-s* in the departing tone forms. He might also have noticed that there is a close parallel in Tibetan, which also has a *-s* suffix with various meanings (cf. Forrest, 1960). There is even a parallel in tonal development, since the *-s* of written Tibetan develops into a sharply falling tone in the Lhasa dialect.

Haudricourt further noted the fact that in Middle Chinese certain rhymes ending in *i*-diphthongs occurred only in the departing tone and conjectured that the disappearance of the final sibilant may have been not long before the time of the *Ch'ieh-yün*. He also drew attention to the Thai forms in *-t* of the duodenary sign 未 EMC *muj* (e.g. Ahom *mut*) (cf. Li, 1945; Egerod, 1957).

The date of the Thai borrowing of the duodenary cycle is unfortunately not known. There is, however, as I showed in 1962, abundant evidence from transcriptions for the persistence of *-s*, from Old Chinese *-ts*, at least until the third century A.D. The transcriptions involve various non-Chinese languages and extend over several centuries. The pattern is also very consistent. That is, whenever we find words from such rhymes used in transcriptions and it is possible to determine the underlying foreign word, we find that the foreign word has *s*, or some other appropriate phoneme, in the position corresponding to our hypothetical Chinese *-s*. There are, of course, a good many transcriptions, especially in the earlier centuries, for which the foreign original is unknown or is more or less conjectural. Among the more certain examples of *-s* from the Han period are: 黃霜 EMC *kuj* (< *kus*)-*ʂian* = Kušan, 鬪鬪 EMC *kiej* (< *kias*)-*pjin* = *Kašpir(a), for Kashmir, EMC *to-laj* (< *ta-las*) = Talas. From the third century A.D. comes 對馬 EMC *toj* (< *tos*)-*mar* = Tusima, i.e. the island of Tsushima. Early Buddhist transcriptions of the second and third centuries A.D. provide many examples. Besides cases like 波羅奈 EMC *pa-la-naʃ* (< *nas*) = Prakrit **Varanaz(ī)* for Sanskrit *Vārāṇasī*, in which Chinese *-s* corresponds to Sanskrit *s* (voiced [z] in intervocalic position in Prakrit), there are cases in which it stands for Sanskrit *-th-* or *-dh-*, both of which became a voiced fricative [ð] and eventually [z] in intervocalic position in Gāndhārī Prakrit (Bailey, 1946; Brough, 1962, 94). Hence 三昧 EMC *sam-moj* (< *mos*, or *mās*) = **samādi* or **samazi*, for Sanskrit *samādhi*.

A similar example, not previously discussed, is *chi* 偈 EMC *giej* (< *gias*) = **gāḍa* or **gaza*, for Sanskrit *gāthā* 'song', a word which was borrowed into Chinese in the sense of 'Buddhist hymn' and has remained part of the language.

By the beginning of the fourth century there is evidence of a shift from *-s* to *-j* in the north. Though the situation in Kumarajiva's transcriptions remains to be thoroughly investigated, a preliminary examination of his versions of the 'Lotus sūtra' (*T*, 262) and the *Mahāmāyūrī* (*T*, 988) shows clear evidence that the shift

must have occurred. Thus I find 齋 EMC *jiej* for *ye* in *kṣaye* and 嚙 EMC *dziej* for *jva* in *jvala*, among many other examples of departing tone words that would have had *-s* previously.

In the south, however, the sibilant final persisted much longer. This can be illustrated from *dhāraṇī* transcribed by Sanghabhara (or -varman?) who worked at Nanking in the period 506–20 under the Liang dynasty. By this time Sanskrit had replaced Prakrit as the language of Buddhist texts. A portion of his version of the *Mahāmāyūrī* (*T*, 984) was published by Sylvain Lévi (1915). In this we find the character 審 EMC *hāj* < *has* used for *-has-* in 毗里審波底 = *Bṛhaspati*. There is one other occurrence of the same character, this time for *-had-* in 毗梨審羅他 = *Bṛhadratha*. The equivalence is less exact in this case but at least *-s* is used for another dental consonant. There are no other words from the same rhyme in the material published by Lévi. In another *dhāraṇī* transcribed by Sanghabhara, however, I find 賴 EMC *laj* < *las* used for *-ra(ś)-* in 毗富羅賴沙彌 = *vipuraraśme*.

A few examples of this kind at such a late date would be too little in themselves to justify the conclusion that *-s* still survived at that period. As mentioned above, however, there is confirmatory evidence from rhyming practice. Occasional rhyming of Middle Chinese *-j* with *-t* in the 'Book of odes' was one of the principal reasons which led Karlgren to reconstruct his Archaic *-d* (which must now be emended to *-ts*, later *-s*). Such rhyming contacts do not, however, cease in the Chou period. They are still very common in Han (Lo and Chou, 1959) and continue through the southern dynasties. This was noted as long ago as 1936 by Wang Li. Wang went so far as to include the departing tone rhymes 泰 *-aj*, 廢 *-iaj*, 霽 *-ej*, 祭 *-iej*, etc., in the same over-all category as the corresponding entering tone rhymes in *-t*. Examples of this kind of rhyming are: 外脫賴 EMC *ŋwaj* *t'wat laj* (K'ung Chih-kui 孔稚珪, 447–501); 節洩髻結雪 EMC *tset jieʃ keʃ ket swiet* (Hsü Ling 徐陵, 507–83); 謁曉沒 EMC *ʔiat ʔaj mot* (Emperor Wu of Liang 梁武帝, 464–549). Chou Tsu-mo, whose study of post-Han rhyming done in conjunction with Lo Ch'ang-p'ei remains unpublished, also noted this tendency for rhymes like *-aj* and *-at* to rhyme (Malmqvist, 1968, 37).

If *-s* survived in the south in some departing tone rhymes as late as the beginning of the sixth century, it obviously has a bearing on the question of what was meant by the 'departing tone' at the time it was given this name by Shen Yüeh 沈約 (441–513). Evidently the 'departing tone' had a sibilant final in some words in his day but not in others. How can we reconcile this with the fact that the whole category must have had a common feature to distinguish it from the other three 'tones'? The most likely explanation is that the other departing tone rhymes were still characterized by final *-h*: *-ah*, *-awh*, *-anh*, *-amh*, etc. This *-h* would not have manifested itself in transcriptions nor would it have rhymed with stop consonants in the way that *-s* could occasionally do with *-t*. It did, however, share with *-s* the feature + fricative, just as the 'entering tone' finals shared the feature + stop. If this surmise is correct, it helps to account for the choice of the terms 'entering' and 'departing', which obviously stand in opposition to one another while forming a related set in contrast to the other two tones, 'level' and 'rising'.

Chou Tsu-mo refers to the rhyming of departing and entering tones in relation to the statement in Lu Fa-yen's preface to the *Ch'ieh-yün* that in Ch'in and Lung, i.e. Shensi and Kansu, the 'departing tone' is the same as the 'entering tone'. This could possibly mean that even in 601 -s was still heard in those regions but, if taken literally, seems to indicate rather a dialectal merger of -s with -t. This is the most natural interpretation of the statement which he cites from Hsüan-ying's *I-ch'ieh-ching yin-i* 18, that in Kuan-chung the term 狡獪 *chiao-kuai* 'mischievous', EMC *karw-kwarj*, was rendered as 狡刮 *chiao-kuā*, EMC *karw-kwart*. Chou also cites two examples of barbarian rulers from that region whose personal names each had two variants, one in -j and one in -t. These provide less clear-cut evidence, since we do not know the foreign originals on which the Chinese forms were based.

There is still further evidence to support the view that there may have been a pre-T'ang shift of -s to -t in a north-western dialect region. Karlgren (1940, 258) notes that the *Chi-yün* has a reading *sjat* (*sic*, this should be corrected to *sjet*) = EMC *sit* for the number '4' EMC *si*, and it calls this a Kuan-chung pronunciation. Karlgren supposed that this showed a persistence of Archaic *sjad*, but it is more likely that it reflects the dialectal shift of *sis* to *sit* instead of standard EMC *si*.

The same dialectal shift of -s to -t probably accounts for the modern forms of the word for 'nose' in northern dialects. In EMC this was *bji*, a form from which the current pronunciation in Cantonese and some other dialects is descended. In Mandarin generally, and to some extent elsewhere, however, the current forms imply Middle Chinese *bjit*. Early evidence for such a form is provided by a bilingual Chinese-Khotanese glossary from Tun-huang, where we find *pīra khuma*, evidently transcribing 鼻空 *bjit k'oŋ* (Bailey, 1954, p. 1, l. 11). Khotanese -r for Chinese -t is regular. The peculiar categorization of the word for 'nose' as '(lower) level tone from departing tone' in the *Chung-yüan yin-yün* also reflects such a Middle Chinese form, since lower level tone would be the normal reflex of entering tone for word with this type of initial but is quite anomalous for a Middle Chinese word with departing tone.

What seems to have happened is that the form *bjit* < *bjis* was borrowed from its north-western dialect source into the standard colloquial of T'ang, spreading to other parts of China and replacing *bji* < *bjis* except in outlying regions. This is more likely than the alternative view that *bjit* and *bji* were variants that had existed side by side in Chinese generally from early times. It is interesting to note that in Amoy the literary form is *pit*, while the colloquial form is *p'it*.

Abbreviations

EMC = Early Middle Chinese, a new reconstruction of the *Ch'ieh-yün* system to be published shortly. N.B. a in these forms represents a low central vowel, not a front vowel.

T = Taishō *Tripitaka*.

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FANGYAN GLEANINGS

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I. Introduction

The *FY* occupies a unique position among early Chinese lexicographical works in that it specifically collects and annotates regional or dialectal words and expressions. The potential value of the text as a source of information on late WH Chinese dialects has long been recognized and has been exploited in various ways in a number of traditional and modern studies. The possibility that the *FY* may contain dialect cognates which could be compared and used to reconstruct earlier ancestral forms has been extensively explored by Serruys in a book (1959) and a number of articles.¹ The work of Serruys has been severely criticised by Miller (1975: 122–23), who has argued that the dialect forms compared by Serruys cannot be assumed to be historically cognate simply because they are associated in the *FY* text. Many may, he feels, be unrelated dialect synonyms.

In considering the different stances of Serruys and Miller we may begin by noting that the criteria underlying the selection of dialect words in *FY* are nowhere specified in the work itself. My own belief, based on close inspection of the text, is that many or most of the entries are of the 'bucket'/'pail' type and are not genetically related. If this is so then it would suggest that the *FY* compiler was primarily interested in assembling and determining the regional origins of what he felt to be "different" words for the same things. This assumption would seem to support Miller's indictment of Serruys' approach to the *FY* text and discourage further comparative phonological studies. But the matter is not so easily resolved, for there can in fact be little doubt that the *FY* does contain a number of true cognate sets of the type envisaged by Serruys. A well-known and generally accepted example is the pair of words in *FY* 11/12 meaning 'a fly' (see # 37 in section V below). Such cases, few though they may be, are worthy of our attention.

It is probable that everyone who has worked with *FY* has his own list of putative cognates. What is presented in section V below is my list. It is, I believe, fairly conservative; but at certain points I have made bold to include doubtful cases on the ground that in future it may be easier to exclude false cognate sets

than to retrieve lost ones. MC and WH reconstructions are given for all entries in section V, and in section VI some rudimentary comparisons are attempted. Nothing so ambitious as an actual reconstruction of proto-forms has been undertaken. It is hoped that the gleanings assembled here may, after pruning and emendation, in some way advance our understanding of Han dialectology.

II. Authorship and composition of *FY*

2.1 The *FY* is traditionally attributed to Yang Xiong 揚雄, whose authorship of the text has been convincingly established by Serruys (1955).² Yang Xiong (53 B.C.–18 A.D.; *HS* biography, *HS* 87A, B, C: 3513–3587) was a native of Chengdu 成都 in Shu 蜀. He was over forty when he left this area and went to Chang-an 長安 (*HS* 87C: 3583), where he spent the rest of his life. Yang must have spoken the dialect of his native place, and it is probable that he was also familiar with the language of the capital.

2.2 The nature and content of the *FY* text have been thoroughly discussed by Serruys (1955, Chap. 1).³ Here we need only note that, in addition to those passages which specifically deal with dialect material, there are others which are "non-dialectal" in content. Most of these occur in chapters 12 and 13 of the text, but they occasionally appear in other sections as well.

The primary evidence regarding the way in which the *FY* was compiled comes from Yang Xiong's famous letter to Liu Xin 劉歆, appended to most current editions of the text.⁴ The passage in question is translated by Knechtges (1977–8: 316–17) as follows:

... whenever Presenters of Annual Accounts and the "Filial and Incorrupt" from the various parts of the empire as well as the interior commandery military officers convened at the capital, I always took my three-inch soft brush, ["and" ? WSC] provided⁵ myself with a four-foot piece of oiled white silk in order to ask them about unusual expressions. As soon as I returned home I used lead to make extracts⁶ and arrange them on tablets. It has now been twenty-seven years that I have been doing this. Occasionally expressions and words were mixed up or contradicted each other, and then I repeatedly discussed them and mulled them over, and collected all I could in detail to settle any doubts.

From this account we may form a picture of how Yang Xiong carried on his dialect studies. First of all it is clear that he worked with "informants," and we can conclude that these people were for the most part educated upper-class speakers. How he proceeded in his inquiries about "unusual expressions" is uncertain. It is entirely possible that he simply asked "what character" an informant used for a certain thing and was shown in reply a particular graph, in some cases a familiar one and in others an "unusual" one, perhaps the informant's own invention or some locally current script form. It is equally possible that in many cases Yang received as his answer a spoken form, either because he had asked how his informant "said" a particular thing, or because the informant knew no graph for the word he was attempting to convey. The fact that in *FY* we find a considerable number of

common graphs used in senses which are elsewhere unattested strongly suggests that Yang's collecting of dialect words sometimes involved "transcription" of spoken forms, either on his own part or that of his informants. As an example we may cite *FY* 2/8 (# 81 below) where 私 (MC *si*), usual meaning: 'private', is glossed as 'small' and is probably a western dialect form of 細 (MC *siei-*) 'small, minute'.

A question of considerable interest is that of how Yang Xiong formulated the word lists which served as the basis for his "survey" of dialect forms. There is evidence that in many cases he took available lexicographical works, commentaries, etc. as his point of departure. For example, there are unmistakably close links between *FY* and *EY*. *FY* ¼ 烈, 耕, 餘也... is identical with *EY* 1B/103, with the exception that, after the basic word equation is given, *FY* adds dialect notes on 烈 and 耕. An example of a more extensive correspondence, involving several *FY* and *EY* entries, is the following:

<i>FY</i>	<i>EY</i>
1/12 敦, 豐, 厯, 奈, 懶, 般, 蝦, 奕, 戎, 京, 葵, 將, 大也...	1A/3 ...厯...蝦...奕...戎... 京...壯...將...大也
	(The original <i>EY</i> passage is quite long, containing thirty-nine glossed words.)
1/13 假, 徂, 懷, 摧, 詹, 辰, 變, 至也...	1A/5 迄, 臻, 極, 到, 赴, 來, 弔, 纓, 樵, 辰, 懷, 摧, 詹, 至也
1/14 嫁, 逝, 徂, 適, 往也...	1A/6 如, 適, 之, 嫁, 徂, 逝, 往也

Examples of this type suggest that Yang Xiong's concern with dialect words may have been intimately connected with his interest in lists of glossed words such as those found in *EY*. He may, at the outset, have suspected that these contained many dialect synonyms. It is possible that he began his work on *FY* by investigating passages such as *EY* 1A/3. Having identified all dialect material in the list, he may then have supplemented his findings with further dialect synonyms which were not part of the original *EY* passage. Close correspondences of the type exemplified here can also be found between *FY* and the Mao commentary on *Shijing* 詩經. It is highly probable that a detailed investigation of the relationships between *FY* and other texts of WH or earlier times would yield much of interest regarding the way in which the *FY* text was compiled. Such a study unfortunately lies beyond the scope of the present paper.

III. Phonological reconstructions

MC reconstructions used in this paper follow Karlgren (1954 and *GSR*) as emended by Li (1971: 4-7), with the following further revisions:

- 1 - will be written as ʔ-.
2. \hat{q} and \check{s} will be written as ∂ .

3. \check{e} will be written as e .
4. Medial $-u-$ will be written as $-w-$.

WJ reconstructions follow Coblin (1974-5) for the initials and Ting (1975) for the finals, with the exception that all labialized (i.e. *hekou* 合口) syllables will be written with $*-w-$. OC forms are reconstructed according to Li (1971 and 1976).

MC reconstructions are given for all dialect forms listed in section V. However, it is clear that what is needed for a cogent discussion of phonological questions in the data is a Han-time reconstruction. This raises the question of what sort of sound system underlies the "transcriptions" used in *FY*. If, as we have hypothesized, Yang Xiong may sometimes have "transcribed" in characters the spoken forms elicited from his "informants," then what did he adopt as the "basic readings" of these characters? Did he take the sound system of his own dialect as basis? Or did he rely on some sort of WH standard with which all educated individuals in the capital area might be expected to be familiar? These are questions which we cannot now answer and which may never be resolved. But, such uncertainties notwithstanding, it still seems worthwhile to utilize a Han reconstruction in dealing with the data in section V. The reconstruction to be used here is one developed for the dialect of Yang Xiong himself. This system, along with certain departures which will be made from it, will now be briefly outlined.

Materials from the works of Yang Xiong have been used, along with data from many other sources, to make a provisional reconstruction of the initials of the WH period (Coblin 1982). The following system of initials can be reconstructed for Yang's dialect:

Labials	p	ph	b	m	hm		
Dentals	t	th	d	n			l
Sibilants	ts	tsh	dz		s	sh	z
Gutturals	k	kh	g	ng	h	ʔ	

Due to the paucity of data on the WH initials this system is necessarily sketchy. Several comments on it seem necessary here. MC *ji-* interchanges with sibilants in the Yang Xiong materials and in certain other late WH sources. I restore it for these dialects as WH $*z-$, followed directly by vowels or by medial $*-w-$. Where $*z-$ is followed by medial $*-j-$ it yields MC $z-$. In other WH materials MC *ji-* interchanges primarily with dental stops, and I reconstruct it there as $*r-$, modelled on Li's OC $**r-$, a dental flapped consonant. I think it possible that Yang adhered to his own "sibilant reading" for this initial in compiling *FY*. MC $\check{s}-$ interchanges with sibilants in the Yang Xiong data. It was probably a voiceless fricative of some sort and must have differed from WH $*s-$ ($>$ MC $s-$). My guess is that it was an aspirated $s-$ (transcribed here as $*sh-$) of the sort found in contrast with plain $s-$ in various Southeast Asian languages and in certain types of Amdo Tibetan. In other WH materials, MC $\check{s}-$ interchanges with dental stops; and

I have consequently restored it there as *hrj- (< Li's OC **hrj-). Whether Yang preferred the "sibilant reading" or the "stop reading" in his dialect work seems uncertain and is a question which must be considered in dealing with the *FY* data.

A cluster, *sm- (> MC s-), can be reconstructed for Yang's language. In other WH dialects one can also posit *gl- (> MC l-), but there is no evidence for this cluster in the Yang Xiong data. There is support for the reconstruction of *gl- in a number of EH dialects (Coblin 1977-8; 1978); and I believe it may have been present in Yang Xiong's language, in spite of the lack of direct evidence for it. Words for which this cluster might be reconstructed in other dialects will be written with *(g)l- here. Where the MC palatals, ts-, etc., interchange with velars in the WH data I reconstruct the former as *k(r)j-, etc. There are no such interchanges in the Yang Xiong data. It seems uncertain whether such earlier velars had merged with the WH dentals in Yang's language or were still distinct and are simply not reflected in the data.

A general reconstruction for the finals of the WH period, based on the rime data of Luo and Zhou (1958), has been proposed by Ting (1975). Rime, loan-graph, and paronomastic data have been used to reconstruct the finals of Yang Xiong's language (Coblin, 1984). The following is a summary of the final consonants, vowels, and medials reconstructed for Yang's dialect:

A. Consonants

Velars	k	h	ng
Labiovelars	kw	hw	ngw
Dental	t		

B. Vowels

Oral	Nasalized
I	u
ə	ẽ
A	ã

C. Medials

-j-	-w-	-r-
-----	-----	-----

Final * -p and * -m are absent from this system. Where MC has -p and -m, Yang's language may have had * -k and * -ng. This was a peculiarity of the Shu 蜀 dialect which seems to have distinguished this language from other WH dialects including, presumably, the WH standard language. All words reconstructed in section V with the finals in question are also given alternate * -p and * -m reconstructions based on Ting's WH system. Open nasalized finals are reconstructed

here for syllables having MC -n. Preliminary studies of several other WH dialects indicate that these probably had final -n in the syllables in question. Whether we should read * -v̄ or * -vn for the *FY* examples seems uncertain.

The MC tone categories will be represented as follows in the MC, WJ, and Han reconstructions:

Ping 平	Shang 上	Qu 去	Ru 入
no symbol	:	-	no symbol

IV. The WH dialects

FY is an invaluable source of information on late WH dialects. By analyzing the geographical terminology in the text it is possible to ascertain with surprising precision what the dialect areas of the early first century were. Then, on the basis of shared vocabulary items, one can determine which areas represented subdialects within the major dialect groupings. Luo and Zhou (1958: 72) have briefly discussed the *FY* terminology, but the definitive treatment of it is that of Serruys (1959: 77-100). We shall now summarize and slightly modify his proposal (pp. 98-9) for a six-group division of *FY* dialect areas:⁷

1. Western Dialects: Guanxi 關西⁸—Qin 秦, Jin 晉,⁹ Liang-Yi 梁益, Shu-Han 蜀漢
2. Central Dialects: Guandong 關東 in general
 - (a) Western Group: Zhou 周, Zheng 鄭, Luo 洛, Han 韓, Wei 魏,¹⁰ Zhao 趙¹¹
 - (b) Eastern Group: Song-Weih 宋衛, Lu 魯, Qi 齊
3. Northern Dialects: Yan 燕, Dai 代, Bei Yan 北燕
4. Eastern Dialects: Dong Qi 東齊, Haidai 海岱, Huai 淮, (Xu 徐)¹²
5. Southeastern Dialects: Wu 吳, Yang 揚, Yue 越
6. Southern Dialects:
 - (a) Northern Type: Chen 陳, north part of Chu 楚
 - (b) Eastern Type: Jiang-Huai 江淮
 - (c) Southern Type: southern part of Chu, Nan Chu 南楚

The geographical locations of the *FY* dialect areas can be seen in Map 1, which is a much simplified and slightly modified version of Serruys (1959: Endpaper). Map 2 shows the approximate boundaries of the six major dialect groups.

In addition to the regional names discussed above, the following terms also appear in the examples cited in section V:

- Bin 邠: A place located approximately 115 kilometers north-west of Chang-an, in the Qin area.
- Chaoxian 朝鮮: An area corresponding approximately to the northern part of modern Korea.

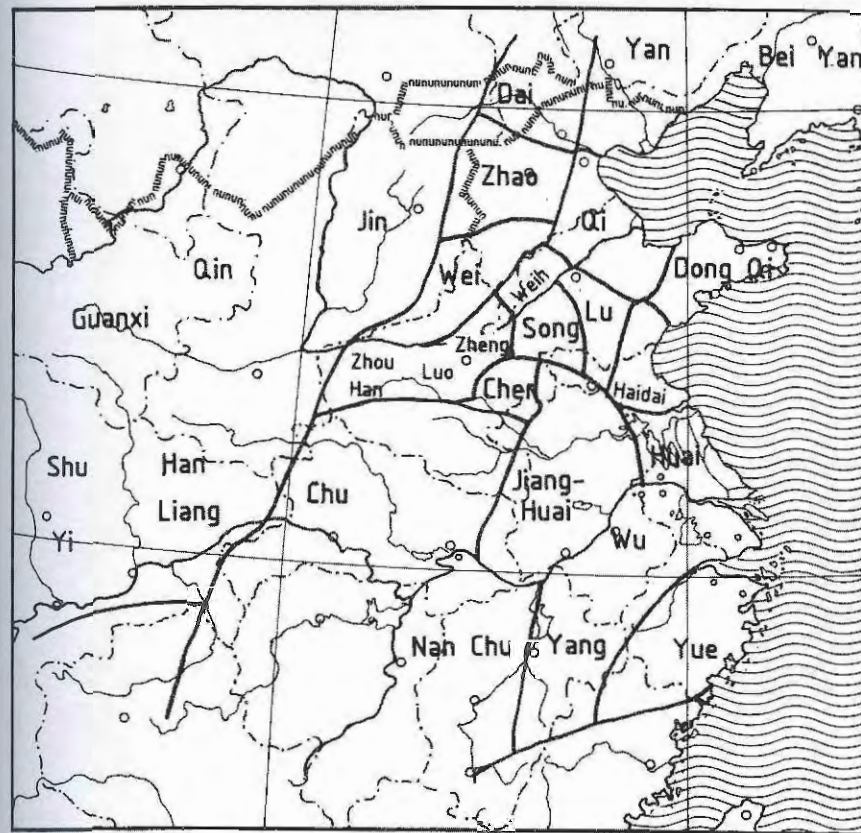
- Daye 大野: A swampy region in the west-central part of the Song area.
 Former Capitals of Qin and Jin: The areas around Fufeng 扶風, Shaanxi and Taiyuan 太原, Shanxi respectively.
 He Ji 河濟: The area between the Yellow and Ji rivers; a strip of territory stretching from Weih through Qi to the Bohai.
 Heng 衡: The area around Mt. Heng, approximately 100 kilometers south of modern Changsha.
 Ji 冀: An area roughly encompassing Zhao and Wei.
 Jiang Mian 江河: The area between the Yangtze and Mian rivers; the latter is a western tributary of the Han River and flows roughly parallel to the Yangtze through the southern part of Shaanxi.
 Jiang Xiang 江湖: The area between the Yangtze and Xiang rivers.
 Jing 荆: A poorly defined area in Chu, stretching both north and south of the Yangtze river. See Serruys (1959: 93-4).
 Jiuyi 九嶷: The area around the Jiuyi Mts., approximately 250 kilometers south of Changsha.
 Lieshui 洌水: A river in Chaoxian. Exact location disputed. See Serruys (1959: 83).
 Ru 汝: The Ru River and its watershed; northern part of the Chu area.
 Ruying 汝潁: The region between the Ru and Ying rivers; northern part of the Chu area.
 Tang 唐: A place near modern Taiyuan, Shanxi.
 Xi Long 西隴: Western Long, an area in the eastern part of modern Gansu.
 Yanh 兗: An area encompassing Weih, Song, and perhaps also Chen.
 Yuan Xiang 沅湘: The area between the Yuan and Xiang rivers; central part of Hunan.

V. The data

The examples in this section have been selected because they may throw light on characteristics which distinguished the various WH dialects. For this reason, with one exception, only sets containing words from *different* dialects are cited. There are in *FY* a number of sets which consist exclusively of two or more synonyms from the *same* dialect area. These are worthy of study in their own right but lie beyond the scope of the present paper.¹³

As a working hypothesis it has been assumed that the glossing words in the various *FY* entries are themselves representative of a "dialect," which may have been the WH standard language. In a number of cases there is direct evidence for this in the *FY* text. The following two occur in our data: #s 41 and 73. In nine cases (i.e. #s 5, 6, 14, 58, 64, 69, 74, 81, 88) words not mentioned in the *FY* passage but known to be current in WH texts are suggested as possible "standard" cognates.

Entries in the data are arranged alphabetically by English gloss and numbered consecutively. Each English gloss is followed by the chapter and section number

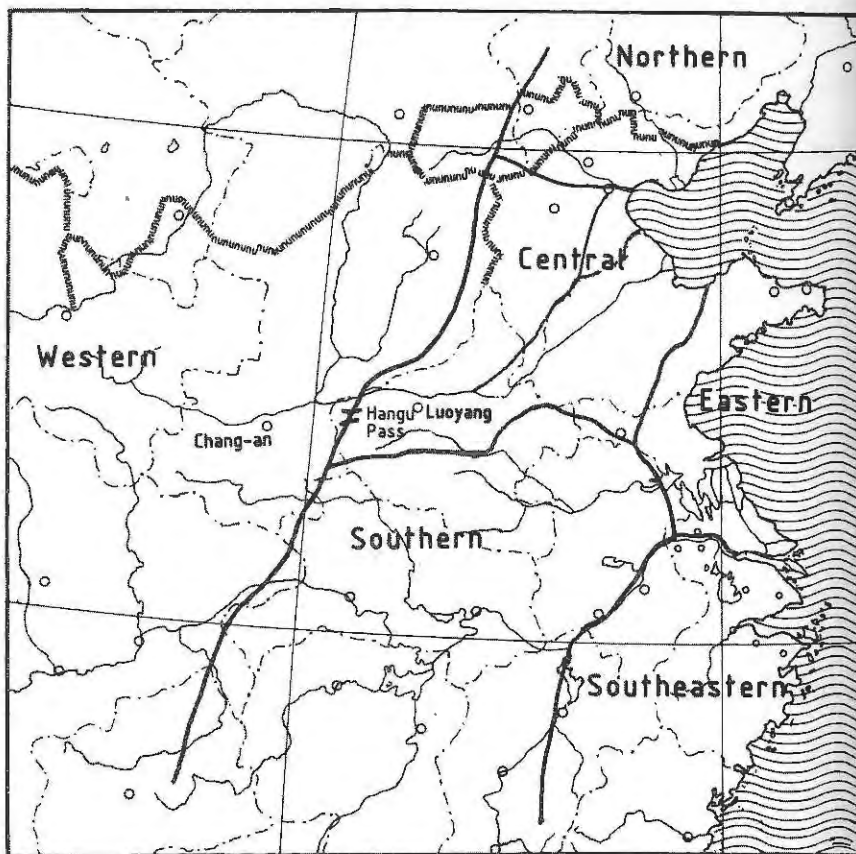


Map 1 Early EH dialect areas according to *FY*

(Based on Serruys 1959: Endpaper)

in which the passage occurs in Zhou (1951). Notes to the data follow each entry. The following abbreviations and conventional spellings are used in the data:

- | | |
|-------|---|
| alt. | Alternate form. These forms are introduced by the phrases <i>huo yue</i> 或曰 "some say . . .," <i>huo wei zhi</i> 或謂之 "some call it . . .," etc. |
| ChChu | Chen Chu 陳楚 |
| DgQi | Dong Qi 東齊 |
| G | Gloss word. Word used to gloss other words in a <i>FY</i> entry. |
| Gndng | Guandong 關東, <i>zi guan er dong</i> 自關而東, etc. |
| Gnxi | Guanxi 關西, <i>zi guan er xi</i> 自關而西, etc. |

Map 2 Major EH dialect groups according to *FY*

Guo	Guo Pu 郭璞 (276–324), author of the earliest extant <i>FY</i> commentary.
HD	Haidai 海岱
NChu	Nan Chu 南楚
QJin	Qin Jin 秦晉
SgLu	Song Lu 宋魯
SgWeih	Song Weih 宋衛
St.	Standard language form. These forms are referred to as <i>tong yu</i> 通語, <i>tong ming</i> 通名, etc. in the text.

1. 'abundant, luxuriant' 2/2
 - A. G: 豐 phjung < *phjangw
 - B. Gnxi, QJin: (1) 騰 mung, mung: < *muang, muang::; (2) (alt.) 騰 mǎng < *mruang
2. 'to aid' 6/7
 - A. Wu Yue: 齊 sjwo < *sjah
 - B. Bei Yan: 由 jiəw < *zəhw
3. 'angry' 2/20
 - A. Chu: 齷 yǎi- < *griat-
 - B. Chen: 苛 yâ < *gai
4. 'to arrive' 1/13
 - A. Bin Tang Ji Yanh: (1) 假 ka: < *krah::; (2) (alt.) 洛 kək < *krak
 - B. Qi and Chu (intermediate area): (alt.) 懷 ywāi < *grwəi
 - C. Song: 纒 kǎi- < *krət-
5. 'basket' 13/142
 - A. NChu, Jiang Mian: 筲 bəng < *brang
 - B. possible St. cognate: 籠 lung, lung: < *(g)luang, (g)luang:
6. 'basket for silkworms' 13/141
 - A. G: 籠 kjwo: < *kjah:
 - B. Jiang Mian: 箕 jiwo¹ < *zah
 - C. Zhao Dai: 簪 thâu < *thahw
 - D. NChu: 簾 lau:, lju: < *luah:, ljuah:
 - E. possible St. cognate: 簾 kjwo: < *k(l)jah:
 - 1) Guo reads WJ *zjo (> MC jiwo), and this reading is also given in *JY*.
7. 'beautiful (sc. physical appearance)' 2/4
 - A. SgWeih: 傑 jiäp < *zak/WH St. zap
 - B. ChChu, Ruying: 奕 jiäk < *zak
8. 'bed' 5/36
 - A. Qi Lu: 簾 tsek < *tsriak
 - B. ChChu: (alt.) 第 tsi:, tsi: < *tsrjəh:, tsrjiəi:
9. 'beverage, liquid' 3/7
 - A. G, Gnxi: 汁 tsjəp < *tjək/WH St. tjəp (< *(r)j-?)
 - B. Gndng: 協 yiep < *giak/WH St. giap
 - C. Bei Yan, Chaoxian, Lieshui: 斟 tsjəm < *tjəng/WH St. tjəm (< *(r)j-?)

10. 'big' 1/21
 A. St.: 于 ju < *gjuwah
 B. Qi Song: 巨 gjwo: < *gjah:
 C. Central Qi, Western Chu: 舒 xju < *hjwah
11. 'big (sc. human frame)' 1/12
 A. QJin: (1) 樊 dzāng: < *dzang:; (2) (alt.) 𠄎 tsjang- < *tsrjang-
 B. Yan (northern part), Qi and Chu (intermediate areas): 𠄎 tsjang, tsjang- < *tsjang, tsjang-
12. 'big, long (sc. human head)' 2/2
 A. Yan: 杼 djwo:, dźjwo:, dźjwo- < *drjah:, djah:, djak-
 B. Chu: 仔 jiwo¹ < *zah
 1) Guo reads WJ *zjo: (> MC zjwo:) for which we would posit WH *zjah:.
13. 'big, to boast (< make big)' 1/21
 A. Gnxi, QJin: 夏 ya: < *grah:
 B. Zhou Zheng: 𠄎 ka: < *krah:
14. 'broken, smashed (sc. a vessel)' 6/34
 A. DgQi: 破 phje, phje- < *phjiai, phjiai-
 B. NChu: 𠄎 phi, bi < *phjiəi, bjiəi
 C. possible St. cognate: 破 phwâ- < *phai-
15. 'cheerful, pleased' 3/13
 A. Gndng: (alt.) 𠄎 xieu: < *hiahw:
 B. Song Zheng Zhou Luo Han Wei: 𠄎 khwo: < *khah:
 C. DgQi, HD: 𠄎 yau- < *grakw-
16. 'a chess-like game' 5/41
 A. G, QJin: 𠄎 pāk < *pak
 B. Wu Chu: (alt.) 𠄎 pjāi- < *pjaiat-
17. 'chicken' 8/4
 A. G: 雞 kiei < *kia
 B. ChChu, Song Wei: 𠄎 bieik gie < *biak gjai
18. 'cicada' 11/2
 A. G: 𠄎 zjān: < *djā:
 B. SgWei: 𠄎 dāng dieu < *dang diəhw
 C. Chen Zheng: 𠄎 lāng dieu < *lang diəhw

19. 'clever' 1/2
 A. G: 慧 yiwei- < *giwət-
 B. Gndng, Zhao Wei: (1) 𠄎 yāt < *griat; (2) (alt.) 𠄎 kjwei: < *kjwəi:
20. 'to cover up' 6/43
 A. Jing Chu: 𠄎 ʔəm: < *ʔəng:/WH St. ʔəm:
 B. Wu Yang: 𠄎 ʔjäm: < *ʔjiang:/WH St. ʔjiam:
21. 'crupper' 9/17
 A. Gndng, Zhou Luo Han Zheng, Ruying: (alt.) 𠄎 khjwok dāu < khjuak dəhw
 B. Gnxi: 𠄎 djəu: < *drjəhw:
22. 'cuckoo' (1) 8/6
 A. G, Gnxi: 布穀 pwo- kuk < *pak- kuak
 B. Zhou Wei: 𠄎 kiek kuk < *kiak kuak
 C. Gndng, Liang Chu: 結語 kiet kâu- < *kiət kakw-
23. 'cuckoo' (2) 8/9
 A. Gndng: 戴鸛 tēi- nǎzjəm < *tək- njəng/WH St. njəm
 B. DgQi, HD: 戴南 tēi- nəm < *tək- nəng/WH St. nəm
 C. DgQi, Wu Yang: 鸛 nǎzjəm < *njəng/WH St. njəm
24. 'difficulty; to worry about (< consider difficult)' 6/6
 A. area east and west of the Taihang 太行 Mts., Jing Wu: 𠄎 tjān: < *trjā:
 B. QJin: 𠄎 dān- < *dā-
 C. Qi Lu: 𠄎 tšjān:, tšhjä: < *tjā:, thjä:
25. 'dove, pigeon' 8/8
 A. G: 鳩 kjəu < *kjəhw
 B. Gndng, outskirts of Zhou and Zheng, capitals of Han and Wei: 𠄎 lāng kâu < *lang kəhw
 C. Gnxi, area between Qin and the Han 漢 River: 𠄎 kjuk-gjuk kjəu < *kjək-w-gjək-w kjəhw
26. 'to draw out, extend' 6/35
 A. Qin: 𠄎 mjen < *mjiə
 B. Zhao: 𠄎 mjian < *mjiā
27. 'to end, come to an end' 6/47
 A. G, QJin (alt.): 𠄎 kjəng: < *kjiang:
 B. QJin: 𠄎 kəng < *kəng

28. 'to exaggerate, brag' 1/21
 A. Gnxi, QJin: (alt.) 僉 tshjam < *tshjang/WH St. tshjam (< **skh(1)jam?)
 B. DgQi: 劍 kjəm- < *kjang-/WH St. kjam- (< **kljamh)
 C. Qi: 槩 thjəm < *thrjəng/WH St. thrjəm (< **hljəm)
29. 'to expose' 7/15
 A. G: 暴 buk < *buak
 B. DgQi, Qin (western border areas), Yan (outer environs), Chaoxian, Lieshui: 膊 phāk < *phak
30. 'far, distant' 7/24
 A. Yan (northern outskirts): 劍 kieu, tsjäu < *kiahw, tjahw (< *k(r)j-?)
 B. DgQi: 超 thjäu < *thrjahw
31. 'to feed, raise' 1/5
 A. Jin Weih Yan Wei: 台 ji' < *zəh:
 B. Qin (alt.): 陶 dāu < *dəhw
 C. Ruying, Liang Song: 胎 thəi < *thəh
 1) Reading after Guo: WJ *zjəi > ji.
32. 'fierce' (1) 2/23
 A. G: 猛 məng: < *mrang:
 B. Qi Jin: 爽 sjang: < *smrjang:
33. 'fierce' (2) 2/23
 A. Jin Wei: 擗 ʔan: < *grā:
 B. Han Zhao: 梗 kəng: < *krang:
34. 'fire' 10/6
 A. G: 火 xwâ: < *hmai:
 B. Chu: 燥 xwəi:, kwân- < *hwəi:, kwā-
 C. Qi: 媯 xjwei: < *hmjəi:
35. 'firm, solid' 2/28
 A. Gnxi, QJin: 蹇 khāi: < *khrəi:
 B. Wu Yang, Jiang Huai: 韃 khiei: < *khiəi:
36. 'flail' 5/29
 A. Gnxi: (alt.) 拂 pjwət < *pjət
 B. Qi Chu, Jiang Huai: (alt.) 桴 bwət < *bət
37. 'a fly' 11/12
 A. DgQi: 羊 jiang < *zang
 B. Gnxi, QJin, ChChu: 蠅 jəng < *zəng

38. 'frame for silkworms' 5/31
 Song Wei, ChChu, Jiang Huai: (1) 曲 khjwok < *khjuak; (2) (alt.) 𦉳¹ khjuk < *khjəkw
 1) Guo identifies this word as the Chu dialect form in his day. It is thus possible that it should be compared with form (1).
39. 'to frighten, startle' 2/13
 A. Gnxi, QJin: 遑 thāk < *thrakw
 B. SgWeih, NChu: (1) 𦉳¹ sjak < *shjak; (2) (alt.) 𦉳¹ sjuk < *shjəkw (also read thəu- < *thuak- (?), sense of 'to jump')
40. 'to go' 1/14
 A. QJin: 逝 zjāi- < *djat-
 B. SgLu: 適 sjäk < *shjiak
41. 'good, nice' (1) 1/3
 A. G, St.: 好 xāu: < *həhw:
 B. Gndng, He Ji: (alt.) 姦 kau: < *krəhw:
42. 'good, nice' (2) 1/3
 A. QJin: 娥 ngā < *ngai
 B. Gnxi, former capitals of Qin and Jin: 妍 ngien < *ngiā
43. 'gossip, slander' 10/9
 A. St., DgQi, Zhou and Jin (intermediate area): 𦉳¹ lān lāu < *(g)lā ləhw
 B. NChu: (alt.) 𦉳¹ lān ləu~ləu: < *ljā luah~luah:
44. 'grass, weeds' 3/8
 A. Gnxi: (alt.) 芥 kāi- < *kriat-
 B. south of the Yuan and Xiang rivers: 葦 yāt < *griat
45. 'greedy, covetous' (1) 1/16
 A. G: 𦉳¹ ləm < *(g)ləng/WH St. *(g)ləm
 B. Chu: 貪 thəm < *thəng (< hləng?)/WH St. thəm (< hləm?)
 C. NChu, Jiang Xiang: 𦉳² khəm: < *khəng/WH St. khəm:
 1) Current *FY* versions write 𦉳¹; here emended after *FYSZ*. Cf. *SW* (*SWGL* 4739b) which states that north of Henei 河內 one said 𦉳¹ for 貪.
 2) Current *FY* versions write 𦉳²; here emended after *FYSZ*.
46. 'greedy, covetous' (2) 10/10
 A. G: 貪 thəm < *thəng (< hləng?)/WH St. thəm (< hləm?)
 B. Jing Ru, Jiang Xiang: (alt.) 悻 ljen- < *ljiā-

47. 'heavy' 6/9
 A. DgQi: 鎮 tien: < *tið:
 B. SgLu: 鍾 djwe, djwe- < *drjwai, drjwai-
48. 'hook' 5/26
 A. G, Gnxi: 鈎 kəu < *kuah
 B. Song Chu Chen Wei: (1) 鹿絡 luk kək < *luak krak; (2) (alt.) 鈎格 kəu kək < *kuah krak
49. 'to hurt; pain' 2/21
 A. Gnxi, QJin: 儻 tʃhek < *tshriak:
 B. possible St. cognate: 刺 'to prick' tsje-, tshjäk < *tshjiai-, tshjiak (Cf. 'to prick, stick' below.)
50. 'to jump' 1/27
 A. G, Gnxi, QJin: (1) 跳 dieu < *diəhw; (2) (alt.) 踏 tək < *tək/WH St. tək
 B. Chen Zheng: 躡 jiäu < *zahw
 C. Chu: (1) 躡 tsjäk < *tjiak; (2) 躡 thjäi- < *thriat-
51. 'kerchief' 4/42
 A. Gnxi, QJin: 絡頭 lâk dəu < *(g)lak duah
 B. NChu, Jiang Xiang: 帛頭 mək dəu < *mrak duah
52. 'knee covers' 4/5
 A. Jiang Huai: (alt.) 袂 pjwət < *pjət
 B. east and west of the Hangu Pass: 蔽鄰 pjiäi- sjet < *pjiat- sjiət
53. 'licentious, lewd' 10/11
 A. Jiuyi, Jing area: 遙 jiäu < *zahw
 B. Yuan Xiang: 窳 dieu: < *diahw:
54. 'locust' 11/7
 A. Song Wei: 蟻 dək,¹ thəi-² < *dək, thək-
 B. area beyond NChu: (alt.) 蠶 dəng < *dəng
 1) This reading is attested only in *JY*.
 2) Guo reads WJ *thəi- (> MC thəi-). This reading is also found in *JY*.
55. 'long' 1/19
 A. Gnxi, QJin, Liang Yi, HD, Daye: 尋 zjəm < *zjəng/WH St. zjəm
 B. SgWeih, Jing Wu: 融 jiung < *zəngw
56. 'to look at, peek' 10/45
 A. north of the Yangtze River, NChu (alt.): 謁 thjǟm < *thrijang-/WH St. thrijam-
 B. NChu: (alt.) 占 tsjǟm < *tjang/WH St. tjam

57. 'to love, pity' 1/6
 A. Han Zheng: 憐 mjwo:, xwo < *mjah:, hmah
 B. SgLu: 牟 mjəu < *mjəhw
58. 'many, exaggerate (< make many)' 1/21
 A. Qi Song border area: 夥 ywâ:¹ < *gwai:
 B. Gnxi, QJin: 夥² ywâ: < *gwai:
 C. possible St. cognate: 過 kwâ- < *kwai-
 1) *GY* also reads MC ywâi:. The reading may reflect a MC dialect which had preserved WH *-wai in this word.
 2) *GY* identifies this as a northwest dialect word for guo 過 'to pass, exceed, exaggerate'.
59. 'mat (bamboo)' 5/35
 A. G, Gnxi: 符簾 yāng dāng < *gang dang
 B. Gndng, Zhou Luo Chu Wei: 倚祥 ʔje: jiang < *ʔjai: zang
 C. beyond NChu: 簾 dāng < *dang
60. 'to meet, encounter' 1/29
 A. Gndng: 逆 ngjək < *ngjiak
 B. Gnxi: (alt.) 迎 ngjəng, ngjəng- < *ngjiang, ngjiang-
61. 'mound' 13/154
 A. QJin: (alt.) 墟 jiu < zuah
 B. Gndng: 墟 ləu: < luah:
62. 'odd, uneven' 2/12
 A. G: 奇 gje < *gjai
 B. Gnxi, QJin: 倚 ʔje: < *ʔjai:
 C. Liang Chu: 畸 khje < *khjai
63. 'old' 1/18
 A. G: 老 lâu: < *(g)ləhw:
 B. QJin, Chen Yanh: 考齡 kəu: thəi < *kuah: thəh 10/40
 C. NChu, Jiang Xiang: (1) 考 kəu: < kuah:; (2) 華 kək < *krək; (3) 穢 kǎi-
 -kjək səi < *krək--kjək səh
64. 'one, single' 12/111
 A. NChu: 蜀 zjwok < *djuak
 B. possible St. cognate: 獨 duk < *dük
65. 'to open' 6/50
 A. G: 開 khəi < khəi
 B. Chu: 闢 khəi, khəi:, khəi- < *khəi, khəi:, khət-

66. 'pained, anxious, sad' 1/9
 A. Ru: 怒 niek < *niək
 B. Qin: 悼 dāu- < *dakw-
67. 'pig' (1) 8/5
 A. G: 豬 tjo < *trjah
 B. Gndng: (alt.) 麩 djäi- < *drjat-
68. 'pig' (2) 8/5
 A. Gndng: (alt.) 豕 šje: < *shjiai: (< *hrj-?)
 B. NChu: 豨 xjei, xjei: < *hjəi, hjəi:
69. 'to pity' 1/7
 A. Qi Lu: 矜 gjen, kjəŋ < *gjiš, kjəŋ
 B. Zhao Wei Yan Dai: 憐 ljəŋ < *ljəŋ
 C. possible St. cognate: 憐 ljen < *ljiš
70. 'pole for suspending a silkworm frame' (1) 5/33
 A. G, Gnxi: 榷 djwe- < *drjwai-
 B. Song Wei, ChChu, Jiang Huai: 植 zjək, đī- < *djək, drjək-
71. 'pole for suspending a silkworm frame (horizontal type)' (2) 5/33
 A. Song Wei, ChChu, Jiang Huai: 榷 tāt- < *tat-
 B. Qi: 特 tək < *trək
72. 'to prick, stick' 3/11
 A. G, Gnxi: 刺 tshje-, tshjäk < *tshjiai-, tshjiak
 B. Bei Yan, Chaoxian: 刺 tshək¹ < *tshriak (Cf. 'to hurt, pain' above.)
 1) Karlgren (*GS* and *GSR* 868e) reads MC *tshje-*, which he attributes to *QY*. I have been unable to locate this reading in the *QY* versions and fragments.
73. 'to reach' 7/13
 A. G, St.: 逮 dāi- < *dət-
 B. Bei Yan: 噬 zjāi- < *djat-
74. 'to receive, hold, contain' 6/10
 A. Qi Chu: 含 yəm < *gəŋ/WH St. gəm
 B. Yang Yue: 含 khəm < *khəŋ/WH St. khəm
 C. possible St. cognate: 函 yəm < *gəŋ/WH St. gəm 'to envelop, contain'
75. 'ripe, well-cooked' 7/17
 A. Gnxi, QJin: 膾 nízi < *njəh:
 B. Xu Yang: 脍 níziəm: < *njəŋ:/WH St. njəm:

76. 'roof covering of a carriage' (1) 9/11
 A. Song Wei, ChChu: 簷 gjuwəŋ~khjwəŋ lung~lung: < *gjuwəŋ~khjuwəŋ (g)luwəŋ~(g)luwəŋ:
 B. Gnxi, QJin: 椽 kju: ləu~lju: < *kjuah: (g)luah:~(g)ljuah:
 C. NChu: (alt.) 隆屈 ljung khjwət < *(g)ljəwəŋ khjwət
77. 'roof covering of a carriage' (2) 9/11
 A. Xi Long: 椽 bjwən: < *bjā:
 B. NChu: 篷 bung < *buwəŋ
78. 'to separate, divide' 6/33
 A. QJin: 離 lje < *ljiai
 B. Chu: 離 lje, liei:¹ < *ljiai, liai:
 1) Guo reads WJ *liei- (> MC *liei-*), which we would reconstruct as WH *liai-.
79. 'sickle' 5/30
 A. G, Gnxi: 鉤 kəu < *kuah
 B. Jiang Huai, Eastern Chu: 鋤 kwā:, kwā- < *kwai:, kwai-
80. 'skirt, lower garment' 4/4
 A. Chen Wei: 褌 phje, phje- < *phjiai, phjiai-
 B. Gndng: (alt.) 褌 phje, phje- < *phjiai, phjiai-
81. 'small' 2/8
 A. Gnxi, QJin, Liang Yi: 私 si < *sjəi
 B. possible St. cognate: 細 siei- < *siəi-
82. 'son' 10/4
 A. G: 子 tsī < *tsjəh:
 B. confluence of the Xiang and Yuan rivers: 崽 sāi¹ < *srəh
 1) Guo reads WJ *sjəi (> MC *sī:*), which I reconstruct as WH *sjəh:.
83. 'spider' 11/16
 A. G, Gnxi, QJin: 蠶 tju mjəu < *trjuah mjəhw
 B. Gndng, Zhao Wei: (1) 蠶 tje tju < *trjiai trjuah; (2) (alt.) 蠶 tšjwək jiu~dzju < *tjuak zuah
 C. Bei Yan, Chaoxian, Lieshui: 蠶 duok jiwo < *dəkw zah
84. 'stupid, confused' 10/31
 A. G: 愚 xwən < *hmə
 B. Chu Yang: 愚 kwən, kwən: < *kwə, kwə:
 C. Jiang Xiang: 頓愚 twən- mjwən: < *twə- mjiš:

85. 'surplus, remainder' 1/4
 A. Jin Weih: 烈 ljät < *ljat
 B. QJin: 孃 ji- < *ziət-
86. 'to take' (1) 1/30
 A. Weih Lu, Yang Xu, Jing Heng: 擲 zjəm, dzəm < *zjəng, dzəng/WH St. zjəm, dzəm
 B. Gnxi, QJin: 擲 dzjwän- < *dzrjwä-
 C. Chu: (alt.) 擲 sjän < *shjä
87. 'to take' (2) 10/47
 A. G: 取 tshju: < *tshjuah:
 B. NChu: 擲 tsja:, dzja, zja: < *tsjiah:, dzjiah, zjiah:
88. 'to tremble, shudder' 6/8
 A. Jing Wu: 震 gjuwong kjwong:~yung < *gjuang kjuang:~guang
 B. possible St. cognate: 恐 khjwong: < *khjuang:
89. 'true, believe' 1/20
 A. G: 信 sjen- < *sjiã-
 B. Qi Lu: 允 jiwən: < *zwã:
 C. SgWeih, Ruying: 悔 sjwen < *sjwã
90. 'true, sincere' 7/11
 A. DgQi, HD: 展 tjän: < *trjä:
 B. Yan: 悻 twən, tsjwen < *twã, tjwã
91. 'twins' (1) 3/1
 A. G: 雙生 šäng şəng < *sruang srang
 B. Gndng, Zhao Wei: 孿生 şwan--sjwän- şəng < *srwã~srjwã srang
92. 'twins' (2) 3/1
 A. ChChu: 孿孿 ljī dzi- < *ljəh dzjək-
 B. QJin: 孿孿 ljän: tsi: < *ljã: tsjəh:
93. 'to want' 6/1
 A. Jing Wu: 聳 sjwong: < *sjuang:
 B. Jin Zhao: 校 (= 獎) tsjang: < *tsjang:
94. 'wildcat' 8/2
 A. G: 狸 bi < *bjiai
 B. ChChu, Jiang Huai: 狸 lei < *(g)ləh
 C. Bei Yan, Chaoxian: 貉 phji < *phjiəh
 D. Gnxi: 狸 ljī < *(g)ljəh

95. 'wily, deceitful' 2/37

- A. G, QJin: 狡 kwái-, kwai- < *kwat-, krwat-
 B. Chu Zheng: 狡 jwe: < *gjwai:

VI. Some preliminary comparisons

6.1 The data presented in this paper have been assembled with the hope that they may throw light on phonological features which distinguished the WH dialects. It is possible, even probable, that individual examples in the corpus contain evidence of this type. However, it is only when we find groups of two or more examples that we can begin to identify dialect features with any degree of confidence. Isolated examples, interesting though they may be, are of minimal value until some sort of corroboration for them can be found. It is with these points in mind that some preliminary comparisons are attempted in the present section.

6.2 In examining the *FY* text it becomes immediately apparent that the western dialects play a dominant role there. In gloss after gloss, where words from hither and yon are brought together, there is more often than not a western form given for comparison. Now, as we have seen in section IV (note 8), the western dialects seem to have formed a uniform and closely related group; and it is possible that comparisons between them and other dialects further east naturally suggested themselves to people of Yang Xiong's time. On the other hand, there can be little doubt that the presence in the west of the city of Chang-an, capital of China for over two centuries and cultural center for almost as long, had a great deal to do with the prominence given to western dialects in Yang Xiong's work. Indeed, it seems highly probable that the standard language of late WH times was in fact based on a dialect of the Qin Jin area.

In section V the possibility has been raised that the *FY* glossing words may in many cases represent the standard language of WH times. If this is so then many of these words may reflect current western usage as well. There are in fact a number of cases where this can be shown to be true (cf., for example, #s 9, 27, 48, 50, 59, 70, 72, 79, 83, and 95 in the data). In such instances the gloss words in question could, for the sake of argument, be taken as "pseudo-western" forms and compared with words from non-western areas. On the other hand, there are clearly cases where gloss words are different from the current western forms.¹⁴ Here one could consider them to be non-western words and compare them with the corresponding western forms. Both of these procedures will be used below. In all cases the gloss words will of course be identified as such.

Examples will be identified by number and English gloss and will be cited in a somewhat reduced form. MC forms are not given and WH forms are unstarred.

6.3 Initial Correspondences.

Western and "Gloss-Standard" voiceless consonants frequently correspond to voiced consonants in corresponding non-Western forms:

	Western		Central and Southern
9. beverage	汁 tjək/tjəp (< *k(r)j-?)		協 giak/giap
36. flail	柳 pjət		杼 bət
44. grass	芥 kriat-		藜 griat
92. twins (2)	子 (ljā) tsjəh:		孿 (ljəh) dzjək-
95. wily	獮 kwat-, krwat-		蕪 gjwai:
	Western		Northern
83. spider	龜 trjuah (mjəhw)		鱉 dəkw (zah)
	Western		Gloss
63. old	老 kuah (thəh)		老 (g)ləhw:
	Gloss		Central and Southern
17. chicken	雞 kiai		鶻 (biak) gjiai
67. pig (1)	豬 trjah		豕 drjat-
89. true	信 sjiā-		允 zwā

Western *z- corresponds to Central and Eastern */- in two examples:

	Western		Central and Eastern
61. mound	塚 zuah		塚 luah:
85. surplus	肄 ziat-		烈 ljat

On the other hand, Central *z- corresponds to "peripheral" (i.e. Southern, Western, and Northern) dental stops:

	Central		Peripheral
			North Central and Northern
6. basket	篋 zah		箬 thahw
			Southern
31. feed	台 zəh		胎 thəh
			Western
			陶 dəhw
			Western
50. jump	踰 zahw		跳 diəhw
			Southern
59. mat	蓆 (ʔjai:) zang		蓆 dang
			Western
			蓆 (gang) dang

Gloss-Standard *hm- corresponds to Southern velar + *-w- initial configurations in the following examples:

	Gloss		Southern
34. fire	火 hmai:		燂 hwəi:
84. stupid	懵 hmō		悞 kwō, kwō:

Western and Gloss-Standard *k- sometimes corresponds to *(g)l- or */- of other areas:

	Western		Central and Southern
48. hook	鉤 kuah		鹿 luak (krak)
	Western		Gloss
63. old	老 kuah: (thəh)		老 (g)ləhw
	Gloss		Southern
6. basket	篋 kjah; cf. also possible Standard cognate: 筥 k(l)jah:		簍 luah:, ljuah:

On the other hand, Western and Standard *(g)l- sometimes corresponds to non-Western labial stops:

	Western		Gloss
94. wildcat	狸 (g)ljəh		獾 bjəi
			Northern
			貉 phjəh
	Possible Standard Cognate		Southern
5. basket	篋 (g)luang		筥 brang

6.4 Medial Correspondences.

Western *-r- corresponds to non-Western -ø- in a number of examples:

	Western		Central, Southern, and Northern
9. beverage	汁 tjək/tjəp (< *k(r)j-?)		協 giak/giap
11. big	壯 tsrjang-		將 tsjang, tsjang-
21. crupper	紉 djəhw:		綯 (khjuah) dəhw
35. firm	錯 khrəi:		錯 khəi:
39. frighten	速 thrakw		透 thuak- ('to jump')
68. pig (2)	豕 shjiai: (< *hrj-?)		豨 hjəi, hjəi:
83. spider	龜 trjuah (mjəhw)		鱉 dəkw (zah), 蠚 tjuak (zuah)
	Western		Possible Standard Cognate
49. hurt	儼 tshriak		刺 tshjiai-, tshjiak 'prick'

In recent studies Mei (1979: 128; 1980) and Bodman (1980: 178) have suggested that the modern Min dialects can be suspected of having lost OC ****-r-** at a very early period. The examples cited above may indicate that **** -r-** losing" dialects already existed in eastern China during the late WH period.

Western ***-j-** corresponds to non-Western ***-ø-** in the following cases:

	Western	Central and Southern
21. crupper	封 drjəhw:	緇 (khjuak) dəhw
25. dove	鳩 kjəhw	鶻 (lang) kəhw
36. flail	拂 pjət	梓 bət
78. separate	離 ljiai	離 liai ¹⁵
	Western	Other
		Possible Standard Cognate
81. small	私 sjiai	細 siəi-
		Northern
83. spider	龜 trjuah (mjəhw)	鱒 dəkw (zah)

Here we may note Bodman's observation (1980: 178) that Proto-Min lost earlier ***-j-** in some cases.

6.5 Vowel Correspondences.

Western and Standard ***ə** corresponds to non-Western ***a** in a number of cases:

	Western	Other
		Central
26. draw out	緝 mjiā	緝 mjiā
50. jump	跳 diəhw	跳 zahw
55. long	尋 zjəng/zjəm	融 zangw
85. surplus	隸 ziət-	烈 ljat
		Guandong
9. beverage	汁 tjək/tjəp (< *k(r)j-?)	協 giak/giap
		Gloss
27. end	緝 kəng	竟 kjiang
37. fly	蠅 zəng	羊 zang
		Southern
50. jump	踏 tək/təp	蹠 tjiak
	Standard	Northern
73. reach	逮 dət-	噬 djat-

On the other hand, Western ***a** sometimes corresponds to non-Western ***ə**:

	Western	Other
		Southern and Central
28. exaggerate	僉 tshjang/tshjam (< **skh(l)-?)	緇 thrjəng/thrjəm (< **hljəm)
52. knee covers	蔽 pjiat- (sjiet)	袂 pjət
63. old	耄 kuah (thəh)	革 krək; cf. also Gloss: 老 (g)ləhw:
66. pained	悼 dakw-	怒 niək w
92. twins	健 ljā: (tsjəh:)	簾 ljəh (dzjək-)
		Northern
83. spider	龜 trjuah (mjəhw)	鱒 dəkw (zah)
	Possible Standard Cognate	Southern
14. broken	破 phai-	欸 pjiai, bjiai

Several of the Western forms in this list have the diphthong ***ua** rather than simple ***a**. Examining Western ***-ua-** in the data, we find that words with this diphthong have a number of correspondences with non-Western syllables having WH ***ə** or ***a** followed by final labio-velar consonants:

	Western	Other
		Central
22. cuckoo (1)	穀 (pak-) kuak	踏 (kiət) kakw-
		Northern
83. spider	龜 trjuah (mjəhw)	鱒 dəkw (zah)
	Western	Gloss
1. abundant	豐 muang; 麗 mruang	豐 phjangw
63. old	耄 kuah: (thəh)	老 (g)ləhw

Southern ***-ua-** vowel words can also be seen to have correspondences with non-Southern syllables having ***a** and ***ə**:

	Southern	Other
		Central and Standard
43. gossip	讕 (ljā) luah--luah:	啤 (lā) ləhw
93. want	贊 sjuang	獎 tsjang:
		Western
77. roof (2)	簾 buang	樁 bjā
		Gloss
6. basket	簾 luah:, ljuah:	簾 kjah:; cf. possible standard cognate: 筐 k(l)jah:
63. old	耄 kuah:	老 (g)ləhw:

On the other hand, there may be a tendency for Southern **a*-vowel syllables to correspond to Western and Standard words having **ua*:

	Southern	Western
79. sickle	鋤 kwai:, kwai-	鉤 kuah
	Southern	Gloss
87. take	担 tsjiah:, dzjiah, zjiah:	取 tshjuah:
	Southern	Possible Standard Cognate
5. basket	筲 brang	籠 (g)luang, (g)luang:

Here we may also mention the word *dang* 黨 (*tāng*: < **tang*:) which is identified in *FY* 1/1 as a Chu dialect word meaning 'to know, understand'. This may be cognate to the modern dialect form *dong* 懂 'to understand'. *Dong* does not occur in early texts, but hypothetical earlier reconstructions for it would be: MC *tung*: < WH **tuang*: < OC ***tungx*. Examples such as this bring to mind certain Min dialects where words with the MC final -*ung* (< * -*uang* < ** -*ung*) regularly have unrounded vowels derived from Proto-Min **a*, e.g.¹⁶

	MC	Proto-Min
蟻	mung:	*məŋ-b
銅	dung	*-dəŋ
公	kung	*kəŋ

6.6 Final Consonant Correspondences.

Western * -*h* corresponds to Central and Southern * -*k* in the following examples:

	Western	Central and Southern
48. hook	鉤 kuah	鹿 luak (krak)
63. old	考 kuah: (thəh)	革 krək ~ 鞞 krək-(səh)
83. spider	龜 trjuah (mjəhw)	蠍 tjuak (zuah); cf. also Northern 蠍 dəkw (zah)
92. twins	子 (ljā:): tsjəh:	孿 (ljəh) dzjək-

In several cases Western final consonants correspond to non-Western * -*i*:

Western Final -*t*

	Western	Southern
95. wily	獮 kwat-, krwat-	蕪 gjwai:
	Gloss	Central
19. clever	慧 giwət-	鬼 kjwəi:

Western Final Velars

	Western	Southern
79. sickle	鉤 kuah:	鋤 kwai:, kwai-
	Western	Gloss
94. wildcat	狸 (g)ljəh	獾 bjəi
	Western	Possible Standard Cognate
49. hurt	懷 tshriak	刺 tshjiai-; (n.b. also read tshjiak)

In three examples Western oral consonants correspond to non-Western nasals:

	Western	Other
		Northern
9. beverage	汁 tjak/tjəp (< *k(r)j-?)	斟 tjəŋg/tjəm (< *k(r)j-?)
		Eastern
75. ripe	脯 njəh	甞 njəŋg:/njəm:
		Central/Southern
76. roof (1)	枸簍 kjuah: (g)luah:	筲 籠 khjuang (g)luang

In the following cases Western open, nasalized finals correspond to non-Western finals ending in * -*ng*:

	Western	Southern and Central
77. roof (2)	樞 bjā	蓬 buang
86. take	晷 dzrjwā-	擗 zjəŋg, dzəŋg/zjəm, dzəm
	Western and Northwest	Mid Central
	Central	
33. fierce	攔 grā:	梗 krang:
	Gloss	Central
18. cicada	蟬 djā:	蟾 dang (diəhw)
	Possible Standard	Central
	Cognate	
69. pity	憐 ljīā	憐 ljəŋg

6.7 Tone Correspondences.

The following tendencies appear among tone correspondences in the data:

6.7.1 Western and Gloss Standard *ping* : Non-Western *shang*

	Western		Southern and Eastern
75. ripe	肺 njəh		任 njəŋ:/njəm:
79. sickle	鉤 kuah		鑷 kwai:, (kwai-)
	Western		Gloss
27. end	緝 kəŋ		竟 kjiang:
	Gloss		Southern
65. open	開 khəi		開 khəi:, (khəi, khət-)
84. stupid	憎 hmə		棍 kwə:, (kwə)

Cf. also,

	Central (Western Part)	Central (Eastern Part)
57. true	恂 sjwə	允 zwə:

6.7.2 Western and Gloss-Standard *shang* : Non-Western *ping*

	Western		Southern and Central
21. crupper	紂 drjəhw:		綯 (khjuak) dəhw
62. odd	倚 ʔjai:		踣 khjai
	Gloss		Southern and Central
18. cicada	蟬 djā:		蟬 dang (diəhw)
82. son	子 tsjəh:		崽 srəh
87. take	取 tshjuah:		祖 dzjiah, (tsjiah:, zjiah:)

Compare also,

	Central (Western Part)	Central (Eastern Part)
57. love	撫 mjah:, (hmah)	牟 mjəhw

6.7.3 Western and Gloss Standard *ping* : Non-Western *qu*

	Western		Southern
78. separate	離 ljiai		離 liai- ¹⁷
	Western		Gloss
81. small	私 sjəi		細 siəi-
	Gloss		Central and Eastern
67. pig	豬 trjah		豕 drjat-

6.7.4 Western and Gloss-Standard *qu* : Non-Western *shang*

	Western		Southern and Central
24. worry about	憚 dā-		憚 tjā:, thjā:
95. wily	獮 kwat-, krwat-		蕪 gjwai:
	Gloss		Central
19. clever	慧 giwət-		鬼 kjwəi:
89. true	信 sjiə-		允 zwə:

6.7.5 Western and Gloss-Standard *qu* : Non-Western *ru*

	Western		Southern
44. grass	芥 kriat-		藎 griat
52. knee covers	蔽 pjiat- (sjiat)		被 pjət
66. pained, sad	悼 dakw-		愨 niəkw
	Western		Central
85. surplus	隸 ziat-		烈 ljat
	Gloss		Central
19. clever	慧 giwət-		黠 griat

VII. Concluding remarks

In this paper a number of suspected *FY* cognates have been brought together in what is hopefully a convenient format. The comparisons in section VI are offered as indications of the sorts of studies which might be carried out on the *FY* data. Whether or not such comparisons can ultimately lead to phonological reconstructions seems uncertain. We must not forget that (1) the WH reconstructions arrived at for the various *FY* examples are already projections of projections (i.e. projections of the reconstructed MC system) and not "real" dialect forms, and (2) we are unable to say with certainty how the compilation of *FY* was done or what sort of phonological criteria Yang Xiong used in collecting and committing to writing the various dialect synonyms in the text. On the positive side, however, we may take heart in the fact that certain words in the data appear several times in the various tables in section VI, providing comparisons of more than one of the elements in the syllables in question and suggesting that real rather than imagined or fortuitous dialect correspondences are involved. The identification of such correspondences, while not necessarily leading to the reconstruction of proto-forms, may ultimately give rise to a comparative *Lautlehre* for Han and perhaps even earlier dialects. Tools of this type have enabled scholars in other areas, such as Indic and Germanic studies, to identify with considerable precision the temporal and regional origins of their texts. It is to be hoped that a better understanding of ancient dialectology

will eventually bring to sinology a similar level of philological control over early Chinese sources.¹⁸

Notes

- 1) A list of these studies will be found in the bibliography of the present paper.
- 2) The problem has also been reviewed by Knechtges (1977–8).
- 3) This discussion does not appear in Serruys (1959) and has unfortunately never been published.
- 4) Considerable controversy surrounds the authenticity of the “appended letters.” Serruys (1955) and Knechtges (1977–8) argue convincingly that they are genuine.
- 5) For *ji* 齏 Knechtges (op. cit., note 44) translates “provided myself” from the word’s basic sense, ‘to furnish’. I prefer to take it in the sense ‘to hold, take along with’ which is attested in various Han texts. It is of course possible that the latter sense is derived etymologically from the former one.
- 6) The syllables *qian* 鋏 and *zhe* 摘 here may be identifiable with the term *qianzhe* which occurs in Six Dynasties texts meaning ‘to correct with lead’. Lead was used as a correcting and erasing medium in Han times. On the use of *zhe* in the sense ‘to correct, put in order (< to pluck, prune?)’ see *SW* (*SWGL* 5430a-b).
- 7) The following conventional spellings are adopted for the names of two dialect areas: 衛 Weih, 兗 Yanh.
- 8) Serruys (1959: 80–81) remarks that the western dialects designated by the general term Guanxi, “West of the (Hangu 函谷) Pass,” form a fairly uniform block. On the other hand, the term Guandong, “East of the (Hangu) Pass” does not imply a unity of this sort, for it can refer either to the non-western dialects as a group or to smaller units limited by other eastern areas.
- 9) Serruys (1959: 86–87) notes that the position of Jin in the classification is somewhat ambiguous. Though it had been almost completely absorbed by the Qin dialect, occasional contacts reveal affinities with the northern and the northeastern dialects. For this reason he places it in both the western and northern groups. Luo and Zhou assign it exclusively to the western group, and I follow them.
- 10) Serruys (1959: 88) remarks that Wei has close affinities with the Zhou Zheng Luo Han group of central dialects.
- 11) Zhao seems to have been a pivotal area. Serruys groups it with the northeast dialects, while Luo and Zhou place it with Wei. In Serruys’ tabulation (1959: 87) it has eighteen contacts with Wei and the central dialects and thirteen with the northern and northeastern group. For this reason I tentatively place it with Wei among the central dialects. The point is problematical.
- 12) Huai and Xu seem to have occupied very much the same area. See Serruys (1959: 206, Map 4; and Endpaper).
- 13) One example of this type, #38, is cited in the data on the grounds that it may be possible to distinguish areally the forms cited in it.
- 14) This need not be viewed as contradictory. It would in fact be odd if the WH standard envisaged here contained no non-western elements at all, particularly in view of the cultural and political importance of eastern China in late Zhou times.
- 15) Guo Pu’s reading.
- 16) I am grateful to Professor Jerry Norman for supplying these Proto-Min forms.
- 17) Guo Pu’s reading.
- 18) As examples of the application of such methods to the study of early Chinese texts, see Luo and Zhou’s discussion of the authorship of the *Yilin* 易林 (1958: 89–97) and Long Hui’s study of previously unknown texts from Mawangdui (Long 1975: 28–31).

Signs and abbreviations

- * Reconstructed Han and WJ forms
- ** Reconstructed OC forms
- EH Eastern Han (A.D. 25–220)
- EY *Erya* 爾雅 (cited according to Harvard-Yenching Institute Sinological Index Series, Supplement No. 8, *Index to Erh Ya*. Reprint, Taipei, 1966)
- FY *Fangyan* 方言 (cited according to Zhou 1951)
- FYSZ *Fangyan shuzheng* 方言疏證 of Dai Zhen 戴震 (edition: *SBBY*)
- GS *Grammata Serica* (Karlgren, 1940)
- GSR *Grammata Serica Recensa* (Karlgren, 1964)
- GY *Guangyun* 廣韻
- HS *Hanshu* 漢書 (edition: *Zhonghua shuju*, Peking, 1965)
- JY *Jiyun* 集韻
- KGXB *Kaogu xuebao* 考古學報
- MC Middle Chinese or Ancient Chinese
- QHXB *Qinghua xuebao* 清華學報
- QY *Qieyun* 切韻
- SBBY *Sibu beiyao* 四部備要
- SW *Shuowen jiezi* 說文解字
- SWGL *Shuowen jiezi gulin* 說文解字詁林 (Ding 1928)
- WH Western Han (206 B.C.–A.D. 24)
- WJ Wei-Jin 魏晉 (264–419 A.D.)

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A NEW APPROACH TO CHINESE HISTORICAL LINGUISTICS

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The received model of Chinese linguistic history, and its associated historical linguistic methodologies, are found wanting in various respects. In particular, the latter field has become divorced from the study of actual spoken forms of Chinese of various places and periods and has instead focused almost exclusively on the exegesis of abstract sets or "systems" of philological data. A call is therefore issued for a new approach which refocuses the field on its appropriate object—the comparative and historical study of human speech in China.

Introduction

A STRIKING FEATURE OF SPOKEN Chinese is the large number of diverse forms in which it manifests itself. The historical record indicates that these divergent entities, called *fangyan* 方言 in China and usually referred to as "dialects" in the West, have been present since at least the first millennium B.C. They have been the warp and woof of Chinese linguistic history for over three thousand years. Indeed, a history of spoken language in China would by definition be an accounting of the development of the phonology, grammar, and lexicon of the Chinese dialects, from their earliest recoverable stages to the present.

The story of the dialects is intimately connected with the political and social history of the Chinese people. In particular, the complex process through which the Chinese have moved out of their original base areas in north China to settle in other regions has left an indelible stamp on linguistic history. In order to study dialect history it is necessary to develop and refine a historical model for language movement and change in China.

The traditional model of Chinese linguistic history

The first full-blown model for Chinese linguistic history was propounded by Bernhard Karlgren. This scheme has been enormously influential among Sinologists

during the last seventy years, and it is therefore worthwhile to examine carefully both its explicit propositions and its implied assumptions. It reached its final and most mature form in Karlgren's *Compendium of Phonetics in Ancient and Archaic Chinese* (1954), and it is to this source that we shall now turn.

The centerpiece of Karlgren's model is his "Ancient Chinese." On this topic he says (p. 212):

By "Ancient Chinese" we designate the language around 600 A.D. codified in the dictionary *Ts'ie yün*, essentially the dialect of Ch'ang-an in Shensi; during the lapse of the T'ang era it became a kind of Koine, the language spoken by the educated circles of the leading cities and centres all over the country, except the coastal province of Fukien.

In a footnote this is elaborated as follows:

It stands to reason that the lowest strata of the population in various provinces to a large extent preserved their vulgar dialects and that traces of these "pre-T'ang" dialects are still discernible in various t'u-hua vernaculars. But the Koine was sufficiently widespread and accepted by a sufficiently large proportion of the population, from the highest officials down to the lower middle class, to have become the ancestor of nearly all the present dialects (except the Min dialects in Fukien and adjacent regions). The remarkably close correspondence between the sound categories in the *Ts'ie yün* and those in each modern dialect conclusively shows that the *Ts'ie yün* depicts a real living and homogeneous language and was not an artificial product, a compromise and *mixtum compositum*, made up of heterogeneous elements from various dialects, as stated by many recent writers.

Moving backward, we have at an earlier stage "Archaic Chinese," about which Karlgren remarks (*loc. cit.*):

Archaic Chinese, . . . means the language of the Honan region during the first Chou centuries (from 1028 B.C.). It is revealed partly by the rimes in the Book of Odes (*Shi king*) and other early texts, partly by the *sheng* characters . . .

And further we find (p. 271):

In going back to Archaic Chinese in order to attempt to reconstruct its sound system, we naturally have to base ourselves on the Ancient Chinese just reconstructed. The modern dialects do not on the whole reveal anything which is prior to the *Ts'ie yün* in the Sui dynasty (the Min dialects alone sometimes point further backwards).

To begin, we note Karlgren's deep concern with phonology. Though he views his Archaic Chinese and Ancient Chinese as real, spoken dialects, for him it is *phonological systems* that define these dialects and give them their real identity in his work. What Karlgren thought about the grammars and lexicons of these particular dialects we do not know, because he seldom mentioned such questions. In any case, practically speaking, Ancient Chinese and Archaic Chinese were for Karlgren phonological systems in the abstract rather than "languages" in the concrete sense of the word.

Karlgren clearly states that his Ancient Chinese is the dialect of the city of Chang'an 長安 in southern Shaanxi in ca. 600 A.D. Archaic Chinese, on the other hand, is the language of the Hernan area in ca. 1000 B.C. The former is treated as directly descended from the latter. Or, more literally, the *sound system* of the medieval Chang'an dialect is "naturally" to be taken as the basis for reconstructing the *sound system* of the Jou-time Hernan dialect. Thus, the two are viewed by Karlgren as if they were different stages in the history of the same dialect.

Karlgren held that contemporaneous with Ancient Chinese there were outside of Chang'an "vulgar dialects" in other areas, but the pre-T'ang history of these dialects does not form part of his historical model. He flatly states that the Chang'an dialect became a koine during the T'ang period. It is important to note here that this supposition does not seem to be based on historical accounts concerning such a koine, contemporary or later references to it in early sources, etc. On the contrary, its existence is inferred from correspondences between the reading pronunciations of characters in the modern dialects and the sound categories of the *Chieh-yün* 切韻. And again it is worth noting that, practically speaking, this koine seems to be viewed by Karlgren as a sound system rather than a full language. The grammar of the koine is never mentioned, and its lexicon is apparently indistinguishable from the large corpus of characters in the *Chieh-yün* dictionary.

Karlgren's discussion of the T'ang koine involves a number of sociological and sociolinguistic assumptions that deserve notice here. For example, he explicitly states that Chinese society of T'ang times possessed an upper class, consisting of "the highest officials," and a "lower middle class." Between these he presumably also assumed at least a middle and/or an upper-middle class, and below the lower-middle class there were, at the least, the "lowest strata of the population." And there is in his treatment of these matters an implicit assumption that these social classes possessed unique speech habits. The picture he envisages is therefore not unlike what one might encounter in a northern European country in the late nineteenth century. How well it corresponds to historical and sociological reality in T'ang China remains problematical.

Karlgren states that the T'ang koine was adopted by everyone down to the lower-middle class, while the lowest strata "to a large extent preserved their vulgar dialects." Eventually, however, the koine would seem to have somehow overcome and supplanted the "vulgar dialects" so that now only "traces of these 'pre-T'ang' dialects are still discernible in various t'u-hua vernaculars."

“Discernible,” it would seem, because they are irregular, i.e., they do not agree with the sound classes of the *Chiehyunn* system. What is “regular” is what agrees with the *Chiehyunn* system. This regular material is derived from the koine; and the existence of the koine is itself predicated on the existence of the regular material.

In summary, then, Karlgren’s historical model posits Archaic Chinese as the dialect of Hernan in 1000 B.C. This language is viewed as the direct origin of the Charng’an dialect of 600 A.D., called Ancient Chinese. Ancient Chinese became the Tarng koine, which then supplanted most other current vernaculars, first in the lower-middle and higher classes and later more generally. The study of Chinese historical phonology is then the study of the development of Archaic Chinese to Ancient Chinese and of Ancient Chinese to the “non-vulgar” elements of the modern dialects.

Modifications and reformulations of the traditional model

Karlgren’s model has undergone certain modifications during the four decades after it reached its final form. First, the view of Archaic Chinese, now more often called “Old Chinese,” has been broadened from its originally rather narrow base. For example, F. K. Li suggested that it was the language of the north China plain in Jou times (Li 1983), which would presumably allow it to be ancestral to a fairly large number of subsequent speech forms used in this broader geographical area. More recently, Baxter (1992: 24) defines Old Chinese as “any variety of the Chinese of early and mid Zhōu” and remarks that “we can speak of dialects and stages of Old Chinese.” This view of Archaic/Old Chinese is, of course, much broader than that of Karlgren. But in the same passage Baxter speaks of “the reconstruction of Old Chinese” as a task specifically and exclusively concerned with phonological studies, indicating that Karlgren’s primary concern with phonology still holds sway in current models of Chinese linguistic history.

Karlgren’s concept of Ancient Chinese has been directly challenged by later authorities. First of all, it is now universally accepted that the *Chiehyunn* cannot reflect the Charng’an dialect of 600 A.D. On the contrary, it seems to be associated with the dialects of several different cultural centers of east central China, namely Luohyang 洛陽, Yeh 郢, and Jinling 金陵 (modern Nanking). A small minority of scholars believes that the Luohyang dialect is the specific basis for the system. Most others view it as a maximally differentiated compromise between the reading traditions of all three areas, further complicated by the inclusion of distinctions attested in various earlier rime dictionaries. As they stand, these views seriously contradict the flow of the Karlgrenian model, because, if the Tarng koine is presumed to derive from Charng’an, then the *Chiehyunn* system cannot be the basis for the Tarng koine.

This point in turn leads us to a more detailed consideration of Karlgren’s position and involves the famous rime tables of Song times. Karlgren was

primarily interested in only one of these, about which he has the following to say (p. 215):

... a brilliant Sung scholar, the famous Sī-ma Kuang, has given a fine survey of the sound system in his own language in the form of a series of Sound tables, called Ts’ie yün chī ch’eng [sic] t’u (A.D. 1069). The language which these tables reveal is far advanced, in the evolution, from that of the Ts’ie yün; above all, a great simplification has taken place, so that e.g. two or several Ts’ie yün finals (well distinguished both by rimes and by fan-ts’ie) have coincided in Sī-ma’s language. But the tables are very valuable indeed, for when the same distinctions in categories are observable in them as in the Ts’ie yün, we may reasonably expect that the phonetic ground for these distinctions is the same for both.

Karlgren’s ascription of the *Chiehyunn Jyyjaangtwu* 切韻指掌圖 to Symaa Guang 司馬光 is not accepted today, but this is really beside the point here. What is important is his general view of rime tables. First, he considered a rime table to be a “survey of the sound system” of the author’s *own language*, rather than an analysis of the *Chiehyunn* system per se. Secondly, however, he felt that, where the same distinctions are found in a rime table as in the *Chiehyunn*, “the phonetic ground for these distinctions is *the same for both*” (emphasis added). That the phonological systems revealed in the rime tables should be directly descended from the *Chiehyunn* system is a reasonable assumption from Karlgren’s standpoint, because later dialects are held by him to derive from the Tarng koine, which in turn comes from Ancient Chinese. But why the same phonetic grounds should necessarily be assumed for parallel distinctions in different periods remains unclear. Nevertheless, this was Karlgren’s position, and he held to it in his reconstructive work.

Subsequent generations of Chinese historical phonologists have replaced the *Chiehyunn Jyyjaangtwu* with the *Yunnjing* 韻鏡. The earliest known editions of this work date from the late twelfth century, or nearly 600 years after the *Chiehyunn*. The authorship, age, and place of origin of the *Yunnjing* are unknown. In general, the text has been used by subsequent workers in Ancient (now usually called “Middle”) Chinese studies in much the same way that Karlgren prescribed for the *Chiehyunn Jyyjaangtwu*. Karlgren’s idea that the sound tables were, in reality, based on their authors’ own languages rather than on the “*Chiehyunn* language” tends to be passed over in virtual silence in favor of a tacit position that the *Yunnjing* may serve as a sort of guide to the *Chiehyunn* system. But this does no harm to the general Karlgrenian approach because Karlgren himself had said that distinctions common to both sources should represent the same phonetic realities. Thus, those who utilize the *Yunnjing* as a sort of latticework through which to view the *Chiehyunn* have tended to forge ahead with little or no comment on the actual historical relationship between the two systems. An exception to this, however, is E. G. Pulleyblank, who has attempted a reformulation of the

Karlgrenian position (1984). With just about everyone else today, Pulleyblank rejects the notion that the *Chiehyunn* system reflects the Charng'an dialect of any period. But he accepts Karlgren's hypothesis that there was in fact a Tarng koine and that it derived from Charng'an. And he further holds that the *Yunnjing* is based on this Tarng koine and thus on the Charng'an dialect. Indeed, he fully adopts Karlgren's original stance that the rime tables are a "phonetic analysis" of this dialect (p. 68). And finally, he believes that, although the *Chiehyunn* system, which he calls "Early Middle Chinese," and the *Yunnjing* system, which he calls "Late Middle Chinese," had different dialect bases and different lines of historical development, they can nonetheless be treated as if the latter had evolved directly from the former (p. 130). Thus, Karlgren's original link between the *Chiehyunn* and the rime tables is maintained and the rime tables in turn are enlisted to provide the crucial connection to the Tarng koine. To this is then added an endorsement of the role of the koine as ancestor of all modern dialects save Miin (p. 63). Thus, in Pulleyblank's work the basic structure of the Karlgrenian model is rescued from its historical and geographical inaccuracies, buttressed with some of Pulleyblank's own theories, and in the end preserved in all its essentials. In its new reformulation it can justifiably be called the neo-Karlgrenian or even the Karlgren/Pulleyblank model.

Problems in the neo-Karlgrenian model and its associated methodology

The neo-Karlgrenian Model can be broken down into a number of discrete claims (A through D, below) concerning the nature of the *Chiehyunn* system and the origin of the Chinese dialects.

A. *There was in early medieval China a real, living language (Ancient Chinese or Early Middle Chinese), which was essentially identical to that codified by Luh Faayan 陸法言 in the Chiehyunn dictionary.*

What did Luh Faayan actually codify in the *Chiehyunn*? The *Chiehyunn*, as is abundantly clear from its preface, was chiefly based on earlier dictionaries. These dictionaries were in turn based on the glossing tradition of the post-Hann period. Although all the rime books mentioned in Luh Faayan's preface are now lost, they were undoubtedly, for the most part, practical handlists of character readings employed by teachers and students of the time. In working over this material, Luh Faayan probably took into account the elegant reading pronunciations employed in the north and the south. The result was naturally a composite phonological inventory containing elements from earlier periods as well as elements from different regions of China.

It is interesting to note that such a view has prevailed in China for a long time, as the following citations illustrate.

Luo Charngeir 羅常培, in his 1933 work *Tarng wuuday shibeei fangin* 唐五代西北方音, expresses himself in this way:

Moreover, by nature the *Chiehyunn* was originally a phonological inventory that lumped together elements from north and south and earlier and contemporary sources. Although it was comprehensive as regarded contemporary dialects there was no single dialect with which it agreed completely.

(Luo 1933: 1)

Luh Jyhwei 陸志韋, in his book *Guuin shuoliueh* 古音說略 (1947), said the following:

Karlgren has a third defect. He resolutely maintains that the *Chiehyunn* represents a koine [guanhuah] of Luh Faayan's time, and that moreover it was the dialect of Charng'an. It is abundantly clear from the *Chiehyunn* preface that this book is a composite of north and south and of ancient and contemporary elements and that it was not based on Luh Faayan's individual views. The *faanchieh* were copied from rime books of the Six Dynasties period.

(p. 2)

A few pages later he adds,

The *Chiehyunn* represents a summa of Nanbeeichaur Chinese and does not represent any single dialect.

(p. 3)

The next citation is from Chen Ynkeh's 陳寅恪 1949 article "Tsorng shyysyhyr lunn Chiehyunn" 從史實論切韻:

Luh Faayan himself relates that his book was written using the record of his discussions with Liou Jen and seven other people as a criterion for selecting among the rimes of various authors and determining the merits of older and more recent dictionaries. For this reason, the phonological system of this book [*Chiehyunn*] was certainly not a dialect in current use at one particular time and place.

(1949 [1974]: 574)

Later, Kun Chang and Betty Shefts, speaking from the same intellectual tradition, observe:

The *Ch'ieh-yiin* does not represent the Ch'ang-an dialect, nor did its author intend that it should. They aimed not at representing one coherent, natural system but rather at synthesizing a number of systems set forth

earlier in such varied dictionaries as those of Lü Ching, Hsia-hou Yung, Li Chi-chieh, and Tu T'ai-ch'ing.

(1972: 2)

Finally, let us quote Wang Lih 王力 in his last published work, *Hannyeu yeuin-shyy* 漢語語音史:

The *Chiehyunn* does not represent at all the phonological system of a single place and time. Luh Faayan himself said, "the rimes accepted in Jiangdong and Herbee are different; so we discussed the merits of north and south and what was permissible formerly and at the present time; we wished to select what was refined and precise and to eliminate what was coarse and imprecise. Most decisions were made by Yan [Jytuei] and Shiao [Gai]." Very clearly the *Chiehyunn* is by nature a book concerned with preserving ancient elements.

(1985: 5)

Later in the same work he says,

Formerly some said that the *Chiehyunn* phonological system was the system of the Swei-Tarng period. In fact, the *Chiehyunn* does not represent the system of a single place and time.

(p. 165)

From these quotes it is evident that, for more than fifty years, a strong current of thought in China has viewed the *Chiehyunn*, not as the record of a dialect of a particular place and time, but as a kind of composite phonological inventory based on earlier works and different regional usage.

It would appear then that the *Chiehyunn* represents the culmination of a tradition, the phonological glossing tradition of the northern and southern dynasties. It was a canonization of tradition and not a new departure. It was, in fact, a profoundly conservative work. It may well be, as Jou Tzuumo 周祖謨 has suggested, that the late Nanbeeichaur reading pronunciation taught in Jinling was a particularly influential factor in the compilation of the *Chiehyunn*, but this does not rule out the strong likelihood that it depended extensively on earlier rime books. In fact there may well be something to the view espoused by Chen Ynkeh and later by Shaw Rongfen 邵樂芬 that in some sense the *Chiehyunn* represents the dialect of Luohyang. After all, the scholars of sixth-century Jinling, it is generally agreed, were descendants of the officials and scholars who fled from Luohyang at the end of the Western Jinn. Luohyang, the old capital, as W. J. F. Jenner has pointed out, "conjured up images of splendor and high civilization" long after it had ceased to be a capital and had become no more than a country town. "Like Jerusalem or Rome, Loyang was as much a symbol as a real place" (1981: 45). Thus, when Yan Jytuei 顏之推 in the "Intsyrt" 音辭 chapter

of his *Yanshyh jiashiunn* 顏氏家訓 referred to Luohyang and Jinling as the two standards of refined usage, it was not the real Luohyang of his day but this symbolic Luohyang which lived on as a norm of cultural judgement and ideal of refined usage long after its destruction in 311. The Jinling dialect he referred to was not the common everyday language of the man on the street but a learned book pronunciation taught in schools.

It seems clear that the *Chiehyunn* does not represent a record of any spoken dialect of a certain place or time; it is rather an inventory of a tradition of phonological glossing. As such, the *Chiehyunn* system is not really a language in any common sense of the term. Not only does it not provide us with a consistent phonological system that can be pinpointed in time or space, it is not the lexicon of any particular dialect. It includes together, indiscriminately, words from texts of all periods without any indication of which of them were actually current in any living form of speech. Furthermore, there are no texts in anything that we could call "Ancient Chinese," if by this we mean texts that reflect even in a remotely complete way the form of any contemporary language. In the absence of such texts, "Ancient Chinese" has no linguistic structure.

The conclusion must be that Ancient Chinese (or Early Middle Chinese, which is only another name for the same thing) has no proper phonology of its own, no lexicon and no grammar. It is not a language.

B. A later, redefined Ancient Chinese (Late Middle Chinese), was the dialect of the Tarng capital Charng'an and was codified in the Yunnjinq sound tables.

There seems to be no historical basis for this claim at all. The temporal and regional origins of the *Yunnjinq* are obscure in the extreme. We have no "Yunnjinq Preface" to tell us who wrote the text or why. No contemporary or later Chinese source has ever associated the *Yunnjinq* with either Charng'an or the early northwest dialects in general. The dialectal foundation of this text, if indeed such a thing can ever be determined, is a topic for future research rather than an established fact on which assumptions about the dialect of the Tarng capital can be based.

C. The Tarng Charng'an dialect in the course of the dynasty became a koine which spread to all parts of the empire and, by and large, replaced the pre-Tarng dialects.

As shown above, the *Chiehyunn* system was not based on the dialect of Charng'an. Pulleyblank, who agrees with this position, nonetheless still contends that all modern Chinese dialects with the exception of Miin derive from a Tarng koine based on the dialect of Charng'an, but that this dialect is reflected not in the *Chiehyunn* but in later sources, chiefly the rime tables. In his view, the present dialectalization of China can be traced back to a Charng'an-based koine of the eighth and ninth centuries.

Curiously no one ever adduces any historical evidence for either of these views. In Chinese historical linguistics there has been a strong tendency to assume that the administrative lingua franca (called *guanhuah* beginning in the Ming dynasty) was necessarily based on the dialect of the current capital. But, as an interesting case in point, recent work by Luu Gwoyau (1985) and Paul Yang (1989) has shown that the Ming and Ching *guanhuah* was actually not based on the local dialect of the capital, Beeijing, but was a variety of Southern (Jiang-Hwai 江淮) Mandarin. In fact, the common administrative languages of the past are what we might call "floating norms" that derive their cohesiveness only from the practical requirement that they allow officials from various parts of the country to communicate with one another. Furthermore, even if the Chang'an dialect of Tang times enjoyed considerable prestige, being the dialect of the capital city, this by no means shows that it replaced all the other regional dialects of the time. Chang'an was capital of China for a period of 326 years in the Swei-Tang period. Beeijing was capital for 490 uninterrupted years in the Ming and Ching dynasties, yet despite a policy of strong centralization in both the Ming and Ching periods, the dialect of Beeijing seems to have had very little influence on local dialects. Now, compared to the Ming or Ching, the Tang was probably not really all that strong a dynasty for a significant portion of its history. After the An Luhsat rebellion it was in fact somewhat sickly (Twitchett 1979: chap. 8). The question of how greatly the Chang'an dialect influenced local vernaculars in the Swei-Tang period is in need of serious re-evaluation.

And at this point one might well ask how apt Karlgren's koine analogy is in the first place. In his *Etudes sur la phonologie chinoise* (1915-26: 693, note 2) he says:

Chinese thus offers an interesting parallel to Greek, almost all of whose modern dialects derive from the Hellenistic koine, while virtually all the dialects of the classical period had disappeared.

Subsequently Karlgren uses this analogy in several of his writings. But is the Greek koine really an appropriate model for Chinese linguistic history? We believe it fails on several accounts. The Greek koine was formed in the fourth century B.C. and spread by the armies of Alexander the Great in the same century. In the cities, dialectal Greek disappeared in the two centuries before the Christian era. In Greece proper (but not in the diaspora), and particularly in remote areas of the Peloponnese, dialect speech, or a form of koine heavily colored by dialectal features, persisted for several centuries (Browning 1983). Karlgren posits a Chinese koine based on the dialect of Chang'an, spreading through China in the seventh century A.D.; Pulleyblank's model dates the koine's spread even later—after the eighth century. In both these models modern Chinese dialectal diversity develops in a time frame of eleven or twelve centuries, while in the much better documented Greek case, modern dialect diversity has come about in a time frame of more than twenty centuries. Moreover, modern Greek dialects are said to be by and large mutually intelligible (Browning 1983: 2). On the other hand, modern

Chinese dialects, even when Miin dialects are excluded from consideration, are highly diverse and by no means all mutually intelligible. Could all this diversity really have developed in the short time span allowed by Karlgren and Pulleyblank? One wonders, in the light of these considerations, how valid and pertinent the koine analogy really is.

Another aspect of this problem has, to our knowledge, never been discussed seriously. It may be true that the phonological categories of the vast majority of non-Miin dialects can be organically derived from the *Chieh-yunn* categories, as Karlgren claimed. It may also be true that they can be derived from what Pulleyblank calls Late Middle Chinese, which he has reconstituted on the basis of the rime tables. Thus, the crux of Pulleyblank's criticism of Karlgren's model would seem to be the observation that the phonological categories of most modern dialects can in actuality be derived from a system simpler and presumably later than that codified in the *Chieh-yunn*. But why stop with the phonological inventory deduced from the rime tables? The modern dialects can in fact be derived from a still simpler inventory, something very similar to Y. R. Chao's "General Chinese," a system constructed by a working back from the dialectal categories themselves (Chao 1983). To be sure, Chao probably never intended his General Chinese to be viewed as the reconstructed ancestor of the mainline Chinese dialects, but in the end it turns out to be a better candidate for this role than either Karlgren's Ancient Chinese or Pulleyblank's Late Middle Chinese. The real question then is, if most Chinese dialects derive from a relatively simple phonological system, simpler than either Karlgren's Ancient Chinese or Pulleyblank's Late Middle Chinese, when did this simplified system first come into being? Written sources like the *Chieh-yunn* and the rime tables are not very helpful here because of their archaizing tendencies. They will always cause us to date many important phonological shifts later than the time when they actually occurred.

D. *The modern Chinese dialects, with the exception of the Miin dialects, are the organic descendants of "Ancient Chinese" (or some later, simplified version of it).*

It will by now be clear that we reject this claim. Modern spoken forms of Chinese come from an earlier spoken popular form of Chinese, but, as we have seen, the *Chieh-yunn* inventory does not in any way represent a spoken dialect of a particular time or locality; moreover, there are no documents contemporary with the *Chieh-yunn* that give a reliable picture of a current living form of speech.

The fact that the phonological categories of a very large number of Chinese dialects can be shown to have a definite and, by and large, regular relationship to the *Chieh-yunn* system, does not mean that it is the origin of the modern Chinese dialects. The Romance languages show a similar relationship to Classical Literary Latin, yet there is universal agreement that the Romance languages descend not from this classical literary language but from a form of spoken or "vulgar" Latin. The same is true of Chinese: the modern vernacular forms of Chinese come

not from the codified phonological inventory of the *Chiehyunn* but from a living, spoken form of early Chinese. Since there is no written record of this language, it will have to be reconstructed inductively from modern dialect forms.

The new historical model and its methodological implications

The new historical model required for a balanced and realistic study of Chinese dialect history is a dynamic one. Its major themes are evolution and growth in northern base areas, accompanied by movement out of these areas into new ones, primarily to the south. The ultimate origin of Chinese, as interesting as this question is, is not of immediate concern to us here. For the study of historical dialectology we require a model for the development of Chinese after the inception of its history. In early periods Chinese of various types was spoken in an area stretching from the north China plain westward into the more rugged areas covered by modern Shanshi and Shaanshi. And we are by no means ignorant of the dialectal divisions in this base area, at least as they existed around the beginning of our era. Areas to the south are thought to have originally been inhabited by speakers of non-Chinese languages, but from very early times the Chinese, bringing with them their dense and intensive settlement and land-use patterns, were pressing towards these southern areas. And, after the great Chyn-Hann imperial unification there began the first of what would be many large-scale migrations from north to south. We may assume that the earliest such penetrations implanted Chinese from the north in areas where the language had not been spoken before. But each subsequent movement into the same area would have brought later forms of more northerly dialects into contact with now well-established earlier importations. And the process would have continued century by century, as the frontiers were pushed further and further into new areas. Developments in each area would have been unique, but the ultimate effect of this process of accretion would have been the development of multiple vocabulary layers reflecting waves of influence from different regions and periods.

Let us now consider the methodological implications of this model. To begin, it seems clear that we must at the outset develop a detailed, finely etched picture of northern dialect history. Every effort must be made to identify and trace linguistic developments in the north, with processes of internal migration, mutual influence, and convergence given special attention. If the north was the springboard for the Chinese movement into the south, then it is essential that we clarify wherever possible the detailed linguistic make-up of this springboard in successive periods. Throughout history, the north, with its succession of capitals and cultural centers, has produced written materials that may in one way or another reflect linguistic history. But, at the same time, strong literary traditions have had a tendency to collapse linguistic features of different periods and areas into chronologically and geographically anomalous "standard" entities which, by their very nature, have tended to efface the true lines of dialectal development. In our work, we must seek a carefully balanced blending of the classical comparative method with the judicious use of written materials.

Wherever we can identify temporally and geographically reliable pre-modern dialect materials, we should use these sources to the fullest. But we must also ruthlessly exclude anything whose periodization and areal origins are suspect.

Moving from the north to the southern dialects will be a complex and difficult step. Here, written materials are few and late, and we must rely heavily on the comparative method, combined with the study of migration patterns and settlement history. And the work will be severely burdened and complicated by the presence of the large-scale vocabulary layering mentioned above. But in dealing with these problems we will have at hand a powerful tool in our newly gained understanding of northern dialect history. For the picture we will have developed for the north will give us firm standards by which to evaluate what we find in the complex layers of the southern dialect lexicons. Our task will be similar to that of establishing stratigraphy in archaeological excavations or of using dendrochronology to identify and periodize climatic changes.

Further methodological considerations concern the nature and goals of our selection and analysis of dialect data. In this connection there has for some time now been a feeling of frustration among many who work in the area of Chinese historical linguistics. What purport to be studies of Chinese linguistic history are generally no more than mechanistic statements of correspondences between alleged stages of Chinese as codified in traditional dictionaries and rime tables. While such studies do tell us a number of important things about the overall drift of linguistic evolution in Chinese, one has the feeling that they are too far removed from real linguistic and philological data and that a great deal of the vast richness and complexity of Chinese linguistic history is simply being ignored or swept under the carpet. The Karlgrenian and neo-Karlgrenian approaches, if pursued further, will lead only to endless hashing and rehashing of the same old ingredients, with few if any new insights into the real development of Chinese.

A particularly unfortunate effect of the Karlgrenian approach has been the trivialization of Chinese dialect studies. Since the *Chiehyunn* system (or some later version of it) is supposed to account for everything in the dialects, once one has reconstructed the *Chiehyunn* system, dialects tend to become uninteresting. If they are to be studied at all, it is merely to see how they derive in a more or less mechanistic fashion from the *Chiehyunn* system. Since the *Chiehyunn* essentially consists of a set of graphs, this is done by collecting a predetermined list of graphs from the dialect in question. Little attention is paid to the actual popular lexicon of the dialect and almost none is given to its grammatical structure. It seems curious that the Karlgrenian approach has also impeded a more serious consideration of philological sources, especially various types of transcriptional data. The view that such material can play only an ancillary role in Chinese linguistic history is still widely held. But once one frees himself from the view that the *Chiehyunn* system represents a real stage in the development of Chinese, such materials as the Tibetan transcriptions studied by Luo Changpeir, Csongor, Takata and others begin to bristle with interest, not because they can be used to justify or refute

some elements of a *Chiehyunn* or rime-table reconstruction, but because they can at last be seen as real, independent witnesses of an actual stage of the language, all the more valuable because they allow us to stand outside the rime-book tradition and look at an earlier stage of the language afresh. The same can be said of the immense corpus of Buddhist transcriptions dating back to the Eastern Han. It is largely because of Karlgren's attitude toward such material that it has never been fully exploited, and we are all the poorer for it.

There is an immense amount of work to be done in Chinese comparative dialectology. First of all we need a better classification of the dialects. This is important because a classification based on rigorous principles is in fact a theory about the origin of the things being classified. Armed with a better classification, we can begin to develop a better understanding of the major groups. In Karlgren's model of linguistic development, only vertical comparisons of dialect data with Ancient Chinese were envisioned. This neglected almost completely horizontal comparisons, that is, the comparison of dialects with sister dialects of the same group. In the past the few people who attempted such comparisons were criticized as "dogmatic comparativists" and lectured for not seeing that the only valid comparisons were those that traced dialectal categories back to some alleged ancestral form found in philological sources. But surely the comparison of dialects with other closely related forms will allow us to make interesting generalizations about whole groups of dialects rather than treating them all in isolation. In this way we will eventually come to realize that such dialect groupings as Wu, Gann, Kehjia, and Miin are very old. As we work our way backward inductively from modern dialect data, we will slowly develop a richer, more realistic, and more exciting picture of China's linguistic past.

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A CASE OF RADICAL AMBIGUITY IN OLD CHINESE

Some notes toward a discourse-based grammar

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Introduction

This discussion starts from an unarguable premise: the accurate interpretation of Old Chinese (OC) text requires close attention to various kinds of contextual cues to sentence meaning. The aim here will be to isolate and describe one such cue and then to explore some implications of discourse-based analysis for the unified description of OC syntax. The examples to be discussed here may strike competent readers of OC as unproblematic, even trivial. However, I am less interested in the fact that such sentences are, *in context*, unlikely to be misinterpreted than in the mechanism of correct interpretation.

In the written form in which it has survived, OC is widely and accurately reputed to be non-redundant (i.e. context-dependent) to a degree unknown among familiar western languages, classical or modern. It is easy to compile a list of grammatical categories which, though deeply familiar to us from our knowledge of English, etc., generally lack overt marking in OC: tense (nonexistent), number in nouns (very rare), definiteness (as marked by articles, for instance: rare), argument-verb coindexing (nonexistent), the distinction between finite and nonfinite verb forms (non-existent) and, occasionally, the distinction between the subordination and coordination of clauses. These distinctions, marked obligatorily in English, are often simply implicit in the contexts created by the organization of OC prose. It is thus an intriguing fact that competent translators of OC into English never haggle about which article to place in front of the translation of a given OC noun, or about whether to render a sequence of two unmarked clauses as coordinate ("C1 and [then] C2", where C=clause) or subordinate-main ("If/When C1, C2"). OC text functions effectively as a medium of communication without a great deal of

the (ultimately redundant) morphological paraphernalia which characterize European languages. I would claim that the competent reader of OC prose can be described as having acquired an acute, internalized sensitivity to a wide variety of contextual cues embedded in the structure of the discourse he is interpreting.

What is the nature of these cues to the correct interpretation of OC text? Is the same type of sentence-ambiguity invariably disambiguated by the same sort of cue? Just how are OC texts organized so that the language accomplishes its communicative functions? The answers to questions of this sort lie by definition beyond the scope of a single-sentence-based description of the language, the only sort of OC grammar we have had to date. It is, on the other hand, precisely these questions which a discourse-based inquiry must address. The idea motivating this exploratory essay is simply that, by looking beyond the boundaries of the single sentence, important generalizations can be made about the basic syntactic patterns of OC and their functions in discourse. Proposing explicit answers to a language-specific conundrum, "How is it that OC gets by on so little?", affords an excellent opportunity 1) to probe more general questions of the structure of natural-language discourse and 2) to form hypotheses about the general organization of "discourse-oriented languages" for testing on other examples of the type.¹ It bears adding that the approach I explore here cannot supplant but will, I believe, supplement the understanding of OC grammar that has already been gained through single-sentence descriptions. Though discourse analysis goes beyond the single sentence, a cogent account of discourse-level phenomena can only be based on a sound grasp of sentence-grammar.

1. *A local problem*: The example to be examined at some length below exhibits three kinds of ambiguity: 1) in terms of the referentiality of its subject noun, 2) in terms of the temporal discreteness of the activities referred to by the verbs and 3) in terms of the relationship between the two assertions the sentence contains. I will attempt to show that all three of these ambiguities are related to a basic distinction between the narrative and evaluative use of declarative statement. Triple ambiguity of this kind within a single sentence is impossible to reproduce in English; hence the rubric "radical ambiguity".

(1) 王 田 不 取 羆。

king hunt NE take pack²

A) [The] king hunted [and/but] did not take [a] pack (=did not bag an entire pack of game animals).

B) [When a] king hunts, [he] does not take [a] pack.

C) [When the] king hunts, [he] does not take [a] pack.

GY:8

The above OC sentence contains: 1) no articles or other markers of definiteness, 2) no morphemes signalling tense-aspect distinctions, and 3) no connective morphemes. Thus, there is no way to determine prima facie 1) the referentiality of 王, 2) the temporal orientation of 田 and 取 within the universe of discourse, or 3) the relationship between the two assertions "king hunt" and "not take pack". In

isolation from context, (1) is accordingly open to the interpretations rendered in English above as (A), (B) and (C).

English distinguishes between (A) and (B) by means of overt markers in the following way. (A) has a definite subject with which the speaker refers to a specific king in the (possibly fictional) universe of discourse. "The king" refers to a king who can, if necessary, be identified uniquely by the speaker. The choice of verb tense signals that the two activities in which the king is involved, hunting and not-taking, occurred from start to finish once at a point anterior to the speaker's present. Thus, like the subject noun, the verb forms in (A) can be said to be "definite" in the sense that they are used to refer to specific acts identifiable through their unique occurrence and temporal orientation within the universe of discourse. Already we have uncovered some redundancy in the threefold marking of both the subject and the two verbs for definiteness. "Pack", the object of "not-take", is non-referential in all three readings. It lies within the scope of the negative verb "not take" and thus does not refer to any identifiable entity within or without the universe of discourse.

I will refer to the kind of discourse made up declarative sentences like (A) as *basic narrative*. English-language text-counts have shown that the subjects of basic narrative sentences are overwhelmingly definite (Givon 1979:52), so that a narrative context alone might be expected to imply definiteness of the subject in languages like OC where this category typically goes unmarked. Consider for a moment the unlikelihood of a sentence like ?*A king hunted but did not take a pack*, where an indefinite subject is coupled with a pair of narrative clauses.

(B) contrasts with (A) in the marking of both the subject noun and the two verbs. "A king" refers to no specific king in the world; nor do "hunts" and "does not take" refer to specific instances of hunting and not-taking. The statement is generic and tenseless. Although we refer to the form *hunts*, etc. as "in the present tense", in its gnomic use here, the form clearly does not label an activity in progress in, or directly relevant to, the speaker's here-and-now (Lyons 1977:194). Again, we find markers of a single grammatical category, in this case indefiniteness, appearing three times in the same sentence: "a king", "hunts" and "does not take".³ As an assertion, (B) lacks the uniquely identifiable subject argument and the discrete, temporally-defined activity which characterize basic narrative. (B) is a more abstract, general statement, less grounded in a moment-by-moment account of phenomena. The sort of discourse which expresses this generalizing grasp of the world, I will refer to as *evaluative*.

(C) is a cross between (A) and (B) as it contains features of both discourse types. In (C) a definite subject, likely to have been evoked in the context, is coupled with assertions of non-discrete activity. The result is a statement about a specific individual's recurrent pattern of behavior. The sentence is evaluative in that it asserts non-discrete, temporally undetermined activity of an individual.⁴

All natural languages can be expected to maintain strategies for distinguishing narrative from evaluative discourse. Some of the strategies OC employs for this purpose will be examined below and it will become clear that, though serving the same function as the use of articles and tenses in English, the OC devices are

formally quite different. In (1), however, all such devices happen to be lacking. But surely, (1) *in context* means (A) or (B) or (C), and not all three. Leaving aside (C) for the moment, it is virtually impossible to imagine a context which would not in some way or other favor reading (A) over (B), or vice versa. What then determines the contextually appropriate (=correct) interpretation?

2. *Its local solution*. Here, then, is the context to (1).

- (2) 恭王 遶 於 涇 上； 密 康 公 從 有 三 女 奔
 PN king ramble LO PN above; PN PN elder attend; exist three woman dash
 之。 其
 3P. 3P.PS
 母 曰： 「必 致 之 於 王。 夫 獸， 三 爲 羣； 人，
 mother declare: must bring 3P LO king TP beast, three make pack; person,
 三
 three
 爲 衆； 女， 三 爲 羣。 王 田， 不 取 羣。 公 行，
 make crowd; woman three make bevy. king hunt, NE take pack. elder go
 下 衆；
 beneath crowd;
 王 御， 不 參 一 族。 ...」 GY:8⁵
 king concubine NE triplicate one clan

"King Gong took his pleasure on the upper reaches of the Jing [River]; Elder Kang of Mi was in attendance; there was [an occasion when] three women dashed up to [=threw themselves at] him. His mother commented, "[You] must take them to [the] king. [Let me tell you something about] beast[s]: three make [a] pack; [as for] human being[s], three make [a] crowd; [when it comes to] women, three make [a] bevy. [When a/the] king hunts, [he] does not take [a] pack; [When] elder[s] (=those of high rank) move, [they] beneath (=behind) the crowd (=they yield the way to crowds of commoners). [As for the] king[']s concubine[s], he never triplicates one clan (=never has three concubines from the same clan, i.e. social tolerance of sororal polygamy is limited). . . ."

The above passage is *prima facie* narrative. The subjects of the first two sentences are proper nouns, which, of course, refer to definite individuals. The third sentence contains a presentative construction, 有 x, which introduces new characters to the developing scenario. Needless to say, these new characters cannot *on first mention* accommodate the definite article. (? "There was an occasion when the three women . . ." "What three women?")

Note that the entire cast of characters (king, elder, three women and mother) as well as the single physical property mentioned in this episode (the Jing River) are all what John Lyons refers to as "first-order entities". He describes this category of entity as consisting of "individual persons, animals and more or less discrete

physical objects”, in other words, the animate and inanimate furniture of the material world. Lyons continues: “under normal conditions, [first-order entities] are relatively constant as to their perceptual properties, . . . are located, at any point in time, in what is, psychologically at least, a three-dimensional space, and . . . are publicly observable” (1977: 442–3).⁶ On Lyons’ analysis, basic narrative could well be renamed “first-order discourse”.

The narrative in (2) continues with a transcript of exactly what Matron Kang had to say about the goings-on on the upper reaches of the river. However, embedded within the scope of the narrative verb 曰, ‘declare’, are a number of clearly non-narrative statements. The first sentence in the woman’s admonition is a deontic modal statement which does not belong to either of the (non-modal) discourse-types I have distinguished above. With the use of the particle 夫, however, we cross over into the evaluative mode of discourse in which generalities are asserted of non-first-order entities.⁷

English has no close equivalent for the topic-marker 夫 (Graham 1972) and it requires a fair amount of epexegetis to make explicit the particle’s discourse function. [夫 x] means something like “I’m going to tell you something about (my interpretation of) the nature of x”. In this first sentence, marked by 夫 as an evaluative statement, note that the NP which bears the relation of subject to the verb 爲, ‘make, constitute’, is not 獸, ‘beast’ but 三, ‘three [of them]’. The function of 獸 is rather different from that of subject. 獸 specifies the frame of reference or “range of things about which it makes sense to assert” 三爲羣. Informally stated, the nature of beasts is what this sentence is about (Barry 1975:3, Chafe 1976:50, Reinhart 1981). In using this sentence, the speaker ascribes the attribute “three-make-a-pack” to beasts in general. This example plainly demonstrates that OC sentences with topics can also have subjects, as is the case in other well-known “topic-prominent” languages (Li and Thompson 1976).⁸

The next two sentences in the text are perfectly parallel in both structure and meaning to 獸, 三爲羣 and have the cumulative effect of accustoming the reader to a regular cadence of evaluative assertion: topic-comment, topic-comment, topic-comment (T:C). The next trio of sentences sets up another cadence, but without a signal to counteract the inertia of 夫 T:C; T:C; T:C;, we simply continue interpreting in the evaluative mode, in spite of the lack of any overt marking of the discourse as evaluative. So we read 不取羣 as an assertion about the general nature of a king’s (or perhaps, *the* king’s) hunting practice, namely that it does not involve the bagging of entire packs of game.

On this evaluative reading of 不取羣, the marking of the English equivalent of 王田 as a subordinate clause by means of a subordinating conjunction such as “when (ever),” or “if” is obligatory. This obligatory subordination, however, is simply a language-specific fact about the structure of English; it certainly does not convert 王田 into a “subordinate clause” in OC. It is more important to recognize that in terms of what it accomplishes in the ongoing discourse, 王田 is very close in function to the topic nouns (夫獸, 人, and 女 of the three preceding sentences. In evaluative discourse, a topic, whether NP or clause, names an entity or

state-of-affairs the *nature* of which is commented on in the rest of the sentence; the comment makes an assertion about the *general nature* of the phenomenon referred to by the topic.⁹

The fact that both NPs and bare clauses can function as topics is clearly illustrated in the second series of parallel sentences we are now considering. 王田 {NP+VP} is surely a clause, as is 公行, ‘[whenever] elders go’. The third sentence in the series, however, has an NP topic, 王御, ‘[the] king[’s] concubine[s]’. As in the examples just examined, the topic names a domain about which the comment, [王] 不參一族, is asserted. Once again, in the ungainly epexegetis which makes explicit the discourse function of the topic constituent, “[Now here’s some information about the nature of the] king’s concubines (or perhaps, “concubinage as practiced by the king”, the distinction is trivial in this context): he never takes three women from the same clan”.

One of the typologically significant features of OC syntax is that, unlike the situation in languages such as English, a bare clause may function as the topic of an evaluative sentence. The notorious “parataxis” (from the standpoint of English) of OC evaluative discourse is simply topic-comment articulation. Such topic clauses are sometimes nominalized (by 之-insertion, 其 or 者-affixation; numerous examples cited in Harbsmeier 1985:96–112, where, however, the topic status of such constituents goes unrecognized). The important point, however, is that topics *need not* be marked as NPs by such devices. To claim that both NPs and clauses may function as topics in OC is, of course, not to claim that the internal structure of any topic is fuzzy or indeterminate. The presence of a predication within the topic distinguishes *prima facie* clausal from nominal tokens of the category. That the rules of OC syntax generalize over such distinctions of internal form in favor of the discourse function shared by all topics in evaluative discourse (the function of setting the domain for a general assertion) is a significant typological fact about the language.¹⁰

Returning to the analysis of passage (2), note that Matron Kang’s speech continues to the end in the evaluative mode.

- (3) A. 『...夫羣, 美之物也。大衆以美物歸女, 而何德以堪之? 王猶不堪; 況爾小醜乎! 小醜備物, 終必亡。』
 B. 康公不獸。一年, 王滅密。
- A. “. . . [This] bevy (=these three women) are beautiful creatures. [If the] multitude [were to] entrust you with beautiful creatures [like these], what virtue [would make] you worthy of them? [The] king himself [would] not be worthy, let alone [the] lowly likes of you! [When] lowly types keep [fine] creatures [to themselves], [the] end [of the story] is certain destruction.”
 B. Lord Kang [did] not present [the women to the king]. One year [later], [the] king destroyed Mi.

Detailed analysis is omitted for reasons of space (and readers’ patience). After the matron’s moralizing lecture, we are abruptly reintroduced to the narrative

mode by a sentence in which one of the main characters in the episode functions as third-person subject. Here the chronicler regains the floor which a few lines back he had yielded to the censorious Matron Kang. The chronicler's discourse in the *Guoyu* is invariably basic narrative.¹¹ Let us test an evaluative reading of the two curt sentences which conclude this episode: ?“[Now I'll tell you something about the nature of] Elder Kang: [he] never offers [women to the king]. [And here's some information about the nature of] one year later: the king destroyed Mi.” A disconcerting, counter-intuitive reading, to say the least.¹²

3. *Some implications.* On the basis of the above analysis of (2) and the shorter consideration of (3), I have formed the following working hypotheses for testing on other OC texts and their English translation.

- 3) A. Sentences in narrative discourse are prototypically subject-verb in structure. Most narrative sentences have subjects, i.e. arguments which exhibit selectional restrictions with the verb (Li and Thompson 1976:463) and thus assume one of a limited number of semantic roles: agent (of a verb like 遊, ‘ramble’), experiencer (of a verb like 畏, ‘feel in awe of’) or beneficiary (of a verb like 受, ‘receive’).
- B. The initial immediate constituent of a sentence in evaluative discourse is typically a topic.¹³ A topic is generally set off from its comment by a pause in reading, as reflected in the punctuation of (2). Topics do not bear a selectional restriction with the verb in the comment. The comment will often include its own subject and have the form {S V (O)}, as in 人, 三爲樂. The *semantic* role of a topic in an evaluative sentence is difficult to pinpoint; it is often noted that the relation binding a topic to its comment is that of (speaker-perceived) relevance.¹⁴ A bare clause may function as the topic of an evaluative sentence in OC. Depending on the structure of the comment, such topic clauses will tend to be realized in English translation as either 1) nominalized subject clauses or 2) subordinate adverbial clauses.¹⁵
- C. The normal sequence of discourse within a single episode in an OC historical text (*Zuozhuan*, *Guoyu*) is narrative → evaluative (→ narrative → . . .). Virtually all of the evaluative discourse will be contained in the speeches made by the characters in the narrative (exceptions discussed in note 11). This discourse-structure reflects the strong moralistic preoccupations of the OC historical corpus, constituting a ground cadence of narrative reportage alternating with evaluative comment.¹⁶
- D. English and other familiar languages encode the narrative/evaluative distinction in every declarative sentence by means of definiteness markers (e.g. articles, verb tense). Virtually all declarative sentences in such languages are {S V (O/C)} in structure so that topic-comment articulation is regarded as a somewhat marginal phenomenon involving a “fronted” argument or special topic-introducing phrases (“As for t. . .”, “About t. . .”, “Speaking of t. . .”). All simple evaluative sentences in English

have the form {S V O/C} due to the existence of a few lexical verbs of extremely general “linking” function like copular *be*, *involve* (“Hunting involves a number of skills.”), and *mean* (“Carelessness just means you’ll have to do it all over again,” = “If you’re careless, . . .”). Such verbs do not exist in OC.

3. *The tentative nature of these observations.* The claims advanced in (3) above clearly require further testing, not only on historical texts but on more “philosophical” material as well. We can expect to find a greater preponderance of evaluative discourse in texts like *Mengzi* and *Xunzi*, with perhaps the balance between narrative and evaluation partially redressed in such anecdotal compilations as *Hanfeizi* and *Lyushi chunqiu*. In any case, not inconsiderable space has been spent here in order to make (painfully) explicit many things all competent readers of OC know intuitively about textual interpretation. I believe that such explicitness about mental processes can be instructive and hope I have demonstrated that there remain many things to be said about how OC functions as a communicative system. That many of the hypotheses I have proposed here could not have been formulated on the basis of a sentence-based treatment of OC should be self-evident.

Notes

- 1 The distinction between “discourse-oriented” and “sentence-oriented” languages is drawn by Tsao who also points out the limitations of single-sentence grammar in the description of discourse-oriented languages (1977: 89–98).
- 2 Abbreviations used in this paper: C=clause, GY=*Guoyu* 國語, LO=locative particle, NE=negative particle, NP=noun phrase, O=object, O/C=object or complement, OC=Old Chinese, P=person, PN=proper noun, PS=possessive, T:C=topic:comment, TP=topic particle, VP=verb phrase, ZZ=*Zuozhuan* 左傳.
- 3 The “redundancy count” could be increased to four by changing the unmarked ‘when’ to ‘whenever’, the latter marked for indefiniteness. Alternatively, indefiniteness could be encoded a fourth time by use of the categorical, generic negative ‘never’ to translate 不. (It is interesting to note that OC has no morpheme equivalent for ‘never’.) Note further that by using ‘whenever’ together with ‘never’ in the same sentence we finally achieve an unacceptable degree of redundancy in English: ?Whenever a king hunts, he never takes a pack.
- 4 It is clear that we are dealing with a continuum of features along which sentences can be contrasted and described as more or less narrative or evaluative, such that a place can be found for phenomena which fall between the two poles. This fact, however, does not invalidate the use of the basic distinction, narrative/evaluative, as a metric in discussing the discourse function of individual sentences and passages of text.
- 5 Punctuation has been augmented to reflect the pauses in contemporary native reading practice.
- 6 The influence of P.F. Strawson’s “descriptive metaphysics” (Strawson 1959) on this characterization of first-order entity is acknowledged by Lyons.
- 7 Lyons characterizes second-order entities as “events, processes, states-of-affairs, etc. which are located in time and which, in English, are said to occur or take place, rather than to exist”. (Compare, however, the use of OC 有, ‘exist’ in a sentence we have already observed: 有三女奔之, literally, ‘exist three-woman-dash-[at-]him’, where

existence is predicated of an event.) The third order includes "such abstract entities as propositions, which are outside space and time" (1977:443). Although Lyons does not discuss the entity-status of the generic use of first-order nominals such as (夫) 獸, it seems plain that when a first-order noun like 獸, 'beast', is used generically, the entity it refers to is no longer of the first order. Since statements about "beasts in general" lie "outside space and time", as already suggested in our discussion of (1B), we may tentatively conclude that such generics refer perhaps to third-order entities in Lyons' scheme. (For the correlation between order of entity and order of nominal, see 1977:445-7). There is an interesting parallel between Lyons' ordering of entities/nominals and the distinction drawn in Van Oosten's recent dissertation between basic-level and superordinate topics (1986:Chapter 2). (Van Oosten's conceptualization was inspired by psychologist Eleanor Rosch's well-known work on natural categorization, conveniently summarized in Lakoff 1982:144-8). Van Oosten's basic-level topics ("individual participants or elements inside the scene", 1986:23) are essentially equivalent to Lyons' first-order entities. Her "superordinate topics", characterized as "cognitive schemata, actualized scenes, generalizations and evaluations", correspond, by and large, to Lyons' second- and third-order entities and to many of the entity-referring expressions, both nominal and clausal, which serve as topics in OC evaluative discourse.

- 8 Compare the impossible, "mixed" reading of 夫獸, 三為羣 which respects the fact that 夫 is used to introduce a generalized topic for evaluation, but then interprets the comment as a narrative statement: ?"[Now about the nature of] beasts, three of them *made* a pack."
- 9 The correlation between generic (=evaluative) statements and the use of the topic particle *wa* in Japanese has long been observed (Kuno 1972:270, among many others). Compare, for example, the following two sentences, the first generic and the other narrative-descriptive: *Syooboosya WA mina akai*, 'All fire engines are red' and *A, nisi no sora GA makka da!* 'Hm? The western sky is bright red!' The distinction between *wa* and *ga* as used in discourse is, of course, much more complex than these two examples can suggest, but part of that distinction involves the difference between the evaluative and narrative use of sentences.
- 10 In their work on the topic-particle *wa* Japanese linguists have long recognized its function of establishing a *domain* for the assertion made in the rest of the sentence: 「は (係助詞) 題目を提示し、叙述の範囲を設定する。」 (Kokken 1951:180).
- 11 The situation is somewhat different in the *Zuozhuan* since that text is at least in part a commentary on the *Chunqiu*. Evaluative sentences are still quite rare in the *unquoted* material in the *Zuozhuan* and are restricted in their occurrence to direct explication of events recorded in the *Chunqiu* (e.g. 難伯如萬, 逆也. 'Shenbo[']s go[ing to] Ju (as recorded in the *Chunqiu*) [was to] welcome [someone back to Lu]. ZZ 226:Cheng 8.3.) or for purposes of quick identification of characters in the *Zuozhuan* narrative (e.g. 祁奚請者, 晉侯問焉, 稱解狐, 其辭也. 'Qi Xi requested [permission to] retire. The Marquis of Jin asked him [about a] successor. [Qi Xi] spoke highly of Jie Hu [who was] his rival.' ZZ 255:Xiang 3ii.)
- 12 It bears remarking that the evaluative reading of 一年, 王滅密 seems less odd than the same interpretation of 康公不獻. This fact, of course, correlates with the frequent marking in narrative of the temporal setting as topic (e.g. 昔者, ... 是歲也, ... 鄭驪公子以傷公之死也, ...). Topicalization occurs in narrative discourse in two and only two functions: that of referring to a temporal setting (as just illustrated) and that of contrastive exposure of an argument from within a narrative clause.
- 13 Shen Xiaolong, in an original and largely persuasive typology of topic-comment sentences in the *Zuozhuan*, remarks in passing on the "deliberative and explanatory" function of T:C articulation (1986:130). His extremely useful study, however, deals primarily with the structure of T:C sentences, rather than with their discourse functions.

- 14 Reinhart 1981 contains important discussion which aims at a formalized account of this notion of relevance or "aboutness", as she calls it. What makes formalization of this notion so difficult is that the relevance asserted between a topic and its comment is often speaker-perceived and fails to respect culturally-acknowledged (=common-sense) category-boundaries. The use of copular syntax to make metaphorical statements is one obvious example of this sort of speaker-determined "aboutness".
- 15 There is a clearly observable tendency across a wide variety of languages to mark initial adverbial clauses as sentence topics. The Mandarin data have been discussed by Chao (1968:113-20) and Henne et al. (1977:94-96). Similar "cross-category" marking of topic NPs and initial adverbial clauses is exemplified briefly in Thompson and Longacre (1985:229-32). The tendency is particularly clear when the adverbial clause functions as a protasis (Haiman 1978, 1985:26-70). In OC, the following initial particles clearly mark both clausal and nominal topics: 若 (+C='If', +NP='As for NP'), 雖 (+C='Although', +NP='Even'), 夫 (+C='Now, in the general case that . . .', +NP='NP, in general') and 凡 (+C='Whenever', +NP='In all cases of NP'). Furthermore, the resumptive proform 則, 'then, in that case' is used in both contrastive T:C articulation and in conditional sentences. These formal parallels between topic NPs and adverbial clauses are, of course, underpinned by the isofunction of such clauses as domains within/about which a second (comment) clause is asserted.
- 16 Compare the relation between an "objective" news story and the analytical commentary on the story contained in an editorial. The news item will be predominantly narrative, i.e. concern the activities of first-order entities. The editorial, on the other hand, will make considerable use of abstract nominalizations, conditionals, etc.—all hallmarks of evaluative discourse whose subject matter is largely second- and third-order entities.

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ZZ「左傳」Harvard-Yenching concordance.

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THE ADPOSITION *yi* 以 AND WORD ORDER IN CLASSICAL CHINESE¹

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Abstract

Linguists seem to have a different opinion on the syntactic properties of the PP's in Classical Chinese. While many assume that Classical Chinese had predominantly postverbal prepositions, many others believe otherwise. This study finds that the latter view is perhaps correct and that the PP's in Classical Chinese could be either postverbal or preverbal. On text-count level, PP's of the two types are about equally divided. Furthermore, this paper shows that the adposition *yi* 以 can be used as a preverbal preposition, a postverbal preposition, or a preverbal postposition in Classical Chinese. Evidence will be given to contend that the variation between the preverbal and postverbal uses of *yi* seems to be motivated by discourse factors. The nominals following the preverbal *yi* seem to be much closer to their antecedents than those after the postverbal *yi*. In addition, the high degree of variability of *yi* may follow from an earlier grammatical change, i.e. changing from postpositional to prepositional. Thus, it is hypothesized that the postpositional use of *yi* perhaps was simply a vestige of earlier Sino-Tibetan syntax.

1. Introduction

This paper attempts to show that the adposition *yi* 以 can be used as a preverbal preposition, a postverbal preposition, or a preverbal postposition in Classical Chinese. Moreover, it is hypothesized that the postpositions could be a vestige of earlier Sino-Tibetan syntax.

However, in the last ten years or so, many linguists (Li & Thompson 1974, Travis 1984) have assumed that Classical Chinese had predominantly postverbal prepositions. On the other hand, many others believe (Liu 1958, Chou 1962, Y-C Li 1980) that the PP's in Classical Chinese could be either postverbal or preverbal. In the following, I will first of all present data demonstrating that the postverbal

hypothesis is incorrect. Furthermore, analysis of the PP's in classical texts reveals that it is equally incorrect to treat the classical PP's simply as preverbal because of the large number of postverbal PP's. Finally, I will discuss the peculiar syntactic distribution of the most frequently occurring adposition, *yi*.

Linguists working within different theoretical frameworks all agree that in modern Chinese there is a set of elements which behave more or less like prepositions in other languages. Yet these prepositions still retain some properties of verbs from which they derive historically. Therefore, they are also known as coverbs (Chao 1968, Y-C Li 1980, Li & Thompson 1981), although some argue (Li & Thompson 1974) that theoretically they are better treated as prepositions. However, such theoretical concern is beyond the scope of the current study. For the sake of convenience, I label them as prepositions. Given the existence of postpositions, the term **adposition** is used for Classical Chinese.

2. Adpositional phrases in Classical Chinese

Li & Thompson observe (1974) that between the 11th and 4th centuries BC the PP's of Classical Chinese were all postverbal, thus S+V+PP, even though in modern Mandarin the PP's are mostly preverbal, S+PP+V. For example, in (1) the PP *yu you gu* 'from dark valley' follows the verb *chu* 'emerge' (The example is from Li & Thompson 1974, p.201).

- (1) 出於幽谷 (Mencius, late 4th century BC)
 chu yu you gu
 emerge from dark valley
 '(Someone) emerged from a dark valley.'

Li & Thompson further claim (1976 p.486):

'... the classical literature up to the twelfth century A.D. leaves little doubt that the predominant sentential position of the prepositional phrase is postverbal rather than preverbal. . . . It was not until the fifteenth or sixteenth century A.D. that the new prepositions with preverbal prepositional phrases became prevalent.'

However, this thesis is contradicted by the observation of many others. He Leshi observe (1984, 1985) that an overwhelming majority of the adpositions in *Zuozhuan* 左傳 and *Shiji* 史記 occurred in preverbal position. His findings (1985) concerning the distribution of the PP's in Classical Chinese are presented in (2).

(2) The distribution of PP's in Classical Chinese:

	optional	postverbal	preverbal	total
<i>Zuozhuan</i> (500 BC)	5 22%	3 14%	14 64%	22 100%
	以於自在及	於諸乎	從與焉由	
<i>Shiji</i> (100 BC)	7 14%	3 6%	39 80%	49 100%
	以於自在及由低	於諸乎	從與焉由	

In both texts, there are adpositions which can occur optionally in either preverbal or postverbal positions. Although in terms of the total number of adpositions the percentage of obligatory preverbal PP's in *Shiji* is 80%, 16% higher than its counterpart in *Zuozhuan*, significantly in both texts the absolute majority of the adpositions occurred obligatorily in preverbal positions. Therefore, if He's analysis is valid, her findings then strongly falsify the postverbal hypothesis for the adpositions in Classical Chinese.

While the emphasis of He's analysis is on the types, i.e. the numbers of possible adpositions, Sun (1987) emphasizes the frequency of occurrences of the adpositions. The PP's in two passages of Classical Chinese texts have been counted; one is *Liang Huiwang Shang* 梁惠王上 of *Mengzi* 孟子 (300 BC), and the other is *Yingong* 隱公 of *Zuozhuan* 左傳 (500 BC). The findings are presented in (3) and (4). In support of He's observation, the PP's in Classical Chinese did not occur exclusively at the postverbal position. As a matter of fact the preverbal uses in actual texts outnumber the postverbal.

(3) The frequency of occurrences of PP's in different positions in *Zuozhuan* (500 BC):

	preverbal	postverbal	total
對 <i>dui</i>	3		3
從 <i>cong</i>	2		2
焉 <i>wei</i>	1		1
及 <i>ji</i>	2		2
在 <i>zai</i>		1	1
自 <i>zi</i>	1		1
與 <i>yu</i>	3		3
于 <i>yu</i>		20	20
於 <i>yu</i>		21	21
以 <i>yi</i>	33	4	37
total	46 50%	46 50%	92 100%

(4) The frequency of occurrences of PP's at different positions in *Mengzi* (300 BC):

	preverbal	postverbal	total
對 <i>dui</i>	3		3
在 <i>zai</i>		1	1
于 <i>yu</i>		3	3
於 <i>yu</i>	1	36	37
焉 <i>wei</i>	1		1
與 <i>yu</i>	3		3
以 <i>yi</i>	46	7	53
total	54 55%	47 45%	101 100%

At first glance, the frequency count between preverbal and postverbal PP's is about half and half in both texts. Moreover, given the fact that most adpositions

occurred at least once in preverbal position and only half occurred in postverbal position, it is highly implausible to take postverbal position as the dominant position for PP's. Furthermore, given that 50% (for *Zuozhuan*) and 45% (for *Mengzi*) of the PP's occur postverbally, it is then equally incorrect to assume preverbal position as dominant. It would seem as if there were no dominant position for PP's as a whole in Classical Chinese. In order to explore further the question of dominant word order position, I will now discuss the syntactic distribution of the most frequently used adposition, *yi* 以, in Classical Chinese.

3. The adposition *yi*

The adposition *yi* 以 is the most frequently occurring example in (3) and (4) making up 47% (90 out of 193) of the total frequency count. Furthermore, it can occur in both preverbal and postverbal positions, although only 12% of them (11 out of 90) occur in postverbal position. In example (5) there is a postverbal use of *yi*, while in (6) there is a preverbal use of the same form. If we ignore the context, the two clauses which contain *yi* phrases almost constitute a minimal pair. In both cases, the meaning of the *yi* is close to the preposition 'with' in English translation.

- (5) 吾非愛其財而易之以羊也 (Mengzi Liang Huiwang Shang)
 Wu fei ai qi cai er
 I Neg love its fortune CONJ
 Yi zhi yi yang ye
 trade it PP sheep EXCL

'I did not grudge the expense of it and changed it with a sheep.'

- (6) 若無罪而就死地，故以羊易之 (ibidem)
 ruo wu zui er jiu si di,
 as if Neg crime CONJ go dead place,
 gu yi yang yi zhi
 thus with sheep trade it

'As if (it were an) innocent person going to the place of death, therefore, (I) changed it with a sheep.'

Furthermore, the object of the preverbal *yi* is commonly absent as in (7).

- (7) 王謂暴以好樂，暴未有以對 (Mengzi Liang Huiwang Xia)
 wang yu bao yi hao yue,
 king tell NAME PP fond music,
 bao wei you yi dui
 NAME Neg. have PP respond

'His Majesty told Bao (me) with (his) fondness of music, (yet) Bao (I) have nothing ready to answer with.'

Typically the antecedents of the absent objects of such preverbal *yi* PP's exist in the immediately preceding context. For instance, in (7) there are two PP's with the same form *yi*. The logical object of the second *yi*, which is preverbal, is the same as the object of the first *yi*, which is postverbal, namely *hao yue* 'the fondness of music'. The second *yi*, which occurs in preverbal position, has a zero anaphora as its object. In both cases the *yi*'s indicate an associative meaning. Sun observes (1987) that the objects (including zero anaphora) of preverbal *yi*'s on average are 2.81 clauses away from their antecedents while the objects of postverbal *yi*'s on average are 17.64 clauses away from their antecedents (for methodology please refer to Givón 1983). The examples in (8) is a piece of continuous discourse. In the first line of (8), the underlined *xiao ti zhong xin*, 'piety, fraternity, sincerity, truthfulness' actually should be analyzed as the object of the adposition *yi*'s in the immediately following (8a & 8b). However, in (8a & 8b) they do not exist in surface. Yet the antecedents of the absent objects of the *yi*'s exist in the immediately preceding discourse, thus constituting no problem in information recovery.

- (8) 壯者以暇日修其孝悌忠信 (Mengzi Liang Huiwang Shang)
 zhuang zhe yi xia ri xiu qi
 strong Nom. PP leisure day cultivate POS.
 xiao ti zhong xin
 piety fraternity sincerity truthfulness

'The strong people, during their days of leisure, shall cultivate their filial piety, fraternal respectfulness, sincerity, and truthfulness.'

- a. 人以事其父兄
 ru yi shi qi fu xiong
 enter PP practise POS. father brother
 'At home, serve their fathers and elder brothers with (it).'
- b. 出以事其長上
 chu yi shi qi zhang shang
 exit PP practise POS. elder superior
 'Outside, serve their elders and superiors with (it).'

Therefore, discourse pragmatics may be an important contributing factor in the selection of a particular position of a *yi* phrase. Preverbal *yi*'s, including those with a zero anaphora, are more likely to be used if the coreferential entity exists in the immediately preceding contexts.

But there are also other factors which may affect the word order. They should include factors like sentence type and the highlighting of certain information. The example in (9) is a WH-question, and the WH word *he* goes before *yi* in the original text. The example in (10) has a proform *shi*² before the adposition *yi*.

- (9) 何以利吾國 (Liang Huiwang Shang)

he yi li wu guo
 what PP profit my kingdom
 'From what my Kingdom can be profited'

- (10) 是以不往見也 (Liang Huiwang Xia)

shi yi bu wang jian ye
 Pron. PP Neg. toward see Part.
 'For this (I) do not go to see (him).'

Moreover, in preverbal position *yi* is frequently used as a postposition. While the *yi*'s in (5) and (11) are a postverbal preposition, and the *yi* in (6) is a preverbal preposition, the *yi*'s in (12) are preverbal postpositions. Semantically all the *yi*'s in (12) indicate an instrumental case. Interestingly, there is no postpositional use of *yi* in postverbal position.

- (11) 召虞人以弓 (Zuozhuan, Shaogong 20)

Zhao yuren yi gong
 call officer with bow
 'Call an officer with a bow.'

- (12) a. 旃以召大夫 (ibidem)
- ³

zhan yi zhao dafu
 flag with call senior official
 'call a senior with a flag.'

- b. 弓以召士

gong yi zhao shi
 bow with call junior official
 'call a junior with a bow.'

- c. 皮冠以召虞人

pi-guan yi zhao yuren
 leather-hat with call officer
 'call an officer with a leather-hat.'

Other than the postpositional phrases which are made up of NP+P like (12a-c), there are postpositional phrases made up of Pronoun+P (13) and postpositional phrases occurring in serial verb constructions (13). The *yi*'s in (13) and (14) both indicate an instrumental meaning. The proform *shi* when used with the adposition *yi* appeared to allow postpositional use only.

- (13) 是以政平 (Zuozhuan Shaogong 20)

shi yi zheng ping
 this with politics peace
 'With this the political state should be at peace.'

- (14) 而城州來以挑吳 (Zuozhuan Shaogong 19)

er cheng zhoulai yi tiao wu
 then citify NAME with provoke NAME

'(You) then citified Zhoulai (by building up the walls) to provoke the State of WU.'

The table in (15) characterizes the distribution of the *yi*'s in two passages of classical texts, *Zuozhuan* (Shaogong 19-20) and *Mengzi* (Liang Huiwang Shang & Xia). The findings presented in (15) show that in preverbal position *yi* is frequently used either as a preposition (19%) or as a postposition (18%) in *Zuozhuan*; in *Mengzi* postposition accounts for 14% of its uses, and preposition for 25%. However, the form which has the highest frequency count in both texts is the preverbal *yi* which takes a zero anaphora as its object, 30% for *Zuozhuan* and 39% for *Mengzi*. In addition, *Yi* also occurs in a serial verb construction in a fairly common fashion, 22% for *Zuozhuan* and 8% for *Mengzi*. Typically in the serial verb construction the noun of the V N sequence immediately preceding *yi* can be analyzed as the object of the *yi*; thus the *yi* is also postpositional. This is exemplified by (14) where the underlined *zhoulai* functions as the object of the preceding verb *cheng* as well as the logical object of the following adposition *yi*.

- (15) The distribution of the adposition
- yi*
- in Classical Chinese
- ⁴

	<i>Zuozhuan</i>		<i>Mengzi</i>	
	<i>N</i>	%	<i>N</i>	%
Preverbal:				
postposition (<i>N yi V</i>)	16	19	15	14
preposition (<i>yi N V</i>)	16	19	26	25
zero anaphora (<i>yi V</i>)	25	30	41	39
Serial verb:				
postposition (<i>V N yi V</i>)	19	22	9	8
Postverbal:				
preposition (<i>V yi N</i>)	8	10	15	14
Total:	84	100	106	100

4. The issue of word order

The existence of postpositions poses a question for us, i.e. where did they come from and what kind of function did they serve in Classical Chinese? Yu first hypothesizes (1987) that the existence of postpositions was a vestige of Sino-Tibetan syntax. It is interesting to note that Delancey observes (1987) that 'with the exception of Karen, all of the Tibeto-Burman languages are postpositional SOV languages . . .' Therefore, it follows to assume that the proto-Sino-Tibetan was postpositional SOV as well. While Classical Chinese is predominantly

prepositional SVO, it does have vestiges of postpositional SOV word order. For example, in (16a), in a positive statement the object pronoun *zhi* occurs postverbally; but in a negative statement, it has to occur preverbally as in (16b). It is very difficult to attribute the word order variation in (16a-b) to any discourse factor. The most plausible solution is to treat the preverbal *zhi* in negation as a kind of residue from earlier SOV order.

- (16)
- a. 將以愚之 (Laozi 65)
 jiang yi yu zhi
 intend with stupid PRON
 '(They) intended to use (it) to keep them stupid.'
- b. 非聖人其之能為 (Xunzi 8/10)
 fei shengren mo zhi neng wei
 Neg. sage Neg. PRON can do
 'Only a sage can do this.'

Finally the examples in (17) demonstrate that *yi* is not the only possible postposition in Classical Chinese. The three instances of *yu* 於 as a postposition were first observed by Yu (1987). All the *yu*'s in (17) are used as a kind of locative marker. However, unlike *yi*, which is commonly used as a postposition, *yu* is rarely used as a postposition. Recall that from the tables in (3) and (4) *yu* is a very common adposition, second only to *yi*. *yu* is not only a preposition but also a predominantly postverbal preposition. Out of 58 *yu*'s only one is preverbal. Therefore, *yu* PP's are postverbal, and their postpositional use is extremely rare.

- (17)
- a. 焉所謂室於怒市於色 (Zuozhuan Shaogong 19)
 yan suo wei shi yu nu shi yu se
 saying as say room at angry market at color
 'As the saying goes: one becomes angry at home and shows his angry look in public.'
- b. 私族於謀 (ibidem)
 si zu yu mou
 privately clan at consult
 'Privately consulted (members) of the clan.'

But the situation for *yi* is more complicated as demonstrated by tables (3) and (4). While the majority of its uses are preverbal, it also commonly occurs in postverbal position. Consequently, *yu* and *yi* are two different classes of adpositions. *yu* is a preposition with a relatively rigid postverbal position. In preverbal position it is rarely used as a postposition. But as a preposition *yi* can be preverbal or postverbal depending on discourse pragmatics. Furthermore, in preverbal position it is also commonly used as a postposition.

It has been observed (Karlgren 1927, Yang 1955, Pulleyblank 1986) that both *yu* and *yi* were originally full-fledged verbs. Given the different syntactic properties of the two, it is possible that they belonged to two different types. The grammaticalization of *yu* into a preposition is more mature than the grammaticalization of *yi*. This hypothesis is supported by the fact that the syntactic distribution of *yu* is more rigid than *yi*. Moreover, in Middle Chinese the more mature postverbal *yu* was replaced by the preverbal *yi* and other preverbal prepositions (Peyraube 1986, Ye 1988). Consequently in Modern Mandarin there are not many postverbal PP's. Nevertheless, the postpositional use of *yi* became impossible in Middle Chinese but the prepositional use of *yi* remained strong until it was partially replaced by other preverbal PP's such as the *ba* / *jiang* 把/將 constructions (Mei 1990) in Middle Chinese.

In summary, this study finds that the syntactic distribution of the commonly used preposition *yu* is relatively stable; thus, it was probably a grammaticalized, mature postverbal preposition in Classical Chinese. For its part, the syntactic distribution of the adposition *yi* was rather variable. It is commonly used as a preverbal preposition, a postverbal preposition, and a preverbal postposition. The alternation between preverbal prepositional and postpositional uses does not seem to be semantically or pragmatically motivated. Rather the postpositional use of *yi* perhaps was simply a vestige of Sino-Tibetan syntax. The high degree of variability of *yi* suggests that the grammatical status of *yi* in Classical Chinese was still undergoing a change, a change from postpositional to prepositional. Furthermore, the grammaticalization of *yi* and other preverbal preposition continued to gain momentum in Middle Chinese and eventually replaced all the postverbal prepositions. This explains why in Modern Mandarin it is the preverbal PP's that are predominant.

Appendix

*The postpositional use of yi in Mengzi*⁵

1. 何以利吾國
2. 何以利吾家
3. 何以利吾身
4. 斧斤以時入山林
5. 是以後世無傳焉
6. 何以能鼓樂也
7. 何以能田獵也
8. 吾可以休
9. 吾可以助
10. 吾可以識其不才而舍之

11. 則何以異於教玉人雕琢玉哉
12. 簞食壺漿以迎王師
13. 何以待之
14. 簞食壺漿以迎王師
15. 是以不往見也

*The postpositional use of yi in Zuozhuan
Shaogong 19-20*

1. 是以君子加穀焉爾
2. 鄙以待之
3. 兄何以不玄
4. 是以鬼神用饗
5. 則慮以求媚
6. 是以鬼神不饗其國以禍之
7. 旃以召大夫
8. 弓以召士
9. 皮冠以召虞人
10. 是以政平而不平
11. 水火醯醢鹽梅以烹魚肉
12. 清濁小大短長疾徐哀樂剛柔遲速高出入周疏以相濟也
13. 猛以濟寬
14. 寬以濟猛
15. 政是以和

Notes

- 1 An earlier version of this paper was presented at the 1987 LSA Conference in San Francisco and appeared in the *Working Papers in Languages & Linguistics* No.1 (1990) of the City Polytechnic of Hong Kong. I would like to express my gratitude to the anonymous referee of JCL for his valuable comments and suggestions.
- 2 Even though in both cases, *he* and *shi* are not regular nouns, grammatically they function as the object of the adposition *yi* in forming a PP.
- 3 The referee of the Journal suggests that the *yi* here may be a conjunction, meaning 'in order to'. However, I still believe that this *yi* should be probably treated as an adposition. First, if it is a conjunction, we may have to analyze the nouns before *yi* in (12 a,b,c) as verbs. But they are really nouns in the original text. Second, if the *yi*'s in (12 a,b,c) are conjunction, in what way the *yi* in (11), where the PP *yi* phrase is postverbal and almost in complementary distribution with the *yi* phrase in (12b), should be treated as a conjunction? If we cannot, the *yi*'s in (12) are probably adpositions rather than conjunctions.
- 4 At the request of the referee of the JCL all the examples of the postpositional use of *yi*'s in the two texts concerned are given in the appendix.
- 5 Among the 15 cases, No. 12 and 14 (the same sentence appeared twice in the original text) listed above may allow a different analysis. If *dan* 'basket' and *hu* 'bottle' are analyzed as verbs, instead of nouns, *yi* should then be treated as an adposition occurring in a serial verb construction without a surface object.

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Part 2

MODERN VARIETIES

A SYSTEM OF TONE "LETTERS"

*Yuen-Ren Chao*Source: *Le Maître Phonétique* 45, 1930, 24-7.

ə sistim əv "toun-letəz"

wið ə vju: tə kəmbain ækjursi, eligəns, ənd kənvi:njəns fə printɪŋ, ai əv divaizd ðə folouɪŋ sistim əv "toun-letəz" fə ðə kənsidəreɪʃn əv felou founitiʃnz.

i:tʃ toun-letə kənsists əv ə və:tɪkl refrəns lain, əv ðə hait əv ən n, tə mi:tʃ ə simplifaid taim-pitʃ kə:v əv ðə toun reprizentid iz ətætʃt, fə touni:mz tə ðə left əv ðə lain, ənd fə toun-vælʒuz tu its raɪt. ðə θɪknɪs əv ðə lainz iz tə bi ðə seim əz ðə hærizəntl (θin) elimənts əv ə roumən kærɪktə.

ðə toutl reindʒ iz divaidid intu fə:r i:kwəl pɑ:ts, ðəs meikiŋ faiv pɔɪnts, nʌmbəd 1, 2, 3, 4, 5, kærɪspəndɪŋ tə lou, hɑ:f-lou, mi:dʒəm, hɑ:f-hai, hai, rɪspektɪvli. in ɔ:də nɒt tə meik distɪŋkʃnz, tu: faɪn, pɔɪnts 2 ən 4 ə ju:zd aɪðər əloun ɔ: wið i:tʃ lðə, bʌt nɒt in kəmbineɪʃn wið 1, 3, ɔ: 5. wið ðis rɪstrɪkʃn, ðə toutl nʌmbər əv toun-letəz mi:tʃ ai prəpouz iz əz fəlouz:

streit tounz.		sə:kəmfleks tounz.		ʃɔ:t tounz.	
toun-letə.	neim.	toun-letə.	neim.	toun-letə.	neim.
┘	11:	↗	131:	┘	1:
┘	13:	↗	153:	┘	2:
↗	15:	↗	242:	┘	3:
┘	22:	↗	313:	┘	4:
┘	24:	↗	315:	┘	5:
┘	31:	↗	351:		
┘	33:	↗	353:		
┘	35:	↗	424:		
┘	42:	↗	513:		
┘	44:	↗	535:		
┘	51:				
┘	53:				
┘	55:				

ði:z ə də touni:m sainz. ðə seim "kə:vz" wið ðə və:tikl̩ lain pleist ən ðə rait said wil giv ðə sainz fə toun-vælju:z.

æz ði intəvɜz əv spi:tʃ-tounz əv ounli relətiv intəvɜz, ðə reindz 1—5 iz teikən tə reprizent ounli ɔ:dinəri reindz əv spi:tʃ intounɛifn̩, tu inklu:d keisiz əv mɔdərit vearieifn̩ fə lɔdʒikl̩ ikspreʃn̩, bət nɔt tu inklu:d keisiz əv ikstri:m imouʃən̩l̩ ikspreʃn̩. fə pə:pəsiz əv toun drilz, i:tʃ step mei bi teikən tə bi: ə houl toun, ðəs meikɪŋ ðə toutl̩ reindz i:kwəl tu ən ɔ:gmentid fift̩. ðis wəd meik ðə səkseisiv prənansieifn̩ əv ə nambər əv tounz saund rɑ:ðər ʌnmju:zikl̩, mitʃ hauevə iz rɑ:ðər ən ədvɑ:ntidz fə fənetik pə:pəsiz.

it wil bi noutid ðæt nou dʌbl̩ səkəmfleks tounz ə givn̩ in ðə list. mən satʃ ə toun iz spred ɔuvə mɔ: ðən wʌn siləbl̩, it kən bi sepəreitid intu kəmpounənts mitʃ 'ɑ:r in ðə list. mɛə satʃ ə toun əpləiz tə wʌn siləbl̩, ðə sain mei bi meid ʌp əz əkeiznz əraiz; ðəs Palmer'z θə:d toun fər *iŋglɪʃ mei bi givn̩ əz ʌ (3513).

igzɑ:mpɪz əv ju:s:

- :42 jɛsʰ (ɔ:dinəri əfəmeifn̩.)
- :51 jɛsʰ (əv kɔ:s.)
- :24 jɛsʰ (gou ən, aim æŋkʃəs tə hiə ðə rest əv it.)
- :13 jɛsʰ (aim lisɪŋ.)
- :15 jɛsʰ (bət, —.)
- :11 fɪjɛsʰ (ai ʌndəstænd əv kɔ:s.)
- :44 jɛ'sʰ (its ɔ:l rait, ɔ:lðou ju: meid ə mes əv it.)
- :55 jɛ'sʰ (ai hə:d ɔ:l əbaut ðæt sɔ:t əv θiŋ.)
- :351 jɛsʰ (ai fəd bi moust dilaitid.)
- :3513 jɛsʰ (sou fa:r əz ðæt s kənsə:nd, ounli —.)
- mɛəŋ dɛzʰ i:ʰ livʰ (ɔ:dinəri interəgeifn̩.)
- mɛəL dɛzʰ i:ʰ livŋ (mɛə didzɔ sei hi: livd?)
- mɛəL dɛzʰ i:ʰ livʰ (nou mætə mɛər i: i:ts.)
- mɛəʰ dɛzʰ i:L livʰ (ai didnt a:sk . . . , ai a:skt hau hi: livd.)
- mɛəL dɛzʰ i:ŋ livʰ (dountʃu nou mɛər i: livz?)

*kəntəni:z:

ŋɔʌ i:lkɑŋŋ wa-pei nei tei, kək-ɪ jam ke-ɪ ɛənʌmɛŋ-ŋ tɛhi-ɪha tɛɛŋ kək-ɪ jam ke-ɪ ka:u-ɪmɛŋ-ŋ, θuŋ-ɪma:i-ɪ tɛhi-tɛɛy-ɪ, kɔŋ-ɪ pei nei theŋ. kɔʌ luk-ɪ kɔ-ɪ jam tɛau-ɪ hai-ɪ niŋ luk-ɪkɔ-ɪ tei-ɪ ke-ɪ jam.

fanʌ fanʌ fan-ɪ fan-ɪ fanʌ fan-ɪ.

*tibetn̩ (*lasa dialekt):

(1) trænzlitəreifn̩. (ə vɔisli:s iniʃl̩ gouz wið ðə hai toun ʌ ənd ə vɔist iniʃl̩ gouz wið ðə lou toun ʌ, ʌnles mɑ:kt tə ðə kɔntrəri.)

ɪaŋ la kaʌwe tɛhamʌpa
 ɛənʌtɛiʌ tɪnʌmɑɪ ɪaŋʌ sɔŋ
 khokne sempɛ tɛɔŋ khɪʌ
 lɪpθ ɛa ɪaŋ kamʌ sɔŋ
 ɲiŋʌθup kuʌ la ɛɔɪ sɔŋ
 mɔtɛha tsɪpyʌ ɪɛn sɔŋ
 phuʌmɔ θuŋʌsemteenma
 miʌlam la khoɪ sɔŋ.

(2) ðə seim æz æktʃuəli prənaunst:

ɪaŋʌ lɑl kaʌwɛt- tɛhamʌbət
 ɛənʌdzɪt- tɪmʌmɔt- ɪaŋʌ sɔŋL
 khoʌnɛt- semʌbɛŋ tɛɔŋt- khɪL
 lət-bθʌ ɛat- ɪaŋʌ kəmt- sɔŋL
 ɲiŋʌtupt- kuʌ lɑt- ɛɔɪt- sɔŋL
 mθ-tɛəŋ tsɪt-bʌlt- ɪɛnʌ sɔŋL
 phuʌmθ- θuŋʌsmʌtɛemʌmʌt
 miʌlamʌ lɑt- khort- sɔŋL.²

ðə præktil̩k vɛlju əv eni sistim əv nouɛifn̩ dipendz ən ðə pɔsibiliti əv its wə:kɪŋ bouθ weiz. æz ə test fə ðis rikwəimənt, ai ju:zd ðə sistim in rikɔ:diŋ siksti-tu: *tibetn̩ fouk-sɔŋz spoukən (nɔt sɔŋ) tu ə diktəfoun, frəm mitʃ ðə trənskripiŋ wəz meid. ðen, a:ftə li:viŋ ðə θiŋ əloun fə sevrəl deiz, ai pikt ʌp mai mænʃuskript əgen ən red ðə houl trənskripiŋ, toun ənd ɔ:l, bæk intə diktəfoun rekɔ:dz. ən pleiŋ ði əridziŋl̩ ənd mai feik *tibetn̩ prənansieifn̩ ən tu: məʃi:nz, ən kəmpɛəriŋ ðəm sentəns bai sentəns in klous səkseʃn̩, ðə rizembləns bitwi:n ðə tu: wəz biʒənd mai ɛkspekɛifn̩. ðis kliəli ʃouz ðət it iz pɔsəbl̩ tə treɪn wʌnsɛlf in satʃ ə sistim sou əz tə meik it wə:k bækwədz əz wɛl əz fɔ:wədz.

Notes

1 si: Daniel Jones and Kwing Tong Woo, *A Cantonese Phonetic Reader*, p. 17.
 2 *Sixty-two Tibetan Folk-songs of Tshan-dbyans-rgya-tsho*, translated [intə *tʃaini:z] by Yu Dawchuyuan and transcribed by Jaw Yuanrenn, tə bi pʌblɪʃt su:n bai The Institute of History and Philology of Academia Sinica.

THE NON-UNIQUENESS OF PHONEMIC SOLUTIONS OF PHONETIC SYSTEMS

Yuen-Ren Chao

Source: *Bulletin of the Institute of History and Philology, Academia Sinica* IV, 4, 1934, 363-97.

In reading current discussions on the transcription* of sounds by phonemes, one gets the impression of a tacit assumption that given the sounds of one language, there will be one and only one way of reducing them to a system of phonemes which represent the soundsystem correctly. Since different writers do not in fact agree in the phonemic treatment of the same language, there arise then frequent controversies over the 'correctness' or 'incorrectness' in the use of phonemes.

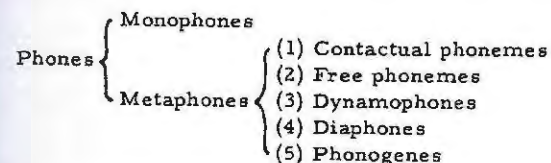
The main purpose of the present paper is to show that given the sounds of a language, there are usually more than one possible way of reducing them to a system of phonemes, and that these different systems or solutions are not simply correct or incorrect, but may be regarded only as being good or bad for various purposes.

I. Definitions of a phoneme

The most comprehensive discussion of the phoneme and related ideas seems to be that by H. E. Palmer,¹ of which we shall now give a brief summary. Palmer begins by quoting at length Jimbo's writing on 'The Concrete and Abstract Nature of Sounds:' 'One concrete sound has one definite quality, one definite pitch, one definite loudness, one definite length,' in other words, it corresponds to one particular oscillograph curve or stretch of the groove of a faithful phonograph record, which is therefore not the usual object of study for phonetics. By collecting examples of actual utterances of what is considered the same word with the same meaning by speakers of the same language of concrete sounds, one arrives at 'an abstract sound of the first degree', such as the first sound in the word army. By comparing

different words such as army, archer, art, argue, one concludes, after due examination, that the first sound in these words are 'the same', which is then 'an abstract sound of the second degree'.

Taking Palmer's own system, we note that he finds it more convenient to replace the term abstract speech-sound by the term phone. His system of phones is then as follows:



A Monophone is 'any phone of the first or second degree of abstraction of which the concrete members are so similar in point of production and of acoustic effect even when observed by a competent observer, that it may be regarded as a minimal unit of pronunciation (i.e. practically unsusceptible of subdivision).' (We may add: 'or of further differentiation'.) 'Contrasted with monophones we have metaphones, which we may define as two or more phones which serve jointly as units of meaning within the limits of a given linguistic community.'

(1) Palmer goes on to identify Jones's definition of a phoneme with his idea of a contactual phoneme: 'A phoneme is a group of sounds consisting of an important sound of the language (i.e. the most frequently used member of that group) together with others which take its place in particular sound-groups. . . . The use of subsidiary members of phonemes is, in most languages, determined by simple principles which can be stated once for all, and which can be taken for granted in reading phonetic texts.'

(2) A free phoneme is like a contactual phoneme except that it is impossible to say in what phonetic circumstances one or another of its members will be actually used. We can give the apparently random² use of the tip or back of the tongue in the nasal ending of words like * [lin ~ liŋ], * [min ~ miŋ] in Nanking as an example of free phonemes. This is the same as Jones's variphone.

(3) A dynamophone is a metaphone which contains two or more phones differing not only in quality, but also in regard to the intensity or force of the articulation that produces them. Palmer cites the first phone in the word as as an example which shades from the first phone of act to the obscure sound of the first phone of about, and even to zero value.

It would seem convenient also to include under this heading those metaphones whose members differ according to conditions of length and intonation (in which case a term wider than dynamophone will have to be used). Thus, the vowel in French bette and bête is a metaphone whose members differ slightly in quality according to the conditions of length.

Those who transcribe eat, it as [i:t], [it] are also considering the vowel in these words as forming one metaphone whose members differ in quality according to conditions of length. Again, the vowel in the Foochow words 𪛗 [kɔ'55:] and 𪛗 [kɔ'12:] is a metaphone whose members differ in quality according as the intonation belongs to one or the other of two sets of tones.

Before taking up the next two terms, it will be well to examine a later definition of a phoneme given by Jones: 'Definition of a phoneme: a family of sounds in a given language which are related in character and are such that no one of them ever occurs in the same surroundings as any other in words.' (The term 'language' here means the pronunciation of one individual speaking in a definite style. 'In the same surroundings' means surrounded by the same sounds and in the same condition as regards length, stress and intonation.)³ This definition differs from the earlier one quoted above in that it no longer mentions a 'principal member', but specifies that the different members should be 'related in character' and that no two of them should occur 'in the same surroundings as regards length, stress and intonation'. It seems therefore that Jones's conception of a phoneme includes not only Palmer's contactual phonemes, but also some at least of his dynamophones.

(4) The term diaphone is used by Palmer following the usage of Jones: 'The diaphone is a family of sounds heard when we compare the speech of one person with that of another.' Jones cites [o:], [ou], [əu], [Au] as members of the diaphone occurring in words like coat, road, home. Similarly, we can cite [au], [ou], [əu], [ɛ], [u], [ɔy], [ei], [i] as members of the diaphone occurring in words like 歐 'Europe', 狗 'dog', 後 'after'.

(5) The phonogene, a term also proposed by Jones, is 'a given phone together with its ancestral forms,' thus the vowel [ou] in stone, together with [o], [ɔ], [a] form a phonogene. Similarly, [ə], [əɪ], [ɪ], [i], [zi], [ɲzi], [ni], [ni] form one phonogene in words like 兒 'child' 耳, 'ear' 二, 'two'.

Bloomfield gives no formal definition of a phoneme. He begins by distinguishing the 'gross acoustic features' of language (Jimbo's 'concrete sounds' or sounds of low degrees of abstraction) and 'distinctive' or 'significant features'. By comparing the partial identities and differences between words like pin, tin, tan, tack, he succeeds in analyzing the distinctive features of words like pin into indivisible units which cannot be analyzed any further (from the standpoint of the language under investigation): each of these units is 'a minimum unit of distinctive sound-feature, a phoneme,'⁴ which phrase is the nearest Bloomfield comes to a formal definition of a phoneme.

Differences of quality conditioned by length are grouped by Bloomfield under the same phoneme, as German Beet [be:t], Bett [bet]. He also writes hate ['hate], where the stress on the first syllable indicates sufficiently the weakened and obscure value of the second vowel. Bloomfield's phoneme therefore also includes Palmer's dynamophones.

Bloomfield makes no explicit mention of free phonemes or variphones. In cases like the apparently random use of final [n] and [ŋ] in some Chinese dialects for the same word in the same phonetic surroundings, he would probably consider simple nasality as being the distinctive feature and the place of articulation as among the gross acoustic features. In other words, variphones are also phonemes, except that the choice of the exact shade of the sound used is determined by psychological and physiological factors other than those of phonetic environment. Since, however, whether variation of sounds determined by non-phonetic conditions are wide enough to be called two or more 'different' sounds or simply inevitable small 'accidental' variations depends upon the degree of narrowness of the phonetician's scale of division, Bloomfield is within his rights in neglecting the existence of variphones.⁵

From the preceding, it may seem that Bloomfield has a different conception of the phoneme from that of Jones and Palmer. For Jones and Palmer, a phoneme is a group of sounds, while for Bloomfield it is a sound-feature. If, however, we examine the two ideas more closely, we shall find that they amount to the same thing. Take for example the English phoneme [h]. From one point of view, we may say that it is a group of different sounds [h₁], [h₂], [h₃], [h₄], etc., where the subscripts are an indication of the tongue and lip positions during the pronunciation of the consonant. But from the other point of view we may just as well say that the phoneme [h] is simply the feature of voiceless glottal friction and leave the other non-significant features unspecified. There is therefore no real difference in the use of the term phoneme by those writers, so far as this point is concerned.

For the present discussion, we shall group together Palmer's contactual phoneme, free phoneme, and dynamophone, all under the term phoneme, to be defined as follows:

A phoneme is one of an exhaustive list of classes of sounds in a language,⁶ such that every word in the language can be given as an ordered series of one or more of these classes and such that two different words which are not considered as having the same pronunciation differ in the order or in the constituency of the classes which make up the word.

Observations:

- (1) This definition presupposes that it is possible to enumerate exhaustively the total number of phonemes for any given language.
- (2) It does not exclude the possibility of the same sound belonging to more than one class (Cf. II 2 (f), (g) below).
- (3) It is non-committal as to whether given a language, there is one unique way for grouping its sounds into phonemes or there are other possible ways.
- (4) It leaves unspecified the scope of the word 'sound' as regards size and kind, i.e. the degree of analysis into successive elements and the degree of differentiation into kinds.

- (5) It includes both the cases where, given the phonemes in a word and its phonetic environment, it is possible to determine the actual pronunciation of the word by a set of 'rules of pronunciation' (i.e. to know which member-sounds of sound-classes will actually be used) and those cases where a given word in a given phonetic environment may still contain a phoneme of which one or another member may be used. The former will be a contactual phoneme or a dynamophone and the latter a free phoneme. (This remark, however, would be superfluous if we repudiate the validity of descriptive phonetics, with its narrow transcriptions.)
- (6) The clause that every word consists of a series of 'classes' may sound a little strange. But if, as is convenient in the study of languages, we speak of recognizable words consisting of recognizable phonemes, then such phonemes are usually classes of sounds, which a trained ear would distinguish as different sounds. The statement sounds no more strange than that 1, 2, 3, 4 are a series of classes, which is what mathematicians define numbers as.
- (7) If each phoneme is written with one definite symbol, then every word will have a definite form of transcription. Homophones, or different words having the same pronunciation, will be transcribed alike. It should be noted, however, that the boundary between a homophone and a word with variations in meaning is often hard to determine.
- (8) A phonemic transcription is pronounceable without reference to grammatical or lexical consideration. Thus, the Chinese National Phonetic Script and the National Romanization are phonemic transcriptions in a sense in which English or even German orthography is not.

II. Factors which influence the phonemic solutions of phonetic systems

As the grouping of sounds in a language into phonemes as defined above does not necessarily lead to one unique solution, we shall now consider the various factors which influence the form of the solutions.

1. Size of unit in time

(a) Under-analysis

In the early days of phonetic transcription, the slogan was 'one sound, one symbol'. In these days of phonemic transcription, this has been changed to 'one phoneme, one symbol', so that it is now permissible to represent more than one sound by one symbol.

But there are two aspects to the idea of 'one sound'. From the point of view of differentiation of quality, 'one sound' is one kind of sound, which is what one usually has in mind when using the phrase in discussions about phonemes.

But from the point of view of analysis in time, 'one sound' is one piece of sound, such that its quality is homogeneous throughout its duration. Discussions about phonemes do not seem to have been very explicit about the change of quality in time which may be included within the scope of one phoneme. We recall that Palmer defines a monophone 'as a minimal unit of pronunciation (i.e. practically insusceptible of further subdivision)'. All the preceding discussions in the passage quoted have to do with the question of differentiation, but as the words 'minimal' and 'subdivision' can also be taken in the temporal sense, it would seem that a monophone should be both one kind of sound and one piece of sound.

Now if it is convenient to group into classes and call phonemes different kinds of sounds in a language which go together in a certain way, it would also be convenient to join into compounds successive pieces of sounds which act as units in a language. This is by no means new practice. Our point here is only to make it explicit and put it on a par with the differential aspect of phonemes.

All kinetic speech-sounds, diphthongs, affricates, aspirates, and other sounds with their usual glides are compounds which act as units and can be treated as phonemes. Thus, Bloomfield considers the English affricates [č] and [j] as independent phonemes. The English plosives [p], [t], [k] are treated by all writers as single phonemes, although in initial stressed positions they have a slight aspiration and have a larger size than in unstressed positions or after [s] (in [sp-], [st-], [sk-]). In the former case, the inclusion of [č] and [j] is optional, for these could be resolved into the phonemes [tʃ] and [dʒ] respectively. In cases like he cheats [hi: 'tʃi:ts], heat sheets [hi:t 'ʃi:ts]; What can each add? [. . . i:tʃ 'æd], What can eat shad? [. . . i:t 'ʃæd], the distinction may either be made by considering [č] and [tʃ] as different phonemes, as with Bloomfield, or simply by the difference in the position of the minimum point, as with most other writers; that is to say, since the [č] in each add and the [tʃ] in eat shad never occur under the same conditions as regards stress, [č] need not be considered as a separate phoneme. In many Chinese dialects, the initial [k] always occurs before low front vowels or central or back vowels, and initials of the [tɕ] type always occur before high front vowels. The two may therefore be taken as the same phoneme, although the latter is an affricate. Similarly, the [t] in [ta] ㄊ, the [tɕ] in [tɕei] ㄊ and the [ts] in [tsu] ㄊ in Japanese may be taken as belonging to one phoneme.

Kinetic sounds of the diphthong type need special consideration. While affricates, aspirates and sounds with characteristic glides can usually be analyzed, if desired, into two or three recognizable elements, kinetic vowels and quasi-vowels are sounds with even more gradual change in quality. The usual method of representing these sounds is simply to indicate the two end-positions of the whole movement, as [ei], or to indicate the open position and the extreme close position even though never actually reached, as [ai] for what is actually never wider than [ae]. In the case of movement not by the most direct line, the turning point is indicated by inserting an additional symbol, as [uei], but not [aou], as [au] means [aou] or [aou].

Now by our definition of a phoneme, there is nothing to prevent us from regarding characteristic kinetic open sounds in a language as independent phonemes, which is in fact the practice of the designers of the Chinese National Phonetic Script, who represent [ai], [ei], [au], [ou] by the single symbols ㄞ, ㄟ, ㄠ, ㄡ, and even [an], [ən], [aŋ], [əŋ] by ㄢㄣ, ㄣㄣ. It may seem unorthodox to take the National Phonetic Script as serious phonemic transcription, but we should be less sure of ourselves when we come to cases of narrow-range kinetic sounds. There is a real difference in practice, if not of opinion, between Bloomfield's use of [ij] and [uw] for English and other writers' use of [i:] and [u:], as contrasted with [i] and [u]; or of [i] and [u] (with implied relative length) as contrasted with [ɪ] and [ʊ]. Again, in many American dialects, it is a toss-up whether to write *bet*, *bait* as [bet], [beit] or as [bet], [be:t], or [bet], [bet] (with implied length). The most interesting case of the size-of-unit question is that of the Foochow dialect, where a whole series of vowels in the same words are static or kinetic according to the tone in which each is pronounced. Thus, 氣 [k'ei 12:] 'air', 竹 [tɔyk 23:] 'bamboo', 護 [hou 242:] 'protect', take on the following sounds when they are pronounced in the following combinations of tonal environment: 氣壓 [k'i 53: ək 23:] 'air pressure', 竹節 [ty 5: ʒaik 23:] 'bamboo section', and 護兵 [hu 55: viŋ 55:] 'guards' (protecting soldiers), respectively. We have therefore on our hands the question of choice between (1) admitting phonemes of which some members are static and other members kinetic vowels, or diphthongs, and (2) regarding the static members as forming one phoneme and the corresponding kinetic vowels as two phonemes in succession, thus allowing the same word to have two forms. The presence and absence of the aspiration in English [p], [t], [k] mentioned above is also a similar case, though not so striking.

Another very peculiar case is that of a vowel in a concave circumflex tone in a number of Chinese dialects, such as the yangshaang tone of Hwangyan, Chekiang, where the valley is so low or simply so narrow that the voice is lost into a glottal stop in the middle of the syllable, so that [ɔ313:] actually becomes [ɔ31:ʔɔ3:]. Phonetically, it sounds like three sounds forming two syllables. But phonemically, it is much more natural to consider it as a form of [ɔ] in a certain tone.

On the whole, the usual practice allows a great deal of latitude in taking kinetic consonants as single phonemes, but is not so free in giving single symbols for kinetic vowels. Bloomfield gives a list of eight diphthongs and one triphthong for English, and calls them 'compound primary phonemes', all their elements occurring also as single primary phonemes. [1955 note: The word 'primary' does not affect this discussion; it was simply Bloomfield's word for our 'segmental' phonemes – the vowels and consonants.]

The chief point we wish to emphasize here is that it is not always advisable or convenient to take the smallest static unit of sound analyzable by the trained ear as the unit of phonemic members ('one piece sound, one symbol'), and that according as we take a smaller or a larger unit for our phonemic members, we sometimes arrive at different forms of phonemic pattern for the same language, which are equally valid, though they may not be equally suitable for this or that purpose.

(b) *Over-analysis*

The principle of 'one piece sound, one symbol' has yet to allow a class of exceptions in the opposite direction, namely, one piece sound, two or three piece symbols. Jones and Camilli give the following cases where combinations of letters are permitted to represent single phonemes:⁷

- a) The affricates [pf], [bv], [ts], [dz], [tʃ], [dʒ], [tɕ], etc.
- b) The aspirates [ph], [th], [kh], [tʰ], [tʃʰ], etc., and weak aspirates [pʰ], [tʰ], etc.
- c) The aspirated [s] or [sh].
- d) [t], [d] with lateral explosions: [tl], [dl].
- e) The voiceless nasals, [hm], [hn], [hɲ], [hŋ], when these are distinct phonemes.
- f) Retroflex vowels, as American [ɔɻ], or Peiping [ɻ]. [Chao quoted Jones's '[uɻ]'.]
- g) Labiovelar consonants: [kp], [gb].

Of these cases, a) and b) are recognizably compound sounds, which we should consider as two or three piece sounds, for which the use of [tʃ], [dʒ], [ph], [th], etc. would be considered as normal and the use of [č], [ʝ], (or [c], [j]), [p], [t], etc. would be considered as cases of under-analysis. c) and d) may be regarded as borderline cases. e), f), and g) are clear cases of over-analysis, that is, cases of one homogeneous sound represented by two or three piece symbols, each of which represents some aspect or aspects of the sound.⁸ Thus, [hm] is a [m]-sound which is breathed (i.e. [h]-ized) or a [h]-sound with labio-nasal articulation (i.e. [m]-ized). It is meaningless to ask which is the substantive and which the adjective, as they are all constituting attributes which together form the sound in question and could be represented by Jespersen's over-analytical alphabetic symbols. Similarly, American [ɔɻ] is a single vowel formed by the middle of the tongue in the [ə] position with the apex curled back (sometimes transcribed as [ə̠]). The representation of voiceless [w] or [ʌ] by [hw] is another case, which is mentioned by Jones and Camilli under an earlier section in the same pamphlet quoted.⁹

Among the uses of diacritical marks, Jones and Camilli¹⁰ mention 'the saving of a series of new letters,' such as adding ~ to [ɑ], [ɔ], [œ], [ɛ], to form [ã], [õ], [œ̃], [ɛ̃] in transcribing French. The reader will recall the great furore which was aroused by Passy's proposal to use [ɑŋ], [ɔŋ], [œŋ], [ɛŋ] for these French vowels in the first post-war issues of *Le maître phonétique*. He modestly called it orthographic transcription; but if [əɻ] can represent [ə̠], there is no reason why [ɑŋ] cannot represent [ã]. To object that other French dialects or German actually has [ɑŋ] as two successive sounds is beside the point, as we are talking about phonemic transcriptions and our universe of discourse is limited to one dialect or one language, otherwise we should have to go back to narrow phonetic transcriptions. Not that [ɑŋ] is the only right way or even a good way of representing French [ã], but there seems to be nothing wrong, so far as usage in other cases goes, with representing one piece sound by two piece symbols.

Jones and Camilli do another thing along the same line. Without mentioning the saving of a series of modified letters under any of the principles, they also use the device of representing one piece sound by two piece symbols in transcribing the Russian palatalized consonants, where the explanatory note says, 'j is used as the sign of palatalization, that is, tj = t_j, nj = n_j, lj = l_j, snj = sn_j, tnj = tn_j, lnj = ln_j, etc.'¹¹ This [j] is therefore a significant feature, but it does not necessarily occupy any time of its own.

Another important case is that of the 'voiced h', which plays a very important part in the Wu-dialects in China. These dialects usually have an ordinary [h], which has different values according to the vowel following and may therefore be taken as one phoneme, just as in the case of English or German, so that instead of having 2n symbols for h₁a₁, h₂a₂, . . . h_na_n (where a₁, a₂, . . . a_n are the vowels which may follow the h in the language), we need only n + 1 symbols for ha₁, ha₂, . . . ha_n. But in the case of the voiced h, not only the vowel quality (or the vowel articulation) begins at the very beginning of the breathing, but the breathiness also lasts till the very last moment of the vowel, so as to form one homogeneous breathy vowel, and there is neither question of order of succession nor question of substantive and adjective. If we must have one piece symbol for one piece sound, we should have to have either a series of different voiced h symbols for different vowels, or an extra series of breathy vowels have to be recognized. The only practical thing to do here is to consider voiced h as one phoneme and write the vowel symbols after it as [hɑ], [hɛ], [hɔ], etc., although we know that these digraphs represent perfectly homogeneous sounds.

There are also borderline cases where it is open to question whether certain sound-elements are simultaneous or successive. According to ordinary transcriptions, the English word sway is transcribed as [swei] while the Chinese word 歲 'year' is transcribed as [suei], from which it would seem that the first two elements in Chinese 歲 would be separated more clearly than in English sway. As a matter of fact, the contrary is the case. While the [s] in English sway is not at all labialized for most of its duration, the [s] in Chinese 歲 is completely labialized. Moreover, the diphthong [ei] starts almost as soon as the tongue leaves the [s]-position without leaving any appreciable duration for the [u] or [w] to stand alone, so that a narrow transcription might give 歲 as [sei] or, as the velar element is rather weak in this type of word, as [sɛi]. But in similar syllables in other tones or with other initial consonants, there is more independence in the [u]-element. It would be contrary to the spirit of phonemic transcription to write 歲 as [sɛi] and 對 as [tuei]. Consequently, we must allow as a possible phonemic 'solution' the over-analysis of [σ] into two phonemes [su] or [sw], and so long as our universe of discourse is Chinese (Mandarin) phonemes, we should not be disturbed by the fact that [sw] in English is a succession of two sounds in which [s] is little or not at all [w]-ized.

From the consideration of these cases of under-analysis and over-analysis, we see the great advantage of Bloomfield's speaking of sound-features instead of sounds. If we consider a sound as made of a number of features, then a phoneme is a combination of certain (simultaneous and/or successive) features, leaving other features unspecified. The English [t]-phoneme, for instance, consists of the features of voicelessness, apico-alveolar articulation of a certain range (eighth, tea,

tray), and complete stop of breath, while the exact position of articulation, the force of stopping, the nature of on-glides (heat, hoot) and off-glides (tar, star, tea, two, little, button, but) are left unspecified. The Chinese [u]-phoneme consists of the features of lip-narrowing, a slight velar action, and voice, and as the position of the tip of the tongue is left unspecified, it is perfectly free to form the [s]-articulation while the [u]-articulation is being held, so that we can entertain the idea of two phonemes [s] and [u] being telescoped into one single sound [σ] without necessarily considering the sound [σ] as one new phoneme or as one member of a new phoneme. Similarly, the [ɦ]-phoneme in the Wu-dialects consists of the feature of emitting more air than usual in producing voice, and as it does not specify anything about the oral or nasal features of articulation, the speaker is free to do all kinds of articulatory tricks at the same time with [ɦ],¹² so that there is an [ɑ] type of [ɦ], an [ɛ] type of [ɦ], etc., and even an [m] type of [ɦ], as [ɦm] 'have not', as contrasted with [m] in [ɦm-mɑ] 'mother', and yet all this does not prevent us from considering the [ɦ] and [ɑ] in [ɦɑ] as two theoretically separate phonemes.

(c) Zero symbols.¹³

As limiting cases of the variation in size of unit, we have the possibility of using zero symbol for sounds or sound-features and of counting absence of sound as a phoneme or as one member of a phoneme.

Where there are several degrees of significant stress, significant length, or kinds of significant intonation, it is the usual practice to represent one of them by zero symbol. Thus, unmarked syllables in polysyllabic English words are understood to have the low degrees of stress. Vowels without length marks are understood to be short. In most systems of tone-marking, the first tone in Chinese is 'marked' by not marking it.

In the Chinese syllables [tʂʊ], [tʂʊ̃], [ʂʊ], [zʊ], [tsɿ], [tsɿ̃], [sɿ],¹⁴ there is a vowel which is a vocalized prolongation of the preceding consonant, and it is understood to be present when these syllables are written in the standard way, that is with the consonantal symbols standing alone: 出, 只, 尸, 冢, 尸, 志, ㄤ, in the National Phonetic Script. This is therefore a way of representing actual sounds by zero symbol.

In German stressed syllables beginning orthographically with a vowel, there is normally a glottal stop. Some writers give the symbol [ʔ] for this sound, but others omit the symbol, and in internal positions, as in Verein, a stress mark suffices to indicate the presence of the [ʔ], as [fer'ain]. It would be perfectly possible, though hardly conventional, for us to favor some other phoneme with the saving of a symbol, say [h], and transcribe Hauch as [aux] and auch as [ʔaux].

Readers of Bloomfield's Language who are used to ordinary types of transcriptions of English must have been impressed by forms like these on pages 111, 112, 121, 122:

gentleman	['jɛntlɪmɪn]
atom	['ɛtɪm]
maintenance	['meɪntɪnəns]

maintain	[mən'tejn]
stirring	['stɪrɪŋ] vs. string [striŋ]
pattern	['pætɪn] vs. patron ['peɪtrən]
erring	['rɪŋ] vs. ring [rɪŋ]
error	['erɹ]
butter	['bʊtɹ] on a par with bottle ['batl]
bottom	['batɪ] on a par with button ['bʊtɪ]
anatomy	[e'netmij] vs. met me [met mij]

Now Bloomfield systematically avoids the use of the obscure vowel letter [ə], and plays his game admirably well. The e in French le he considers as a short variety of [œ] (p. 106), which agrees more or less with the idea of the French themselves. For German, he lets the difference in stress take care of the difference between [e] and [ə]. For American English, he uses the strong forms where there is no following consonant or where the following consonant is not usually considered to be a syllable-carrier in English, but leaves out the symbol entirely in other cases. Now from the point of view of actual sound, weakened orthographically written vowels either become [ə] or disappear entirely. If we take ordinary deliberate conversation as the style of 'language' to consider, we can say, according to the writer's own observation of Middle Western American speech, that the presence or absence of a vocalized [ə] is about as follows:

[ə] compulsory or preferred	[ə] optional	Absence of [ə] compulsory or preferred
arbor [-bər] vs. club rate	happen [-p(ə)n]	able [-b]
upper [-pər] vs. upright	often [-f(ə)n]	simple [-p]
gentleman [-mən] vs. autumnal	even [-v(ə)n]	dismal [-m]
humor [-mər] vs. am ready	bacon [-k(ə)n]	careful [-fl]
kingdom [-dəm] vs. bed-mate	Winkum [-k(ə)m]	devil [-v]
London [-ndən] vs. kindness	Beauchamp [-č(ə)m]	sudden [-dn]
under [-dər] vs. shad roe	Gresham [-š(ə)m]	middle [-dl]
atom [-təm] vs. met me	patron [-tr(ə)n]	colonel [-nl]
pattern [-tɔrn] vs. outright	Durham [-r(ə)m]	wiggle [-gl]
maintenance [-nəns] vs. main news	coral [-r(ə)l]	engine [-jŋ]
Barnum [-nəm] vs. on me	handsome [-s(ə)m]	cordial [-j]
corner [-nər] vs. Henry	bosom [-z(ə)m]	luncheon [-čn]
Helen [-lən] vs. hell no	Bentham [θ(ə)m]	celestial [-čl]
alum [-ləm] vs. elm (but also [eləm])	fathom [-ð(ə)m]	nation [-šn]

Keller [-ləɹ] vs. all right	lengthen [-θ(ə)n]	special [-šl]
finger [-gɹɹ] vs. big row	heathen [-ð(ə)n]	vision [-ʒn]
teacher [-čɹ] vs. teach right		listen [-sn]
pleasure [-žɹ] vs. rouge-red		tassel [-sl]
error [-rɹɹ] vs. her right		dozen [-zn]
tracer [-sɹ] vs. viceroy		hazel [-zl]
Caesar [-zɹ] vs. phase-rule		Ethel [-θl]
ether [-θɹ] vs. Ruth ran		brothel [-ðl]
father [-ðɹ] vs. with rum		

Opinions may differ as to the placing of particular cases under each heading, but there seems to be no doubt as to the presence of [ə] in gentleman [-mən] or its absence in able [-b]. Historically, as the orthography indicates, many of these words had clear vowels. Now some of them have an obscure vowel even in deliberate speech, which does not however entirely disappear in some cases. Since the presence, option, or absence of the [ə]-sound are more or less determined by the nature of the sounds preceding and following, and sometimes by conditions of syllabication, we can regard this as one phoneme of which one member is the obscure vowel [ə], a second member is a variphone (or dynamophone) consisting of [ə] and zero, and a third member is zero. Bloomfield has therefore as much right to represent this phoneme by zero symbol as one has to represent German [ʔ] by zero symbol. Apparent ambiguities as in the case of string and stirring may be avoided by marking the syllabication: ['strɪŋ], which will remind us to explode the [t] before the [r], as it is a case of the first member of the phoneme.

It should be noted that our discussion here is to find a methodological justification for Bloomfield's used of zero symbol for an actual sound. There are other considerations from which this avoidance of the symbol [ə] seems rather inconvenient. Thus, when there is no final consonant like [l], [n], etc., to act as a syllable carrier, as in America, suppose, jealous, he is obliged to use exclusively strong forms like [e'merike] or [e'merika], [so'powz], [ʒelos], which are rarely heard even in deliberate speech (understanding of course that [o] is the 'short u'). The definite article the will have to be either [ðij] or [ð], with no middle ground. Those who favor Bloomfield's system for English will find that he is simply carrying the omission of [ə] to its logical conclusion. Those who do not will consider forms like ['strɪŋ], ['meɪntɪns], [e'merika] a reductio ad absurdum.

Under cases of under-analysis, we considered the representation of affricates, aspirates, and narrow-range diphthongs by single symbols. Now if the symbol used is obviously one of the elements in the compound, as [p] for [pʰ], [c] (instead of [č]) for [cɛ], [ɟ] (instead of [j]) for [ɟz], or [o] for [ou], then we can regard that element which is understood but not represented as having zero

symbol. For instance, in the Soochow dialect, labials go with [u], velars and dentals go with [əu], and alveolars go with an apical vowel with protruding lips, for which the writer has proposed the symbol [ʷ],¹⁵ as 布 [pʷ], 故 [kəʷ], 詰 [tʃʷ]. All these can be considered as members of one phoneme [u], in which case the [ə] in [əu] would be a sound with zero symbol. Again, in the Foochow vowels [u] ~ [ou], [i] ~ [ei], [y] ~ [øy] according to tone, as cited above, it is common practice to consider the first tone, which goes with [i], [u], [y], as basic, so that it is convenient to write these phonemes as [i], [u], [y], in which case a tone mark would suffice to remind one of the addition of [e-], [o-], [ø-] (by no means weak and parasitic), though these elements still have no symbol to themselves except as implied by the tone.

(d) Zero sound

In the cases of over-analysis, as in [fiɑ], we had two features representing separate phonemes which together make one single sound. But if we take the series [u], [əu], [ʷ] in Soochow and consider them as varieties of [əu], of which the [ə] is absent after labials and alveolars, then under the latter conditions the phoneme [ə] will have zero as a member. Similarly, if we write in the symbol [ə] for maintenance [-nəns], happen [-pən], button [-tən], all alike, then the [ə] will be a symbol for a phoneme, of which one member (in words of the type in the third column in the preceding table) has the value zero. Again, Bloomfield's use of [ij] and [ow] in unstressed positions may be regarded as cases of [j] and [w] with zero sound. In Passy's 'orthographic' notation referred to above, he spelt out the 'mute e' as [ə] in all cases, letting the 'rule of three consonants' take care of the presence or absence of the actual sound. From our point of view, [ə] would then be a phoneme with zero as a possible member. In the system of Ancient Chinese initials, there are two called yiing (影) and yuh (喻) which have been reconstructed by Karlgren as [ʔ] and smooth vowel respectively. Those are of course only the names of the initials. But Jang Tayyan (章太炎) has devised an alphabet with a symbol for each of the 36 initials, so that his symbol for yuh would be a symbol with zero value, very much like the ' symbol for the smooth ingress of vowels in Greek.

In the theory of shéh (攝) or 'rim-emes' in traditional Chinese phonology, the use of a symbol for zero is extremely useful. Taking again the National Phonetic Script, which is constructed very much in the spirit of traditional phonology, we have the rimemes ㄨ, ㄨㄛ, ㄨㄛㄨ, ㄨㄛㄨㄛ which, like the other rimemes, may be preceded by the medials ㄨ, ㄨㄛ, or ㄨㄛㄨ so as to form the following complete finals (i. e. syllables minus initial consonant, if any) which actually occur in words:

- without medial : ㄨ ㄨㄛ ㄨㄛㄨ ㄨㄛㄨㄛ
- with medial ㄨ : ㄨㄨ ㄨㄨㄛ ㄨㄨㄛㄨ ㄨㄨㄛㄨㄛ
- with medial ㄨㄛ : ㄨㄛㄨ ㄨㄛㄨㄛ ㄨㄛㄨㄛㄨ ㄨㄛㄨㄛㄨㄛ
- with medial ㄨㄛㄨ : ㄨㄛㄨㄨ ㄨㄛㄨㄨㄛ ㄨㄛㄨㄨㄛㄨ ㄨㄛㄨㄨㄛㄨㄛ

A simple phonemic transcription in the IPA would be

- əi əu ən əŋ
- iəu iən iəŋ
- uəi uən uəŋ
- yən yəŋ

In these twelve finals, the [ə] in [iən], [iəŋ], and [yəŋ] always has zero value (in [yəŋ], the [y] is broken up into an intermediate value between [iu] and [yu]), just like the [ə] in [ba:dən] for German baden.^{15a} In the case of [uəi] and [iəu], the [ə] has zero sound in the first and second tones and has some sound in the third and fourth tones, except that in [uəi] not preceded by an initial consonant, [ə] does not entirely disappear in any tone. In [uən] the [ə] has zero sound in the first and second tones when there is an initial consonant, is fully sounded when there is no initial, and is very weak in other cases. With [uəŋ], the [ə] is sounded only when there is no initial consonant. With [yəŋ], the [ə] is sounded (with the value [ɿ]) when there is a palatal initial or no initial, but has zero sound with other initials. With such a complicated group of facts, where each case is a law unto itself, we should still fail to attain perfect phonetic accuracy by writing something like:

- ei ou ən ʌŋ
- iu in iŋ
- uei un uŋ
- yn iuŋ,

although this may be a useful form of transcription for certain purposes. The paradoxical appearance of a symbol with widely different values, including zero, would disappear if we stuck to the National Phonetic Script or used some non-committal symbol such as 'ø' for the phoneme in question, thus:

- øi øu ən øŋ
- iøu iøn iøŋ
- uøi uøn uøŋ
- yøn yøŋ.

This is of course not the only or even the best phonemic treatment of these finals, but by allowing the possibility of zero members of phonemes, we do gain a number of advantages.¹⁶

(e) *Phonemic treatment of conditional end-consonants*

In ordinary transcription of French, cases of liaison and elision are spelt as they sound. The word *pas* then has two forms [pa] and [paz], *le* has [lə] and [l], and by the 'rule of three consonants' the word *demander* has the two forms (vous) [dmãde] and (pour) [dãmãde]. Similarly, Southern English *sore* has the two forms [sɔ:]¹⁷ (throat) and [sɔ:r] (eyes). The presence or absence of the sound in question is not distinctive, so that it and zero may be considered as members of the same phoneme. But the difference between *saw* [sɔ:] and *sore* [sɔ:] is distinctive, and for the phoneme with the conditional [r], the symbol '*' has been used in dictionaries, though the writer has never seen it used in texts, probably because ordinary transcriptions are not phonemic. From arguments with unsophisticated Frenchmen, who insisted that *point* did not have the same pronunciation as *poing*, the writer would think that a special phonemic symbol for these optional sounds would be welcomed by the French, say something like [paz], [pwẽt], so as to avoid the pitfalls of the 'patakes' business.¹⁸ Better symbols than these may be devised. Our interest here is in the obvious phonemic nature of these groups [z] ~ zero, [t] ~ zero, etc. It may not be necessary to outlaw the writing of two alternate forms for one word. But it would be an advantage not to have to do so.¹⁹

In this connection, we may mention the so-called 'aspirated h' in French as a consonant phoneme which always has zero sound, but has a very definite 'feature' of its own, and may be conveniently symbolized as [h̥]. The great advantage in regarding this as a consonant phoneme lies in that it greatly simplifies the description of the behavior of other phonemes. We can then say that [-t̥] (liaison t) has the sound [t] before vowels, and zero sound before consonants or in end-position. If we refuse existential status to [h̥], we have to say that [-t̥] has the sound [t] before vowels, except before the following exhaustive list of words: [aza:r], [z:z], etc., which is no way of stating the 'rule of pronunciation' for phonemes.

In many Chinese dialects, final consonants like [-n], [-k], [-ʔ] are pronounced very clearly at the end of phrases, but become weakened or disappear entirely when followed immediately by another word. The [ʔ] in Foochow or the Wu-dialects is a phoneme which has zero value before another word. Thus, Soochow 八 [poʔ] 'eight', 八百 [popaʔ] 'eight hundred', 八百八 [popapoʔ] 'eight hundred eight(y)'. The vowel is not even lengthened (as it is in Soochow under certain conditions) to make up for the time of the original [ʔ]. If we write phonemically, we can represent this phoneme with [ʔ] and zero sound as its two members either by (1) zero symbol (and let the symbol for the entering tone, with which it is always associated in these dialects, indicate its presence), or (2) the symbol [-ʔ] or [-ʔ̥] in all cases, whether the glottal stop is articulated or not.

It is not our purpose here to propose purely for the pleasure of perversity either to under-analyze two or more piece sounds and treat them as single phonemes or to over-analyze one piece sounds and treat them as successions of phonemes, nor purposely to write something where there is nothing to write, or to write nothing where there is something to write. We wish only to indicate that all such tricks

are actually being done in current transcriptions, and that according to the way in which we treat the time unit of phonemes in a language we may arrive at one or another of various possible solutions for that language.

2. *The Grouping of Sounds into Phonemes*

So long as we confine ourselves to the consideration of stock examples like *keep*, *call*, *cool*, our construction of phonemic systems is smooth-sailing. We need only to disregard slight variations of what is generally regarded as 'the same sound' and call it a phoneme. But on many questions of the identification of sounds in a language, we are not favored with such general consensus of opinion. Is the second element of the English 'long i' to be identified with the first element in *yes* (Bloomfield's [aj]), or with the first element in *it* ([ar] by many writers), or with the final element in *very* (Palmer's [aɪ]), or with the undistinguished [i] in *it* [it], *eat* [i:t], *very* ['veri] ([ai] by many writers), or with the first element in *eight* ([æ] in certain 'narrow' transcriptions)? Is the palatal series [tɛ], [tɛ'], [ɛ] in words like 茶, 芽, 下 (occurring only before high front vowels) to be identified with the velar series [k], [k'], [x] or with the retroflex series [tʂ], [tʂ'], [ʂ] (none of either series ever occurring before high front vowels)? According as we emphasize this or that motive, we should arrive at a different system of organization of elements into phonemes. We may desire to have (a) phonetic accuracy, or smallness of range of phonemes, (b) simplicity or symmetry of phonetic pattern for the whole language, (c) parsimony in the total number of phonemes, (d) regard for the feeling of the native speaker, (e) regard for etymology, (f) mutual exclusiveness between phonemes, (g) symbolic reversibility, and these motives are often conflicting.

(a) A minimum degree of phonetic accuracy is provided for by the 'similar in character' clause contained in Jones's later definition. By our purely logical definition, we should have the possibility of regarding English [h] and [ɲ] as members of one phoneme, which never occur in the same phonetic environment, and we could write forms like [hæt], [bi'hɛiv], [sɔh], ['sihɔ*] for *hat*, *behave*, *song*, *singer*, and learn very quickly when to say [h] and when to say [ɲ]. Such practice, however, would not be favored by either the phonetician or the philologist. Now the automaticity of variation within a phoneme has two senses. (1) The variation of [h] of the shades [h_c], [h_a], [h_ɔ], [h_ɔ],²⁰ etc., according to the following vowel is automatic practically in all languages which have these sounds. So is the variation of the [t] in [ts] and [tʃ] in all languages which have these affricates, that is, if we take affricates as successions of two phonemes. But such cases are much rarer than we are inclined to think. (2) In most cases, the automaticity of variation holds only for the particular language in question, although familiarity with the language may give one the impression of its universality. Thus, speakers of one language, e. g. Japanese, would find the change of [h] into [ç] before [i] so natural as to be something inherent in the nature of speech sounds, while in

another language, e.g. German, [h] can be followed by [i] without becoming [ç], which belongs to another phoneme. The variation of Foochow [a] and [ɛ] 𪛇, 'to be able to', according to tonal environment, is so natural to the native speaker that he refuses to admit that he is not pronouncing it always in one and the same way, while in many languages these are widely different phonemes. Since, therefore, the automaticity of variation is mostly of conditional nature, we shall have to allow a good deal of latitude in the interpretation of the 'similar in character' clause. For the sake of phonetic accuracy, it would be an advantage to construct our phonemes with as narrow ranges of variation as possible (though it is never desirable to limit ourselves to universally automatic groups of the type (1) mentioned above), but this one desideratum may have to be sacrificed to some extent for other motives.

(b) Simplicity or symmetry of phonetic pattern is a factor which greatly influences our organization of phonemes. Bloomfield wishes to say that there are no long vowels in English, a statement which, from our standpoint, is neither true nor false, but may be estimated as methodologically desirable or not desirable. He has eight vowels:

i	u
e	o
ɛ	ɔ
a	ɑ

and eight diphthongs or triphthongs:

aj	ɔj ²¹	ej	ij	juw
aw	ow		uw	

It would seem that he could gain phonetic accuracy by writing [ai], [ɔi], [ou], even without the addition of special symbols like [ɪ] and [ʊ], but then he could not very well go on and write [ii], [uu], and if he indicated the diphthongal character of these vowels by [ij], [uw], the system would look much less symmetrical. The table would also look less symmetrical if he wrote [i:], [u:], with the American narrow-range [e:] and [o:] lurking around for recognition, while [aj], [aw], and [ɔj] must still remain as diphthongs. The use of the nonce phoneme 'ø' for Chinese (see I (d) above) with zero as a possible member of the phoneme, gives great symmetry to the system. Again, the series 𪛇, 𪛈, 𪛉, 𪛊 may be symmetrically rendered as [an], [ian], [uan], [yan] instead of the usual [an], [iɛn],²² [uan], [yan], which is phonetically more accurate but by no means necessary. When symmetry runs parallel to structural or etymological considerations, so that the phonemes also agree with diaphones or phonogenes, its claim for consideration will of course be greatly increased.

(c) Parsimony of entities in the spirit of 'Occam's razor' is of course the hobby of symbolologists. We have already noted the admission of digraphs for single sounds

for the saving of a whole series of new letters. The use of [ij] and [uw] or introduction of length saves the use of the letters [ɪ], [u], and [ʊ] for English. Palmer deplors this 'exaggerated compliance with the principle of symbol economy,'²³ because, among other reasons, the symbol for length, e.g. in although [ɔ:l'dou] does not necessarily indicate length. The writer can recognize the usefulness of the letters [ɪ], [ʊ], and [ʊ] from motives of phonetic accuracy, but the objection to the length mark does not seem to be fatal, for the symbol [ɔ:] may also be taken phonemically in such a way that it is long in stressed positions, less long before voiceless consonants, and short (without change of quality) in unstressed positions, while [ɔ] can still be considered a separate phoneme. Bloomfield's avoidance of [ə] and his identification of the vowel in son with the first vowel in own (instead of writing the former [ʌ] or [ɜ]) also effects a saving of 'queer symbols'.

The extent to which one could go in the parsimony of symbols can best be illustrated by Liu Fu's numerical code for the Peiping syllables.²⁴ He used only six symbols in six positions (or 'plus' six positions, if we count positions as part of the set of symbols) as shown by the table below. Thus 𪛇 [kuɑŋ] would be 312241, where 31 stands for [k], 224 is [uɑŋ] and the last figure '1' means the first tone. 000042 would be the nasal interjection meaning 'What did you say?' This system is extremely symmetrical in structure, economical in the number of kinds of symbols used, and very illuminating as to the phonetic pattern of the language, but it can hardly be used as a system of transcription and was never intended to be. It may be noted here that his 'Abdomen No. 1' includes [ɜ], [ʌ], [ɛ], [ɔ], [ɪ], [ə], and zero as members, and corresponds to our 'ø'. In the body of the table, he gave also a somewhat narrow transcription of all the syllables.

Position	I. HEAD	II. FACE	III. NECK	IV. ABDOMEN	V. TAIL	VI. EXPRESSION
Figure	Place of articulation	Manner of articulation	'Medial' vowel	Principal vowel	Final vowel or consonant	Tone
0		zero	zero	zero	zero	—
1	labial	unaspirated	i	ə	i	1st
2	dental	aspirated	u	ɑ	u	2nd
3	velar or palatal	nasal	y		n	3rd
4	retroflex	voiceless continuant			ŋ	4th
5	dental advanced	voiced continuant				

(d) The feeling of the native speaker is a factor which is greatly emphasized by Sapir. Where the feeling comes from obvious misconceptions, arising often from orthographic considerations, such as the idea that principal and principle have different pronunciations,²⁵ or that ng = n + g,²⁶ we need not take it very seriously. But when there is no question of misconception, but one of preference of choice

between alternate manners of organization of phonemes, then the feeling of the native should be given due consideration, though it need not be taken as the deciding factor. Thus, while the phonetician would write Chinese ㄉ, ㄉㄛ, ㄉㄛㄛ, ㄉㄛㄛㄛ as [an], [ien], [uan], [yan], the speaker of the dialect of Peiping feels that they all belong to the same rimeme with different medials. This is further supported by the fact that when the [-n] is dropped when the syllable is amalgamated with a following retroflex vowel, [ien] does not become [ier], but [iar], as in—點兒 [i tien ər] > [itiar] 'a little'. Most speakers of the Foochow dialect feel that among the vowels in the following words,

- 音 in55: 諫 ein242:
- 筵 ein55: 限 ain242:
- 溫 un55: 問 ouŋ242:
- 恩 ouŋ55: 筵 ouŋ242:

those in the same row are tonal variations of the same vowel, while refusing to recognize that the vowels in 諫 [ein242:] and 筵 [ein55:] or those in 問 [ouŋ242:] and 恩 [ouŋ55:] are the same. As there are very definite rules for the diphthongization of single vowels (or opening of close vowels, as [ɛ] ~ [a]), it is quite possible to arrange the Foochow vowel phonemes according to the native conception as an alternate and for some reasons a better way of grouping the phonemes. On the ambiguity of the phonemic membership of Peiping ㄐ, ㄑ, ㄒ, the native speaker will also have something to say. The distribution or patterning of these sounds and related sounds is as follows:

- 1 ㄐ ㄑ ㄒ tɕ tɕ' ɕ always before [i] or [y]
- 2 ㄎ ㄎ' ㄒ k k' x
- 3 ㄒ ㄒ' ㄒ ts ts' s
- 4 ㄒ ㄒ' ㄒ tʂ tʂ' ʂ } never before [i] or [y]

It is therefore possible to identify the series '1' phonemically with any one of the other three series. Wade identifies it partially with '4': he writes ch, ch', hs for '1', and ch, ch', sh for '4'. The National Romanization identifies '1' with '4' completely by writing j, ch, sh for both. The French system of romanization for Chinese has '2' or '3' according to etymology, which was what '1' came from, and overzealous adopters of the French system identify '1' with '3' completely, and write forms like Sien Sien for 嚴縣, although both belonged to series '2'. Now as to the feeling of the native, the favored series is '2'. For he feels [kə, tɕi, ku, tɕy] or [xə, ɕi, xu, ɕy] to be alliterative series with only different vowels. Moreover, in the system of a secret language which breaks every syllable with initial-final I+F into Iai + kF, (e.g. 北 [pei] > [pai-kei]),²⁷ the [k] becomes [tɕ] when the final begins with a high front vowel, as * [mi] > [mei-tɕi].

(e) Regard for etymology is properly not within the scope of our present study, which is concerned only with the descriptive study of one language of one period.

But in the very frequent case of possibility of alternate phonemic treatment, we should certainly be allowed to steal a squint towards extrinsic factors. As a matter of fact, consideration of etymology does have a great weight with many writers. The identification of [tɕ], [tɕ'], [ɕ] with [k], [k'], [x] is etymologically preferable, if only partially, to identifying them with [tʂ], [tʂ'], [ʂ]. It would, however, cease to be strictly phonemic transcription of the Peiping dialect if we split [tɕ], [tɕ'], [ɕ] into a velar and a dental series according to derivation, as [xi] for 希 and [si] for 西, for then no rule of phonemic membership short of lexical enumeration could tell us when it is [xi] and when it is [si].

It is also of etymological interest to try to secure identity of words by giving them constant phonemic forms. Thus, we can write [sɜ:*] or [sɜ:r] for sir and let the phonetic environment decide when it is to be pronounced [sɜ:r], [sɜ:], [sər], or [sə]. Again, by writing [ɛ:trə] for être, instead of [ɛ:tr] before vowels, [ɛ:trə] before consonants, and [ɛ:tr̩] at the end of phrases, Passy gives the word a constant form, the value of the phoneme [ə], which may be written in italics if desired, to be determined by the 'rule of three consonants', etc. The Foochow word 能 'to be able to' may be given the constant form [a], or a compromise form [æ], and the choice of values between [ɛ] and [a] may be determined by a very simple tonal rule. The identity-of-word interest, however, must not go so far as to cover grammatical considerations, where the rule of pronunciation would have to contain other than purely phonetic conditions. Thus, while we can write French en as [an], understanding that it is to be pronounced [ã] before consonants (s'en va) and [an] before vowels (s'en aller), we cannot write fin as [fin] in order to provide for the pronunciation of the feminine form [fin]. In such cases, we shall have to consider fin [fɛ̃] (or [fɛn]) and fine [fin] as two separate words, as much as files and fille.²⁸

(f) Mutual exclusiveness between phonemes is another desideratum we wish to consider; that is, the list of phonemes shall not only be exhaustive for the language, but, other things being equal, we should try to make the membership of the classes mutually exclusive. Other things, however, are never equal, and we have in fact already allowed the possibility of over-lapping of membership between phonemes in cases like the Foochow:

one phoneme	[i]	[ei]
another phoneme	[ei]	[ai]
one phoneme	[u]	[ou]
another phoneme	[ou]	[əu]

and in cases of different phonemes each of which contain zero as a member. The treatment of affricates as independent phonemes where their occlusive and fricative element can easily be identified with other phonemes in the same language, such as Bloomfield's [j] and [č] for what many other writers give as [dʒ] and [tʃ], may also be considered as a case of overlapping of membership. Palmer calls this 'multiple identity',²⁹ under which he cites a number of examples from Japanese and English. We should note, however, that the 'same sound' which belongs to

two or more phonemes may be taken in two senses. In a conditional sense, 'the same sound' never occurs under the same conditions as to contiguous sounds or as to conditions of stress, length, and tone. The [ei] in the Foochow [i] ~ [ei] phoneme occurs always in the tones [12:], [242:], [23:], while the [ei] in the [ei] ~ [ai] phoneme occurs always in the tones [55:], [53:], [22:], [5:].³⁰ The English [ɛ] and [j] also occur under different conditions of stress from combinations like heat sheets and and Jeanne. In an absolute sense, on the other hand, Palmer's 'multiple identity' implies that two phonemes will have in common one member identical in all respects. Thus, there is absolutely no difference between the initial in * [ei] and the initial in ㄝ [ei], discussed above under (e). We could, if we like, put both into the [x] phoneme or both under the [s] phoneme, but if we write * [xi] and ㄝ [si], then the identical [e] would belong to two phonemes under the same conditions. This treatment brings up the question of

(g) Symbolic Reversibility. The use of symbols has two aspects, the aspect of reading, or the determination of the object from the given symbol, and the aspect of writing, or the determination of the symbol from the object. The reading aspect of phonemic symbols is always determinate with respect to the language in question. Given a phonemic symbol, the range of sounds is determined, and the choice within the range is usually further determined by phonetic conditions. It would also be a desirable thing to make this reversible, so as to include the aspect of writing; that is, given any sound in the language, its phonemic symbol is also determined. If phonemes do not overlap, this is obvious. If they overlap, and the common members occur under different phonetic conditions, the reversibility still obtains. For instance, although 電報 is normally pronounced [tiəmpau], so that the m sounds exactly like the m in 門 [mən], yet we can tell that it is only a member of the phoneme n, as the phoneme m never occurs in this position in standard Chinese. Again, in the dialect of Foochow, if we had the symbol A for the [i] ~ [ei] phoneme and the symbol B for the [ei] ~ [ai] phoneme, we could still tell whether a given case of the sound [ei] is to be written A or B from the tone.³¹ But if the identity of a common member between phonemes is unconditional, as the distinction of * [xi] and ㄝ [si] for the Peiping dialect, then it would be impossible to go from the sound to the symbol even for the native speaker. Strictly, a non-reversible symbolization of sounds based on etymological or other considerations becomes an orthography and ceases to be a transcription, and the French system of romanization of Chinese, which distinguishes 基, 欺, *ki, k'i, hi from 璣, 妻, ㄝ tsi, ts'i, si (also favored by Bernhard Karlgren) is a case of this kind. In other words, homonyms should not have different transcriptions. There is, however, a class of intermediate cases, where the common member between two phonemes occurs sometimes under exactly the same phonetic conditions, but at other times becomes differentiated in some way under other sets of identical conditions. Thus, the same [ə] which occurs in mica ['maikə] and in poker ['poukə] before consonants becomes differentiated, for some speakers of English, into [ə] and [əɾ] respectively before vowels. If we write the former as [ə] and the latter as [ə*] or as [əɾ], then it will be possible to go from sound to symbol only when the sound in question is followed by a vowel, but not

when followed by a consonant. The reversibility is therefore only partial. Usage is by no means uniform in such cases. Sometimes, symbolic reversibility is secured at the expense of word identity, the same word poker appearing in two forms ['poukə] and ['poukəɾ], considered as different sets of phonemes. At other times, identity of word form is secured at the expense of reversibility, the same word Fr. espèce always appearing as [espəs], where the final [s] is pronounced [z] when followed by a voiced consonant, so that given the final sound [z], one cannot tell whether it is a member of the [s]-phoneme or a member of the [z]-phoneme.

3. Choice of symbols

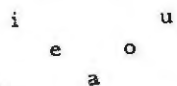
It is one problem to group the sounds of a language into such and such phonemes and another thing to assign such and such symbols or letters to these phonemes. As a phonemic transcription has reference to one language, there is a great degree of freedom in our use of symbols. The freedom, however, is not so unlimited as in the case of mathematics, where the same symbol changes value not only from problem to problem, but also within the same problem. From purely logical considerations, it would seem that once the phonemes themselves are agreed upon, it is only a 'matter of form' as to the symbols used for them, 'What's in a letter?' Who ever heard of one mathematician writing l, m, n and another insisting that the same items shall be written as p, q, r? In phonetic symbols, however, there is tradition, or rather, what is more unfortunate, a number of conflicting traditions in the use of symbols. Consequently, there arise frequent controversies with as much vehemence as about the use of words. We shall feel the importance of the use of symbols when we realize that it often has an influence on our actual organization of phonemes. Some of the factors which influence our choice of symbols run parallel to those which influence the organization of phonemes. Thus, symmetry and simplicity of phonetic pattern corresponds to a certain degree of symmetry and simplicity in the symbols. Parsimony in the number of phonemes implies also parsimony in the number of symbols. The feeling of the native as to sound will also apply to the choice of the symbol if the language already has an alphabet, although this is often less dependable than his feeling for the pattern in the abstract. In addition to these, we have following questions especially concerned with the choice of symbols.

(a) The desire to keep within the limits of the ordinary 26 letters of the roman alphabet is such a powerful one that transcribers yield to it at great cost to other considerations. Thus, if a language has [ɑ], [ɔ], or [ɛ] but no [a], [o], or [e], then the latter symbols will be used as a rule.³² If a language has only [ɾ], but no [r], then [r] would be used, although phonetically it would be taking as much liberty as writing [t] for [κ]. Bloomfield's use of [o] in the phoneme [o] and the diphthong [ow] avowedly comes from the desire to avoid 'queer symbols'. So far as parsimony of number of phonemes and symbols is concerned, [ɻ] would do just as well as [o], but would be even more appropriate, as it is more natural to say that the [ɻ]-phoneme is rounded in the diphthong [ɻw], on account of the labial [w],

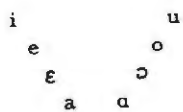
than to say that the vowel [o] in American English is an unrounded vowel except in the diphthong [ow]. This avoidance of queer letters means that while theoretical phonetics tells us that there are such and such sounds, or at least advises us to recognize conveniently such and such distinguishable sounds in the main, yet we feel inclined to identify the phonemes of a language with those sounds which happen to be favored with 'lower case' letters.

(b) Of those symbols which are not the ordinary letters of the alphabet some are considered less "queer" than others, either on account of old standing or on account of the importance of their position in the scheme of general phonetics. Thus, [ŋ], [ʃ], [ð], [ø], [ɔ] are usually considered much less queer, and less effort is usually made to avoid them than in the case of symbols like [ʂ], [β], [w], [ɣ]. Again, in the abstract scheme of cardinal vowels, a special symbol for the part between [ɛ] and [a] would be of less importance than the eight main positions. And since it is possible to group all the [e]-[ɛ]-region sounds in English under the phoneme [ɛ], the symbol [ɛ] is left free for indicating the phoneme between cardinal [ɛ] and [a], which is what Bloomfield does: using the less queer symbol [ɛ] instead of the symbol [æ], which is 'queer' in that it occupies a less strategic position.

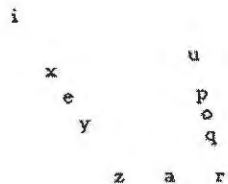
(c) The scale of division into which a variable range of sounds is supposed to be divided will have a great influence on the choice of the symbols. Thus, the traditional triangular scale



and the cardinal scale



differ in the number of intervals into which the vowels are divided. The difference would be less confusing if we had non-conflicting symbols in the new scale, something like:



As a matter of fact, one does find a partiality for using [ɛ] for [e] and [o] for [ɔ] (Cf. (a) above), and, less frequently, [a] for [ɑ], which shows the influence of the

prestige of the i-e-a-o-u system. Every transcriber feels that somehow [ɛ] is a variety of [e] and not a variety of [a], [ɔ] is a variety of [o] and not a variety of [ɑ]. If we took our scheme of cardinal vowels seriously, we ought not to have such feelings.³³

In Karlgren's scheme of vowels, using Lundell's dialect alphabet, the 3-point 2-interval high vowel scale of [i(y)—i(u)—u(u)] of the IPA is given as a 2-point 1-interval scale of i(y)—u(u). (More accurately speaking, uu is placed in Karlgren a little to the front of u.)³⁴ The Russian ui, which on the 3-point scale is nearest to [i], is therefore given as [i] in the IPA,³⁵ but as uu by Karlgren, as it is nearer to the back vowel than to the front i on his 2-point scale.

(d) The avoidance of diacritical marks, which are now reserved for modifiers, also influences our choice of letters. We have already noted that rather than writing [s] for the single sound in Chinese ㄝ, we allowed the modifier to be written separately, thus: [suei]. Again, if a language has only two series of voiceless plosives, one unaspirated and one aspirated, but no voiced plosives, then either [p, t, k; ph, th, kh] or [b, d, g; p, t, k] would be preferable to [p; t, k; p', t', k'] or [b, d, g; p, t, k].

(e) Consistency with phonemic transcriptions of other languages is a thing that one may keep in mind, but which one must not go out of one's way to obtain. Where our phonemes are of narrow ranges and the symbols given them are the nearest phonetic letter we happen to have, the resulting transcription is not likely to conflict seriously with other transcriptions. But if for one reason or another our phonemes vary within very wide ranges, and if, further, we wish to secure certain symbolic advantages by departing somewhat from the usual range of values of the letters, then the chance of conflict with other transcriptions will be greater.

III. Phonetic and phonemic transcriptions

It is the usual practice to distinguish between phonetic, or narrow, transcriptions and phonemic, or broad, transcriptions. The former express the actual sounds [ʃat], [tʃai], ['veri], [ɛit], [ge't], [ðeə], [æt], while the latter only indicate the distinctive classes of sounds [rait], [trai], ['veri], [eit], [get], [ðeə], [æt] (or [ɛt]). From the previous discussions, however, we have seen that there is no such thing as the correct phonemic transcription for any given language. According as we emphasize one or another factor in the size of the unit, method of phonemic grouping, and choice of symbols, we arrive at one or another form of phonemic solution. There is nothing in our definition of a phoneme or any other of the definitions quoted that can decide for us, for example, whether the Chinese [ɛ] shall be a member of [x] or [ʂ] or [s], or how the [t] in [at], the [j] in [ij], the [r] in [rt], and the [j] in [jes] should be grouped into phonemic classes. The definition permits us to devise ways and means of grouping together distinguishable sounds that are not distinctive with respect to the particular system of phonemic grouping. It also implies that certain sounds in a language are never distinctive in that language by any reasonable manner of symbolic juggling, e.g. the difference between the [k]'s in keep, call, coo, etc., or the [h]'s in heap, hall, who, etc., can never be considered as being distinctive, unless we should do the very unnatural thing of considering all

the vowels [i:], [ɔ:], [u:], etc. as non-distinctive members of one vowel phoneme X, the value to be determined by the nature of the preceding consonant k_1, k_2, k_3 , etc., h_1, h_2, h_3 , etc., or zero₁, zero₂, zero₃, etc. (i.e. in words like eat, all, ooze). But many sounds in a language are neither distinctive nor non-distinctive per se, but depend upon our particular manner of phonemic treatment. Thus, by writing up, owe, oil as [op], [ow], [ɔj], Bloomfield considers the difference between the first elements in up and owe as non-distinctive and the difference between elements in owe and oil as distinctive. But precisely the reverse thing will have to be said if we treat the same sounds as [o], [ɔw], [ɔj], a modification which would do no damage to Bloomfield's system as a whole either by way of compromising the parsimony of letters, or by way of introducing queer symbols. Again, in most of the Wu-dialects, in words of the type [tɛ'a], [ɛ'a], [ɲ'a], etc., as against [ka], [xa], [ŋa], the ['] is so short that it can be considered as a glide of the preceding consonant and can be left out of the transcription, in which case the difference between [k], [x], [ŋ] and [tɛ], [ɛ], [ɲ] would be considered distinctive. On the other hand, if we write the ['] on the line then we could consider the [tɛ]-series as members of the [k]-series phonemes: [ki], [xi], [ŋi], and it is now the difference between [a] and [ia] that is distinctive. In practice, no phonetic transcription is so narrow and concrete as to distinguish between the [h]'s in [he], [hɛ], [hə] in any language, and no phonemic transcription is so broad and so purely abstract as to group English [h] and [ŋ] under the same phoneme [h]. Between these extremes, there are all intermediate proportions of phoneticity and phonemicity. On the whole, we may say that a phonetic transcription is one which makes use of all the usual distinctions which the majority of phoneticians are expected to be familiar with, irrespective of their distinctiveness in the language, and that a phonemic transcription is one which, given a particular set of directions of approach, makes only such distinctions as are necessary in distinguishing words from that particular set of directions.

The reader will notice the unsatisfactory nature of the phrase 'the usual distinctions which the majority of phoneticians are expected to be familiar with.' This comes from the unsatisfactory nature of the actual state of affairs. In the field of descriptive phonetics, there is nothing like the near unanimity of opinion which exists among physicists, either as to the organization of facts or as to the use of symbols for referring to them. Thus, Bloomfield says, 'The phonetician's equipment is personal and accidental; he hears those acoustic features which are discriminated in the languages he has observed . . . He should remember that his hearing of non-distinctive features depends upon the accident of his personal equipment, and that the most elaborate account cannot remotely approach the value of a mechanical record.'³⁶ This is all true to a great extent, but in the opinion of the writer, Bloomfield is going too far in saying further: 'Only two kinds of linguistic records are scientifically relevant. One is a mechanical record of the gross acoustic features, such as is produced in the phonetic laboratory. The other is a record in terms of phonemes, ignoring all features that are not distinctive in the language. Until our knowledge of acoustics has progressed far beyond its present state, only the latter kind of record can be used for any study that takes into consideration the meaning

of what is spoken.' We need not, however, be worried if we cannot read or copy the grooves of a phonograph record. The phonograph record is at best an icon, or a picture, not a symbol in the usual sense of something that we can 'read' and 'write'. Nor need we be worried that the number of sounds in human speech is infinite. The number of distinguishable sounds in human speech is relatively small, limited by the condition of oral-auditory transmission of phonemic distinctions from one generation to the next. When the average actual difference falls below a certain finite limen, the distinction becomes unstable, and the two phonemes soon coalesce into one later phonogenic member. We cannot say, as Bloomfield seems to imply, that phonetic transcriptions are mostly subjective and that phonemic transcriptions are mostly objective. We have already seen how phonemic transcriptions are not unique and to that extent subjective. On the other hand, there is also a certain degree of practical agreement as to the non-phonemic use of symbols in general phonetics. For purpose of (1) citation of forms where a feature which is non-distinctive in the language cited is relevant to the point under discussion, (2) giving forms of words or sounds in comparative dialectology, (3) noting incipient or vestigial traces of sound-change, (4) impartial consideration of the gross features of a language before a good phonemic system has been worked out for it, and (5) as a less worthy purpose, for pedagogical use—for all these a narrow phonetic transcription is sometimes very useful and sometimes quite indispensable. One should not do the worst of narrow transcriptions all the time, but one should be prepared for the worst at any time. The dialect alphabet of Lundell, used by Karlgren in his *Phonologie Chinoise*, both in his main discussions and in the appended dialect dictionary, is a very narrow and non-phonemic transcription. The writer has nevertheless found the system thoroughly usable and understandable, and although for typographical reasons he has changed it into the IPA form in the Chinese translation,³⁷ he has been able to equate the symbols of the systems with relatively few additions and few doubtful points of classification arising from the number-of-scale-steps problem. In the writer's own experience in the recording of Chinese dialects, he found that besides the matching and comparison of words with related sounds, a very important procedure is to give a reasonably narrow phonetic transcription at the start, so that we have materials to base our decisions upon when we come to questions of choice among alternate treatments.

Bloomfield observes rightly that phonetic transcriptions are often inconsistent as to what features to include and what features to neglect. This difficulty can be met in two ways. In the first place, we can lay down as a principle of symbolology that the position of a symbol in its context may be considered to be one constituent of the symbol. Thus, there is no inconsistency in the figure 1 meaning 1×10 and 7 meaning 7×1 in the form '17', as the symbol 1 is not just '1', but '1 in the second position'. Similarly, there is no inconsistency in the symbol '>' meaning 'greater than' in $19 > 17$ and meaning 'changes into' in $p > f$, or even between the two uses of '>' in $\underline{a} > \underline{o}$ according as the formula occurs in an article on phonetics or in one on mathematics.³⁸ So in discussions on diphthongs, we may need to mention forms like [čaj], [čæɛ], [čæɛ], etc., while in discussions on affricates, we may refer

to [tʃai], [tʃai], [tʃai], [tʃai], etc., just as Bolling finds it perfectly in order to write Enroughity is coming: The Enroughities are coming, so long as the discussion is about the forms of the plural.³⁹ But if our discussion should turn on the forms of the indefinite article, it would then be necessary to write [ɛn 'eg], but [ej 'da:bi] (the correct pronunciation of the name Enroughity according to Bolling), as it would not bring out the point at all if we wrote an egg but a Enroughity.

For avoiding too much inconsistency in the citation of forms, both Karlgren and users of the IPA have resorted to the distinction between broad and narrow transcriptions apart from considerations of significant distinction. Karlgren's practice, as carried out in his *Phonologie* (pp. 260 ff.), is very consistent. He has a set of bold-faced letters for a broad transcription, under each of which he puts a number of the Lundell letters, which are always in italics. Thus, what corresponds to the [ɛ] and [æ] in the IPA are grouped under ä, what corresponds to [ʃ], [e], [j] in the IPA are grouped under š, and so on. There are a few cases of overlapping groups, but on the whole the groups are mutually exclusive. The relation between the two sets is therefore very much like that between phonemes and members except that no reference is made to word distinction. A similar tendency is noticeable among users of the IPA, but no systematic division has ever been made between a narrow and a broad transcription. Nevertheless, there are certain unsystematic traditions among phoneticians which are based, on the whole, on the identity of the letters in the roman alphabet. Thus, r is somehow recognized as a broad form covering [r] and [ʀ], whereas [t] and [k] are not covered by any broad form. Similarly [e] and [ɛ] are felt as members of a group of the e-type in a way that [i] and [e] do not seem to be. All this points to a conception which no one consciously recognizes, but which seems to be assumed by many, that there are such things as phonemes in general, apart from reference to any particular language, and that all we need to do either for the study of one language or for comparative work is to use one consistent phonemic transcription for all languages. This would of course be recognized by anyone as an impossible illusion as soon as the situation is thus made explicit, as we may be called upon at any time to make phonemic distinctions between shades of sounds whose differentiation we never anticipated in either our narrow or broad system of phonetic symbols. The existence of the tradition of usage, however, is real. It is true that the existence of only one common letter r for [r] and [ʀ] but two common letters t and k for [t] and [k] (or [k]) is a matter of historical accident. But we shall see the significance of this accident when we note that as a matter of fact most of the languages which phoneticians, or at least European phoneticians, have studied, do take [t] and [k] as separate phonemes, while [r] and [ʀ] rarely, if ever, occur as separate phonemes. The idea of general phonemes, which we have just proposed and condemned in the same breath, is therefore not entirely baseless. Without entertaining the idea of general phonemes as such, the writer wishes to propose the term typical phoneme, to be defined as those groups of sounds which very often go together to form phonemes in many of the major languages studied by phoneticians. This definition of course makes the idea of a typical phoneme depend again on historical accident, the fact that most contemporary phoneticians are speakers of the Germanic and Romance languages. Thus, for a broad transcription using

typical phonemes, a European would group [p] and [p'] under one typical phoneme, as against [b],⁴⁰ while an unsophisticated Chinese phonetician would most likely group [p] and [b] under one typical phoneme as against [p'].

The troublesome part of the transcription problem comes from the inconsistency in using the same symbol sometimes in a general and sometimes in a particular sense. In the citations in this article, the writer has found it hard to do better, and has tried to manipulate the context (taken as part of the symbolic system) in such a way as to eliminate ambiguity. But there is always the danger of slips. When we refer to the English [i], one may not know whether it is narrow [i] or [ɪ] that is meant.⁴¹ This is very similar to the old practice of referring to the ancient Chinese initials 照, 穿, 牀, 審 in this way:

General names:	照穿牀審	
For the apical series:	莊初牀山	[tʃ][tʃ'][dz'] [ʃ]
For the dorsal series:	照穿牀審	[tɕ][tɕ'] [dz'] [ɕ]

so that when 照 is mentioned, one is at a loss as to whether it is the 照 in general (including both [tʃ] and [tɕ]) that is meant, or only 照 [tɕ] as against 莊 [tʃ]. He has therefore proposed the following names for the differentiated series, reserving the traditional names for the general sense, incidentally also using an inclusive broad transcription for the general series, thus:

General names:	照穿牀審	[č] [č'] [j'] [š]
For the apical series:	莊初牀山	[tʃ][tʃ'] [dz'] [ʃ]
For the dorsal series:	穿初牀審	[tɕ][tɕ'] [dz'] [ɕ]

Karlgren's use of a special series of boldfaced types is based on the same principle. Symbols may be as general and inclusive as we may have use for, but must not be vague and ambiguous. An approach to this method of having both general and particular use of symbols is made in connection with the usage of a few symbols in the IPA. Thus, the symbol [ə] is usually understood to be a general form for [ɜ] (half-close) and [ɝ] (half-open). [j] and [ɜ] may be used either for [ʃ] and [z] or for [e] and [z] respectively. This latter, however, is less satisfactory, as in the dialect of Lintzy (臨淄), Shandong, [ʃ], [j], [e], all three exist as separate phonemes, in which the [j] series is intermediate between apical and dorsal articulations of the tongue and is identical with English [j] except that there is no protrusion of the lips. [š] and [ž] would be better general symbols, though they are not properly IPA letters.

Summary

We have proposed a new definition of a phoneme and have endeavored to show that given a language, there is not necessarily one unique solution for the problem of reducing its sounds into elements. We have considered what factors can

influence, and have influenced, the phonemic treatment of languages: the variability of the size of the phonemic unit, including the admission of zero symbols and zero sounds, the grouping of phonemic membership, and the choice of actual symbols. Because phonemic solutions are not unique, it is necessary, before arriving at solutions, to have recourse to considerations of descriptive phonetics and the use of phonetic transcriptions. These are also necessary for other purposes, such as the comparative study of dialects. We have also noted that there is a tendency among phoneticians to group together sounds under broad symbols, which form phonemes in a number of languages, and we have called them 'typical phonemes', although there is no consistency in the use of symbols for these. It is hoped that a more consistent system of symbols be devised for indicating both narrow shades of sounds and typical phonemes for the purpose of phonetic and phonemic transcriptions, but for the time being, we have to let the context serve as part of the symbol to inform us as to shade (if particular) or scope (if general). It is not necessary to take serious exception to anyone's transcription so long as it is self-consistent and its interpretation is clear to the extent it is meant for, and so long as it does not claim unique correctness to the exclusion of other possible treatments. Usage may in time become unified, but problems will always vary. Our motto must be: Write, and let write!

Notes

* Since this was written at a time when the differences between transcription and phonemization and between phonemes and morphophonemes were not as clear as they are today, the article would have to be reworded in many places if these differences were to be taken into account. In this reprint no attempt was made to make such changes, except to correct minor errors of fact.—Y. R. C.

- 1 H. E. Palmer, *The Principles of Romanization*, 1931, Tokyo, pp. 52 ff.
- 2 That is, determined by psychological or physiological conditions other than those which usually are considered to be phonetic.
- 3 Proceedings of the International Congress of Phonetic Sciences, 1932, Amsterdam, p. 23.
- 4 Leonard Bloomfield, *Language*, 1933, New York, p. 79.
- 5 See however III below on the finiteness of the number of distinguishable speech sounds.
- 6 Taken in the sense of the pronunciation of a homogeneous speech community, such that members of the same community will find absolutely no 'accent' in one another's speech.
- 7 Fondamenti di Grafia Fonetica, by Daniel Jones and Amerindo Camilli, 1933, Aube and London, 11–12.
- 8 G. M. Bolling must have overlooked such cases when he said, 'At least I can recall no example of . . . a digraph for a non-compound phoneme,' in an editorial note on R. G. Kent's review of Bloomfield's *Language* in the journal *Language*, X, 1, 1934, pp. 51–52.
- 9 Fondamenti, p. 11, section 15.
- 10 Fondamenti, p. 4, section 3.
- 11 Fondamenti, p. 17.
- 12 There is a trick recitation in one of the dialects near Nanking in the form of a story consisting mostly of phrases like 鴨對鵝 [ŋo tŋei ŋa ?] 'goose versus duck', in which

- a flapped click is made with the front of the tongue each time [ŋ] is pronounced. The effect is that of beating a pair of clapping boards as an independent rhythmic accompaniment to the recitation. In other words, the [ŋ]-phoneme consists of the features of voice, nasality, and articulation with the back of the tongue. The front of the tongue can do as it pleases.
- 13 Under this heading, we are not including cases like ancient Hebrew, in which the vowels were not written. For in this system of writing, the vowels cannot be deduced from the phonetic environment alone by any set of phonetic rules. The writing is therefore an orthography and not a transcription.
 - 14 The symbols ʌ and ɹ are Karlgren's.
 - 15 A combination of Karlgren's [ʌ] and [ɹ].
 - 15a Bloomfield, *Language*, p. 113.
 - 16 In this article, we are limiting ourselves to the discussion of phonemes of single languages. If we extend our universe of discourse to diaphones, say about 100 miles south of Peiping, the advantage of the above form will be enormously increased.
 - 17 One type of Southern British English.
 - 18 'Puisque ce n'est pat à moi et n'est points à vous, je ne sais pat à qu'est-ce.' From Passy's *Chrestomathie*.
 - 19 The case of English *a:* an is somewhat doubtful. If English never had a system of writing, or if its orthography had come to writing for uncle: fo mother, just like an uncle: a mother, we might then be inclined to treat the indefinite article as one word (as it was) and provide a special phoneme [-ŋ] as its second element, a phoneme which occurs only in one word. Cf. II(e) below on word identity.
 - 20 Not to include cases of high vowels, which involve other questions.
 - 21 Regard for 'similarity in character' probably prompted him to identify the first element of oi with the first element of or, rather than the first element of up. He would gain still greater symmetry if he wrote [oj], [ow], or still better [ɔj], [ɔw], as the first element in own is much nearer the first element in or [ɔr] than the first element in up [op] in American English.
 - 22 Considering ɱ as the nasal ending counterpart of ɪɛ [iɛ].
 - 23 H. E. Palmer, *Principles of Romanization*, pp. 68–69.
 - 24 'A Table of the Analytical Numbers of the Beeipynŋ Dialect,' *The Kwoshyue Jihkan*, III, 3, 1932, pp. 533 ff.
 - 25 Except when the former is pronounced [prinsi'pæl], which is merely an abbreviated way of saying, 'the word which ends in -p-a-l.'
 - 26 Even this is open to question, if we take a broader linguistic (as contrasted with phonetic or phonemic) point of view. Cf. Sapir's discussion on this point in 'Sound patterns in language,' *Lang.* 1.49 (1925) ((25)).
 - 27 Y. R. Chao, 'Eight varieties of Secret Language Based on the Principle of Faanchieh,' *Bulletin of the Institute of History and Philology, Academia Sinica*, II, No. 3, 1931, pp. 320 ff.
 - 28 Cf. Bloomfield's distinction between phonetic alternation and formal alternation, 'A set of postulates for the science of language,' *Lang.* 3.160 (1926) ((29)).
 - 29 *The Principles of Romanization*, p. 151.
 - 30 A pure phonetician would therefore prefer to take [ei] as one phoneme (or succession of two phonemes) in seven tones, although this would be against the 'feeling of the native'.
 - 31 This is not as complicated as the description looks on paper. The native speaker is not even aware of the vocalic identity or similarity of the [ei] in the two sets of tones.
 - 32 Jones and Camilli, *Fondamenti*, p. 3.
 - 33 The writer once heard a piece of music and interpreted it as being here in major and there in minor and its notes as being do, re, mi, etc., only slightly 'off', but

subsequently learned to his surprise that it was a scale of seven equal steps in the octave. The illusion persisted even after he was told. He had forced his own intervals into the new scale, just as we all tend to force the 4-step i-e-a-o-u scale into the 7-step cardinal scale.

- 34 Bernhard Karlgren, *Études sur la phonologie chinoise*, p. 316.
 35 As for instance by Daniel Jones.
 36 Bloomfield, *Language*, pp. 84–85.
 37 中國音韻學研究, 趙元任, 羅莘田, 俞敏編, 商務印書館, 1940.
 38 In discussions like the present, where there may be a call for ‘narrow symbols’, one could use ‘→’ for ‘changes into’ and ‘>’ for ‘greater than’, thus making peace among mathematics, phonetics, and chemistry.
 39 From an editorial note on R. G. Kent’s review of Bloomfield’s *Language*, *Lang.* 10.50 (1934).
 40 Except speakers of certain German dialects.
 41 On the principle of non-uniqueness of phonemic transcriptions, we cannot prohibit the writing of the vowels in *eat*, *it* as [i], [ɪ], and insist on the writing of [i:], [i] or of [ij], [i].

PEIPING PHONOLOGY¹

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The phonetics and phonology of Peiping Chinese have been extensively studied.² The justification for yet another discussion is the approach, which is in some respects new. A detailed presentation of this approach would be out of place here, but brief mention of its major points will render the body of the paper more readily intelligible.³

- (1) Any articulatory event which occurs in a certain position in some utterances of a language, but not in all, is *distinctive*. Any feature which characterizes all the utterances of the language is non-distinctive. Likewise, a feature which does not regularly occur at least in all repetitions of one particular utterance, is non-distinctive. This is a somewhat wider definition of “distinctive” than has been customary. For example, in English the difference between the aspirated *t* of *till* and the unaspirated *t* of *still* has usually been termed non-distinctive (or “non-phonemic”); we cannot so classify it, since whenever one says *still* the aspiration is absent, and whenever one says *till* the aspiration is present. Any such feature must be accounted for in our phonological description. It is true, as Bloomfield points out,⁴ that in our examination of a language we may miss some such features, because of the accidents of our training; such difficulties are encountered in many branches of science; we do the best we can.
- (2) Within the total mass of distinctive material in a language, we find a relatively small set of *determining features*, characterized as follows: (a) if two articulatory events (or what might be described in purely phonetic terms as two articulatory events), **a** and **b**, are so distributed that **a** occurs only and always in conjunction with **b**, they constitute a single determining feature; (b) two articulatory events, **a** and **b**, so distributed that **a** occurs only when **b** occurs, but that **b** occurs also without **a**, are two determining features; (c) if **a** occurs both with and without **b**, and vice versa, **a** and **b** are two determining features. But an articulatory event **a** is not a determining feature at all, nor part of one, if its occurrence is predictable in terms of the occurrence and arrangement of

those events which are determining features; for example, if **a** is found with **b**, with **c**, and with **d**, but nowhere else, and neither **b**, **c**, nor **d** is found without **a**, then **a** is not a determining feature. Distinctive features which are not determining are *determined features*. Often one may divide the total stock of distinctive material into determining and determined, and itemize the determining features, in more than one way; such differences of statement are stylistic, in no way reflecting facts about the language being described.⁵

- (3) In the examination of the raw data, we avoid the (usually unstated) linearity-assumption to which our tradition of linear orthography renders us susceptible. Two features, that is, may occur successively (dental closure and labial closure in *hatpin*), or simultaneously (labial and velar closure in some African languages), or in various overlapping sequences. Bundles of simultaneous or immediately adjacent features are given no priority, save precisely for the purpose of deriving an essentially linear notation; this purpose is phonologically irrelevant, though such a notation is useful, if not unavoidable, in making phonological statements.
- (4) We ignore all considerations of grammatical structure, including such matters as morpheme or word borders. The purpose of this is to avoid circularity: if phonology is dependent on grammatical analysis, then phonology is just so much the less useful as a tool in grammatical analysis. Suppose, for example, that following the procedure here recommended we find in a particular language a type of open juncture, and then, when grammatical examination has been carried to the point of identification of words (= minimum free forms), discover that word-boundary coincides always, or usually, with this type of open juncture. Such a correlation is of importance; in some languages it does not exist. But if we had merely assumed that word-boundaries are phonologically relevant, the discovery of the juncture, and thus of the correlation between open juncture and word-boundary, would have been impossible.
- (5) Phonological description thus consists of: (a) a list of the determining features (with alternative statements if alternatives exist); (b) a statement of the arrangements in which determining features occur in utterances; (c) a statement of the circumstances under which each determined feature occurs. This itemization is logical; the actual arrangement of one's statements will of course depend on the specific problem.

The body of this paper will serve as an example in extenso of the principles just listed.

We describe a dialect with a maximum number of phonemic distinctions.⁶ Simpler patterns, perhaps more common in Peiping, are more easily dealt with in terms of the complex type than vice versa.

1. Segmentation

A Chinese utterance has two simultaneous components: a *register-contour*, and a sequence of one or more *macrosegments*.⁷

A macrosegment is bounded by *macrojunctures*, and has two simultaneous components: an *intonation* and a sequence of one or more *mesosegments*.

A mesosegment is bounded by *mesojunctures*, and has two simultaneous components: a *stress-contour* and a sequence of one or more *microsegments*.

A microsegment is bounded by *microjunctures*, and has as its simultaneous components a *stress*, a *tone*, and a *residual structure* (of vowels and consonants).⁸

2. Junctures

All the junctures to which names are assigned above are open. We find no need to postulate also a close juncture; in terms of the present system, close juncture is the absence of all open junctures.

Microjuncture is a zero-point of sonority,^{8a} a clear and unambiguous point of syllable division; symbol // (space).

Mesojuncture is a slight pause. It occurs only in combination with microjuncture, and the combination is symbolized /./.

Macrojuncture is a pause, often no longer than mesojuncture, but sometimes long enough for a breath to be taken. The constant distinction is that macrojuncture falls at the juxtaposition of two intonations, whereas mesojuncture without macrojuncture falls within a single intonation. Macrojuncture occurs only in combination with the two less open types; symbol for the combination of the three /;/; except that at the end of an utterance we write /./ or /?/ (the choice dependent on intonation) instead of /;/.

3. Register-contours and intonations

The analysis of these features is as yet incomplete; we try to supply categories enough to take care of the maximum number of distinctive features of the kind that may be discovered.

By "register" is meant the range of pitch at any particular place in an utterance, within which the ups and downs of pitch which constitute intonations and tones take place. The most typical, and best identified, of the register-contours is found in utterances of at least four or five macrosegments' length: wide at first, narrower and with a lower average pitch in the interior, and wider again, but still somewhat lower than at the beginning, in the terminal macrosegment.⁹

However, this and other register-contours may be, not independent features, but rather automatic resultants of the sequence of intonations on successive macrosegments, and of the number of macrosegments in the utterance.

The clearest thing about intonations is their scope: there is usually little doubt as to where a particular intonation begins and ends. The exact nature and number of the intonations is less clear. For the last macrosegment of an utterance, we indicate by terminal /./ a lowering of pitch from the nuclear stress (§ 4) to the end, and by /?/ the absence of such a fall in pitch; thus, in short utterances: /'tuei⁴ me?/ 'Is that right?': /'tuei⁴ le./ 'That's right.' Under /?/ we are probably lumping together several phonemically distinct types; possibly also several are covered by /./.

A third clearly recognizable intonation, for which no symbol is here provided, consists of a squeezing of the pitch-range into a narrow band at median level, with only slight variations of stress (probably no nuclear stress) and relatively rapid articulation. This occurs, for example, in short introductory phrases before a direct quotation: /tha' 'srue'; 'hau³./ 'He said "OK."'

4. Stress-contours and stresses

The stress-contour of a mesosegment consists of varying degrees of prominence (produced largely by volume, but partly by length and speed) of its constituent microsegments. The position within the mesosegment of the microsegment of greatest prominence is not predictable, nor, given the position of this, are the degrees of prominence of the remaining microsegments. Therefore the degree of stress of each component microsegment has to be recognized as phonemically primary, and the stress-contour of the mesosegment is an automatic resultant thereof.

The most prominent microsegment in a mesosegment bears *loud stress* (¹/ before the microsegment). The remaining microsegments bear *quiet stress* (¹/), or no stress at all (unmarked; "zero stress" if that terminology is preferred).

In addition, in macrosegments bearing certain intonations (e. g., /./), it is necessary to specify one of the loud stresses in the macrosegment as the nuclear stress, the stressed element at which the intonation turns. The nuclear stress is often, but not always, the last loud stress in the macrosegment. Since its location is not predictable, nuclear stress must be recognized as phonemically distinct from loud stress. No separate symbol is here provided, however, because none of the forms cited require distinctive marking of the nuclear stress in contrast to high stresses.

Finally, in some cases one finds an extra-loud *contrastive stress* (¹'/) instead of a loud stress; further intonational analysis may eliminate this as a separate stress-level.

5. Tones

The tones are contrasting contours of pitch, volume, glottalization, and length. There are six tones; we number five of them, indicating them by superscript numerals after the microsegment; the sixth is indicated by the absence of such marking, and a microsegment bearing it is referred to in the discussion as "toneless."¹⁰

Toneless microsegments are staccato; microsegments with a tone are legato. Staccato microsegments have an observable pitch ("high," "low," etc.), but only legato microsegments have a discernible pitch-contour ("level," "rising," "falling").

Pitch: ¹/ and ²/ are usually level, and have contrasting pitches as their distinguishing features: ¹/ is high, ²/ low. ²/, ⁴/, and ⁵/ have contrasting pitch-contours as their distinguishing features: ²/ and ⁵/ are rising, ⁴/ falling. The rise for ²/ begins and ends somewhat higher than that for ⁵/.

Volume: With loud stress (or nuclear or contrastive stress), ¹/ and ²/ are crescendo, ²/, ⁴/, and ⁵/ diminuendo. With quiet stress this contrast is sometimes audible; with no stress, never.

Glottalization: With loud stress, ²/ and ⁵/ often have glottal friction during the lowest-pitched phase of the contour.

Length: With loud stress, ²/ is longest, ⁴/ half-long, and the other three relatively short.

¹/ and ²/, though usually level, are on occasion not level. When ¹/ is accompanied by loud stress and followed by /:/ (possibly by /./), there is sometimes a slight fall in pitch at the end; this variant is in some circles considered "elegant."¹¹ When ²/ is accompanied by contrastive stress, it starts relatively high, but immediately dips to extra low; when ²/ bears any loud stress and is followed by /:/, there is usually a terminal rise. The combination of these occasional features on a single microsegment with third tone cited in isolation is the source of the customary description of the third tone as "dipping."

With quiet stress or no stress, certain tonal distinctions are lost or facultatively lost. ⁵/ is often not distinguishable in these circumstances from ²/.

In posttonic position in the mesosegment, with no stress, ¹/ and ²/ are in free alternation. In the transcription we maintain the distinctions despite their optional loss (morphophonemically, on the basis of lexical identifications).

The pitch-range within which the contour constituting a tone is placed depends, of course, on the position of the microsegment relative to intonations and register-contours. It is also affected by the stress-level: with higher stresses the range is wider, with lower stresses narrower. The dynamic range for the crescendo or diminuendo contour of a tone is similarly affected by stress-level: greater range with higher stress, less with lower (none with no stress). For unstressed microsegments, with or without tone, the pitch-range is also conditioned by the terminal pitch of a preceding stressed microsegment in the same mesosegment, if any, and the initial pitch of a following stressed microsegment within the mesosegment, if any.

This last factor operates as follows: initially in a mesosegment, an unstressed microsegment tends towards mid or lower mid pitch. Finally in a mesosegment, such a microsegment has lower mid pitch if ¹/, ²/, or ⁵/ precedes, higher mid pitch after ²/, and low pitch after ⁴. Flanked on both sides by stressed microsegments, within a single mesosegment, the pitch of the unstressed microsegment is a compromise between the terminal pitch of the preceding and the initial pitch of the following.

The phonemic status of the contrast between the first four tones can be demonstrated abundantly by lexical citation of free forms one microsegment in length, e.g.: /chru¹/ 'to exit': /chru²/ 'divided into'; /pau²/ 'thin': /pau³/ 'to go bail for'; /ciu³/ 'nine, wine': /ciu⁴/ 'thereupon.' The fifth tone does not appear on such elements, but can be demonstrated in free forms of two microsegments' length; our examples contrast it with the second and third tones, which are most similar: /ta⁵ pan⁴/ 'make-up,' /ma⁵ fan⁴/ 'annoying': /sr² heu⁴/ 'time,' /i² khuai⁴/ 'one

(dollar): /'mai³ mai⁴/ 'business,' /'u³ khuai⁴/ 'five (dollars).'¹² In all these examples, the second microsegments are facultatively toneless (see below).

Toneless microsegments cannot be demonstrated by direct lexical citation at all. There is a distinction, however, between the utterances /'hau³/ 'OK' in answer to a question, and /'hau./ 'Yes, go on' said quietly over the telephone as an indication to the other party that one is following what is being said; the latter utterance has the intonation indicated by /./, but no tone. In longer utterances, toneless microsegments are common. Certain forms, such as the particle /te/ (mark of attribution), /le/ (completive aspect), /cre/ (continuative aspect), /me, ne/ (question), are always toneless, even when stressed: /,ue³ 'te, 'pheng² ieu³/ 'I said "my friend" using the attributive particle, not without the particle.' For some of these particles there are formal citation forms, /ti⁴/ for /te/, /liau³/ for /le/, with differing phonemic structures, based, as it happens, on the shape of morphemically distinct elements that are written with the same characters; this does not affect the present discussion. Many elements other than the particles listed above, for example, the second microsegments in the two-microsegment free forms cited in the last paragraph above, are regularly without stress, and optionally retain or lose their tones.

6. Residual structure: determining features

Under constant conditions of register, intonation, stress, tone, and placement in utterance, macrosegment, and mesosegment, microsegments contrast on the basis of the occurrence or non-occurrence, and the arrangement, of the following fifteen determining features:¹³

- p bilabial position
- t apico-alveolar position
- k dorso-velar position
- c tongue-front position with sibilance or with affricate release
- f labiodental position
- q glottal position (for which g is always substitutable, though not vice versa)
- S unaspirated complete closure without nasalization
- F fricative spirant contact
- N nasalization, with stop closure or approximation thereto
- l lateral frictionless continuant
- i high-front tongue position
- u lip rounding
- r tongue retroflexion
- e mid tongue height
- a low tongue height.

The total stock of determining features in the language, therefore, consists of the register contours(?), intonations, junctures, stresses, tones, and the fifteen features

just enumerated. Every linguistically relevant event in the speaking of Chinese is either one of these features arranged in a particular way relative to others, or a mechanically determined and predictable product of a particular arrangement of these features.

7. Residual structure: notation and terminology

Some of the features listed above occur only in simultaneous bundles. Since it is inconvenient to transcribe other than linearly, we derive the symbols for inclosure between solidi from the symbols defined above in such a way as to eliminate the need for non-linear notation:

$$\begin{aligned} /p t k c/ &= p t k c, \\ & \quad S S S S \\ /f s h/ &= f c q, \\ & \quad F F F \\ /m n ng/ &= p t k; \\ & \quad N N N \end{aligned}$$

and, for the others, simply

$$/l i u r e a/ = l i u r e a.$$

The digraph "ng" saves a type-face, and leads to no ambiguity since "g" is not otherwise used.

"#" is used, when needed, for zero.

The following cover terms are used: /a e/ are *vowels*; /i u r/ are *semivowels*; /c s/ are *semiconsonants*; /p t k f h m n ng l/ are *full consonants*. Both the semiconsonants, and all but one of the full consonants, are simultaneous clusters; it is convenient to classify the successive cluster /ch/ also as a semiconsonant, and the successive clusters /ph th kh/ also as full consonants.

8. Residual structure: arrangements

The above definitions of the symbols for use between solidi are statements of phonemic structure: the definition of /p/, for example, at the same time states that the simultaneous bundle of p and S occurs as one arrangement of distinctive features in utterances.

Statements of arrangement still to be made are made in terms of the elements and simultaneous bundles described above, on the convenient assumption that all the remaining arrangements are linear successions of these elements or simultaneous bundles; later on we indicate at what points this assumption is false.

8.1. Types of microsegments

Microsegments are *monosyllabic*, containing a single peak of sonority, or *disyllabic*, containing two peaks, the first much more prominent than the second. The latter type is much the rarer, and (probably) does not occur toneless.

8.2. Monosyllabic microsegments

For the description of these we recognize four successive position for elements, symbolized as [1], [2], etc. Elements in position [1] are *initials*; the remainder is a *final*.¹⁴

8.2.1. Initials

These fall into the following classes: /#/; /c ch s/; /n l/; /t th/; /p ph m/; /f/; /k kh h/; /ng/; /cr chr sr/; /r/.¹⁵

8.2.2. Finals

In position [2] occur /# u i iu/ in [3], /# e a/; in [4], /# i n ng u m r ir ngr ur/. The finals are listed in the Table.

Table of finals

Group 1.									
#									
e	ei	en	eng	eu	em	er	eir	enr	eur
a	ai	an	ang	au	am	ar	air	anr	aur
Group 2.									
u			ung			ur		unr	
ue	uei	uen	ueng		uem	uer	ueir	(uengr)	
ua	uai	uan	uang			uar	uair	uangr	
Group 3.									
i		in	ing		im				
ie				ieu		ier	ieir	iengr	ieur
ia	iai	ian	iang	iau		iar	iair	iangr	iaur
Group 4.									
iu		iun	iung			iur		(iungr)	
iue						(iuer)			
		iuan							iuair

In the top row of each group, [3] is /#/; in the middle row, /e/; in the bottom row, /a/. The finals of a single group have the same element in [2]; those in a single column have the same element in [4]. The three parenthesized finals are morphologically to be expected but are not attested.

The following points, though implicit in the Table, are not obvious:

- (1) /u/ does not occur in both [2] and [4] of a final. The same is true of /i/ in those finals which do not contain /r/, save for /iai/, which is rare and perhaps only literary.¹⁶
- (2) [4] elements other than /#/ occur only with positions [2] and [3] not both empty.
- (3) /r/ as [4] does not occur with /#/ as [3] and /i/ as [2].

8.2.3. Combinations of initial and final

For combinations of an initial and a final which does not contain /r/, we say that the combination *occurs* if (1) there exists a morpheme consisting of such a shape (plus a tone), or part of which consists thereof (e. g., if the first microsegment of a two-microsegment morpheme has the required shape), or if, there being no such morpheme, (2) there is clear evidence that the shape in question, with some tone, is pronounceable as a nonsense-element. Such a combination is termed *literary* if the required pronunciation is assigned to a character in character-dictionaries, but the element does not occur in ordinary colloquial speech (and thus not at all in the speech of many individuals). For combinations of an initial and a final which does contain /r/, we say that the combination occurs if (1) there exists a morpheme or group of morphemes of the required shape, or if (2) the existence of such is morphologically to be expected, even if it has not been heard.¹⁷

Finals with /m/ as [4] are ignored until (12) below.

- (1) Final /#/ occurs only with initials /c ch s, cr chr sr, r/.
- (2) Initial /#/ occurs with all finals except /ung ungr/. /ung¹/ has been heard as an alternative pronunciation of the surname usually pronounced /ueng¹/, but this is probably a non-Peiping or even non-Mandarin feature.¹⁸
- (3) Finals /ueng uengr/ occur only with initial /#/; /ueng/ and /ung/, likewise /uengr/ and /ungr/, may thus be in complementary distribution. /iai/ seems to occur only with the initials /# ch/; both are literary.
- (4) Initials /c ch s/ do not occur with finals /ua uai uang uar uangr/; nor do the combinations /chei, chen, sen, seng, sengr/ occur.
- (5) Initials /n l/ do not occur with finals /uei ua uai uar uangr iun iung iungr iuer iuair/. The only case of /len/ is in a recently given personal name, where the use of a "non-occurrent" micro-segment was premeditated;¹⁹ but the name is pronounced without difficulty by native speakers. /niue, liue, liuan/ occur only in literary context; /ne/ occurs only toneless; /nuang/ is questionable; /nen, neu, nuen, luang, nia, niuan/ are not attested.

Finals of group 4 do not occur with any of the initials yet to be discussed, save for a peculiar occurrence of /iu/ (and possibly /iur/) after /k/: /chiue³ 'kiu⁴/ is the form assumed in a variety of "Pig-Latin" by ordinary /'chiu⁴/ 'to go.'²⁰

(6) Initials /t th/ do not occur with finals /ua uai uang uar uangr/ in ia iang iar iangr/. There are no cases of /thei, thieu;/ /thuen/ is literary. Dictionaries based on characters give no pronunciations involving /ten, then/, but these occur at least in /ten⁴/ 'to pull on with sudden tugs' and /'tung⁴ then/ 'to be not at rest.'

(7) Initials /p ph m/ do not occur with finals /ieu ieur ia iang iar iangr/, and probably not with final /er/, nor with any of the finals of group 2 except /u ur ue uer/. There are no cases of /phe, peu;/ /pheu/ is literary; /pe, me/ occur only toneless.

Finals of group 3 do not occur with any of the initials yet to be discussed.

(8) Initial /f/ does not occur with the finals /e er ai au aur/, nor with any of the finals of group 2 except /u ur ue uer/.

(9) Initials /k kh h cr chr sr/ occur with all finals not excluded by statements in the foregoing, except that there are no cases of /chrei, srung;/ /chrua/ is literary.

(10) Initial /r/ does not occur with finals /ei a ai ar ua uai uang uar uangr/.

(11) Initial /ng/ occurs only with final /e/, toneless (§ 10).

(12) Finals with /m/ in position [4] are rare, and apparently confined to relatively fast speech (§ 8. 3). /em/ occurs with initials /sr cr c/; /am/ with /t th c/; /uem/ with /#/; /im/ with /n/. The following examples are exhaustive or almost so: /srem², cem³, nem⁴ ~ /sreme², ceme³, neme⁴/ 'what, how, thus'; /crem⁴, cem⁴ ~ /creme⁴, ceme⁴/ 'thus'; /'tam⁴ cr³ ~ /'ta⁴ me cr³/ 'thumb'; /tham¹, cam² ~ /'tha¹ men, 'can² men/ 'they, we'; /uem³ ~ /'ue³ men/ 'we'; /nim³ ~ /'ni³ men/ 'you (pl).'

Since more finals containing /r/ are recognized in this analysis than is customary, examples are given here of all except the three parenthesized in the Table: /er⁴ ~ /air⁴/ 'two'; / ai¹ 'meir²/ 'go from door to door'; /hengr²/ 'horizontal stroke' (in writing characters); / pi³ 'theur²/ 'pen point'; /par³/ 'handful, bunch'; /, siau³ 'hair² 'child'; /pangr¹/ 'group'; /phaur⁴/ 'bulb'; /, siau³ 'srur¹/ 'small book'; /khungr⁴/ 'free time'; /, siau³ 'srur¹/ 'novel'; /khueir³/ 'spool'; /, siau³ 'sruar¹/ 'small brush'; /uair²/ 'to amuse oneself with'; /khuangr¹/ 'basket'; /ier⁴/ 'leaf'; /tieur³/ 'bottom' (as of a cup); /piengr³/ 'cake'; /chieur²/ 'ball'; /iar² ~ iangr¹/ 'sprout, seedling'; / iair⁴/ 'swallow' (bird); /tiaur⁴/ 'melody'; /, siau⁵ 'iur³/ 'shower, light fall of rain'; /, hua¹ 'iuair²/ 'flower garden.'

8.3. Disyllabic microsegments

In these there are five positions for elements: [1], [2], and [3] as for monosyllabic microsegments, save that [2] and [3] are not both empty; [4'] one of the set /p t k c m n ng f s h l/ (not all of these have been observed, but the nature of the alternation between two-microsegment sequence and single disyllabic microsegment [see below] is such as to suggest that the list is correct); [5] /e i u r/. The limitations of sequence in the first three positions are as for monosyllabic microsegments; if [5] is /i u r/, the same limitations apply to positions [4']-[5] as to [1]-[2] in all microsegments.

Most disyllabic microsegments occur only in fast speech, being replaced at slower speeds by sequences of two monosyllabic microsegments, the first of which is stressed and has the tone of the disyllabic alternant, the second of which

is unstressed and toneless or optionally toneless: /pusr² ~ /' pu² sr⁴/ 'isn't'; /siesi⁴ ~ /' sie⁴ sie/ 'thanks'; possibly /tulu¹ ~ /' tu¹ lu/ 'cluster' (as of grapes).²¹

A few disyllabic microsegments occur in either rapid speech or normal-speed speech, but in the latter case are paralleled by groups of two monosyllabic microsegments. All the cases citable have, also, in fast speech only, still shorter alternants consisting of a single monosyllabic microsegment: /crem⁴, cem⁴ ~ /creme⁴, ceme⁴ ~ /' cre⁴ me/ 'thus, this way'; /nem⁴ ~ /neme⁴, name⁴ ~ /' na⁴ me/ 'thus, that way.'

There are two disyllabic microsegments which have the shorter alternant just mentioned, in rapid speech, but no two-microsegment replacement except as a highly artificial reading-pronunciation: /srem²/ ~ /sreme²/ ~ (reading-pronunciations) /'sren² ma⁴, 'sren² mue⁴, 'sr² ma⁴, 'sr² mue⁴/ 'what'; /cem³ ~ /ceme³ ~ (reading-pronunciations) /'cen³ ma⁴, 'cen³ mue⁴/ 'how.'

9. Residual structure: determined features

The statements of arrangement just made were based on the assumption that features or bundles of features represented in the transcription by single letters (or the digraph "ng") occur only in linear sequence (§ 8, beginning). As we proceed with the presentation of determined features, we also indicate at what points that assumption was false.

9.1. Features dependent on placement

9.1.1. Release and onset

Consonants initial in a microsegment have distinctive release; final in a microsegment, distinctive onset; medial in a disyllabic microsegment (position [4']), both.

→/l/ is now completely described. Examples: /lau³/ 'always,' /tulu¹/ (?) 'cluster.'²²

→/m/ is completely described on the addition of the following: the simultaneous occurrence of determining features **p** and **N** involves, as a determined feature, complete closure, the alternant possibility covered by the definition of **N** (approximation) being eliminated. Examples: /ma³/ 'horse,' /tham¹/ 'they,' /sreme²/ 'what.'

9.1.2. Voicing and voicelessness

Microsegments are voiced throughout unless they begin with /p t k c ph th kh ch/ s h a/. Microsegments beginning with one of these are voiced except for an initial voiceless phase (the phase indicated by the symbols listed), except as follows: Initial /p t k c/ are usually voiced in an unstressed microsegment, rarely elsewhere. /a/ in initial position often has a glottal stop onset (constituting an initial voiceless phase); this is rarer in unstressed microsegments.

→/p t k ph th kh f h/ are now completely described. Examples: /pau⁴/ 'newspaper,' /' la³ pa/ 'trumpet'; /ta⁴/ 'large,' /' ue³ te/ 'my'; /kau¹/ 'high,' /' i² ke/ 'one'; / phau³/ 'run'; /than²/ 'converse'; /khai¹/ 'open'; /fan⁴/ 'food'; /he¹/ 'drink.'

9.1.3. *Peaks of sonority*

By definition, one peak of sonority occurs in each monosyllabic microsegment, two in each disyllabic microsegment.

If a monosyllabic microsegment contains a vowel, there is a peak of sonority simultaneous with the vowel. If it contains no vowel, but contains a semivowel /i u/ or the cluster /iu/ in position [2], there is a peak of sonority simultaneous with the /i/ or /u/ or with the second phase of the cluster /iu/. If it contains no vowel and no semivowel /i u/, the peak of sonority is simultaneous with the last phase of the microsegment, whatever it may be (e. g., with the /r/ of /sr⁴/ 'is,' with the terminal vocalic phase [§ 9.2] of /s⁴/ 'four').

The major peak of sonority in a disyllabic microsegment is simultaneous with a vowel or semivowel in position [3] or [2], as the case may be. The minor peak is simultaneous with the element /e i u r/ in position [5].

9.2. *The semiconsonants*

/c/ or /s/ as the only residual constituent of a microsegment has two successive phases. Phase one is, in each case, consonantal (simultaneous bundle of c and S, or of c and F), with the added determined feature of lowering of the central part of the tongue, raising of the dorsal part, and often some tension of the throat muscles. The second phase is vocalic, identical for /c/ and /s/, and composed entirely of determined features: an unrounded high back vowel, with tongue as for the consonantal phase and the throat muscles still tense. Examples: /c⁴/ 'word,' /s⁴/ 'four.'

When the only residual constituent of a microsegment is /ch/, /c/ has the two phases just described, but the /h/ falls between them, after the consonantal phase of /c/ and before the vocalic phase; the determined features of tongue-position and throat tension are maintained during the /h/: /ch⁴/ 'time, occurrence.'

In all other circumstances, /c, s/ have only a single phase. When this phase is not simultaneous with palatalization or retroflexion (§ 9.3), the tongue position is as described above.

→/c ch s/ are now completely described.

9.3. */i u r/ not in position [4].*

We take up separately /i u iu/ in position [2] and /r/ in position [1] or in the [1]-clusters /cr chr sr/.

9.3.1. */i/.*

In the arrangement symbolized /CiV/ ("C"=consonant, "V"=vowel), our assumption of linearity is false. The /i/ begins at the beginning of the microsegment, as palatalization of the consonant, and continues after the consonant as a

high-front-unrounded glide. The palatalization of the consonant is clearest in the case of /c ch s/; these consonants with palatalization are articulated with the tip of the tongue behind the lower teeth, the frontal surface of the tongue in contact with the upper teeth and the alveolar ridge to produce the closure or friction. samples: /siang³/ 'think,' /chiau²/ 'bridge,' /bian¹/ 'side.'

In the arrangement /Ci/ (no vowel), /i/ begins with the consonant as palatalization (as above), continues after the consonant optionally as high-front-unrounded glide, then in all cases as high-front-unrounded vowel simultaneous with the peak of sonority. If /n/ follows, the glide phase is usually present, and the vocalic phase is lower than otherwise. Examples: /si¹/ 'west,' /sing¹/ 'star,' /sin¹/ 'new,' /phin¹/ 'to spell out.'

In the arrangement /iV/ (no initial consonant), /i/ is a high-front-unrounded glide (and our assumption of linearity is correct): /iang²/ 'ocean,' /ian¹/ 'smoke.'

In the arrangement /i/ (no initial consonant and no vowel), /i/ begins as a high-front-unrounded glide and continues as a high-front unrounded vowel simultaneous with the peak of sonority. The vowel is slightly lower if /n/ follows than otherwise. /i¹/ 'one,' /in¹/ 'sound,' /ing¹/ 'should.'

9.3.2. */u/.*

All cases of /u/, save when /i/ overlaps (§ 9.33), add high-back tongue position as a determined feature.

In the arrangements /(C)uV/, /u/ is a high-back-rounded glide: /uan³/ 'bowl' / kuan¹/ 'officer.'

In the arrangement /Cu/, /u/ is a high-back-rounded vowel: /phu⁴/ 'store,' /tung¹/ 'east.'

In the arrangement /u/, /u/ begins as a high-back-rounded glide and continues as a high-back-rounded vowel: /u³/ 'five,' /ur¹/ '(small) room.'

9.3.3. */iu/.*

(1) When /ng/ follows immediately, /i/ has the varieties described in § 9.32 for the arrangements /CiV/ and /iV/, and the /u/ is a high-back-rounded vowel: /siung¹/ 'fierce,' /iung⁴/ 'use.'

(2) When /ng/ does not follow immediately, four cases must be distinguished as for /i/ alone:

In the arrangement /CiuV/, /i/ begins with the consonant as palatalization thereof, /u/ begins after the consonant, the /i/ continuing, the two together constituting a high-front-rounded glide: /chiuan²/ 'together.'

In the arrangement /Ciu/, /i/ begins with the consonant as palatalization; /u/ begins after the consonant, the /i/ continuing, the combination constituting (a) if /n/ follows, a high-front-rounded glide followed by a slightly lower high-front-rounded vowel; (b) otherwise, just a high-front-rounded vowel: /ciun¹/ 'army,' /chiu⁴/ 'to go.'

In the arrangement /iuV/, /i/ begins first, as high-front-unrounded glide; then the /u/ begins, the /i/ continuing, the combination forming a high-front-rounded glide: /iuan⁴/ 'court,' /iue⁴/ 'month.'

In the arrangement /iu/, /i/ begins first, as high-front-unrounded glide; then the /u/ begins as the /i/ continues, the combination constituting (a) if /n/ follows, a high-front-rounded glide followed by a slightly lower high-front-rounded vowel; (b) otherwise, just a high-front-rounded vowel: /iun⁴/ 'to ship,' /iu³/ 'rain.'

9.3.4 /r/.

In the arrangements /CrV/ and /Cru/, /r/ begins and ends with the consonant, as retroflexion thereof. The consonants /c ch s/ with simultaneous /r/ have as position of articulation, therefore, the tongue retracted and lifted to the roof of the mouth, so that the tip is behind the alveolar ridge, the contact being between an area of the tongue including tip and blade and the roof of the mouth behind the alveolar ridge. Examples: /chru¹/ 'exit,' /srau³/ 'few.'

In the arrangement /Cr/ (with no vowel nor following /u/), /r/ begins with the consonant as retroflexion thereof (as above), and continues after the consonant as retroflex vowel simultaneous with the peak of sonority. The tongue position for the vowel is identical with the position described above for /c ch s/ with simultaneous /r/. Examples: /cr³/ 'point,' /chr¹/ 'eat,' /sr⁴/ 'is.'

In the arrangements /rV/ and /ru/, /r/ is a retroflex glide, often with some friction: /re⁴/ 'hot,' /ru⁴/ 'enter.'

In the arrangement /r/ (no consonant and nothing following), /r/ begins as a fricative retroflex glide and continues as retroflex vowel simultaneous with the peak of sonority: /r⁴/ 'day, sun' (bound form).

9.4. Position [4].

/m/ has already been covered in this position and elsewhere (§ 9. 11). The remaining elements in position [4] are discussed in the order /i u n ng r ir ngr ur/.

/i/ is a glide towards (not necessarily to) the high front tongue position: /hai³/ 'sea,' /kei³/ 'give.'

/u/ is a glide towards (not necessarily to) the high back tongue position with concomitant increasing lip rounding: /hau³/ 'OK,' /keu³/ 'dog.'

/n/ is motion of the tongue to or towards the apico-alveolar position, with concomitant nasalization. If the following microsegment in the same mesosegment begins with /i/, the apico-dental closure is often not completed; in this case the nasalization begins with the peak of sonority or even immediately after an initial consonant, if any: thus in /'man⁴ i ,tian/ 'a little shower.' If the following microsegment in the same mesosegment begins with /p ph m/, the closure of the lips for that consonant is often made simultaneously with the final /n/ of the preceding microsegment; similarly for the dorso-velar closure for an initial /k kh h/ of a following microsegment. Because the features constituting /n/ are still present, this

is not a morphophonemic replacement of /n/ by /m/ and /ng/. Thus: /,chian¹ 'pi³/ 'pencil,' /'nuan³ he/ 'warm.'^{22a}

/ng/ in this position involves no determined features: /,pang¹ 'mang²/ 'to give help.'

/r/ is a glide to the retroflex position, frictionless, the tongue approaching the roof of the mouth less closely than for /r/ in other positions: /far²/ 'method,' /ier⁴/ 'leaf,' /her²/ 'small box,' /uer¹/ 'nest.'

/ir/: the /i/ and /r/ are simultaneous, constituting a glide to palatalized retroflex position: the front and central portions of the tongue are raised, and the tip slightly curled: /tiar³/ 'a little,' /tieir³/ 'bottom.'

/ngr/: the nasalization begins with the peak of sonority, or even immediately after an initial consonant, if any. After the peak of sonority there are, simultaneously, a glide of the front part of the tongue to the retroflex position (as with /r/ alone in [4]), and motion of the dorsal part of the tongue towards, but not to, contact with the velum; the nasalization increases throughout. Examples: /hengr²/ 'horizontal stroke,' /piengr³/ 'cake.'

/ur/ is a combination of /u/ and /r/, each as described above for position [4]; the two glides come in any arrangement relative to each other—/u/ first, /r/ first, simultaneous, or overlapping with either starting first: /phaur⁴/ 'bulb'²³

→/i u r/ are now completely described;²⁴ /n ng/ are completely described once we add that, save as specified above, /n, ng/ involve closure, not approximation. There remain to be treated only the vowels, /e a/.

9.5. Vowels

Microsegments with otherwise identical residual structure (as here analyzed) often occur in triads, in which a prominent feature of the contrasts between them is the height of the tongue at the peak of sonority. Thus: /i¹: ie¹: ia¹/ 'one: coconut: to press down,' /u³: ue³: ua³/ 'five: I: tile,' /c³: ce²: ca²/ 'purple: duty: variegated.' Sometimes there are only two terms: /in¹: ia¹/ 'sound: smoke' /tuen⁴: tuan⁴/ 'ton: segment.' And sometimes there is only one: /iung⁴/ 'use.'

Vowel-sounds at the peaks of sonority of such microsegments differ in more than tongue-height: that of /ie¹/ is front, that of /ue³/ is back and rounded. The vowel-sound at a peak of sonority in some cases has several simultaneous components. For high vowel-sounds, the only components are parts of determining features written with symbols other than /e a/; thus in /i¹/ 'one,' /u³/ 'five,' /chr¹/ 'eat,' /c⁴/ 'word,' /iu³/ 'rain,' and the like (§ 9. 2-3). In other cases, such components are often present, but there is in addition the component of mid or low tongue-height, symbolized by /e a/. For example, the mid-front-unrounded vowel-sound of /ie¹/ has two components: the front position is part of /i/, the mid tongue-height is the /e/; the mid-back-rounded vowel-sound of /ue³/ has three components: the roundness is part of /u/, the mid tongue-height is the /e/, and the back position is a determined feature occurrent whenever this concatenation of determining features is found.

In what follows statements of the kind just made are greatly abbreviated: when nothing is said to the contrary, /e/ (plus whatever other simultaneous components may be involved) is to be taken as having its "normal" value, mid-back-unrounded; /a/, similarly, its "normal" value low-central-unrounded.

9.5.1. Triads

Three-way contrasts occur in the following frames ("C" = consonant, #, or a cluster /cr chr sr/; "V" = /# e a/): /CV#, CuV#, CuVr, CuVng, CuVngr, CiV#/.

/CV#/ : /e/ has its normal value or, optionally, is a glide downwards and forwards from a fairly high back position, the peak of sonority near the beginning of the glide. /cre¹: cra¹/ 'to cover up: to jab.'

/CuV#, CuVr/ : /e/ is rounded (otherwise "normal"), often with a glide after the peak of sonority towards mid-central-unrounded. /a/ is sometimes slightly retracted and rounded. /ue¹: ua¹/ 'nest: to vomit,' /,siau³ 'uer¹, /,siau³ 'uar⁴/ 'small nest: small stockings.'

/CuVng, CuVngr/ : /a/ is often a bit retracted and rounded: /ueng¹: uang²/ (surnames), /khuangr¹/ 'basket.'

/CiV#/ : /e/ is mid-front-unrounded, often with a centering glide after the peak of sonority; /a/ is sometimes slightly fronted: /ie¹: ia¹/ 'coconut: duck.'

9.5.2. Pairs

Two-way contrasts occur as follows:

9.5.2.1 /e/ versus /a/, in frames /CVr, CVi, CVir, CVn, CVng, CVngr, CVur, CVm, CuVi, CuVir, CuVn, CiVngr, CiVu, CiVir, CiVr, CiVir/.

/CVr/ : as in frame /CV#/ : /chrar¹: ,siau³ 'chrer¹/ 'X-mark: small cart.'

/CVi/ : /e/ is mid-front-unrounded; /a/ slightly fronted and raised: /kei³: kai³/ 'to give: to alter.'

/CVir, CVn/ : /e/ higher-mid-central-unrounded, even more fronted in the specific frames /rVn, rVir/; /a/ is slightly fronted and raised: /keir¹: kair¹/ 'root: dried stuff,' /ren⁴: cran⁴/ 'to give relief: to stand,' /ren²/ 'people.'

/CVng, CVngr/ : /a/ is often a bit retracted. /reng¹: rang³/ 'to throw: to call out,' /fengr¹: fangr²/ 'small envelope: small house.'

/CVu, CVur/ : both /e/ and /a/ are optionally rounded, /e/ usually so; /a/ is optionally a bit retracted: /keu³: kau³/ 'dog: pick (tool),' /teur¹: taur¹/ 'pocket: small knife.'

/CVm/ : /e/ is slightly fronted: /srem²: tham¹/ 'what: they.'

/CuVi/ : with /k kh h cr chr sr r #/ in position [1], /e/ is higher-mid-central-unrounded; with anything else in [1], higher-mid-back-rounded: /kuei¹: 'kuai¹ ta/ 'to pertain to: to pat with a flat instrument,' /tuei⁴/ 'correct.'

/CuVir/ : both /e/ and /a/ are fronted and raised: /tueir¹: tuair⁴/ 'pile, heap: segment.'

/CuVn/ : with # as [1], /e/ is slightly fronted; otherwise, /e/ is raised, almost to a (lax) high-back position, and rounded. /a/ is slightly fronted and raised. /tuen⁴: tuan⁴/ 'pause: segment.'

/CiVngr/ : /e/ is higher-mid-central-unrounded: /piengr³: iangr⁴/ 'cake: manner.'

/CiVu, CiVir/ : with tones /¹²/, /e/ is raised and optionally rounded; with tones /³⁴⁵/, not raised but optionally rounded; toneless, between these two. /a/, with tone /¹²/ and with /c ch s/ in position [1], is markedly raised and retracted, usually with rounding. Examples: /ieu¹: iau¹/ 'to swing: waist,' /siau¹/ 'flute,' /chieur²: chiaur²/ 'ball: bridge.'

/CiVr/ : as in frame /CiV#/ : /ier⁴: iar²/ 'leaf: seedling.'

/CiVir/ : both /e/ and /a/ are fronted and raised: /tieir³: tiair³/ 'bottom: a little.'

9.5.2.2 /#/ versus /e/, in frames /CiuV#, CiuVr/ : as in frames /CiV#/ or /CiVr/:

/ciue²/ 'to dig,' /,siau⁵ 'siuer³/ (?) 'light fall of snow.'

9.5.2.3 /#/ versus /a/, in frames /CiVn, CiVng, CiuVn/.

/CiVn/ : /a/ is raised and fronted radically, almost a lower-mid-front-unrounded vowel-sound: /tian³/ 'a bit.'

/CiVng/ : /siang⁴/ 'towards.'

/CiuVn/ : /a/ varies between its normal value, and low-front-unrounded: /iuan³/ 'far away.'

9.5.3. Unpaired items

In the following frames there are no contrasts: with /#/ : /CiVm, CiuVng, CiuVngr/; with /e/ : /CuVm/; with /a/ : /CiuVir/.

/CuVm/ : /e/ is rounded: /uem³/ 'we.'

/CiuVir/ : /a/ is slightly fronted and raised: /,hua¹ 'iuair²/ 'flower garden.'

9.5.4. Unstressed and disyllabic microsegments

Unstressed monosyllabic microsegments are in general the same in their residual characteristics as those bearing stress. However, final /e/ in an unstressed monosyllabic microsegment, and /e/ in position [5] of disyllabic microsegments, are centered and lowered, and alternate freely with a slightly raised variety of /a/. In unstressed monosyllabic microsegments, though not in position [5] of disyllabic microsegments, there is a morphophonemically distinct /a/ (slightly raised) which does not alternate with /e/. The transcription is on this score morphophonemic: /'ceme³ ne?/ 'What?!'; but /'kuai¹ ta/ 'to pat with a flat instrument.'

In position [3] of a disyllabic microsegment, /e/ has the same quality that it has with the same elements in position [1] and [2], and /n/ in position [4], in a monosyllabic microsegment: /srem²: ceme³/ 'what, how.'

→/a, e/ are now completely described.

9.5.5. *Alternative treatments*

Our analysis above selects in a few cases one rather than the other of two apparently equally acceptable choices, the reasons for our choice being irrelevant to the phonological facts:

In the frame /CiVn/, the vowel quality interpreted as /a/ has higher tongue-position than any other vowel quality so interpreted; there is no contrasting /e/ in this frame, and the vowel quality in question could also be interpreted as /e/, e.g., /tien³/ 'a little,' instead of /tian³/. This alternative choice is reflected in the Wade Romanization.

In the frames /CuVi, CuVir, CiVu, CiVur/, and in frame /CuVn/ when C is not zero, only /e/ and /a/ occur. The vowel qualities interpreted as /e/ are quite high, and could also be interpreted as zero; thus /kui⁴/ for our /kuei⁴/ 'expensive,' /khui³/ for /khuei³/ 'spool,' /iu²/ for /ieu²/ 'oil,' /chiur²/ for /chieur²/ 'ball,' and /tun⁴/ for /tuen⁴/ 'pause,' /uen⁴/ 'to ask' would not be altered, for in this case the vowel quality is clearly in the mid tongue-height range. Since the symbolism /iu/ would thus become ambiguous for our present /iu/ (as in /iu³/ 'rain') and /ieu/, another orthographic convention would have to be introduced: simultaneous or overlapping /i/ (**i**) and /u/ (**u**) would have to be written with a single symbol, say /y/, giving /iu³/ 'to have,' /y³/ 'rain.'²⁵

Had the alternative choices been made in these cases, the arrangement of our descriptive statements would have been modified slightly; neither this nor the necessity of introducing /y/ militates against this treatment.

10. Limitations on sequence of microsegments

A microsegment with initial /ng/ occurs only in macrosegment-final, preceded in the same mesosegment by a microsegment ending in /ng/: /lau³ 'uang² nge²/ 'O friend Wang!'

Within a macrosegment: the third tone does not occur on two successive microsegments; neither does the fifth tone; the fifth tone does not fall on the terminal microsegment; a mesosegment with an initial pretonic toneless and stressless microsegment does not occur initially.

11. Comparison with Hartman's analysis

The formulation just completed above of Peiping phonology is based on and supported by the writer's own observations; but both observations and formulation were guided by the work of predecessors. In the late thirties George L. Trager,

working with George A. Kennedy, developed the theories of: three basic vowels (high, mid, low); the biphonemic status (/iu/ in our notation) of high-front-rounded vowels or glides; and the analysis of retroflex initials /sr cr chr/ into non-retroflex initials /s c ch/ and a retroflex semivowel /r/. The results were not published by either Trager or Kennedy; Hartman later took up the investigation, carried it further, and published.²⁶ The present analysis is also, so to speak, in the same "tradition"; but there are differences, and these differences are worth discussion.

(1) Hartman posits three vowels, /a e/ and high /i/; he writes the semivowels as /j w r/. To each syllable one of these three vowels is assigned.²⁷ Monosyllabic microsegments which here are taken as having no vowel at all are by Hartman taken to contain the high vowel. Thus he writes /njwi/ for our /niu/, and so on.

It turns out, upon inspection, that if Hartman's high vowel is omitted, the remaining set of symbols with which such a microsegment is written, together with the fact that they constitute a single microsegment, defines unambiguously both the location of the peak of sonority and the vowel-quality which occurs there. It is therefore redundant to indicate, with a separate symbol, the location and high-vowel nature of the peak of sonority in such microsegments.

Of paramount importance in the statement just made are the words "together with the fact that they constitute a single microsegment." Hartman assumes this fact, not discussing (save in one footnote) phenomena in sequences larger than a single monosyllabic microsegment. Until such phenomena have been observed, however, we cannot know for sure whether Hartman's "syllable," the structure of which is his topic, is a unit defined phonologically by the fact that it has a peak of sonority, or by the fact that a phonemically relevant syllable-juncture occurs between each two successive syllables. If the former should turn out to be the case, then the presence of a peak of sonority is necessarily a primary factor (a determining feature, in our terminology); but if the latter is the case, then at least so long as we confine our attention to *monosyllabic* microsegments (as Hartman did), the presence of a peak of sonority is not a primary factor, but a resultant of the arrangement of other factors. Furthermore, if the former is the case, we cannot legitimately discuss segmental structure in terms of "syllables," but must instead take as our larger units, within which certain arrangements of features occur, whatever unit happens to be marked off by successive occurrences of the closest phonemic variety of open juncture—perhaps, for example, whole phrases.

Within Hartman's range of discussion, therefore, with arrangement of material within what we here call monosyllabic microsegments as the topic, the high vowel, the "syllabicity" vowel with no other distinguishing characteristic of its own, is clearly a resultant rather than a determining feature in its own right. In the present discussion we have explicitly introduced the determining feature (microjuncture) which enables us to discuss arrangement of material within microsegments, and are led a fortiori to exclude the high vowel as a separate entity. However, we also see that there are disyllabic microsegments, not discussed by Hartman, the structure of which must also be accounted for in our complete analysis. It might have

turned out, quite easily, that in this special and rare type of microsegment the high vowel would be necessary; and, if that had been the case, it would of course have had to be used throughout. Since disyllabic microsegments are hard to observe, further familiarity with allegro speech may still necessitate a return from the two-vowel system to Hartman's, but at the present writing this does not seem likely.

(2) Hartman reports a smaller variety of finals containing /r/ than are recognized herein. Thus he recognizes the contrast here transcribed as /eir/ versus /er/, providing the microsegment bears first or second tone, but not with any of the other tones, and no comparable distinction between /air/ and /ar/. This, of course, may well be the situation for some speakers.

Hartman's analysis of /eir/ and /er/ takes the first as /er/, the second as /eer/, with the mid vowel doubled; this is based on a reputed difference in length of the vocalic phase of the final, which he takes, instead of the qualitative difference, as primary. This could be extended to the cases he does not distinguish: /eer, er; aer, ar/, respectively, with all tones, instead of my /er, eir; ar, air/. There is perhaps little basis for choice; I hear distinct palatalization in the second of each pair, and have interpreted accordingly.

(3) Hartman, § 7, says "there is . . . nothing in the distribution to suggest that the aspirates [ph th ch kh] are anything but unit consonants." Here our phonemic working assumptions differ; Hartman is analyzing occurrent material into phonemes, I analyze into determining (and determined) features; Hartman uses distributional facts as the basis for phonemic conclusions, I find the determining features and then state the distributions. The aspiration of /ph th ch kh/ *sounds* like the independent aspiration /h/; so I take it to be the same thing.

(4) Hartman does not, in his paper, recognize tone /⁵/ ("raised third") as phonemically distinct; but it was Hartman who, after publication of his paper, discovered cases of minimal contrast which establish /⁵/ as different from both /²/ and /³/.

Addenda

Since this report was submitted several facts have come to light (mainly through the courtesy of Yuenren Chao) which bear on the discussion.

- (1) (To § 8.23) The following monosyllabic microsegments, excluded in the text, are attested: /sen, seng, liun, nen, neu, tiang, tiangr, thei, pia, phia, chrei, rua/. /len/ occurs elsewhere than in the name referred to (§ 8.23, (5)). Many of the above additions are from onomatopoeic forms.
- (2) (To §§ 9.31, 9.33) In the sequence /Ci. . ./, if /C/ is /t th n l/ the consonant is not palatalized; rather, the /i/ is a rather low high-front glide or vowel, not overlapping the consonant.
- (3) There are a number of interjections having vocalic structure not subsumable under the system here set up. In addition, there is a minimum contrast between /,ieu² 'cing³/ 'oil wells' and what we would

here transcribe identically in the meaning 'there are wells,' where the first syllable of the latter might also bear tone /⁵/. /ieu²/ in the first of this pair has a relatively high back rounded vowel; in the second of the pair, a considerably lower vowel (identical with that of /ieu³/ or /ieu⁴/). In the light of this phenomenon there is serious doubt as to whether the two-vowel system, or its three-vowel predecessor, can be maintained. Perhaps it can, if we accept the modification suggested in § 9.55, writing /ieu¹ ieu² 'swing, oil,' and /ieu² ieu³ ieu³, ieu⁴/ for 'there is [three forms], again.'

Notes

- 1 Study of Chinese was begun in connection with the preparation of teaching materials for members of the Armed Forces, as part of the Program of the Language Section, Education Branch, Information and Education Division, ASF. The present paper was drafted during the tenure of a Grant-in-Aid from the Intensive Language Program, ACLS, Spring-Summer 1946. Of the dozen or more Chinese with whom the writer has worked, special mention is due Mr. Chaoying Fang, his collaborator, transcribing informant, and (save in the technical phases of phonology) co-analyst for several years. A number of colleagues read an earlier version of this paper, and many constructive criticisms were received (not always acted on), especially from Yuenren Chao, Robert A. Hall, Jr., Zellig S. Harris, George L. Trager, and W. Freeman Twaddell. To all the individuals and agencies just mentioned, and to numerous others, the writer is deeply indebted.
- 2 Each of the alphabeticizations of Chinese (Wade, Wade-Giles, Latinxua, Chinese National Romanization, Yale, and the usual Cyrillization) reflects a more or less sophisticated phonological analysis. The following is a partial list of discussions not ancillary to the devising of an alphabetization (those the writer was not able to consult in preparing this report are in brackets):

[Y. R. Chao, *Singing in Chinese*, *Le Maître Phonétique*, 3.39.9-10 (1924).]

Lawton M. Hartman 3rd, *The segmental phonemes of the Peiping dialect*, *Language* 20.28-42 (1944).

[Daniel Jones, *Chinese tones*, *Le Maître Phonétique* 28.95-6 (1913).]

B. Karlgren, *A Mandarin phonetic reader in the Pekinese dialect*, *Arch. d'Études Orientales* 13.23; *Upsala*, 1917.

Jos. Mullie, *The structural principles of the Chinese language*, *Anthropos Linguistische Bibliothek* vols. 5, 6; *Peiping* 1932, 37.

Morris Swadesh, *A condensed account of Mandarin phonetics*, *TCLP* 8.213-6 (1939).

[L. T. Wang, *Recherches expérimentales sur les tons du Pekinois*, *Arch. Néer. Phon. Exp.* 13.1-40 (1937), 14.1-48 (1938).]

[. . . , *Whispering in Chinese*, *Le Maître Phonétique*, 3.40.4 (1935).]

- 3 See also the writer's earlier discussion, *A system of descriptive phonology*, *Language* 18.3-21 (1942) (except §§ 6-7, now superseded).
- 4 Leonard Bloomfield, *Language* (New York, 1933), 84 and elsewhere.
- 5 An analogy may be helpful. In stating the law of gravitation, one says that the force of attraction between two bodies varies, among other things, inversely as the *square* of the distance between them. It would be just as accurate to say, "inversely as the 1.99997 power of the distance between them," or "inversely as the 2.0003 power of the distance between them;" our techniques of measurement do not allow of sufficient

- precision to judge between these alternatives. In such a case we choose, for simplicity's sake, the nearest "round number," keeping clearly before us the degree of relative accuracy thereby attained. The analogy breaks down, however, in that, as yet, we do not know how to decide which of two phonological descriptions is the "rounder." Apparently the only legitimate use of the criterion of economy in science is in matters of this kind: where applicable, it gives us neater statements, but not necessarily more accurate ones.
- 6 Essentially that of Chaoying Fang (b. Tientsin, educated Peiping) and Victor Ch'üan (b. Paris, educated Peiping); where these differ, the more complex type is chosen.
 - 7 This systematic, though somewhat unwieldy, terminology is introduced here primarily because it seems inadvisable to extend the meaning of the term *syllable* so as to cover segments which, in the traditional meaning, may be "disyllabic" (i. e., have two peaks of sonority); see § 8.1.
 - 8 *Residual structure* is what has heretofore been called *linear* or *segmental* structure. The latter terms are unsatisfactory because the structure referred to (in Chinese, at least) is *not* linear. "Residual" is also not too fortunate, but it will serve until a better expression has been found.
 - 8a Paul Benedict (private conversation).
 - 9 George A. Kennedy (private conversation).
 - 10 The numbering /¹/ through /⁴/ is as in Wade-Giles Romanization; /⁵/ is the so-called "raised-third" tone (usually not considered phonemically distinct from the second tone).
 - 11 Yuenren Chao (private correspondence).
 - 12 /ma⁵ fan⁴/ is written with a sequence of two characters, read individually as /ma²/ and /fan²/; this has afforded the basis of a protest against the present treatment. If the writer's hearing has not been at fault, then either (a) the morphemic identification reflected by the orthographic convention is incorrect, or (b) the morphophonemics of tone must be considered more complex than has been customary. More probably (a) is the case: Chinese characters serve about as well as an indication of morphemic identities as the letters in English orthography serve as an indication of phonemic identities.
 - 13 There are probably a number of alternative possibilities here; we may mention one. Instead of writing /c/, we could write /ts/; given a slightly different definition of t, we would define /s/ as simultaneous t and F, and make the necessary minor modifications of wording in ensuing sections. This would eliminate c as a separate determining feature. The difference seems trivial.
 - 14 Almost all earlier treatments of Chinese syllables (= our monosyllabic microsegments) make use of this initial-final division. The convenience of the device, however, seems not to reflect anything of a fundamental nature about the structure of the language (to the contrary: Bloomfield, *Language*, 182).
 - 15 An alternative is to eliminate the initial classes /cr chr sr/ and /r/, and to add two further groups of finals, one with /ru/ and one with /r/ in position [2].
 - 16 /i tuan⁴ 'iai²/ 'precipice' has an alternative form with /ia²/; /chiai³/ (Hartman, loc. cit., 39) has the alternative pronunciation /khai³/.
 - 17 Most elements with a retroflex final are bimorphemic, consisting of a first constituent without retroflexion in its final and a second constituent of retroflexion added according to a fairly complex pattern. The first constituents fall into certain grammatical classes; if an element of such a class exists having a certain phonemic shape, one may legitimately expect the existence of the corresponding bimorphemic form with retroflexion, whether one has heard it or not.
 - 18 Hartman, loc. cit., fn. 18, reports this presumably from a Peiping speaker.
 - 19 Information from Chaoying Fang.
 - 20 Victor Ch'üan (see fn. 6 above) speaks this jargon; Yuenren Chao, *Eight varieties of secret language [in Chinese]*, Bull. of Inst. of Hist. and Philol. of Academia Sinica, 2.3.312-53 (1931).

- 21 Yuenren Chao discussed such fast-speech forms in a talk to the Yale Linguistics Club c. 1943.
- 22 Beginning here, we mark with an arrow each paragraph which concludes the discussion of one or more vowels or consonants.
- 22a Perhaps rigor would require that we say, rather, that in such cases one has simultaneously /n/ and /m/, or /n/ and /ng/—that is if simultaneous p and N constitute /m/, and simultaneous t and N constitute /n/, perhaps simultaneous p, t, and N must be interpreted as simultaneous /n/ and /m/. But the p or k in such cases is a long component, stretching back across microjuncture from the following microsegment.
- 23 Hartman, loc. cit., fn. 14, suggests a possible contrast of terminal /ru/ and /ur/ postvocally, but I have not heard any.
- 24 Except for phrases simultaneous with /e/ or /a/, discussed in § 9.5.
- 25 This alternative was suggested by Morris Swadesh (private conversation).
- 26 Loc. cit. (see fn. 2 above).
- 27 Hartman's "syllable" = our "monosyllabic microsegment"; Hartman, like his predecessors, does not discover disyllabic microsegments, and does not examine too closely the problem of establishing syllables as phonologically relevant units to start with.

THE ZERO INITIAL AND
THE ZERO SYLLABIC

Fang-Kuei Li

Source: *Language* 42, 2, 1966, 300-2.

In 1948, Y. R. Chao suggested that the voiced velar fricative of Mandarin might be regarded as an initial; but since he found that there was little chance of minimal contrasts, we might, for practical purposes, leave this phoneme unmarked.¹ In the present paper I intend to list additional examples of contrast involving this initial, and to comment on its patterning with other initials.

The velar fricative occurs before the low vowel /a/ and before the mid vowel /e/ in both stressed and unstressed syllables. Most speakers use it, though some have variants. The fricative quality is not strong; as Chao suggested (*op.cit.*), it may be considered a semivocalic constriction. Two types of the weak velar fricative can be recognized: a bright-colored [ɣ] before /e/ and a dark-colored [ɣ̄] before /a/.

No examples need be given of monosyllables. In dissyllables, the semivocalic constriction prevents the second syllable from joining smoothly to the final element of the first, and often causes a preceding final nasal to be incompletely closed. Examples:²

1. Both syllables stressed:

p'ing ān 'peaceful' [pʰi~ ɣan] or [pʰiŋ ŋan]
chiāo ào 'proud' [tɕiəu̯ ɣau]
ēn ài 'to love fondly' [ɣə~ ɣai̯]
mǎ ān dzu 'saddle' [ma ɣan dz]
ái è 'to suffer hunger' [ɣai̯ ɣə]
pào ēn 'to return a favor' [pau̯ ɣən]
lién ōu 'lotus stem' [li̯e~ ɣou̯]

2. Second syllable unstressed:

ān an (a baby's name) [ɣa~ ɣan]
áo ao 'just simmer' [ɣau̯ ɣau̯]

ái ai 'just suffer' [ɣai̯ ɣai̯]
è e 'just fast' [ɣə ɣə]
èn en 'just press down' [ɣə~ ɣən]
òu ou 'just let it rot/ferment' [ɣou̯ ɣou̯]

The unstressed type here is to be sharply distinguished from the final particle, which has no initial. Examples:

3. With high-pitched *a* (marked by a raised dot):

pān a 'move away!' [pana.]
máng a 'I'm busy!' [maŋa.]
shéi a 'who is it?' [ʃeja.]
tsōu a 'go!' [tsoua.]

4. With low-pitched *a* (marked by a full-stop):

mǎi a 'going to buy it?' [maja.]
máng a 'busy?' [maŋa.]
fān a 'is it rice?' [fana.]
p'ǎu a 'going to run?' [phaua.]
mǎ a 'is it a horse?' [ma.] or [maja.]

There is no difficulty in isolating a morpheme [a], which alternates freely with [e] and conditionally with [ia], but which has no initial. This feature distinguishes it from the cases in sections 1 and 2 above, where the second syllable is generally assumed to have a zero initial. For this zero initial, Martin³ follows Chao in introducing the phoneme /ɣ/; but he extends its range to include two allophones [j] and [w], predictable from the following vowel—thus /ɣi/ [ji] 'one', /ɣü/ [wu] 'five'. Hockett⁴ recognizes a zero position for all syllables beginning with the vowels /e a i u ü/, but seems not to recognize a vowel with NO initial. He treats the final particle as a syllable with consonant initial, its nature determined by the last element of the preceding syllable. Thereby he cuts the intervocalic nasals and semivowels (as in section 3 above) into two parts: the first as the final of the preceding syllable, the second as the initial of the particle.⁵ This practice can be defended if one insists that every syllable in Mandarin must have an initial, even though it may be zero (Martin's [ɣ]).

While Martin and Hockett provide us with a number of vowels—especially Martin, who adds several marginal vowel phonemes and a syllabic /z/—Hartman⁶ assumes the semivowels or nonsyllabics /j w jw r/, thus making the syllabics /i u ü z r/ completely dependent on the preceding semivowel or consonant. For these syllabics he assumes a single high vowel /i/. It has been suggested that a better name for it would be 'zero syllabic', since all its features are predictable from the preceding segment. Hockett regards syllabic [r] and [z] as zero syllabics after /r s ts/, etc., but he recognizes /i u ü/ in the same positions. If we follow Hartman's lead and assume not only /j w jw r/ but also Chao and Martin's /ɣ/, we may wish to set up two varieties /ɣ/ and /ɣ̄/. At this point we are fast approaching a stage where

no vowel distinctions need to be made. In such a system we have the nonsyllabic initials /t k p l m n f h/, the semivowels or syllabics /s r j w ɣ ʎ/, and the finals /m n ŋ j w r/. The system differs very little from Martin's (though he also uses vowels), except in the treatment of /ɣ/ and the addition of /ʎ/. It is admittedly awkward, but I can imagine that an orthography with no vowels might readily adopt such an analysis.

These various systems of phonemicizing seem to indicate that there is simply no distinction in Mandarin between semivowels and vowels. The systems are different statements arising from the nature of the language, a continuum of segments blurred together, with the distinctive features overlapping. The various attempts to systematize the data are important, perhaps necessary, for the purpose of probing the structure of the language; but the adoption of one system over another is often influenced by factors that are not necessarily structural.

Notes

- 1 Y. R. Chao, 'The voiced velar fricative as an initial in Mandarin', *Le maître phonétique* no. 89 (1948).
- 2 In the phonetic transcriptions, tone marks have been omitted for typographical reasons. They are in every case the same as in the immediately preceding italic notation.
- 3 Samuel E. Martin, 'Problems of hierarchy and indeterminacy in Mandarin phonology', *BIHP* 29.209-29 (1957).
- 4 Charles F. Hockett, 'Peiping phonology', *JAOS* 67.253-67 (1947).
- 5 Hockett, 'Peiping morphophonemics', *Lg.* 26.63-85 (1950).
- 6 Lawton M. Hartman III, 'The segmental phonemes of the Peiping dialect', *Lg.* 20.28-42 (1944).

A SYSTEMIC INTERPRETATION OF PEKING SYLLABLE FINALS

M. A. K. Halliday

Source: P. Tench (ed.), *Studies in Systemic Phonology* (London and New York: Pinter, 1992), pp. 98-121.

This study presents one part of a systemic interpretation of the syllable in modern standard Chinese, as represented by the Peking variety of Mandarin. It is based on my own observations, made very many years ago, (i) of Peking speech in general and (ii) of one particular speaker in detail. I shall always be deeply indebted to Mr Lien Shihmin for his thoughtful collaboration in this research. Recently I have had the opportunity of partially checking these observations: I think they were largely valid, though I would now interpret them differently, in certain respects, from the way I did in a summary presentation at the time (1959).

The study covers the syllable as a whole; but it is too long to be presented here in full. Here I propose to treat only the finals; and to shorten the treatment still further by leaving out what would otherwise be a long account of investigating vowel variation and showing why such variation provides the key to Mandarin phonology. Instead I shall simply present the observed phonetic variation in tabular form, using a moderately narrow transcription. My aim is to suggest what I understand by a systemic approach to phonology. It is perhaps appropriate to add, in view of the rather one-sided picture of twentieth-century linguistics that is generally prevalent today, that the theoretical foundations for this study derive from two sources; traditional Chinese phonology, as interpreted by Luo Changpei and Wang Li, and prosodic phonology as developed by J. R. Firth and his colleagues in London. These two approaches are entirely compatible and share a highly abstract view of phonology based on paradigms of (nonsegmental) features (Wang 1936, 1981; Firth 1948; Hill 1966).

Chart 1 shows the total syllabary of modern Pekingese; almost exactly 400 syllables, with less than half a dozen fringe syllables which are admitted by some speakers and not others (like *den* in *denqi* 'knock straight', *rua* in *ruale* 'gone soft'). They are written in Pinyin, the authorized roman transcription; but since I am not here dealing with tone, tonal diacritics are omitted. The format is designed to make it easy to refer to in the discussion; again, of course, it is the result of lengthy phonological analysis, not something that is 'given' in advance. For a

prosodic analysis of a complete syllabary of a language, compare Henderson's (1966) investigation of Vietnamese.

Let us begin by noting all those syllables which contain the vowel symbol *a* in their spelling:

- (1) those where it is the only vowel symbol and ends the syllable (row 2);
- (2) those where it is the only vowel symbol but is followed by *-n* or *-ng* (rows 8 and 10);
- (3) those where it is followed by another vowel symbol (rows 4 and 6);
- (4) those where it is preceded by another vowel symbol (rows 13 and 22);
- (5) those where it is both preceded and followed by another vowel symbol (rows 15 and 24);
- (6) those where it is preceded by another vowel symbol and followed by *-n* or *-ng* (rows 17, 19, 26, 28 and 32).

The phonetic quality of the vowel represented as *a* in the spelling varies in two respects. First, it varies from one syllable type to another; if we consider just the environments in (1) and (3) above, it is most open when final, fronted before *-i* and backed before *-o*. [The spellings *-ai*, *-ao* are anomalous; for consistency they should be either *-ai*, *-au* or else *-ae*, *-ao*.] Second, for any given syllable the quality of the *a* vowel varies both among different speakers and within the speech of the individual speaker.

There is nothing surprising in this; variation of both these kinds is familiar in all languages and will be found in Mandarin occurring throughout the syllabary. But whereas the former, allophonic variation is assumed to be fundamental to the phonological analysis, and the only question is how best to take account of it (the phonemic interpretation embodied in the Pinyin transcription may or may not turn out to be effective in theory), we usually treat the latter, lectal type of variation as something to be attended to after the phonological system has been established. I would argue, however, not only that the lectal variation is an inherent feature of the system but also that, in the case of the Pekingese syllable, it is a major source of insight into the way the system works (cf. Lock, 1989).

I shall not attempt here to describe all the phonetic variation that is heard to occur in Peking speech. What I have done is to take the syllables listed in two columns in Chart 1, columns 12 and 15, and present in a systematized form the variants that are typically associated with each one. There are 34 syllables in all, and these are set out as Chart 2. In Chart 2, however, I have used a different order to make them easier to refer to in the subsequent discussion; from now on, row numbers cited will be those of Chart 2 unless otherwise announced. These 34 syllables can be taken to stand for the full range of 'finals' (roughly, the rhyming part of the syllable) in the Mandarin phonological system. The pattern of realization, including the variability, is more or less constant across the whole of each of the rows in Chart 1 (with some exceptions in column 22, Block VII, which will be brought in at the end).

It will be clear from Chart 2 that, if we postulate an /a/ phoneme where there is *a* in the spelling, there are regular patterns of allophonic variation that could be

constructed from what comes before and after it: the /a/ nucleus is rather strongly affected by the periphery. If we consider just the vowel environments, leaving out final *-n*, *-ng* for the moment, the phonetic value of *a* depends on whether it is preceded, and whether it is followed, by (i) no other vowel symbol, (ii) *i*, or

Chart 1 Mandarin Chinese syllabary [in Pinyin spelling]

	I				II				III			
	1	2	3	4	5	6	7	8	9	10	11	
i	1	bu	pu	mu	fu							
	2	ba	pa	ma	fa	da	ta	na	la	ga	ka	ha
	3	bo	po	mo	fo	de	te	(ne)	le	ge	ke	he
	4	bai	pai	mai		dai	tai	nai	lai	gai	kai	hai
	5	bei	pei	mei	fei	dei		nei	lei	gei		hei
	6	bao	pao	mao		dao	tao	nao	lao	gao	kao	hao
	7		pou	mou	fou	dou	tou	nou	lou	gou	kou	hou
	8	ban	pan	man	fan	dan	tan	nan	lan	gan	kan	han
	9	ben	pen	men	fen	(den)		nen		gen	ken	hen
	10	bang	pang	mang	fang	dang	tang	nang	lang	gang	kang	hang
	11	beng	peng	meng	feng	deng	teng	neng	leng	geng	keng	heng
ii	12	bi	pi	mi		di	ti	ni	li			
	13									lia		
	14	bie	pie	mie		die	tie	nie	lie			
	15	biao	piao	miao		diao	tiao	niao	liao			
	16			miu		diu		niu	liu			
	17	bian	pian	mian		dian	tian	nian	lian			
	18	bin	pin	min				nin	lin			
	19							niang	liang			
	20	bing	ping	ming		ding	ting	ning	ling			
	iii	21					du	tu	nu	lu	gu	ku
22										gua	kua	hua
23						duo	tuo	nuo	luo	guo	kuo	huo
24										guai	kuai	huai
25						dui	tui			gui	kui	hui
26						duan	tuan	nuan	luan	guan	kuan	huan
27						dun	tun	nun	lun	gun	kun	hun
28										guang	kuang	huang
29						dong	tong	nong	long	gong	kong	hong
iv	30							nü	lǔ			
	31							nüe	lǜe			
	32								(lüan)			
	33											
	34											

(Continued)

Chart 1 (continued)

IV			V				VI			VII	
12	13	14	15	16	17	18	19	20	21	22	
			zhi	chi	shi	ri	zi	ci	si	er	1
			zha	cha	sha		za	ca	sa	a	2
			zhe	che	she	re	ze	ce	se	e	3
			zhai	chai	shai		zai	cai	sai	ai	4
			zhei		shei		zei			(ei)	5
			zhao	chao	shao	rao	zao	cao	sao	ao	6 i
			zhou	chou	shou	rou	zou	cou	sou	ou	7
			zhan	chan	shan	ran	zan	can	san	an	8
			zhen	chen	shen	ren	zen	cen	sen	en	9
			zhang	chang	shang	rang	zang	cang	sang	ang	10
			zheng	cheng	sheng	reng	zeng	ceng	seng	(eng)	11
ji	qi	xi								yi	12
jia	qia	xia								ya	13
jie	qie	xie								ye	14
jiao	qiao	xiao								yao	15
jiu	qiu	xiu								you	16 ii
jian	qian	xian								yan	17
jin	qin	xin								yin	18
jiang	qiang	xiang								yang	19
jing	qing	xing								ying	20
			zhu	chu	shu	ru	zu	cu	su	wu	21
			zhua	chua	shua	(rua)				wa	22
			zhuo	chuo	shuo	ruo	zuo	cuo	suo	wo	23
			zhuai	chuai	shuai					wai	24
			zhui	chui	shui	rui	zui	cui	sui	wei	25 iii
			zhuan	chuan	shuan	ruan	zuan	cuan	suan	wan	26
			zhun	chun	shun	run	zun	cun	sun	wen	27
			zhuang	chuang	shuang					wang	28
			zhong	chong		rong	zong	cong	song	weng	29
ju	qu	xu								yu	30
jue	que	xue								yue	31
juan	quan	xuan								yuan	32 iv
jun	qun	xun								yun	33
jiong	qiong	xiong								yong	34

(iii) *o/u*. Moreover the effect of the following environment seems rather stronger than that of the preceding: contrast zhai, zha, zhao (rows 11, 12, 14) with jia zha zhua (rows 2, 12, 23). [This is contrary to what I wrote in my earlier summary, where I had not taken into account the full range of systematic variation.]

Chart 2 Phonetic realization of syllables with palatoalveolar (j-) and retroflex (zh-) initials, showing variation in rendering of the finals.

1	jian	dz'ɛn	dz'ɛ̃n	dz'ɛ̄	
2	jia	dz'a	dz'ã		
3	jiang	dz'aŋ	dz'ãŋ	dz'ā	dz'ã̄
4	jiao	dz'aɔ	dz'ãɔ	dz'āɔ	
5	jin	dz'ɿn	dz'ɿ̃n	dz'ɿ̄	
6	jie	dz'e	dz'ẽ		
7	jing	dz'ĩŋ	dz'ĩ̄ŋ	dz'ī	
8	jiu	dz'ɿu	dz'ɿ̃u		
9	ji	dzai			
10	zhan	dzæ̃n	dzæ̃̄n	dzǣ	dzǣ̄
11	zhai	dzæ̃ɛ	dzæ̃̄ɛ		
12	zha	dzæ			
13	zhang	dzæ̃ŋ	dzæ̃̄ŋ	dzǣ	dzǣ̄
14	zhao	dzæ̃ɔ	dzæ̃̄ɔ		
15	zhen	dzæ̃n	dzæ̃̄n	dzǣ	
16	zhei	dzɛɪ	dzɛ̃ɪ		
17	zhe	dzɛ̃			
18	zheng	dzɛ̃ŋ	dzɛ̃̄ŋ	dzɛ̄	
19	zhou	dzɛ̃u	dzɛ̃̄u		
20	zhi	dzɿ			
21	zhuan	dz'ɛ̃n	dz'ɛ̃̄n	dz'ɛ̄	dz'ɛ̄̄
22	zhuai	dz'ɛ̃ɛ	dz'ɛ̃̄ɛ	dz'ɛ̄	dz'ɛ̄̄
23	zhua	dz'a	dz'ã		
24	zhang	dz'ãŋ	dz'ã̄ŋ	dz'ā	
25	zhun	dz'ũn	dz'ũ̄n	dz'ū	dz'ū̄
26	zhui	dz'ũɪ	dz'ũ̄ɪ		
27	zhuo	dz'ũo	dz'ũ̄o		
28	zhong	dz'ũŋ	dz'ũ̄ŋ	dz'ū	
29	zhu	dz'u			
30	juan	dz'æ̃n	dz'æ̃̄n	dz'ǣ	dz'ǣ̄
31	jun	dz'ɿ̃n	dz'ɿ̃̄n	dz'ɿ̄	dz'ɿ̄̄
32	jue	dz'ẽ	dz'ẽ̄		
33	jiong	dz'ɿ̃ŋ	dz'ɿ̃̄ŋ	dz'ɿ̄	dz'ɿ̄̄
34	ju	dz'ɿ			

Note: (1) On-line phonetic symbols are those of the IPA, except that ɐ̃ has been used here instead of ɛ̃ for the open front rounded vowel, æ̃ instead of ã for the open front spread, with a used for maximally open position.

(2) Raised phonetic symbols represent generalized postures towards which, through which or away from which the vowel moves in its glide.

(3) Diacritics show 'nasalized', 'lowered', 'raised', 'fronted' and 'backed' variants of the vowel in question.

If we then consider the syllables zhan, zhang (rows 10 and 13), we find that the final nasal has the same effect on the /a/ as the final vowel: zhan pairs with zhai and zhang pairs with zhao. This can best be explained in prosodic terms: -n and -i are both 'y-prosodic' (yotizing), -ng and -o are both 'w-prosodic' (labiovelarizing)

(cf. Firth, 1937; Scott, 1956). I shall refer to this as the system of POSTURE. We can now predict what kind of vowel variation we shall find with *-iang* and *-uan*: see *jiang* and *zhuān* (rows 3 and 21), where *zhuān* behaves like *zhuai* and *jiang* behaves like *jiao*. In both these pairs, there is movement between a *y* posture and a *w* posture.

With the nasals, however, another environment is opened up because we also find *-ian* and *-uang*: see *jian*, *zhuang* (rows 1 and 24). Here the effect on the vowel nucleus is more pronounced, since in each case the preceding and the following margins are exerting the same force: both are *y*-prosodic (*i-* and *-n*), or else both are *w*-prosodic (*u-* and *-ng*). The vowel nucleus is further from the open position, and it does not vary significantly in the degree of openness attained. Here there are no corresponding syllables with non-nasal final: there are no forms *jiāi* or *zhuaō*.

The syllables in row 30–34 present special problems which I shall return to later in the study; but in respect of the system of posture they are the same. Once we have recognized that *-n* is *y*-prosodic, like *-i*, and *-ng* is *w*-prosodic, like *-o*, we shall expect the nasal finals to exert the same force on the nuclear vowel as the oral finals do. The generalization that the phonetic quality of the nucleus of the syllable – that is, the range within which it can vary – is determined by the posture at the peripheries applies throughout the phonological system, and not only with the vowel written *a*. It makes no difference whether the final is nasal or oral: because of their *y*-/*w*- prosody, *-V* (final vowel) and *-N* (final nasal) are identical in their effect on the preceding syllabic nucleus.

In terms of posture, therefore, we find nine distinct environments. These are shown in Table 1, where the symbols are in phonemic notation. In the next step, we will represent this in prosodic notation; but first we need to note the other significant dimension of variation that occurs just with the nasal finals, namely variation in the way the nasality itself is manifested. In syllables written with final nasal consonant (rows 1, 3, 10, 13, 21, 24 in Chart 2), the onset of nasality may take place at any time following release of the initial consonant; and there may or may not be tongue contact. The variant without tongue contact is relatively more frequent with the alveolar nasal than with the velar; but both forms occur both with and without contact, so that the only constant feature is the opposition between nasality and orality. Thus nasal/oral constitute another prosodic system; we will refer to it as the system of RESONANCE (cf. Catford, 1982: 138).

We can now see the difference in what is implied by a prosodic and a segmental interpretation. Consider the syllable *zhan*, in contrast (i) with *zhai* and (ii) with

Table 1 The nine possible environments of /a/ [in phonemic notation]

	preceding		following	
open	#		#	
front	i	a	i, n	
back	u		u, ŋ	

zhang. The pair *zhan/zhai* may have identical vowel quality, differing only in that one is nasal, the other oral. On the other hand, the pair *zhan/zhang* may have identical nasal resonance (no tongue contact, hence no segmental realization of alveolar/velar), differing only in that one has a fronted vowel, the other a backed vowel. Likewise, *zhao/zhang* have the same posture with different resonance; *zhao/zhai* the same resonance with different posture. It is difficult to explain this in segmental terms, with a segment /a/ followed by the four distinct segments /i/, /o/, /n/, /ng/. But it becomes predictable if we explain these four as the product of two intersecting two-term prosodic systems: posture (*y*-prosody or *w*-prosody) and resonance (nasal or oral).

Returning to Chart 2, however, we have also to accommodate the syllables ending in *a*, namely *jia zha zhua* (rows 2, 12, 23). Here the vowel written *a* attains its most open quality; and there is very little variation, either within the syllable or even across all three. What variation there is, however, turns out to be similar to that found throughout the set of examples – as a function, not of the final posture but of the posture associated with the vowel onset. Again, we have found this represented in alphabetic writing as a segment: *i* in *jia*, *u* in *zhua* and neither of these in *zhā*. (For the alternation *jlzh* see below.) We therefore need to modify the prosodic system of posture in two respects. In the first place, we need to add a third term representing the open posture, neither *y*-prosody nor *w*-prosody: let us call this ‘*a*-prosody’. These give us the three basic postures out of which our human speech has evolved and which can be observed in young children’s proto-language: tongue lowered, lips open (*a*-prosodic); front of tongue raised to front, lips spread (*y*-prosodic); back of tongue raised to back, lips rounded (*w*-prosodic). In the second place, we need to recast this in terms of movement through the syllable, so that instead of one choice of posture we need two, one for the beginning of the syllable and another for the end.

This means that we now have eighteen possible syllable types, defined by the prosodic systems encountered so far: three initial postures by three final postures by two resonances. Table 2 shows these 18 prosodic patterns. It also indicates that, of these 18 possibilities, 13 actually occur. Table 3 shows these 13 syllable types in Pinyin spelling, using the initial consonants from Chart 2. The five syllable types that are excluded are:

- (i) nasal resonance with open (*a*-prosodic) posture (three types);
- (ii) oral resonance with stable front (*y*-*y*) or back (*w*-*w*) posture (two types).

Table 2 The eighteen possible syllable types with vowel *a*, showing the thirteen which actually occur [in prosodic notation]

	y/		a/			w/			
Oral		y – a	y – w	a – y	a – a	a – w	w – y	w – a	
Nasal	y – y		y – w	a – y		a – w	w – y		w – w

Table 3 The thirteen syllable types with vowel *a* (open aperture) [in Pinyin spelling]

□	y/			a/			w/		
	y-y	y-a	y-w	a-y	a-a	a-w	w-y	w-a	w-w
Oral		jia	jiao	zhai	zha	zhao	zhuai	zhua	
Nasal	jian		jiang	zhan		zhang	zhuan		zhuang

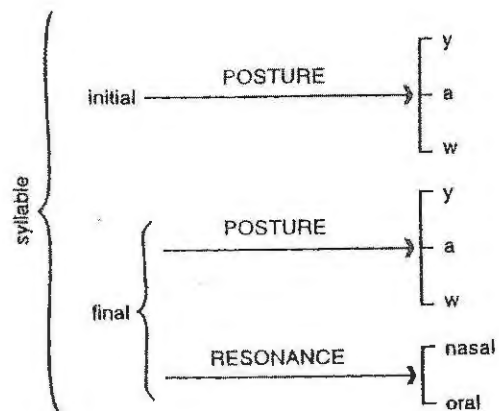


Figure 1 Network specifying eighteen theoretically possible syllable types with vowel *a*

The prosodic profile of each of the thirteen syllable types that do occur describes the phonetic space-time co-ordinates within which it is found to vary.

Figure 1 gives a simple network for generating this paradigm, using as entry conditions elements corresponding to initial and final in the Chinese phonological analysis. However, it generates all the eighteen syllables envisaged as possible in Table 2, whereas as we have seen only thirteen of these occur. We therefore rewrite Figure 1 in the form of Figure 2, which specifies just the required thirteen. These are all the possible syllable types that have an *a* in the spelling, but without taking account of initial consonants – that is, corresponding to one column (or two half-columns) in Chart 2. In terms of Chart 2, they are the first four in Block i, the *ji*-block; the first five in Block ii, the *zh*-block; and the first four in Block iii, the *zhu*-block.

But although Figure 2 gets the right answer, it is somewhat arbitrary; there seems no pattern in its constraints. We can therefore replace it, in turn, with Figure 3. By introducing the system 'stable/shifting' this shows the gaps to be systematic: you can choose between nasal and oral resonance only if you shift, either from non-*y* (*a* or *w*) posture to *y*, or from non-*w* (*a* or *y*) posture to *w*. Otherwise,

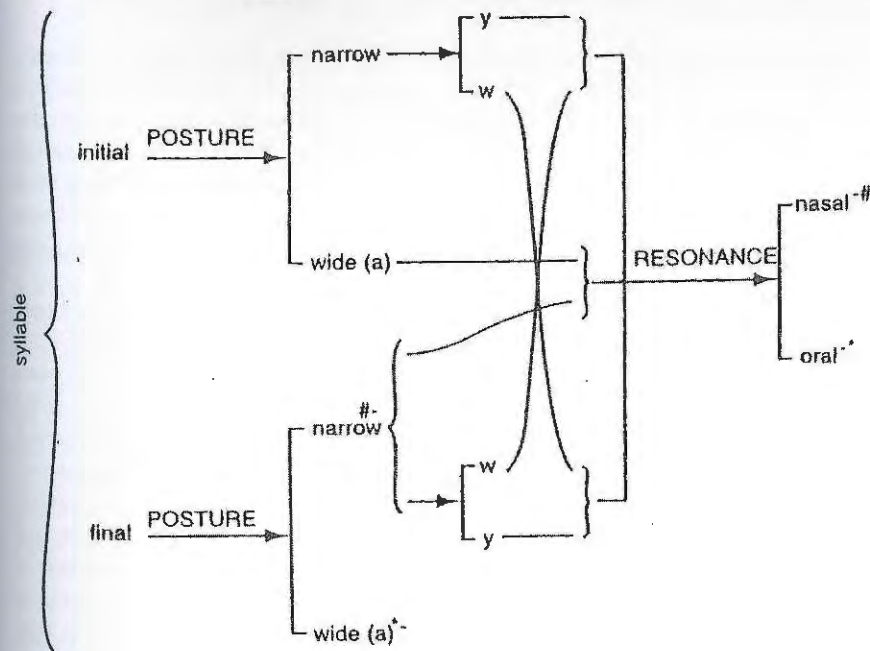


Figure 2 Network specifying thirteen actually occurring syllable types with vowel *a*

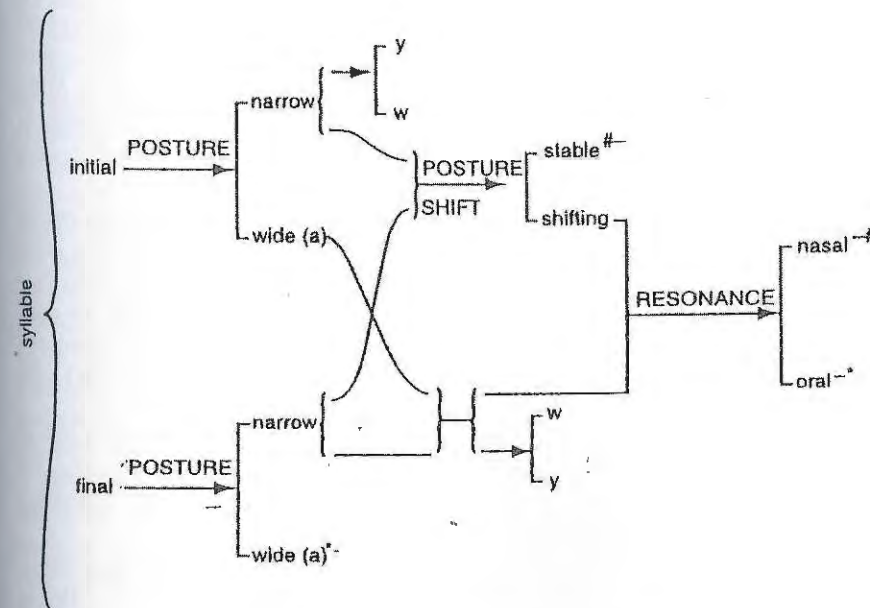


Figure 3 Revised version of Figure 2 showing system of 'posture shift'

you have either oral only or nasal only: oral if ending with open posture (there is no a-prosodic final nasal), nasal if the posture is stable at $y - y$ or $w - w$ (that is, if you maintain the posture you must change the resonance; note in this connection that the initial nasals $n-$, $m-$ operate in a different system, not one of resonance). [It is natural to ask whether in those dialects which have preserved the three nasal finals $-n$, $-ng$, $-m$ the $-m$ carries the a-prosodic 'open' posture. But as far as I know none of these dialects shares this Mandarin pattern by which nasal and oral finals are posturally matched.]

The network combines four principles of analysis. One is the Chinese phonological principle whereby all syllables are structured simply as initial plus final. The second is the Firthian prosodic principle whereby features such as posture ($y/a/w$) and resonance (nasal/oral) are treated non-segmentally. The third is the paradigmatic principle whereby features are interpreted as terms in systems, each system having a specified condition of entry. [Note that in Firthian system-structure theory the entry condition is specified syntagmatically, whereas in a system network it is specified paradigmatically: entry to one system depends on selecting a certain term in (at least one) other.] The fourth is the dynamic principle whereby the syllable is envisaged as a wave, a periodic pattern of movement characterized by a kind of 'flow-and-return'. What this last means is that the syllable is construed as a movement from an initial state to a final state, each of these states is specified as a 'selection expression' (a cluster of features from different prosodic systems); and there is variation both temporally, in the extent to which a particular feature persists across the syllable, and spatially, in the route that is traversed from the initial to the final state. The evidence so far, on the basis of the vowel written as a , suggests that the final state exerts the greater force: the shape of the syllable at its peak tends to anticipate where it is going. This is of course implied by saying that all syllables have CV structure, and it will turn out to be true of the Pekingese syllable as a whole. [It is not true, however, of all Chinese dialects; in Cantonese, for example, the features selected at syllable final have little effect on the quality of the vowel.]

So far, however, I have considered only those syllables whose trajectory passes through an open, a -like intermediate position. We must now explore the other finals in the Pekingese syllabary, those that have no a in their spelling in the Pinyin transcription. These syllables display a variety of different spellings: see rows 5–9, 15–20 and 25–29 in Chart 2. But if we apply the same principles of analysis, we shall find that all except those in the last row of each block (ji , zhi , zhu) have one and the same vowel nucleus.

The phonetic value for each syllable type is shown as before in Chart 2, together with the observed range of variation. For quicker reference, a typical value for each of the different syllable finals is shown in Table 4, with Pinyin spelling above the line and phonetic representation below.

The phonetic range covered by these syllables is considerable; they range over most of the upper half of the traditionally recognized vocalic space. This is reflected in the Pinyin spellings, which use e , i , o and u , both singly and in digraph

Table 4 Typical phonetic values for the thirteen finals with half-close aperture [Pinyin spelling above the line, IPA below]

-e	-ie	-uo	-ei	-en	-uo	-eng	-in	-iu	-ing	-ui	-un	-ong
ɛ	e	o	eɪ	ɛn	uo	ɛŋ	in	iʊ	iŋ	ʊɪ	ʊn	ʊŋ

combinations. Some other transcriptions also use trigraphs such as *uei* and *iou*. But we can interpret all this variety in terms of the same prosodic systems as we used to explain the values of the a vowel, recognizing one and the same vowel nucleus in different prosodic environments.

There are three syllable types which end as a monophthong at a height which we can call half close (Catford 1982: 176): front spread [e], back rounded [o] and back spread [ɤ]. These show no tendency to move towards a 'close' position; in this they are parallel to final $-a$, having neither y -prosodic nor w -prosodic posture at syllable final. The distinction among the three is determined by initial posture alone, which has a much greater effect here than with the open vowel: the y -prosodic initial gives [e], as in *jie*; the a -prosodic initial gives [ɤ], as in *zhe*; the w -prosodic initial gives [o], as in *zhuo*. This simply reflects the greater possible variety of tongue and lip configurations available at this degree of vowel closure (cf. the shape of the 'vowel triangle / quadrilateral'); there is more space in which to move.

Four syllables, those spelt $-ei$, $-en$, $-ou$, $-eng$, have a half-close vowel as the nucleus. The spelling suggests that two of them form closing diphthongs while the other two are monophthongs followed by nasal consonant. In fact, however, the nasal syllables closely parallel those with the a vowel: the nasality may begin at any point, and there may or may not be consonantal closure (obstruence) at the end – again, it is more common with $-ng$ than with $-n$. The vowel of the nasal syllables is more central than those of the oral syllables; but it is clearly fronted before $-n$, often with a glide towards close front, and backed before $-ng$, sometimes with a (slighter) glide towards close back. Thus the nasals have exactly the same prosodic values as those of the a syllables; the final part of the syllable does not consist of two segments, vowel plus nasal, but is a combination of two final prosodies, nasal resonance with y or w posture. The oral finals tend to begin less centrally, but they show considerable variation towards the centre: $-ou$, in particular, is often heard as [əʊ], curiously like its British English analogue. Thus *zhei*, *zhen*, *zhou*, *zheng* are prosodically identical with *zhai*, *zhan*, *zhao*, *zhang*, but with half-close vowel instead of open: they begin with open posture (a -prosody) and end with y or w , oral or nasal.

This leaves the six finals $-in$, $-iu$, $-ing$, $-ui$, $-un$, $-ong$. Of these, the oral pair $-iu$ and $-ui$ are the half-close analogues of the open oral pair $-iao$ and $-uai$. Both pairs move prosodically from y to w , or from w to y – that is, they shift to the opposite posture; but while $-iao$ and $-uai$ follow a trajectory via the 'open' region of vocalic space, $-iu$ and $-ui$ make the same postural shift but with the trajectory through the 'half-close' region. There is obviously a broad band through which such a traverse

Table 5 Typical pattern of tonally-correlated variation in the phonetic realization of y – w and w – y finals with half-close aperture [Pinyin and variant spelling on the left, IPA on the right]

tone 1	-iu	-iu	iu	ui
tone 2	↕	↕	i ² u	u ² i
tone 3	↕	↕	io ³ u	uei
tone 4	-iou	-uei	io	ue

can be made; interestingly, the route taken tends to depend on the tone, and *-iu* and *-ui* are in fact the only syllable types in Mandarin that display tonally regulated variation, as shown in Table 5. [The spellings *-iou* and *-uei* are not used in Pinyin, but this systematic tonal variation is recognized in some other transcriptions.]

The nasal finals form two sharply distinct pairs. Two of them, *-in* and *-ong* (in *jin*, *zhong*), show almost no movement and no variation in vowel quality; they are somewhat opened-up versions of the two close cardinal vowels. The only variation they display is in the nasality: when it sets in, and whether or not there is obstruence; in other words the pattern is the same as we have found with nasality throughout. There is perhaps slightly greater tendency for final tongue contact here than with the *-an*, *-ang* nasals, but it is still by no means categorical. The other two nasal finals, *-ing* and *-un*, are very different. Here there is both movement and variation. There is the same variation in the nasality as elsewhere; but there is also variation in the transition to the final posture. The vowel in *-un* is opened (lowered) and then fronted, in varying degrees, so that it sounds more like the vowel in English *jewel*, or even *ruin*, than like that in *full* or *rune*. Likewise the vowel in *-ing* is opened (lowered) and then backed, like English *young* but with the diphthong falling instead of rising (Catford 1982: 216).

It is not difficult to see what is happening here, once we interpret in terms of the prosodic system of posture. As always, final ‘-n’ is y-prosodic nasality, and final ‘-ng’ is w-prosodic nasality. In *zhen*, *zheng* the postural transition is a – y, a – w. In the four syllables *jin*, *zhong*, *jing*, *zhun*, on the other hand, the initial posture is either y or w; hence with nasality there is the possibility of either stabilizing the posture (y – y, as in *jin*; w – w, as in *zhong*) or shifting (y – w, as in *jing*; w – y, as in *zhun*). When the posture is stable, the transition is simple, with little movement or variation. When it is shifting, the transition is complex; there is considerable movement, and hence great latitude for variation in the trajectory adopted. But the initial and final states are what constitute the essence of the syllable. Thus, whereas in English the peak of resonance in the syllable – the vowel nucleus – is also the most ‘fixed’ part, so that in a set like *seen*, *soon*, *sing*, *soong*, the vowel posture is projected outwards on to the initial and final consonants, in the Mandarin syllable it is the other way round: the vowel ‘nucleus’ is simply a degree of aperture, and the initial and final postures of the syllable are projected inwards to create a movement within this broad band of phonetic space.

We have thus recognized a multiple proportionality,

- (1) within the half-close vowel:
 - ui : iu :: un : ing :: [both w – y : y – w]
 - ei : ou :: en : eng [both a – y : a – w];
- (2) and between all of these and those with open vowel:
 - uai : iao :: uan : uang :: [both w – y : y – w]
 - ai : ao :: an : ang [both a – y : a – w].

What is striking is that this same proportionality extends right throughout the system; the half-close vowel series show the same five finals remaining unpaired in respect of nasal/oral resonance:

- (3) oral only:
 - ie : e : uo :: [y – a : a – a : w-a]
 - ia : a : ua [y – a : a – a : w-a]
- (4) nasal only :
 - in : ong :: [y – y : w – w]
 - ian : uang [y – y : w – w]

Thus out of the 18 finals that are theoretically possible as combinations of initial posture, final posture and resonance, exactly the same 13 occur with half-close vowel as with open vowel; moreover the realization of the several terms in both these prosodic systems is entirely analogous throughout. If we represent the two vowel spaces, the open and the half-close, as a third prosodic system of APERTURE, using ∇ for open and ∃ for half close, then for all the 13, prosodic profiles of initial posture, final posture and resonance there would be a constant proportionality such that

$$\nabla_1 : \exists_1 :: \nabla_2 : \exists_2 :: \nabla_3 : \exists_3 :: \dots$$

Table 6 shows the syllable finals with ‘half-close’ aperture together with their prosodic values for resonance and posture; note the identity between this and Table 3. It is not difficult to accommodate the half-close series within the same system network. All we need to do is to modify Figure 3 as Figure 4.

We have now accounted for the finals in all rows in Chart 14.2 except the last one in each block, namely *ji*, *zhi*, *zhu* (rows 9, 20, 29). There is almost no variation in the pronunciation of these syllables (at least among people brought up in Peking – there is a great deal of variation among non-Pekingese speakers in their rendering of the ‘vowel’ in *zhi*!). Here there are three entirely distinct vowel qualities: [i] in *ji*, [u] in *zhu*, both very close; and [ɿ] in *zhi*. It is the last of these, in fact, that provides the clue to their phonological status (see Table 7).

Table 6 The thirteen syllable types with half-close aperture [in Pinyin spelling]

[ɛ]	y/			a/			w/		
	y-y	y-a	y-w	a-y	a-a	a-w	w-y	w-a	w-w
Oral		jie	jiu	zhei	zhe	zhou	zhui	zhuo	
Nasal	Jin		jing	zhen		zheng	zhun		zhong

Table 7 Typical phonetic values for the three finals with close aperture [Pinyin spelling above the line, IPA below]

-i [in zhi chi shi ri]	-i [in ji qi xi]	-u [in zhu chu shu ru]
i	i	u

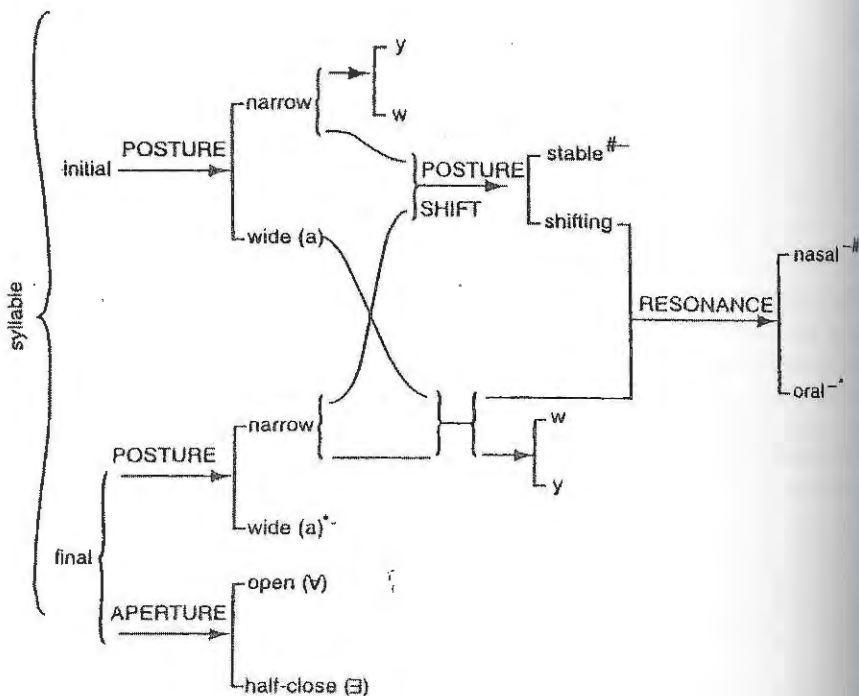


Figure 4 Network specifying the 26 syllable types with open and with half-close aperture

It will be seen that, in Chart 1, there are two series of syllables in row I written with the letter *i*: zhi chi shi ri, and zi ci si. The vowel in all of these is an apical vowel: the tip of the tongue remains in the position of the initial consonant and is relaxed just enough to allow vocalic release. The lips take up a neutral posture at

the start of the syllable and remain unchanged throughout. Since zhi chi shi ri are retroflex, while zi ci si are dental, the acoustic effect of this vowel in the two series is very different; but its prosodic profile is the same in both.

If we now consider the vowel in ji qi xi (row 12 in Chart 1), we can describe it by exactly the same formula. These consonants are palatoalveolar, so the vowel cannot be called apical; but it is entirely analogous to an apical vowel, since it is the vowel that is produced by minimally relaxing the tongue away from the initial consonantal position. When this vowel follows the other initials in that row, in bi, di, ni etc., there is of course movement away from the place of obstruction; but the vocalic posture of tongue and lips is established at the beginning of the syllable. In other words, all syllables with [i] (that is, those written with -i in Pinyin except the retroflexes and dentals zhi chi shi ri, zi ci si) are y-prosodic from the start.

Likewise in all -u syllables (row 21 in Chart 1), the w-prosodic posture, with back of the tongue raised and lips rounded, is established at the beginning of the syllable. The articulatory organs simply remain in place to produce the close back vowel.

We can now account for the remaining three finals of Chart 2, namely -i as in ji, -i as in zhi, and -u, in terms of our prosodic systems. In syllables with these finals, there is no prosodic movement: the initial posture is maintained throughout. So instead of nine possibilities there are only three, a, y and w (ie a-a, y-y, w-w). Moreover there is no prosodic system of resonance; such syllables are oral only. The vowel represents a third term in the system of aperture, namely 'close', which we can write as 'I'. One could interpret these syllables as having no vowel in their structure; but, apart from destroying the powerful generalization that all syllables have identical structure CV (initial + final), this would lead us to predict that such syllables would be toneless, whereas in fact they display the same system of tone as all the other syllables.

More interestingly, we could treat the finals of ji and zhu as the missing y-y and w-w terms in the half-close system, with the idea of eliminating the need for a close vowel altogether. But it would not in fact do that because we could not account for zhi in this way as there is already an a-a final in both the half-close and the open series (zhe, zha). It would also distort the analogy between the half-close and the open series (Tables 3 and 6) because (as we have seen) there are no comparable y-y or w-w oral syllables in the latter; and it would make the wrong predictions phonetically – the one kind of variation that is found in the I-series is a slight increase or decrease in the amount of friction generated; here -i (palatoalveolar, in ji) and -u clearly belong with apical -i, in that they can have considerable friction (especially in the syllables yi and wu), whereas friction is never found elsewhere in the ɛ series.

So the finals of ji, zhi, zhu constitute a third subsystem, having close vowel but no further prosodic paradigm beyond their initial selection of posture y, a or w (Table 8). The system is now as shown in Figure 14.5. Note that syllables with close finals (the I-series) select only in the initial posture system; they can enter no other system in the network – but they pick up the feature 'oral' in the resonance

Table 8 The three syllable types with close aperture [in Pinyin spelling]

I	y-	a-	w-
Oral	ji	zhi	zhu

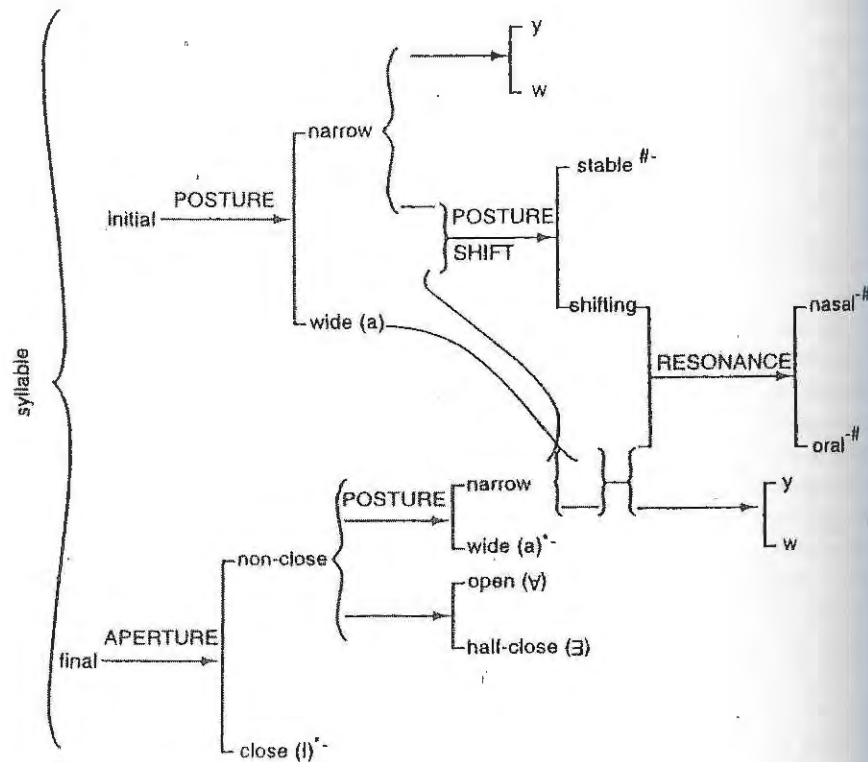


Figure 5 Revised version of Figure 4, including syllables with close aperture

system by default. This network generates the 29 finals we have been considering: with reference to Chart 1, all those except Block iv. More importantly, it does so in a way which naturally predicts not only the form of the phonetic output but also the kind of variation that is associated with it. Two points should be stressed here. One is that the network so far specifies only the finals; although it states the prosodic posture (y/a/w) of the initials, it does not yet incorporate the system of initial consonants. Second, it specifies the finals entirely as complexes of features in prosodic systems, without the need for any phonematic units. The question arises whether the initials can be treated the same way, as a network of prosodic systems: but that will have to be explored in another study.

Let us turn now to Block iv, rows 30-4 in Chart 1. As can be seen, these form a very limited series. Phonetically they begin with a front rounded posture; close, not open (ie clearly not a-prosodic), but combining the tongue position of y-prosody with the lip position of w-prosody. We could provisionally consider them as a fourth term in the posture system, labelled η . But in order to handle these we shall need to take one or two steps towards a theory of the initial consonants. So far we have concentrated on three sets of initials (Blocks IV, V and VI in Chart 1):

y-prosodic	a-prosodic	w-prosodic
j(i) q(i) x(i)	z c s	zu cu su
	zh ch sh r	zhu chu shu ru

These are obviously not symmetrical, at least on the basis of the spelling: and this does reflect the phonetic facts, in that the dentals (z, etc.) and the retroflexes (zh, etc.) remain constant in their place of articulation whether a-prosodic (open posture) or w-prosodic (labiovelar posture), whereas the palatoalveolars (j, etc) constitute in this respect a distinct set.

This suggests a solution for Box IV/iv in Chart 1: that ju qu xu are labialized (w-prosodic) versions of ji qi xi. Which, indeed, they are; there is a proportionality such that jun: jin :: zun: zen. If we now turn to rows 30-4 in Chart 2 we shall find that all the variants predicted by this interpretation come out right. Note for example that juan rhymes with zuan, not with jian; and it is the zuan vowel that would be predicted if juan has initial w-prosody. [That is to say, juan is [dʒʷæn] etc. not [dʒʷɛn]. I have never heard the second form from a Pekingese speaker; interestingly, however, it is sometimes heard in the Mandarin of speakers of other dialects, and is reported by Lock (this volume, Chapter 7) from Singapore.] The yu group, Box VII/iv in Chart 1, follows exactly the same pattern. This analysis would give us, for the series of affricate/fricative initials, the pattern shown in Table 9 (cf. Ladefoged & Wu 1984).

The question arises, however, of how to interpret the j- q- x- y- series of palatoalveolar initials in prosodic terms. Assuming that they carry a y-prosody, is this inherent in their consonantal make-up, or are they to be interpreted as a variant of one of the other consonantal series in a syllable with y initial posture? Historically, they are a mixed group, partly related to the retroflex (affricate/fricative)

Table 9 Affricate and fricative initials: place of articulation by initial posture [in Pinyin spelling]

PLACE	POSTURE	non-labialized	labialized
non-palatal (Blocks V, VI)		zh- z-	zhu- zu-
palatal (Blocks IV)		ji-	ju-

series and partly to the velar plosives (Blocks V and III in Chart 1). That, at least, is the recent history of the morphemes which now have palatoalveolar initial; but this is simply the latest cycle in a process that has repeated itself at least three times in the known (i.e. reconstructable) history of Chinese phonology. This is far outside the scope of this chapter; but we need to establish some principle for determining their present status.

We saw earlier (cf. Tables 3 and 6) that Cy (y-prosodic initial) excludes the finals *-ai*, *-ei*, and Cw (w-prosodic initial) excludes *-ao*, *-ou*. If *ju-* embodies some combination of y and w postures, it should exclude all four; and it does. But this suggests that, rather than seeing it as a fourth type of syllable (with a distinct η posture, as formulated above), we should treat it as a combination of y and w postures; so let us rewrite C η as Cyw. Now, since Cy and Cw each occurs with nine finals, but excluding a different two, that should leave seven for Cyw. In fact, however, there are only five, because in the \forall group (open aperture) neither *-a* nor *-w* is found: there are no syllables *jua*, *qua*, *xua*, *yua*; and no syllables *juang*, *quang* *xuang* or *yuang*. On the other hand, both *-a* and *-w* occur in the \exists group (half close). Thus for the *ju-* series (including *yu -*, column 22 in Chart 1) the syllabary is as in Table 10, having only *juan*, *jue*, *jun*, *jiong* and *ju*. Note that all these syllables are lip-rounded throughout; this includes that spelt *jiong* (also *qiong*, *xiong*, *yong*), which is typically realized as [dz^huŋ] – although there is a variant which begins unrounded, [dz^huŋ] dissimilating the two w postures.

In some way or other, therefore, syllables of the *ju-* series have to be analysed as Cyw: that is, as having a combination of y and w postures. But there are two possible ways of interpreting this: (1) they could be generated as four initial prosodies each combining a term from two distinct systems; (2) alternatively, the entire *j-*, *q-*, *x-*, *y-* series of syllables (Blocks IV.ii, IV.iv, VII.ii and VII.iv in Chart 1) could be treated as having an initial consonant which is inherently palatal (and hence y-prosodic), and which then can have associated with it either a-prosody (in *ji*, *qi*, *xi*, *yi*) or w-prosody (in *ju*, *qu*, *xu*, *yu*). This is a substantive issue, reflecting a complex history of sound change, as mentioned above: there has always been a skewness between palatalizing and labializing, such that in some way or other palatalization has to be accommodated in the system twice over – in prosodic terms, both as a feature of the initial consonant and as a prosody of the initial element of the syllable – even though the morphemes involved in modern Mandarin are quite different from those in respect of which this pattern is first known to have appeared (Karlgren 1940; Wang 1980).

The situation becomes complex at this point; once we start to bring in the initials we face a cluster of intersecting features which can be interpreted prosodically in more than one way, offering different explanations of the patterns involved. I shall not try to present the alternatives here because this would require a detailed treatment of all the initial consonant systems. Here I am taking account just of the problems that are raised by the finals; and when we include those that

need to be explained by postulating a complex initial prosody Cyw we have to bear in mind two factors:

- (1) Finals occurring with Cyw include only those which would be permitted *both* by Cy *and* by Cw [*juai* is excluded because (like *jiai*) it would be O/y-y; *juao* is excluded because (like *zhua*) it would be O/w-w].
- (2) Finals occurring with Cyw are always realized phonetically as *either one or the other* (that is, like those with Cy or those with Cw), not in some distinct phonetic shape of their own. [But not always the same one: the type with \forall aperture is Cw-like (*juan* is like *zhuan*, N/w-y); whereas the type with \exists aperture is Cy-like (*jue* is like *jie*, O/y-a), although there is a Cw-like variant *juo* (like *zhuo*, O/w-a) used by some speakers with some morphemes only – i.e. the variation has a dialectal basis.]

It seems therefore that we should prefer a three-term system of posture both at C (initial) and at V (final), rather than adding a fourth term for initial position only. Furthermore, since the *ju-* *qu-* *xu-* *yu-* series exclude Vw marginally more strongly than they exclude Vy (*juan*, *quan*, *xuan*, *yuan* occur, while *juang*, *quang*, *xuang*, *yuang* do not), it would seem better to treat them as having Cw (initial w-prosody) mapped on to an inherently y-prosodic consonant rather than the other way round. [This is in fact borne out by the detailed investigation of the initials, which also allows *n-* and *l-* to be accounted for in the same way (note the occurrence of Cyw with *n* and *l* in Chart 1, Block II.iv).]

A network for generating the entire syllabary is shown as Figure 6. This takes account of all the points raised in the present study. But it should be made clear that it is not the network I would offer as the optimum systemic solution, because it does not take account of all the problems raised by the initials in their own right, and it leaves unexplained some gaps in initial + final (including tonal) combinations which can be shown to be systematic. There are of course some random gaps in the syllabary; I know of no way to explain the absence of syllables at *shong* or *tiu*, and I would not want to exclude them from the network. But it is clear that there is a suspicious similarity among some of the 'defective' boxes in Chart 1 (especially I.ii, II.ii, II.iii and VI.iii), and patterns of this kind seem to call for some explanation.

Firth once remarked that if modern phonology had developed out of the tradition in China, we should never have heard of the phoneme – with the implication that the world would have been a better place. I think there is an important place for the phoneme, as a potential member of a phonological rank scale; and the fact that speakers of certain languages chose to write them with an alphabet suggests that they also felt the same. But the Chinese did not; they developed a character system instead; and the phonology of their language, while it has very clearly defined syllables with remarkably little indeterminacy, shows no real trace of phonemic structure. It should be said that this last is less true of some of the southern dialects – most notably Cantonese, where there is far less distance between a

prosodic and a phonemic interpretation than there is with Mandarin. In Mandarin the two approaches give very different pictures; here, instead of taking the minimum articulatory segment as prototypical and reducing everything to that, we can take tone as our prototype and explain the entire system as a network of tone-like features. This is, in essence, what the prosodic analysis does: and it is what the Chinese phonologists were doing starting about two thousand years ago – even though it was another five centuries before they took account of tone itself as a distinct feature of the syllable (cf. Halliday 1981).

The system network that has been being built up in the course of this study, up to and including Figure 5, generates the total set of finals for the syllabary of modern Pekingese, other than the tonal variants. That in Figure 6 incorporates the remaining features of the syllabic system but in a sketchy and provisional form. Let me try to summarize the theoretical principles on which this systemic interpretation is based.

- (1) In accordance with Chinese phonological theory, the syllable consists of two loci, initial and final. As these (English) names imply, the two are lineally ordered; but they are not segmental. Rather, the syllable has an initial state, characterized by a syndrome of features; and a final state, characterized by another such syndrome – the movement from one state to the other is continuous throughout. [The Chinese terms do not embody the notion of linear ordering. The word for ‘final’ is ‘rhyme’. The word for the initial is usually regarded as opaque; it meant ‘twist’ (like the twist in a cord to make a Chinese button), but also ‘handle’ for lifting with – perhaps a metaphor either of lift-off or of configuration.]
- (2) There is considerable variation in the enactment of the syllable, both among different speakers and within one and the same individual speaker. This variation is explained as a spatiotemporal dynamic: (i) initial, opening features may be more, or less, prolonged; (ii) final, closing features may start earlier or later; and (iii) there may be more than one route from the one to the other.
- (3) The initial prosodic systems have been presented only in outline, without explanation, to enable the network to be completed. The systems are:
 - (a) ALIGNMENT (PLACE): pointed : labial / velar / alveolar // flattened : dental / cerebral (‘retroflex’) / palatal;
 - (b) MANNER: obstruent /// continuant : fricative // approximate : nasal / lateral;
 - (c) VOICE ONSET: early (‘unaspirated’) / late (‘aspirated’);
 - (d) POSTURE: y-prosodic / a-prosodic / w-prosodic;
- (4) The final prosodic systems are:
 - (w) APERTURE: close [I] / half close [∅] / open [∇];
 - (x) POSTURE: y-prosodic / a-prosodic / w-prosodic;
 - (y) RESONANCE: nasal [N] / oral [O];
 - (z) TONE: high level [1] / mid rising [2] / low rising [3] / falling [4].

- (5) The system of POSTURE figures both at initial and at final; hence a syllable may either retain the same posture throughout or shift from one posture to another. It turns out that this option, in the context of the opposed postures y and w, is best interpreted as itself forming a prosodic system: (v) POSTURE SHIFT: stable / shifting.
- (6) Not all features are equally variable, in the ways described in (2) above. But it is not misleading to represent even the apparently segmental features of the initial consonants in these prosodic terms. For example, it is often noted that in Mandarin the aspirated syllables ‘may be very heavily aspirated’ which means there is variation in the timing of the onset of voice. And the evolution of the apical vowel seems to suggest a tendency to prolong the tongue contact at the place of articulation.
- (7) It is not suggested that in every language the syllable would be best interpreted in entirely ‘prosodic’ (non-segmental) terms. In English, for example, there seems no convincing argument for saying that all syllables have the same structure or for trying to specify all consonant and vowel features as syllabic prosodies. Matthiessen (1987) presents a systemic interpretation of Akan phonology which includes separate networks for the syllable and the phoneme, with the latter further subdivided into consonant and vowel. It is to be expected that for some languages there would be networks at both syllable and phoneme rank.

In Chinese, however (at least in Mandarin), all syllables have the same generalized structure, and there is no value in setting up the phoneme as a separate unit. The one syllable I have not discussed is the maverick syllable *er*, phonetically [ʒɿ], which appears as vowel plus consonant, the ‘consonant’ being a (very) retroflex frictionless continuant. At one stage in its history this was a palatoalveolar nasal with close aperture, systemically where *ni* is today; now, however, it has no trace of either nasality or palatality and might be interpreted systemically in one of two ways: either as the ‘close’ member of the a-prosodic series with initial semivowel (going with *yi*, *wu* and *yu*; this is how it is located in Chart 1) or as the occupant of the empty *ra* slot. In fact in typical Pekingese speech its vowel tends to be open, rather than close or even half close, which suggests that it is felt more akin to the latter. It is actually quite like *ra* pronounced backwards – a variant which is presumably within the limits of what we should expect, if the syllable is interpreted as having no linear segmentation.

One major variable among phonological systems that is foregrounded in a prosodic and systemic perspective is where they make contact with the grammar (cf. Hill 1966). The phonological rank scale may include tonal and/or rhythmic units which may be mapped more or less consistently on to clauses or phrases; and in many languages the word is the point of origin for certain phonological systems, either with or without being fully integrated into the overall phonological structure (Matthiessen, 1987; Prakasam 1987; and cf. the phonological hierarchy of tagmemic theory). In Chinese the word has hardly any phonological

Notes to Figure 6 The initials as represented in Pinyin spelling are specified by the systems in the network as follows (roman numerals refer to blocks in Chart 6):

		obstruent		continuant								
				fricative		approximant		postures				
		early	late	early	late	nasal	lateral	i	ii	iii	iv	
flattened	dental VI	z	c		s					a	w	
	cerebral V	zh	ch	r	sh					a	w	
	palatal IV, II	j	q	y	x	n	l			a	w	
pointed	labial I	b	p	w	VII	f	m			a	y	
	velar III	g	k	o		h					a	w
	alveolar II	d	t				n	l			a	y w

Initials n. 1 are interpreted as alveolar in Blocks i and iii, palatal in Blocks ii and iv. (Hence ni-, li- are palatal with a-posture, not alveolar with y-posture; and nü-, lü- are palatal with w-posture.)

Block VII are interpreted as voiced fricatives. With those in VII/ii-iv there can be considerable friction, especially with close aperture. Those in VII/i typically have voiced glottalic initiation, the variant with velar nasal, which I observed frequently in my original investigation, seems to be much less common today.

Notes regarding unmarked (default) options:

* All 'voiced' (early voice onset) continuants are fricative unless palatal, labial or alveolar, which may be fricative or approximant.

¹⁻¹ All 'flattened' initials, and also the velars, if selecting 'narrow' posture can take only w-prosody, not y [either they are palatal already, or they cannot be palatalized].

²⁻² Labial initials, if selecting 'narrow' posture can take only y-prosody, not w (they are labial already). Thus, from ¹⁻¹ and ²⁻² together, only alveolar initials can select either y- or w-prosody.

*-# All syllables which retain the same narrow posture throughout (y-y or w-w) must have nasal resonance.

- All syllables with close aperture, and all non-close with final a-prosody, must have oral resonance. Thus, from #-# and *-# together, only those syllables which shift into y- or w-prosody from somewhere else can select either nasal or oral resonance.

Table 10 The five syllable types with yw posture [in Pinyin spelling]

		yw/		
		yw - y	yw - a	yw - w
∇,	Oral			
∇,	Nasal	juan		
∃,	Oral		jue	
∃,	Nasal	jun		jjong
l,	Oral		ju	

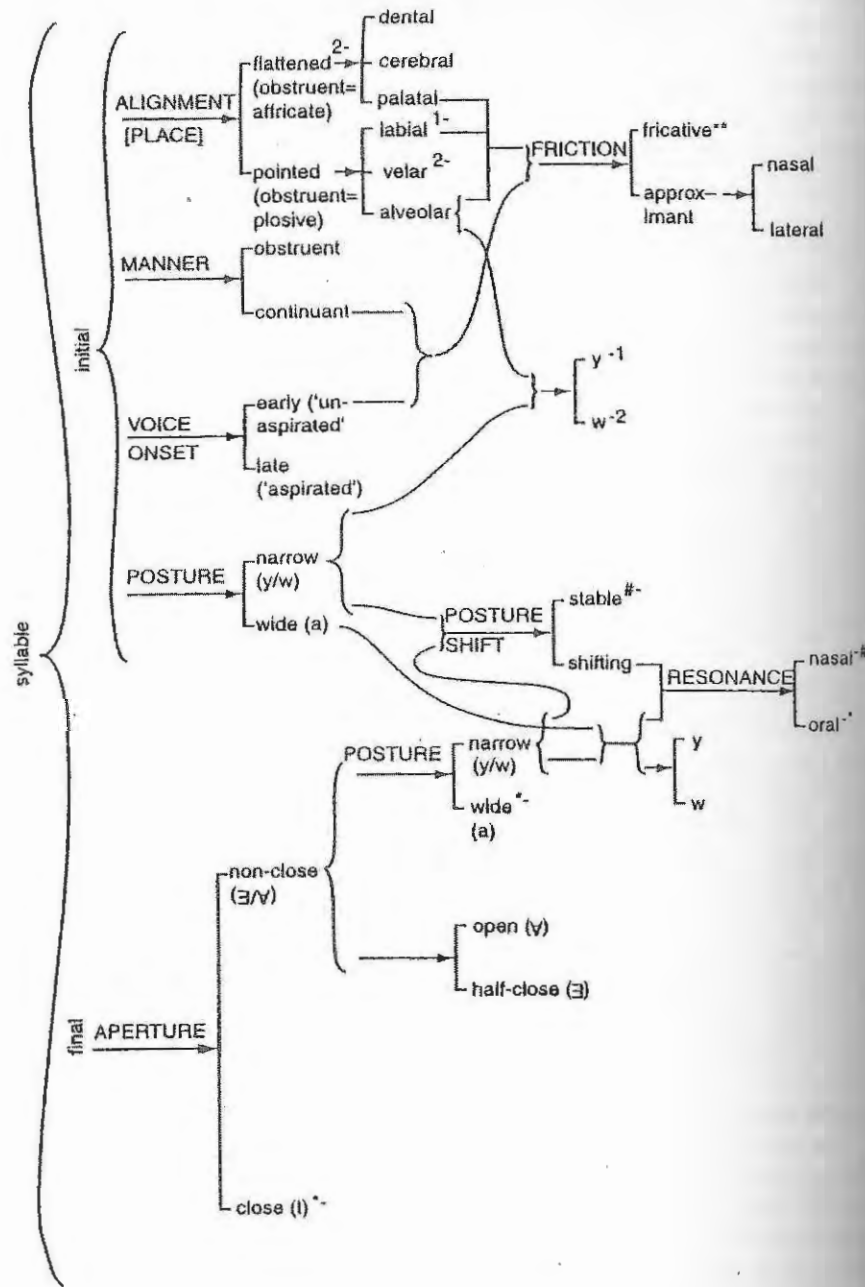


Figure 6 Network specifying total Mandarin (Pekingese) syllabary

significance: none at all in many dialects, a little in Mandarin because it defines an environment within which the tonal system may be neutralized. But throughout the known history of the language there has always been an overwhelming association of the syllable with the morpheme, and this gives an added significance to the syllabary as the basis of the phonological system. It should be possible to synthesize the Mandarin syllabary from a systemic-prosodic description, with the prosodic features as the parameters and provision for varying their duration and the traversal between one setting and another. It would be interesting to compare these results with those obtained by synthesizing in phonemic and allophonic terms.

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TONAL DEVELOPMENT IN MIN

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The reconstructed Qieyun language has long been used as the basis for Chinese dialectal comparison. The present study demonstrates that the Qieyun language is an inadequate historical reference for the comparison of the Min dialects.

1. Introduction

Chinese shares with certain other languages of Southeast Asia a remarkably similar tonal history.¹ In Tai, Miao-Yao and Vietnamese, much as in Chinese, a basic four term system is found which in most (if not all) modern dialects have been elaborated into more complex systems. This has come about because of splits in the original four-way tonal distinction which have been conditioned by various features of the initials; these include voicing, glottality, aspiration and prenasalization. A. G. Haudricourt (1961) and G. B. Downer (1963) have described this type of tonal development in some detail.

1.1. Initial types

Although the number of distinct initial types necessary to explain the tonal development of Tai and Miao-Yao is quite large, for Chinese a three-way distinction is sufficient for the great majority of dialects. In traditional terminology the three types were called *qing* (清), *quánzhuó* (全濁), and *cìzhuó* (次濁), literally 'clear', 'fully muddy' and 'partially muddy'. Many interpret these terms to mean voiceless, voiced obstruent, and voiced sonorant respectively. Cantonese illustrates this sort of scheme very well:

Qieyun tone class		ping	shang	qu	ru
initial	qing	53	35	33	55, 33
	cìzhuó	21	13	22	22
class					
	quanzhuo	21	22	22	22

Cantonese has a handful of rising tone words which had voiced stop initials in the Qieyun language which are lower rising (13) in Cantonese; these words all have 'irregular' aspirated initials. The split in the upper entering tone is conditioned by vowel length.

Hitherto in a number of analyses of the Min dialects it has been assumed that Min tones can all be explained on the basis of the same Qieyun (hereafter QY) initial distinctions. Indeed, Southern Min on the whole can be accounted for quite neatly using such a scheme. But with the northern and western dialects matters are quite different.

The thesis I hope to prove in this paper is that the QY language is an inadequate basis for explaining the tonal evolution of a part of the Min dialects; additional initial features must be assumed. I further hope to demonstrate that, although it has appeared possible in earlier analyses to account for Southern Min using the QY distinctions, it is nevertheless now necessary to attribute to Southern Min some of the additional distinctions needed to explain Min tonal behavior as a whole.

I assume that Proto-Min had a four term tonal system which later underwent splitting conditioned by features of the initial consonants. In this, the Min dialects are not different from other Chinese dialects. The difference between Min and the other dialect groups is found in the number of the features affecting tone which have to be postulated for initial consonants. Whereas the tonal evolution of other dialects is influenced by only a three-way division of the initials, I propose to demonstrate that a six-way division must be postulated to explain the tones of the Min dialects.

1.2. Illustration using six Min dialects

I have used six Min dialects to illustrate my thesis. These dialects along with the sources used are listed below; the abbreviations following each name in parentheses will be used hereafter:

- Foochow (Fc) 福州 Maclay and Baldwin (1871), Maclay and Baldwin revised (1929), Peking University (1962), Chen and Norman (1965)
 Amoy (Am) 廈門 Douglas (1899), Campbell (1913), Bodman (1955, 1958), Peking University (1962)
 Chaochow (Cc) 潮州 Huiji yacong shiwuyin (1916), Li (1959), Peking University (1962)
 Kienyang (ky) 建陽 Gospel of St. Matthew (1900), Norman (1969)
 Kienow (Ko) 建寧 Séng-iō cūng-sū (1922), Huang (1957), Norman (1969)
 Shaowu (Sw) 邵武 Norman (1969)

The transcription used for dialect forms is mostly broad phonetic. Tones are indicated by numerals to the right of the syllables in question. The numerals correlate with the traditional tonal categories in the following manner:

	ping	shang	qu	ru
yin	1	3	5	7
yang	2	4	6	8

The ninth tone of Kienyang does not correspond exactly to any of the traditional categories. The table below shows the phonetic values of the tones of the dialects cited in this paper:

	Fc	Am	Cc	Ky	Ko	Sw
1	55	44	33	53	54	11
2	52	24	55	33	-	33
3	22	52	53	<u>21</u>	<u>21</u>	55
4	-	-	35	-	<u>42</u>	-
5	13	11	213	32	22	24
6	242	33	11	43	44	35
7	<u>24</u>	<u>21</u>	<u>22</u>	35	35	51
8	<u>55</u>	<u>44</u>	<u>55</u>	<u>43</u>	-	-
9	-	-	-	31	-	-

Ky tones two, five and six are considerably longer in duration than the other tones. All underlined tones are short, ending either in *-p*, *-t*, *-k* or *-ʔ*. For Fc, I have written those words which in Maclay's dictionary have final *-h* as open syllables, and those words which have final *-k* I have written with *-ʔ*: in fact both types end in glottal stop phonetically when pronounced in isolation, but they are kept distinct morphophonemically (Yuan 1960: 298).

2.1. Voiced stops in Proto-Min

When one examines the Min correspondences to the QY voiced stops, it is evident that they cannot be considered descendants of the QY forms. The following comparisons to words with QY *b*-illustrate this:²

	QY	Fc	Am	Ky	Sw	
爬	ba	pa ²	pe ²	pa ²	p'a ²	'climb'
病	bi 'eng-	paŋ ⁶	pɿ ⁶	paŋ ⁶	p'ian ⁶	'ill'
白	b 'ek	pa ⁸	pe ^{ʔ8}	pa ⁸	p'a ⁶	'white'
皮	bjj	p'ui ²	p'e ²	p'ui ²	p'ei ⁷	'skin'
被	bjj:	p'ui ⁶	p'e ⁶	p'ui ⁶	p'ei ³	'coverlet'
鼻	bi-	p'ei ⁵	p'i ⁶	p'oi ⁶	p'i ⁵	'nose'
雹	bâk	p'oi ⁸	p'au ^{ʔ8}	p'o ⁸	p'au ⁷	'hail'

	QY	Fc	Am	Ky	Sw	
瓶	bieng	piŋ ²	pan ²	vaiŋ ⁹	p'en ²	'vase'
步	buo-	puo ⁶	po ⁶	vo ⁶	p'u ⁶	'step'
薄	bâk	po ⁸	po ^{ʔ8}	vo ⁸	p'o ⁶	'thin'

A thorough examination of this situation has failed to turn up any conditioning factor in the QY language itself to account for this one-to-three correspondence between the QY voiced stops and those of the Min dialects. I propose, therefore, that Proto-Min (PM hereafter) had three distinct sets of voiced stops; I will symbolize them as follows:

b	d	g
bh	dh	gh
-b	-d	-d

It would be premature to speculate about the real phonetic properties of these three series; what I am more interested in here is identifying the number and interrelations of the initial features which influence tonal development. At this stage, then, I will remain content to project those features prevalent in the modern dialects back to the proto-language. These three series are assumed to have been voiced in some sense on general typological grounds: complicated tonal systems like those found in the Min dialects have developed out of a simpler system as a result of the loss of a major initial feature such as voicing; furthermore, the neighboring Wu dialects spoken just to the north of the Min speaking area still retain voiced initials in those words for which I posit voiced initials in PM. The first series (**b*, **d*, **g*) become voiceless unaspirated stops in the modern dialects; provisionally, they can be described as voiced unaspirated stops. In like manner, the second series (**bh*, **dh*, **gh*) can be designated voiced aspirates since they become voiceless aspirated stops in the dialects. The third series (**-b*, **-d*, **-g*) is kept separate from the first only in the northwestern dialects of Kienyang and Kienow; in Kienyang their reflexes are voiced sonorants or zero. This third set arose, I suspect, from the influence of some type of voiced prefix; the root consonant following the prefix underwent a process of lenition which led to the present situation in Kienyang. From this process, the third series can be described as softened stops. The table below shows the correspondences of these proto-phonemes in the modern dialects.

PM	Fc	Am	Cc	Ky	Ko	Sw
*b	p	p	p	p	p	p'
*d	t	t	t	t	t	t'
*g	k	k	k	k	k	k'/h
*bh	p'	p'	p'	p'	p'	p'

PM	Fc	Am	Cc	Ky	Ko	Sw
*dh	t'	t'	t'	h	t'	t'
*gh	k'	k'	k'	k'	k'	k'
*-b	p	p	p	v	p	p'
*-d	t	t	t	l	t	t'
*-g	k	k	k	k/∅	k	k'/h/f

The reflex of *-g in Ky is either *k* or ∅ (zero), or both in free variation. The rule appears to be that Ky has ∅ in forms lacking a palatal medial; words having a palatal medial usually show *k* and ∅ in free variation. PM *g, *gh, and *-g all become Sw *k'* when they occur before a palatal medial; otherwise they become Sw *h* (in Sw, *h* regularly becomes *f* before *u*; if the *u* was a medial it is lost: Sw *fai* < *huai, Sw *fu* < *hu).

2.2. Tonal development in words with voiced initials

Tonal development in words which had voiced initials has been conditioned by the three different manners of articulation reconstructed for PM. In the following tables the bilabials *p, *ph, *bh, *-b etc. are used as cover symbols for the whole set of sounds having the same manner of articulation; thus *p stands for *p, *t, and *k. The four tones of PM will be designated by the four numerals *1, *2, *3, *4. These four numerically marked tones correspond respectively to the classical tonal categories ping, shang, qu and ru. The development of these tones in words which had voiced initials is shown in the following table:

PM tone *1

	Fc	Am	Cc	Ky	Ko	Sw
*b	2	2	2	2	5	2
*bh	2	2	2	2	5	7
*-b	2	2	2	9	3	2

PM tone *2

	Fc	Am	Cc	Ky	Ko	Sw
*b	6	6	4	5	6	3
*bh	6	6	4	5	6	3
*-b	6	6	4	5	4	3

PM tone *3

	Fc	Am	Cc	Ky	Ko	Sw
*b	6	6	6	6	6	6
*bh	5	6	6	6	6	5
*-b	6	6	6	6	6	6

PM tone *4

	Fc	Am	Cc	Ky	Ko	Sw
*b	8	8	8	8	6	6
*bh	8	8	8	8	6	7
*-b	8	8	8	8	4	6

2.3. Examples of stops in lower register words

PM *b

- climb 爬: Fc pa²; Am pe²; Cc pe²; Ky pa²; Ko pa⁵; Sw p'a²
- harrow 耙: Fc pa⁶; Am pe⁶; Ky pa⁶; Sw p'a⁶
- fat 肥: Fc pui²; Am pui²; Cc pui²; Ky py²; Ko py⁵; Sw p'i²
- dish 盘: Fc puan²; Am puā²; Cc puā²; Ky poiŋ²; Ko puen⁵; Sw p'on²
- rice 饭: Fc puoŋ⁶; Am puŋ⁶; Cc puŋ⁶; Ky puŋ⁶; Ko pyeŋ⁶; Sw p'an⁶
- white 白: Fc pa⁸; Am pe⁸; Cc pe⁸; Ky pa⁸; Ko pa⁶; Sw p'a⁶
- level 平: Fc paŋ²; Am pi²; Cc pē²; Ky pian²; Ko pian⁵; Sw p'ian²
- sick 病: Fc paŋ⁶; Am pi⁶; Cc pē⁶; Ky paŋ⁶; Ko paŋ⁶; Sw p'ian⁶

PM *bh

- tare 粳: Fc p'a⁵; Am p'ue⁶; Cc p'oi⁶; Ky p'ai⁶; Ko p'ai⁶
- skin 皮: Fc p'ui²; Am p'e²; Cc p'ue²; Ky p'ui²; Ko p'ye⁵; Sw p'ei⁷
- cover 被: Fc p'ui⁶; Am p'e⁶; Cc p'ue⁶; Ky p'ui⁵; Ko p'ye⁶; Sw p'ei³
- nose 鼻: Fc p'ei²; Am p'i⁶; Cc p'i⁶; Ky p'oi⁶; Ko p'i⁶; Sw p'i⁵
- duckweed 菜: Fc p'iu²; Am p'io²; Cc p'ieu²; Ky p'io²; Sw p'iau⁷
- escort 伴: Fc p'uaŋ⁶; Am p'uā⁶; Cc p'uā⁴; Ky p'oiŋ⁵; Ko p'uen⁶; Sw p'on⁶
- hail 雹: Fc p'∅i⁸; Am p'au⁸; Cc p'ak⁸; Ky p'o⁸; Ko p'au⁶; Sw p'au⁷
- shine 光: Fc p'uo⁸; Am p'ak⁸; Cc p'ak⁶; Ko p'u⁶; Sw p'u⁷

PM *-b

- raft 筏: Fc pe²; Am pai²; Cc pai²; Ky vai⁹; Sw p'ie²
- bark 呖: Fc pui⁶; Am pui⁶; Cc pui⁶; Ky y⁶; Ko py⁶; Sw p'ei⁶
- pull 拉: Fc pei⁸; Am pui⁸; Ky vai⁸; Sw p'ai⁶

thin 薄: Fc pɔ⁸; Am pɔ⁷; Cc pɔ⁸; Ky vɔ⁸; Ko pɔ⁶; Sw p'ɔ⁶
 vase 瓶: Fc piŋ²; Am pan²; Cc paŋ²; Ky vaiŋ⁹; Ko paiŋ³; Sw p'en²
 In Ky v < PM *-b and *-p disappears before y and ioŋ; see bark above and maple and fly below.

PM *d

tea 茶: Fc ta²; Am te²; Cc te²; Ky ta²; Ko ta⁵; Sw t'a²
 bean 豆: Fc tau⁶; Am tau⁶; Cc tau⁶; Ky teu⁶; Ko te⁶; Sw t'au⁶
 step on 踏: Fc ta⁷; Am ta⁷; Cc ta⁷; Ky ta⁸; Ko ta⁶
 straight 直: Fc ti⁷; Am tit⁸; Cc tik⁸; Ky te⁸; Ko te⁶; Sw t'ə⁶
 heavy 重: Fc toŋ⁶; Am taŋ⁶; Cc taŋ⁴; Ky toŋ⁵; Ko toŋ⁶; Sw t'uŋ³

PM *dh

pillar 柱: Fc t'iu⁶; Am t'iau⁶; Cc t'ieu⁴; Ky hiu⁵; Ko t'iu⁶
 hammer 槌: Fc t'ui²; Am t'ui²; Cc t'ui²; Ky hy²; Ko t'y⁵; Sw t'ei⁷
 weep 哭: Fc t'ie²; Am t'i²; Cc t'i²; Ky hie²; Ko t'i⁵; Sw t'i⁷
 peach 桃: Fc t'o²; Am t'o²; Cc t'o²; Ky hau²; Ko t'au⁵; Sw t'au⁷
 head 頭: Fc t'au²; Am t'au²; Cc t'au²; Ky heu²; Ko t'e⁵; Sw t'ə u⁷
 staff 杖: Fc t'ioŋ⁶; Am t'ŋ⁶; Ky hioŋ⁵; Ko t'ioŋ⁶
 bug 蟲: Fc t'Øiŋ²; Am t'aŋ²; Cc t'aŋ²; Ky hoŋ²; Ko t'oŋ⁵; Sw t'uŋ⁷

PM *-d

rudder 舵: Fc tuai⁶; Am tua⁶; Cc tua⁴; Ko tue⁴
 long 長: Fc touŋ²; Am tŋ²; Cc tŋ²; Ky ləŋ⁹; Ko toŋ³; Sw t'oŋ²
 worth 值: Fc ti⁷; Am tat⁸; Cc tak⁸; Ky loi⁸; Sw t'w⁶
 bronze 銅: Fc t'Øiŋ²; Am taŋ²; Cc taŋ²; Ky loŋ²; Sw t'uŋ²
 move 動: Fc toŋ⁶; Am taŋ⁶; Ky loŋ⁵; Ko toŋ⁴; Sw t'uŋ⁶

PM *g

eggplant 茄: Fc kio²; Am kio²; Cc kie²; Ky kio²; Ko kio⁵; Sw k'io²
 kneel 跪: Fc kui⁶; Am kui⁶; Cc kūi⁴; Ky ky⁶; Ko ky⁶; Sw k'uei³
 bridge 橋: Fc kio²; Am kio²; Cc kie²; Ky kio²; Ko kia⁵; Sw k'iau²
 old 老: Fc kou⁶; Am ku⁶; Cc ku⁶; Ky kiu⁶; Ko kiu⁶; Sw k'y⁶
 aunt 姑: Fc keiŋ⁶; Am kim⁶; Cc kim⁴; Ky kiŋ⁵; Ko keŋ⁶; Sw k'ə n³
 sweat 汗: Fc kaŋ⁶; Am kuā⁶; Cc kuā⁶; Ky kueŋ⁶; Ko kueŋ⁶; Sw hon⁶

PM *gh

persimmon 柿: Fc k'ei⁶; Am k'i⁶; Ky k'i⁵; Ko k'i⁶
 mortar 臼: Fc k'ou⁶; Am k'u⁶; Cc k'u⁴; Ky k'iu⁵; Ko k'iu⁶; Sw k'y³

ride 騎: Fc k'ie²; Am k'ia²; Cc k'ia²; Ky i⁹; Sw k'i²
 stand 站: Fc k'ie⁶; Am k'ia⁶; Cc k'ia⁴; Ky kye⁵; Ko kye⁴; Sw k'i³
 Note that for the last two examples, the eastern dialects (Fc, Am, Cc) imply an aspirated initial, while the western dialects (Ky, Ko, Sw) imply *-g.

PM *-g

bite 咬: Fc ka⁶; Am ka⁶; Cc ka⁴; Ky au⁵; Ko kau⁴
 monkey 猴: Fc kau²; Am kau²; Cc kau²; Ky eu⁹; Ko ke³; Sw hæ u²
 thick 厚: Fc kau⁶; Am kau⁶; Cc kau⁴; Ky eu⁵; Ko ke⁴; Sw hæ u⁶
 ball 球: Fc kiu²; Am kiu²; Cc kiu²; Ky kiu⁹~iu⁹; Ko kiu³; Sw k'ou²
 slippery 滑: Fc kou⁷; Am kut⁸; Cc kuk⁸; Ky kui⁸; Ko ko⁴; Sw fə i⁶
 hsien 縣: Fc kaiŋ⁶; Am kuāi⁶; Cc kūi⁶; Ky kyeŋ⁶~yeŋ⁶; Ko kyeŋ⁶; Sw yen⁶

3.1. Voiceless stops

The voiceless stops show the same three-way contrast as the voiced stops. I will symbolize them similarly:

unaspirated	p	t	k
aspirated	ph	th	kh
softened	-p	-t	-k

The modern reflexes of these stops are shown in the following table:

	Fc	Am	Cc	Ky	Ko	Sw
*p	p	p	p	p	p	p
*ph	p'	p'	p'	p'	p'	p'
*-p	p	p	p	v/φ	p	p'
*t	t	t	t	t	t	t
*th	t'	t'	t'	h	t'	t'
*-t	t	t	t	l	t	t'
*k	k	k	k	k/x	k/x	k
*kh	k'	k'	k'	k'	k'	k'
*-k	k	k	k	k/Ø	Ø	?

PM *k normally becomes k both in Ky and Ko, but in a small number of common words it becomes x:

liver 肝: Fc kaŋ¹; Ky xueŋ¹; Ko xueŋ¹
 marry 嫁: Fc ka⁵; Ky -; Ko xa⁵
 type of leek 韭: Fc kiu³; Ky xiu³; Ko xiu³

tangerine 橘: Fc kei⁷; Ky xi⁷; Ko xi⁷
 save 救: Fc kiu⁵; Ky -; Ko xiau⁵
 teach 教: Fc ka⁵; Ky xau¹; Ko xau¹

The origin of this split is unclear. PM *-k becomes either Ky *k* or *q* (in free variation) in the word for *dog*, but disappears in the word for *jug*.

3.2. Aspirated and unaspirated voiceless initials

Tonal behavior of words with aspirated and unaspirated voiceless initials is the same everywhere. The softened initials, however, have given rise to quite a different behavior in western dialects:

PM tone *1

	Fc	Am	Cc	Ky	Ko	Sw
*p, ph	1	1	1	1	1	1
*-p	1	1	1	9	3	3

PM tone *2

*p, ph, -p	3	3	3	3	3	3
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PM tone *3

*p, ph	5	5	5	5	5	5
*-p	5	5	5	9	3	?

PM tone *4

*p, ph	7	7	7	7	7	7
*-p	7	7	7	3	?	3

Although I have deliberately avoided discussing affricates in this paper, it seems relevant to point out here that the lenition process also applies to voiceless affricates. The evidence for these is as follows: *-ts becomes *l* in Ky and *t'* in Sw; tonal behavior is the same as for the other softened voiceless stops:

drunk 醉: Fc tsui⁵; Am tsui⁵; Cc tsui⁵; Ky ly⁹; Ko tsy³
 early 早: Fc tsa³; Am tsa³; Cc tsa³; Ky lau³; Ko tsau³; Sw t'au³

3.3. Examples of stops in upper register tones

PM *p

share 分: Fc puoŋ¹; Am pun¹; Cc puŋ¹; Ky puŋ¹; Ko pyeŋ¹; Sw pə n¹
 board 板: Fc peiŋ³; Am pan³; Cc paŋ³; Ky paiŋ³; Ko paiŋ³; Sw pan³
 half 半: Fc puaŋ⁵; Am puã⁵; Cc puã⁵; Ky poiŋ⁵; Ko pueŋ⁵; Sw pon⁵
 eight 八: Fc pai⁷; Am pue⁷; Cc poi⁷; Ky pai⁷; Ko pai⁷; Sw pie⁷

PM *ph

break 破: Fc p'uai⁵; Am p'ua⁵; Cc p'ua⁵; Ky p'oi⁵; Ko p'ue⁵; Sw p'ai⁵
 register 册: Fc p'uo³; Am p'ɔ³; Cc p'ou³; Ky p'o³; Sw p'u³
 hit 拍: Fc p'a⁷; Am p'a⁷; Cc p'a⁷; Ky p'ɔ⁷; Sw p'a⁷
 bee 蜂: Fc p'uŋ¹; Am p'aŋ¹; Cc p'aŋ¹; Ky p'oŋ¹; Ko p'oŋ¹; Sw p'iuŋ¹

PM *-p

fly 飞: Fc pui¹; Am pe¹; Cc pue¹; Ky ye⁹; Ko ye³; Sw p'ei³
 reverse 反: Fc peiŋ³; Am pan³; Ky vaiŋ³
 emit 发: Fc puo⁷; Am pu⁷; Ky voi³; Sw p'ə i³
 maple 枫: Am pŋ¹; Cc puŋ¹; Ky ioŋ⁹; Sw p'iuŋ³

PM *t

belt 带: Fc tai⁵; Am tua⁵; Cc tua⁵; Ky tue⁵; Ko tue⁵; Sw tai⁵
 list 册: Fc taŋ¹; Am tuã¹; Cc tuã¹; Ky tueŋ¹; Ko tueŋ¹; Sw tan¹
 short 短: Fc tɕi³; Am te³; Cc to³; Ky tui³; Ko to³; Sw ton³
 table 桌: Fc to⁷; Am to⁷; Cc to⁷; Ky to⁷; Ko to⁷

PM *th

leg 腿: Fc t'ɕi³; Am t'ui³; Cc t'ui³; Ky hui³; Ko t'o³; Sw t'ei³
 sky 天: Fc t'ien¹; Am t'i¹; Cc t'i¹; Ky hien¹; Ko t'ien¹; Sw t'ien¹
 iron 铁: Fc t'ie⁷; Am t'i⁷; Cc t'i⁷; Ky hie⁷; Ko t'ie⁷; Sw t'ie¹
 charcoal 炭: Fc t'aŋ⁵; Am t'ua⁵; Cc t'ua⁵; Ky huen⁵; Ko t'uen⁵; Sw t'an⁵

PM *-t

turn 转: Fc tion³; Am tŋ³; Cc tŋ³; Ky lyen³; Ko tyen³; Sw t'ien³

PM *k

melon 瓜: Fc kua¹; Am kue¹; Cc kue¹; Ky kua¹; Ko kua¹; Sw kua¹
 remember 记: Fc kei⁵; Am ki⁵; Cc ki⁵; Ky ki⁵; Ko ki⁵; Sw kw⁵

cocoon 繭: Fc keiŋ³; Am kiŋ³; Cc kōi³; Ky kaiŋ³; Sw kan³
 horn 角: Fc koi⁷?; Am kak⁷; Cc kak⁷; Ky ko⁷; Ko ku⁷; Sw ko⁷

PM *kh

bitter 苦: Fc k'u³; Am k'ɔ³; Cc k'ou³; Ky k'o³; Ko k'u³; Sw k'u³
 foot 脚: Fc k'a¹; Am k'a¹; Cc k'a¹; Ky k'au¹; Ko k'au¹; Sw k'au¹
 advise 教: Fc k'uon⁵; Am k'ŋ⁵; Cc k'ŋ⁵; Ky k'yeŋ⁵; Ko k'yeŋ⁵; Sw k'yeŋ⁵
 guest 客: Fc k'a⁷; Am k'e⁷?; Cc k'e⁷?; Ky k'a⁷; Ko k'a⁷; Sw k'a⁷

PM *-k

dog 狗: Am kau³; Cc kau³; Ky eu³; Ko e³; Sw kə u³
 jar 缸: Fc kouŋ¹; Am kŋ¹; Cc kŋ¹; Ky ɔŋ³; Ko koŋ³
 cut 切: Fc ka⁷?; Am kua⁷?; Cc kua⁷?; Ky ua³

4.1. Sonorant initials

Every Chinese dialect has a small number of words with sonorant initials which are found in the upper register of one of the tonal categories. These words for the most part are either onomatopoeic, etymologically obscure, or expressive; although various explanations have been offered for the tones of such words, to my knowledge, no one has ever made a convincing case for a two-way distinction of sonorants in earlier stages of Chinese. I believe, nonetheless, that there is incontrovertible evidence in the Min dialects for just such a distinction at the stage of the proto-language. Since the tonal development of one of the series exactly parallels that of the voiced aspirated stops, I will symbolize the distinction thus:

voiced	m	m	ń	ŋ	l
voiceless	mh	nh		ŋh	lh

4.2. Laterals

Because the case of the laterals is clearer than that of the other sonorants, I will describe it first; in the process, the tonal development triggered by the two different series will be made clear.

The initial correspondences for *l and *lh in the modern dialects are shown in the following chart:

PM	Fc	Am	Cc	Ky	Ko	Sw
*l	l	l/n	l/n	l	l	l
*lh	l	l/n	l/n	s	s	s

In the eastern dialects the evolution of *l and *lh is the same. In Am and Cc *l and *lh have become n before those PM finals that have become nasalized vowels in these two dialects and l before other finals. (In Am n and l are in complementary distribution: l occurs only before oral finals and n only before nasalized vowels. In Cc they contrast in a limited number of environments: naŋ² 'person' and laŋ² 'deaf', but a tendency similar to that found in Am can be observed.) In the western dialects the reflexes of *l and *lh are quite distinct, and the two types of sonorants have left their traces in the tones of the modern dialects, especially in Sw, but also to a lesser degree in Fc. The tonal reflexes (as seen in words with *l and *lh) are shown in the tables below; reflexes of *dh are given to illustrate the parallel development of the aspirated voiced stops and the voiceless sonorants:

PM tone *1

	Fc	Am	Cc	Ky	Ko	Sw
*l	2	2	2	2	5	2
*lh	2	2	2	2	5	7
*dh	2	2	2	2	5	7

PM tone *2

	Fc	Am	Cc	Ky	Ko	Sw
*l	6	6	4	5	4	3
*lh	6	6	4	5	6	3
*dh	6	6	4	5	6	3

Judging from the reflexes of words with initial *l and *lh, no particular tonal behavior is associated with voiceless sonorants in this tone except in the case of Ko. There is in fact considerable irregularity associated with words having initial sonorants in tone *2. A significant number of words are found with upper register tones in all dialects; others are found with the upper register in the east but with a lower register tone in the west:

l, me 𪛗: Fc ŋuai³; Am gua³; Cc ua³; Ky ŋue³; Ko ue⁴
 horse 𪛗: Fc ma³; Am be³; Cc be³; Ky ma³; Ko ma³; Sw ma³
 incite 𪛗: Fc nia³; Am dzia³; Cc dzia³; Ky nia³; Ko nia³
 buy 𪛗: Fc me³; Am buē³; Cc boi³; Ky mai³; Ko mai³; Sw mie³
 rice 𪛗: Fc mi³; Am bi³; Cc bi³; Ky moi³; Ko mi⁴; Sw mi³
 tail 𪛗: Fc mui³; Am be³; Cc buē³; Ky mui³; Ko mye³; Sw mei³
 dye 𪛗: Fc nieŋ³; Am dziam³; Cc dziam³; Ky nieŋ³; Ko nieŋ³
 saliva 𪛗: Fc laŋ³; Am nuā⁶; Cc nuā⁴; Ky lueŋ³; Ko lueŋ⁴
 collar 𪛗: Fc lian³; Am niā³; Cc nuā³; Ky lian³; Ko lian⁴; Sw lian³

Are we to consider these upper register reflexes as evidence for voiceless initials? There are two reasons to think that this is not so: (1) It is well known that in many Chinese dialects the sonorant initials (*cìzhúo* 次濁) of QY, unlike the voiced obstruents, went to the upper rising tone; some of the Min words cited above may be influenced by such dialects. (2) In the other tones the tonal behavior of words with voiceless sonorant initials is the same as that of words with initial voiced aspirated stops; this is not the case with any of the above examples.

*PM tone *3*

	Fc	Am	Cc	Ky	Ko	Sw
*1	6	6	6	6	6	6
*lh	5	6	6	6	6	(5)
*dh	5	6	6	6	6	(5)

There are no examples of this tone in Sw for words with initial **lh* or **dh*, but we know the expected reflex from words sharing the same manners of articulation.

*PM tone *4*

	Fc	Am	Cc	Ky	Ko	Sw
*1	8	8	8	8	4	6
*lh	8	8	8	8	6	7
*dh	8	8	8	8	6	7

Sw has a different tonal reflex for words with initial voiceless sonorants except in PM tone *2. Ko ostensibly has a different tonal reflex for such words both in tones *2 and *4; this is clearly true for words which had **lh*, but I have not found any examples of similar behavior for words with the other sonorant initials. (This perhaps reflects different origins for the two sets. I suspect that **lh* comes from an earlier cluster consisting of a voiceless stop plus **l*, and that the voiceless nasals are the reflexes of a voiceless fricative plus a nasal.) This means that except for **lh*, there is now no clear tonal evidence for voiceless sonorants in PM tone *2.

4.3. *Examples of *L and *LH*

*PM *1*

come 來: Fc li²; Am lai²; Cc lai²; Ky le²; Ko le⁵; Sw li²
 plow 犁: Fc le²; Am lue²; Cc loi²; Ky lai²; Ko lai⁵; Sw lie²
 flow 流: Fc lau²; Am lau²; Cc lau²; Ky lau²; Ko lau⁵; Sw lou²
 wax 臘: Fc la²; Am la²; Cc la²; Ky la⁸; Ko la⁴; Sw lan⁶
 pungent 辣: Fc la²; Am lua²; Cc lua²; Ky lue⁸; Ko lue⁴; Sw lai⁶
 cage 籠: Fc lɔi²; Am laŋ²; Cc laŋ²; Ky loŋ²; Ko loŋ³; Sw luŋ²

*PM *1h*

basket 簍: Fc lai²; Am lua²; Cc lua²; Ky sue²
 snail 螺: Fc lɔi²; Am le²; Cc lo²; Ky sui²; Ko so⁵; Sw soi⁷
 reed 葦: Ky so²; Ko su⁵
 dew 露: Fc lou⁵; Am lo⁶; Cc lou⁶; Ky so⁶; Ko su⁶
 thunder 雷: Fc lai²; Am lui²; Cc lui²; Ky sui²; Ko so⁵
 sharp 利: Fc lei⁵; Am lai⁶; Cc li⁶
 wildcat 狸: Fc li²; Am li²; Cc li²; Ky se²; Ko se⁵
 plum 李: Fc li³; Am li³; Cc li³; Ky se⁵; Ko se⁶; Sw sə³
 old 老: Fc lau⁶; Am lau⁶; Cc lau⁴; Ky seu⁵; Ko se⁶
 a surname 姓: Fc lau²; Am lau²; Cc lau²; Ky seu²
 remain 留: Fc lau²; Am lau²; Cc lau²; Ky seu²
 basket 籃: Fc laŋ²; Am nã²; Cc nã²; Ky saŋ²; Ko saŋ⁵; Sw san⁷
 rain-hat 笠: Fc li²; Am lue²; Cc loi²; Ky se⁸; Ko se⁶
 egg 卵: Fc lauŋ⁶; Am nŋ⁶; Cc nŋ⁴; Ky suŋ⁵; Ko soŋ⁶; Sw son³
 scale 鱗: Fc liŋ²; Am lan²; Cc laŋ²; Ky saiŋ²; Ko saiŋ⁵
 young man 郎: Fc louŋ²; Am nŋ²; Cc nŋ²; Ky soŋ²; Ko soŋ⁵
 two 兩: Fc laŋ⁶; Am nŋ⁶; Cc nŋ⁴; Ky soŋ⁵
 deaf 聾: Fc lɔi²; Am laŋ²; Cc laŋ²; Ky soŋ²; Ko soŋ⁵; Sw suŋ⁷
 six 六: Fc lɔi²; Am lak⁸; Cc lak⁸; Ky so⁸; Sw su⁷

4.4. *The modern reflexes of *M and *MH*

PM	Fc	Am	Cc	Ky	Ko	Sw
*m	m	m/b	m/b	m	m	m
*mh	m	m	m	m	m	m

The conditions for the split of PM **m* in the southern dialects is the same, *ceteris paribus*, as for PM **l*. There is a very definite tendency for words for which I have reconstructed **mh* on the basis of Sw and Fc tones to retain nasal initials in the southern Min dialects even where the PM final would regularly evolve to an oral final in these dialects. Examples of PM **m* and **mh*:

*PM *m*

grind 磨: Fc muai²; Am bua²; Cc bua²; Ky moi²; Ko mue⁶; Sw mai²
 sell 賣: Fc ma⁶; Am bue⁶; Cc boi⁶; Ky mai⁶; Ko mai⁶; Sw mie⁶
 coal 煤: Fc mui²; Am bue²; Cc bue²; Ky mui²; Ko mo⁵; Sw mei²
 plum 梅: Fc mui²; Am bue²; Cc bue²; Ky mui²; Ko mo⁵; Sw mei²
 slow 慢: Fc maiŋ⁶; Am ban⁶; Cc maŋ⁶; Ky maiŋ⁸; Ko maiŋ⁶; Sw man⁶
 honey 蜜: Fc mi²; Am bit⁸; Cc bik⁸; Ky moi⁸; Ko mi⁷; Sw mi⁶
 door 門: Fc muoŋ²; Am mŋ²; Cc muŋ²; Ky muŋ²; Ko moŋ⁵; Sw mə n²
 blind 盲: Fc maŋ²; Am mi²; Cc me²; Ky maŋ²; Ko maŋ⁵

wheat 粳: Fc ma⁸; Am be⁷; Cc be⁷; Ky ma⁸; Ko ma⁴; Sw ma⁶
 life 命: Fc mian⁶; Am miã⁶; Cc miã⁶; Ky mian⁶; Ko mian⁶

PM *mh

hemp 麻: Fc muai²; Am muã²; Cc muã²; Ky moi²; Ko mue⁵; Sw mai⁷
 scold 罵: Fc ma⁵; Am mē⁶; Cc mē⁶; Ky ma⁶; Ko ma⁶; Sw ma⁵
 sister 妹: Fc mui⁶; Am mui⁶; Cc mui⁶; Ky mui⁶; Ko mye⁶; Sw mei⁵
 cat 貓: Fc ma²; Am mã²; Ky mau²; Ko mau⁵; Sw mau⁷
 face 面: Fc meij⁵; Am bin⁶; Cc mij⁶; Ky mien⁶; Ko mien⁶; Sw min⁵
 mosquito 蚊: Fc muon²; Sw mən⁷
 ask 問: Fc muon⁵; Am mŋ⁶; Cc muŋ⁶; Ky muŋ⁶; Ko moŋ⁶; Sw mə n⁵
 name 名: Fc mian²; Am miã²; Cc miã²; Ky mian²; Ko mian⁵; Sw mian⁷
 dream 夢: Fc moij⁵; Am baŋ⁶; Cc maŋ⁶; Ky moŋ⁶; Ko moŋ⁶; Sw muŋ⁵
 eye 目: Fc mphi⁷; Am bak⁸; Cc māk⁸; Ky mo⁸; Ko mu⁴; Sw mu⁷

4.5. Reflexes of PM *N and *NH in modern dialects

PM	Fc	Am	Cc	Ky	Ko	Sw
*n	n	n/l	n/l	n	n	n
*nh	n	n/h	n/h	n	n	n

The paucity of forms for which we can confidently reconstruct voiceless sonorant initials (especially *nh and *nh) makes it extremely difficult to say what the regular development of these phonemes has been in the Southern Min dialects. The process of denasalization that has affected the nasal sonorants of Southern Min is very irregular: it would seem that as the distinction between voiced and voiceless sonorants broke down, the Southern Min dialects entered a period of great instability with respect to these sounds. We can only hope that as more data become available the process will become somewhat clearer. In the case of *nh, there is a clear tendency for it to become h when it occurs before a high front vowel. Both Am and Cc have n in the word for 'year', but it is interesting to note that in at least one expression Cc preserves this word with an initial h: 年根 hi² ke⁵ 'the first three days of the New Year'. The initial n of the word for 'meat' in Cc can be explained by assuming that the word originally had a high front vowel and that the voiceless nasal persisted until after the vowel was lowered. Examples of *n and *nh:

PM *n

south 南: Fc nan²; Am lam²; Cc lam²; Ky nan²; Ko nan⁵; Sw nan²
 read 唸: Fc nain⁶; Am liam⁶; Cc liam⁶; Ky nan⁶; Ko nan⁶; Sw nien⁶

PM *nh

year 年: Fc nieŋ²; Am ni²; Cc ni²-hi²; Ky nieŋ²; Ko nieŋ⁵; Sw nin⁷
 leaf 葉: Fc nio⁸; Am hio⁷; Cc hie⁷; Ky nio⁸; Ko nio⁴; Sw nio⁷
 pus 膿: Fc nphiŋ²; Am lan²; Cc lan²; Ky neŋ²; Sw nuŋ⁷
 meat 肉: Fc ny⁷; Cc nēk⁸; Ky ny⁸; Ko ny⁴; Sw ny⁷

4.6. Reflexes of *ŋ in modern dialects

PM	Fc	Am	Cc	Ky	Ko	Sw
*ŋ	n	dz	dz	n	n	n

Only one rather doubtful case of *ŋh was found: 蚌 'bait' Fc nei⁵, Am dzi⁶. It is perhaps significant that the word for 'meat' can be reconstructed with initial *nh, even though it has a palatal initial in QY; this may mean that original *ŋh merged with *nh before the period of common Min. Examples of PM *ŋ:

PM *ŋ

two 二: Fc nei⁶; Am dzi⁶; Cc dzi⁶; Ky noi⁶; Ko ni⁶; Sw ni⁶
 recognize 認: Fc neiŋ⁶; Am dzin⁶; Cc dziŋ⁶; Ky noiŋ⁶; Ko neŋ⁶; Sw nin⁶
 day 日: Fc ni⁷; Am dzit⁸; Cc dzik⁸; Ky noi⁸; Ko ni⁴; Sw ni⁶
 intercalary 閏: Fc nouŋ⁶; Am dzun⁶; Cc dzuŋ⁶; Ko noiŋ⁶

4.7. Reflexes of *ŋ and *ŋh in modern dialects

PM	Fc	Am	Cc	Ky	Ko	Sw
*ŋ	ŋ	ŋ/g/h	ŋ/g/h	ŋ	ŋ	ŋ/n
*ŋh	ŋ	h	h	ŋ	ŋ	ŋ/n

The denasalization of these sounds in southern Min, although in general outline like that for the other nasal initials, is exceedingly difficult to understand. With so few forms it is impossible to see much of a pattern. In Sw *ŋ and *ŋh become n before high front vowels. In a few words, all containing rounded medials, initial *ŋ drops in some dialects but is preserved in others; e.g. 'I, me', 'outside' and 'tile'. Examples of *ŋ and *ŋh:

PM *ŋ

goose 鵞: Fc ŋie²; Am gia²; Cc go²; Ky ŋye²; Ko ŋye⁵; Sw ŋo²
 fish 魚: Fc ŋy²; Am hi²; Cc hw²; Ky ŋy²; Ko ŋy⁵; Sw ŋ²
 outside 外: Fc ŋie⁶; Am gua⁶; Cc gua⁶; Ky ŋye⁶; Ko ŋye⁶; Sw uai⁶
 five 五: Fc ŋou⁶; Am gɔ⁶; Cc ŋou⁴; Ky ŋo⁵; Ko ŋu⁴; Sw ŋ³

silver 銀: Fc ɲyŋ²; Am gun²; Cc ɲɿŋ²; Dy ɲeŋ²; Ko ɲoiŋ⁵; Sw nin²
 moon 月: Fc ɲuoŋ⁸; Am geŋ⁸; Cc gueŋ⁸; Ky ɲye⁸; Ko ɲye⁴; Sw ye⁶
 jade 玉: Fc ɲuo⁸; Am gik⁸; Cc gek⁸; Ky ɲy⁸; Ko ɲy⁴; Sw ny⁶

PM *ɲh

moxa 𪗇: Fc ɲie⁵; Am hiã⁶; Cc hiã⁶; Ky ɲye⁶
 ink-stone 𪗇: Fc ɲieŋ⁵; Am hi⁶; Cc hi⁴; Ky ɲaiŋ⁶; Ko ɲaiŋ⁶
 forehead 𪗇: Fc ɲie⁸; Am hia⁸; Cc hia⁸; Ky nia⁸; Sw nia⁷

5.2. Conclusion

In this paper I have demonstrated that the initial system which must be postulated to explain Min tonal development is more complex than that of QY. Min tonal evolution is determined in part by a five-way division of the initials as shown in the following scheme:

(1) voiceless stops	p	p'
(2) softened voiceless stops	-p	
(3) aspirated voiced sounds	bh	mh
(4) plain voiced stops	b	
(5) plain nasals	m	
(6) softened voiced stops	-b	

The initials thus reconstructed represent an eight-way manner distinction at each point of articulation. It seems unlikely that a language could bear such a large number of distinctions simply as differences of manner. I have suggested that what I have called here softened stops may in fact be the reflexes of some kind of lost voiced prefix; it also seems likely that some of the other distinctions originated from the reduction of initial clusters of some type. It is not difficult to imagine possible systems, but with the available data it is impossible to substantiate any particular scheme. For that reason, I have not proposed anything of the sort and have rather chosen to symbolize the various distinctions in ways which I think are suggestive of the values in the modern dialects; in the one case of the voiceless or aspirated sonorants I symbolize the distinction so as to focus on its parallelism to one of the other sets.

The Shaowu dialect, while exhibiting traits ordinarily associated with the Kan-Hakka dialects (particularly the evolution of voiced stops to aspirates in all tones) is seen to be fundamentally a Min dialect, since the Min initial system is reflected in its tonal evolution, and indeed, the Shaowu tones can only be understood in light of PM phonology. But since Shaowu deviates from the typical Min dialects in so many other respects, perhaps it should be called a quasi-Min dialect. This dialect is an excellent example of how the conventional division of the Chinese

dialects into five or six groups fails to account for real historical connections in all cases. It also points up the usefulness of doing comparative work on individual dialect groups.

Notes

- 1 Work for this paper was supported by the U.S. Office of Education, contract number OEC-0-9-097734-4516(041) and by the Chinese Linguistics Project at Princeton University.
- 2 Qieyun forms are cited in Karlgren's (1954) transcription except that the aspiration mark has been omitted after the voiced stops.

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HAKKA IN WELLENTHEORIE PERSPECTIVE

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1. Introduction

Among the five major dialect-groups of modern Chinese:

1. Northern Mandarin, e.g. Pekinese;
2. Wu, e.g. the Suzhou dialect and, more recently, Shanghainese;
3. Hakka, e.g. the Moiyan (Meixian) dialect;
4. Min, e.g. the Fuzhou and Amoy dialect;
5. Yue, e.g. Cantonese;

the Hakka dialects usually draw the least attention of modern linguists. Thus, studies on the Hakka are often only added toward the very end of a list of papers at conferences or in collected essays on Chinese dialects, apparently in order to complete the coverage of the major dialect-groups of Chinese.

Yet, the Hakka dialects offer copious, highly valuable data of the utmost interest to modern linguists, because of the unique formation of these dialects and their speakers' exceptionally long migration and firm ethnic unity. In particular, phonological data these dialects offer have some unusual, direct relevance to the study of Ancient and Archaic Chinese, because:

- a) since the time of Bernhard Karlgren, these old Chinese sound systems have not been reconstructed merely through the comparison of modern dialects, but by filling out the slots of sound categories (established by examining the construction of Chinese characters coined in the north, or found and determined in the old rime dictionaries and rime tables, compiled mainly the north) with the sound values corresponding to these categories in modern dialects, and:
- b) these Hakka speakers are believed to be the direct descendants of northerners who migrated to the south from the so-called Central Plains. This relevance is all the more valued, when one takes into consideration the systematic departure of Min

sound categories from the *Qieyun* / *Guangyun* system and the curious non-Chinese aspects of Yue dialect sound values (despite the beautiful correspondences of sound categories between the *Qieyun* system and, for instance, Cantonese).

In the past, Hakka phonological information has not been systematically utilized in reconstructing Ancient and Archaic Chinese, mainly because data from these dialects were not readily available in a well sorted-out form.

There have been quite a few developments in Hakka dialect studies since an extensive critical survey by the present author in the early 1970s.¹ Publications of book or monograph length include:

1. a classified lexicon of three major Hakka dialects, Moiyan (Meixian), Shiyen (Sixian) and Hoiliuk (Hailu) (1972)² with a multilingual index (1973);³
2. the first comprehensive phonological description of a Hakka dialect spoken in the New Territory of Hong Kong (1982);⁴
3. a traditional description of Shiyen (Sixian) Hakka grammar (1984);⁵ and
4. a phonetic description of a related Gan dialect, the Fengxin dialect (1975).⁶

Comprehensive descriptions of either representative speech forms or individual dialects of Hakka are yet so meager that photo offset reprints of such dated works as Donald MacIver and M. C. MacKenzie's *Moiyan* (Meixian) dictionary of the early years of this century,⁷ and Jian Xiangrong's *Shiyen* (Sixian) grammar of the prewar period⁸ are still commercially feasible in Taiwan. Information on southern coastal Hakka is so scarce that an English translation of Simon H. Schaank's *Het Loeh-foeng Dialect* of 1897⁹ is still useful.

Instead of offering a critical evaluation of these recent publications,¹⁰ this paper endeavors to point out some of the interesting aspects of Hakka dialect studies as well as the current, most urgent tasks which have not been noted before and thus need immediate attention by modern linguists for the further development of Chinese linguistics.

2. Hakka as a major dialect group

The label "Hakka people" as used here refers to a limited group of southern Chinese residents who, after the initial move from the north, migrated toward the south into Guangdong Province from Jiangxi Province beyond the Five Ridges and then to various other parts of South China including Sichuan and Taiwan Provinces.

One of the most conspicuous features of the Hakka dialect is this label itself. Among the five major dialect-groups of Chinese, it is only Hakka, or *kejia* [*ke* meaning 'guest' and *jia* 'a people'], that does not adopt an areal term as the group's label.¹¹ One naturally suspects that this is not a regional dialect, yet not strictly a social one either. In any event, no systematic reexamination on the scientific nature of the Hakka dialect as a major dialect-group of Chinese has so far been explicitly attempted.

Being newcomers among the 'natives' in the Lingnan (South of the Five Ridges) area, Hakka speakers have endured much discrimination and group fights which often ended in a large-scale rebellion or local uprising, as typified by the

Taiping Rebellion. Even in China proper, a complaint against treating the Hakka as a national minority had been raised as late as 1958.¹² Discrimination such as this has kept the Hakka speakers' self identity unusually clear and their ethnic ties extraordinarily firm and lasting among the Han Chinese. A report, as recent as this year, on the Hakka dialect of Jiangxi mentions this feeling of ethnic awareness on the part of the Hakka speakers there.¹³

The Hakka dialect exhibits conspicuous phonetic features, such as the often mentioned fact that in Hakka all the Ancient *quanzhuo* ("completely muddy" = voiced obstruent) initials are pronounced as voiceless aspirated consonants. During the early period of modern Chinese history, when detailed information on the dialectal situation in China was not yet available, this fact was enough to set up a single dialect group for Hakka, comparable to the other major groups of modern Chinese dialects. However, with increased knowledge of modern Chinese dialects, particularly after the data and results of the 1957-1958 general survey of dialects in China were gradually published and became available to general public in various forms, it is now generally accepted that this phonetic feature, aspiration of all Ancient *quanzhuo* initials, is not unique to Hakka dialects. For instance, this feature is also found in a group of dialects spoken in northern Jiangsu, a relatively small group of dialects spoken in the border area of Hubei and Hunan,¹⁴ several typical Hunan dialects,¹⁵ and the so-called "Hakka subgroup" of dialects of Fujian¹⁶—to say nothing of the major dialects of Jiangxi.¹⁷ Yet, the more we learn about the entire linguistic structure of the Shaowu dialect, one of the "Hakka subgroup", the clearer it becomes that this so-called "Hakka feature" is a very superficial one in Shaowu, and the dialect itself should definitely belong to the Min group.¹⁸

The clear division of Hakka from Gan, the dialects of Jiangxi, has always been disputed and some linguists simply put these two together to form a single group Gan-Hakka. It is thus that a single phonological feature of the historical origin of a tone category (namely, some of the Ancient *shang* ('rising') tones carried by the syllables whose initial consonant happened to be a nasal, liquid or glide merged with the Ancient *ping* ('level') tones carried by the syllables having a voiceless initial consonant) uniquely determines the Hakka dialects. This single feature characterization of the Hakka dialect presented more than a decade ago¹⁹ had remained unchallenged until very recently.

This piece of Hakka linguistic history is quite unique with respect to the other dialect groups of Chinese, but the merger itself is nothing extraordinary in its phonetic-phonological nature. Contemporary tones corresponding to the Ancient *shang* ('rising') tones in some Jiangxi dialects maintain phonetic values of relatively higher falling tones (e.g. Nancheng and Wannian) or higher level tones (e.g. Lichuan and Qianshan) (even though these tones are carried by syllables having a nasal or liquid initial), while those corresponding to the Ancient *ping* ('level') tones maintain phonetic values of lower falling tones (e.g. Nancheng and Wannian) or lower level tones (e.g. Lichuan and Qianshan) respectively (even though these tones are all carried by syllables having a voiceless initial consonant).²⁰ In such a situation, a merger could easily take place between these tones. Small wonder that the present author himself recently—in fact much belatedly—realized that Yuen Ren Chao had already reported the presence of such a merger in the literary layer of the two Wu

dialects, Yixing and Wuxi, over half a century ago.²¹ In addition, Prof. Kun Chang kindly drew the present author's attention to a recent report on an Anhui dialect, i.e. Taiping (Xianyuan), in which the Ancient *shang* ('rising') tones carried by syllables having a nasal, liquid, or glide initial, merged with those *ping* ('level') tones carried by syllables having a voiceless initial consonant, unless the present Taiping (Xianyuan) initial happens to be a palatalized [d].²² The uniqueness of the Hakka change under consideration can now be questioned, though it is more than a coincidence that these similar changes mentioned above have so far been found only in the dialects spoken in those areas through which, or at least near which, the Hakka speakers passed in order to migrate further beyond the Five Ridges toward to south.

Another phonetic feature, namely that some Hakka labial and dental stops correspond to the other major dialect groups' labiodental fricatives and dental/retroflex affricates respectively, is often pointed out as one of the characteristics of the Hakka dialect. But these phenomena are too well known for Min and some Gan dialects, which are, in fact, more thorough and systematic in these dialects. Thus, this can hardly be defined as a genuine Hakka feature. If there is anything quite characteristic of Hakka, it would have to be some unique lexical elements, such as [*k'ioi'*] 'tired', etc. which can be found throughout Hakka dialects but not in dialects of any other major groups. But such lexical items are too fragmentary to uniquely define a major dialect group. The linguistic validity for isolating the Hakka group as one comparable to the major groups is yet to be scientifically established.

3. Hakka as a dialect wave

The Hakka people are widely believed to have migrated to South China "from the north"—from the Central Plains of China continent in particular. Numerous family records have been utilized to "prove" this legend or ethnic saga. But very clearly this is to a large extent nothing more than a popular belief. The orthodoxy of being former residents in the Central Plains—the main stage for the major political and cultural events in the entire history of ancient China—was indispensable and desideratum in order for the Hakka people to fight against the local southerners' prejudice.

3.1. Hakka homeland in the north

Very few studies have ever questioned this legend—to say nothing of publicly challenging this popular belief. Quite to the contrary some linguists were obsessed by this belief, and were determined to find linguistic evidence to support the theory of the northern origins of Hakka.

For instance, Ting Pang-hsin in his article on Northern Chinese dialects, contributed to *Languages and Dialects of China*, searches for the homeland of Hakka in the north, asking himself why not a single modern Mandarin dialect maintains aspirates for all the voiced stop and affricate initials of Ancient Chinese, if indeed the Hakka people migrated from Shaanxi, Shanxi, and Henan. He was therefore very excited, when Gong Hwang-chen discovered that voiced stop and affricate initials of a twelfth century Northwestern Chinese dialect were utilized, regardless

of the tone of syllables these initials belong to, in order to transcribe aspirated voiceless initial consonants of the Tangut language described in Gule Maocai's pocket Tangut-Chinese dictionary, *Fan-Hanyu Heshi Zhangzhongzhu* ['Barbarian-Chinese Simultaneous Pearl in the Palm'].²³

Although more fragmentary and sporadic, a similar phenomenon can be found in the Tibetan transcription of the same northwestern Chinese dialect from the eighth to ninth centuries, and Ting himself notices it. Yet, he does not seem to be bothered by the fact that less than a few decades later in the same Northwestern Chinese dialect, unaspirated initials correspond, again regardless of the tones of syllables these initials belong to, to Ancient voiced stop and affricate initials.²⁴ Ting mentions the presence of aspirated initials, throughout the four tones of Ancient Chinese, in modern dialects of Anhui and Jiangsu, pointed out by Kun Chang more than a decade ago,²⁵ which, ironically enough, include Ting's own dialect of Rugao.

Yet, he appears not to be aware that these modern dialects constitute a beautiful wave ring in the periphery of the Central Plains, a fact to which we will return.

3.2. Resemblances to the Jin dialect

The present author has also pointed out a "striking resemblance" of the Hakka tonal system to that of some Shanxi (Jin) dialects, the Central Shanxi (Jinzhong) dialects in particular, in this connection.²⁶ The tones of the Fenyang dialect from the Jinzhong subgroup are hardly distinguishable from those of the Ng-yan subgroup of Hakka. The resemblance includes the number, the historical origin, and the actual tone values (pitch contours) of these corresponding tones. The similarity of the tonal system even involves the sharing of the same set of morphemes carrying exceptional *rusheng* ('entering-tone') correspondents between Moiyian (Meixian) and Taiyuan, a representative of Shanxi dialects:

Toneme	Ng-yan (Hakka)	Fenyang (Shanxi)
1	[+legato -high -low -falling]	[+legato -high -low -falling]
2	[+legato -high +low -falling]	[+legato -high +low -falling]
3	[+legato +falling]	[+legato +falling]
4=5=6	[+legato +high -falling]	[+legato +high -falling]

Toneme	Ng-yan (Hakka)	Fenyang (Shanxi)
7	[-legato -high]	[-legato -high]
8	[-legato +high]	[-legato +high]

In other words, Hakka shows a striking similarity of the upper/lower (*yin- / yang*) split of entering-tone to the Taiyuan dialect even with respect to some exceptional words—a kind of correspondence which can not be dismissed as fortuitous.

The chart below shows the nineteen commonly used morphemes which constitute exceptional correspondences (a plus indicates the item is shared, and minus not shared):

	5 <i>lat</i> 'pungent'	5 <i>diat</i> 'to stumble'	5 <i>mat</i> 'to rub'
Moiyan	+	+	+
Taiyuan	+	+	+
Suzhou	-	+	-
Wenzhou	-	+	-
Linchuan	-	+	-
Canton	-	+	+
Chaozhou	-	+	+
Amoy	-	-	-
Fuzhou	-	-	+
	5 <i>lot</i> 'inferior'	5 <i>mat</i> 'socks'	5 <i>ngit</i> 'the sun'
Moiyan	+	+	+
Taiyuan	+	+	+
Suzhou	-	-	-
Wenzhou	-	-	-
Linchuan	+	-	-
Canton	+	-	-
Chaozhou	+	-	-
Amoy	-	-	-
Fuzhou	-	-	-
	5 <i>ngiok</i> 'harsh'	5 <i>cet</i> 'dwelling'	5 <i>ngiak</i> 'forehead'
Moiyan	+	+	+
Taiyuan	+	-	+
Suzhou	-	-	-
Wenzhou	-	-	-
Linchuan	+	+	-
Canton	-	-	-
Chaozhou	-	-	-
Amoy	-	-	-
Fuzhou	-	+	-

	5 <i>it</i> 'also'	5 <i>muk</i> 'wood'	5 <i>tut</i> 'sudden'
Moiyan	+	+	+
Taiyuan	+	+	+
Suzhou	-	-	-
Wenzhou	-	-	-
Linchuan	+	+	-
Canton	-	-	+
Chaozhou	-	-	-
Amoy	-	-	-
Fuzhou	-	-	-

	5 <i>muk</i> 'to tend cattle'	5 <i>liuk</i> 'six'	5 <i>liuk</i> 'dry land'
Moiyan	+	+	+
Taiyuan	+	+	+
Suzhou	-	-	-
Wenzhou	-	-	-
Linchuan	+	-	-
Canton	-	-	-
Chaozhou	-	-	-
Amoy	-	-	-
Fuzhou	-	-	-

	5 <i>iuk</i> 'to bear children'	5 <i>liuk</i> 'green'	5 <i>liuk</i> 'to record'
Moiyan	+	+	+
Taiyuan	+	+	+
Suzhou	-	+	-
Wenzhou	-	-	-
Linchuan	+	+	+
Canton	-	-	-
Chaozhou	-	-	-
Amoy	-	-	-
Fuzhou	-	-	-

	5 <i>muk</i> 'the eye'
Moiyan	+
Taiyuan	+
Suzhou	-
Wenzhou	-
Linchuan	+
Canton	-
Chaozhou	-
Amoy	-
Fuzhou	-

Out of these nineteen items, eighteen (seventeen, if we interpret that *tut* 'sudden' is not from Ancient **duet* but from Ancient **t'uet*) are shared with Taiyuan; even the Linchuan dialect of Gan (which as noted above some linguists regard as constituting

a single dialect-group with Hakka) shared only eleven [or ten], and the shared exceptions in other dialects are limited to four [or three] with Cantonese of the Yue group, two [or one] with Suzhou of the Wu group, and zero with Amoy of the Min group.

3.3. Distribution in a wave form

In pointing out the unquestionable similarities or resemblances between Hakka and Taiyuan mentioned in the preceding section, it was never taken into consideration until very recently²⁹ that all of this might be due to the simple fact that Hakka and Shanxi constitute the southern and northern portions respectively of the same dialect wave or waves which spread toward the peripheral regions of China, with the Central Plains as the center of all of these waves.

3.3.1. Nonaspirates in a wave form distribution

As was already reported by Yuen Ren Chao and his colleagues in the late 1940s,³⁰ in some Chinese dialects spoken in a narrow, southern peripheral zone of the great North China plains, i.e. the mountainous, southeastern corner of Hubei Province in the southern side of the Yangzi River [see Map 1], Ancient Chinese voiced stop and affricate initials went, regardless of the tones of the syllables these initials belong to:

- entirely to voiceless aspirates (thus merging with the descendants of Ancient voiceless aspirates, as for instance in the dialect spoken in the eastern half of Yangxin Prefecture of Hubei), as shown below:

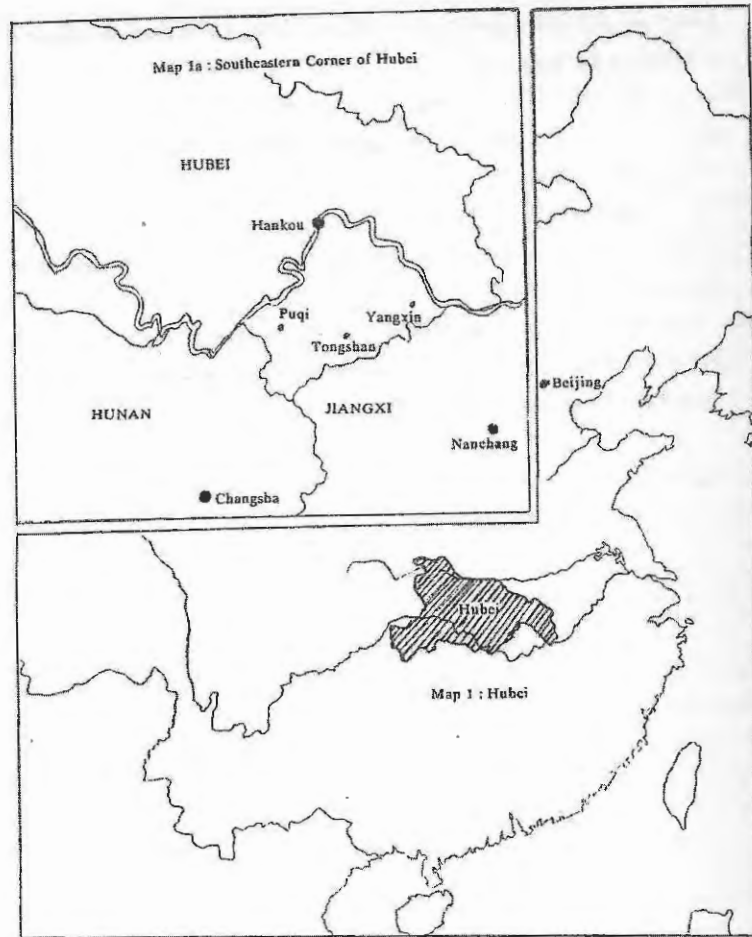
Ancient Chinese				Yangxin			
<i>ping</i>	<i>shang</i>	<i>qu</i>	<i>ru</i>	<i>ping</i>	<i>shang</i>	<i>qu</i>	<i>ru</i>
p	p	p	p	p	p	p	p
b	b	b	b	p'	p'	p'	p'
p'	p'	p'	p'	p'	p'	p'	p'

or:

- entirely to voiced aspirates (with which, curiously enough, the descendants of Ancient voiceless aspirates completely merged, perhaps after having become voiced, as for instance in the Puqi dialect, as shown below:

Ancient Chinese				Puqi			
<i>ping</i>	<i>shang</i>	<i>qu</i>	<i>ru</i>	<i>ping</i>	<i>shang</i>	<i>qu</i>	<i>ru</i>
p	p	p	p	p	p	p	p
b	b	b	b	b'	b'	b'	b'
p'	p'	p'	p'	b'	b'	b'	b'

- in a dialect spoken right next to those having voiceless or voiced aspirates, the same initials went entirely to voiceless nonaspirates (thus merging with



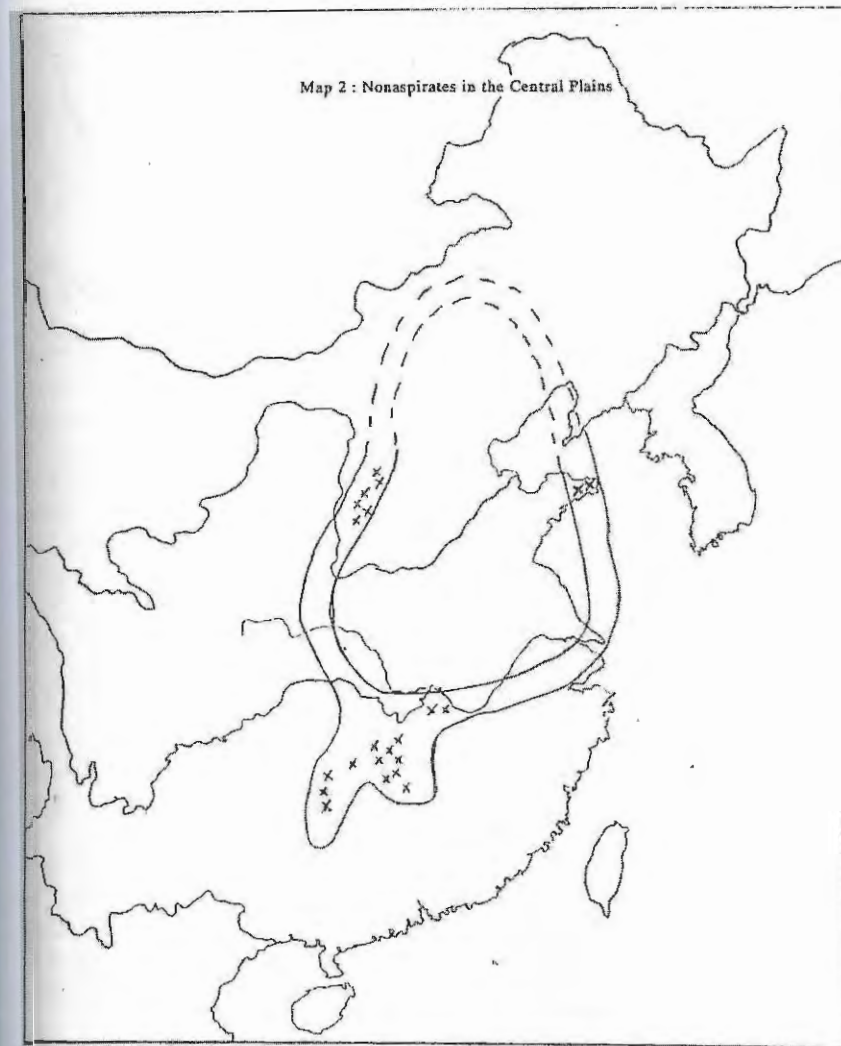
Map 1 Southeastern corner of Hubei

the descendants of Ancient voiceless non-aspirates, as for instance in the Tongshan dialect), as shown below:

Ancient Chinese				Tongshan			
<i>ping</i>	<i>shang</i>	<i>qu</i>	<i>ru</i>	<i>ping</i>	<i>shang</i>	<i>qu</i>	<i>ru</i>
p	p	p	p	p	p	p	p
b	b	b	b	p	p	p	p
p'	p'	p'	p'	p'	p'	p'	p'

This kind of drastic contrast of sound changes puzzled linguists for quite some time. As reported elsewhere,³¹ during his field survey undertaken specifically to solve this puzzle, the present author realized that (see Map 2):

- 1) as reported by Yang Shi-feng of Academia Sinica,³² dialects having voiceless nonaspirates throughout the tones as in Tongshan are spoken in the basins of three major rivers of Hunan, i.e. Xiang, Zi and Ruan, in the thirteen prefectures or cities of Hunan, i.e. Changsha, Ningxiang, Yueyang, Nanxian, Ruanjiang, Xiangyin, Xiangtan, Xiangxiang, Anhua, Qianyin, Huitong, Tongdao,



Map 2 Nonaspirates in the Central Plains

and, perhaps a dialect island, Anren (despite its appearance, Rucheng does not belong here);

- 2) Tongshan and the western half of Yangxin perhaps constitutes an isolated dialect island, separated by later waves of newer dialects from the above group located just beyond the southeastern edge of the Central Plains;³³
- 3) the same type of changes are found, this time in the northwestern corner of the Central Plains, in the colloquial layer of a group of Shanxi dialects distributed in the seven prefectures around the central part of Shanxi Province, i.e. Taiyuan, Qingxu, Yuci, Wenshui, Pingyao, and Jiexiu;³⁴
- 4) in the northeastern end of the Central Plains the same type of initials can be found in the two dialects spoken at the very tip of Shandong Peninsula, i.e. Rongcheng and Wendeng. The case of Rongcheng is very interesting; the same change can be found only in the dialect spoken in the surrounding suburban area, not in the city itself [the situation in the latter is already much influenced by standard Mandarin and these unaspirated initials all went to aspirates when carried by syllables having the *ping* ('level') tone.³⁵

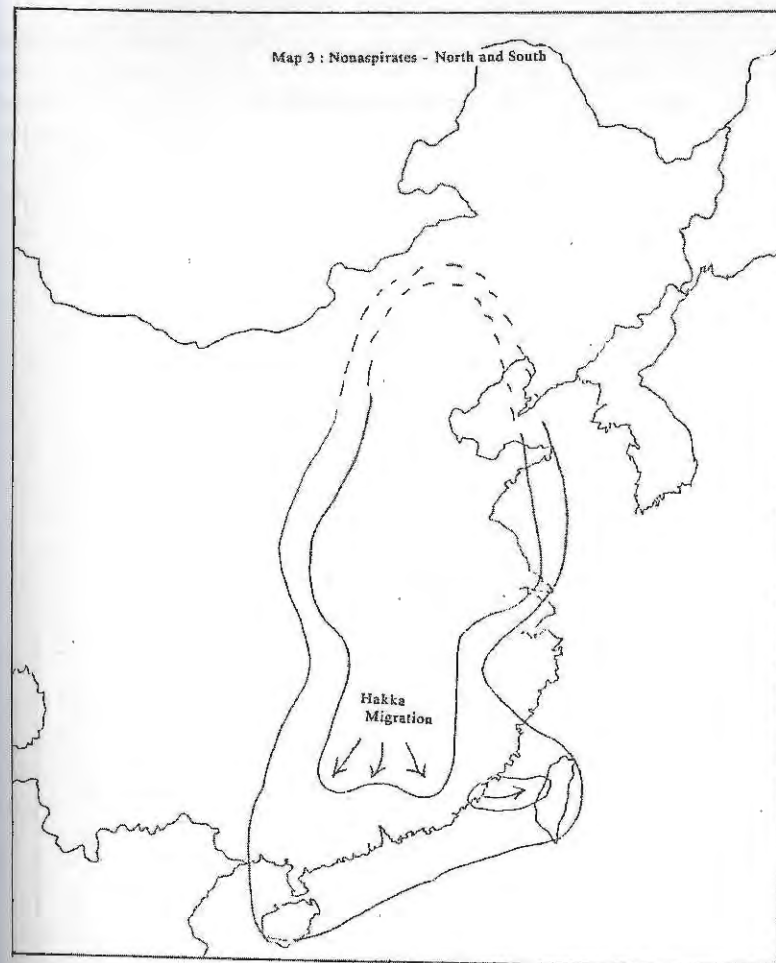
This clearly shows that the change in question is under constant assimilation to standard Mandarin in the Central Plains.

The distribution in the north of the Yangzi River only in the peripheral zones of the Central Plains clearly shows that the said change reflects a wave prevalent in the north before the standard Mandarin type (in which those Ancient voiced stops and affricates went to voiceless aspirates in case these initials belonged to syllables having the *ping* ('level') tone but, otherwise, to voiceless non-aspirates) spread all over the Central Plains. It is well known that the same type of non-aspirate initials with the *ping* ('level') tone occurs in Min³⁶ and some Yue dialects.³⁷ Thus there is the possibility that these dialects listed above constitute a larger wave as shown in Map 3.

3.3.2. Aspirates in a wave form distribution

What has been neglected is the fact that Northern Chinese dialects having aspirates for all Ancient voiced stops and affricates are also distributed in a belt surrounding the Central Plains [see Map 4]. We now recall and realize that:

- 1) During his survey of Shanxi dialects, the present author noticed some sporadic occurrence of aspirates in words having non-*ping* ('level') tones—in the colloquial layer in particular—for which the other dialects, including standard Mandarin, have nonaspirates, as for example, [*tɕ'in*⁴], instead of **[tɕin⁴]*, in the Anyi dialect in the northwestern corner of the Central Plains—though a little bit closer to the center of the Plains;³⁸
- 2) Yang Shi-feng and Eugene Ching reports the same type of sporadic occurrence in the Lingbao dialect in the northwestern corner of Henan Province;³⁹

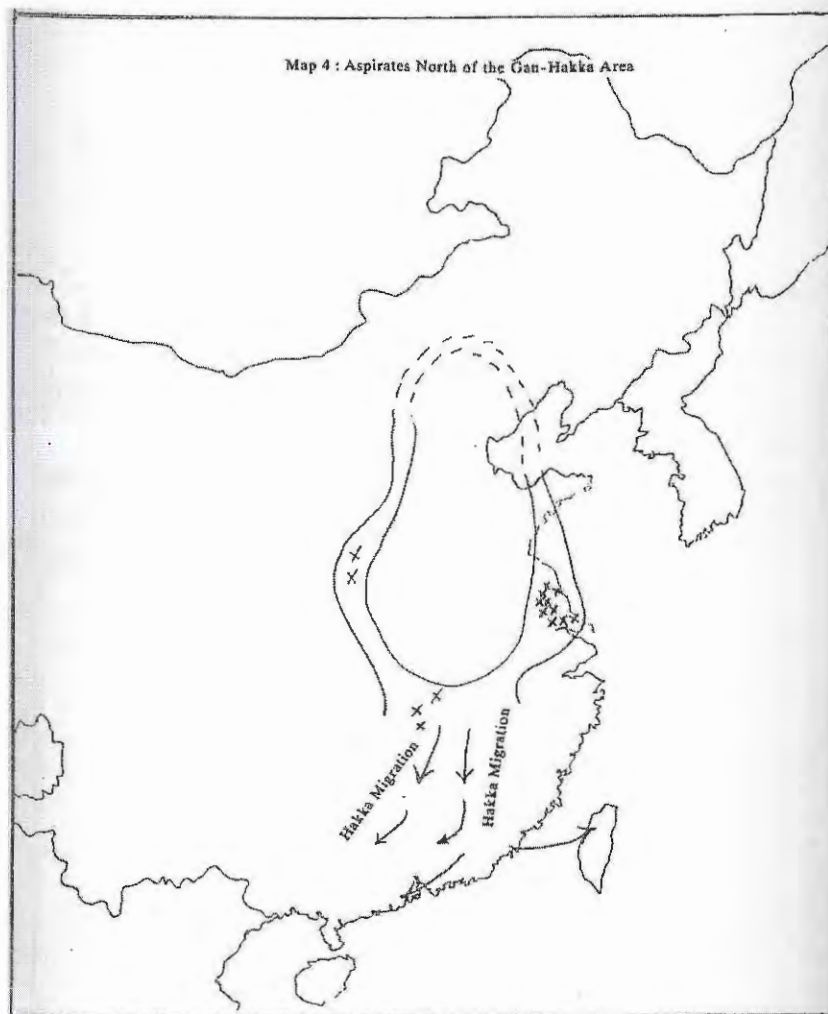


Map 3 Nonaspirates – North and South

- 3) Ting Pang-hsin reports that his dialect, Rugao of Jiangsu, has such aspirates only in the colloquial words; in Wang Jun's dialect, Nantong, aspirates in both literary and colloquial layers;⁴⁰
- 4) The 1957-58 general survey of dialects in Jiangsu made clear that toward the very southeastern corner of Northern China north of the Yangzi River, dialects of the five coastal prefectures, i.e. Nantong, Rudong, Rugao, Taixing, and Xinghua, and one city, i.e. Nantong, most modern initials corresponding to Ancient voiced stops and affricates turn out to be aspirates, even though they belong to syllables having tones other than *ping* ('level'); in five other coastal prefectures, i.e. Taizhou, Haian, Dongtai, Dafeng, and Yangcheng, part, though not all, of the same type of initials turn out to be aspirates.⁴¹

See Map 4.

If all of these dialects really belonged to the same wave or waves surrounding the Central Plains, there may be some validity in the idea of a northern Chinese origin for the Hakka speakers, since after all, both Hakka and Shanxi dialects belong to the same wave from the Central Plains. However, this fact does not necessarily mean that the Hakka people literally migrated from where the Shanxi people nowadays reside. All one can theoretically conclude from this is that both of them should have a common origin somewhere in North China where they constituted the southern and the northern portions of the same wave or waves.



Map 4 Aspirates North of the Gan-Hakka area

The time has come for Chinese dialectologists to carry out extensive, unbiased reexamination on the geographical distribution of various dialectal phonological, morphological and syntactic features, beyond the conventional boundaries of the so-called major dialect-groups. Only on the basis of such observations can one understand the nature of certain historical data on Northern Chinese in a new perspective. For instance, the occurrences of nonaspirates regardless of tones in the phonetic annotations for the *Kaimeng Yaoxun* ['Important Instructions for Beginners'] of AD 929 in the extreme northwest of China (Dunhuang), which must have puzzled the late Luo Chang-pei very much,⁴² can now be understood as belonging to the earlier wave, a portion of which still survives in the central dialects of Shanxi Province, while the occurrence of aspirates throughout four Ancient tones in the Tangut-Chinese sound equations found in Gule Mao'ai's *Fan Hanyu Zhangzhongzhu* of two centuries later, AD 1190, in the central part of northwest China (Xingqing, the present-day Yinchuan) should be affiliated with the later wave, a very small portion of which still survives in the colloquial words of the Lingbao dialect of Henan and of the Anyu dialect of Shanxi. Only with this perspective can we correctly understand the mutually conflicting phonological information these two historical documents provide us with.

4. Contacts with other groups

While the sound system of Hakka dialects remains fairly homogeneous so that sound correspondences among Hakka dialects are relatively easily established,⁴³ those spoken in the peripheral parts of the Hakka speaking area underwent certain drastic changes.

4.1. With northwestern Mandarin

Practically all Hakka dialects maintain the phonological distinction between *-m*, *-n*, *-ng* (and their corresponding homorganic stops, *-p*, *-t*, *-k*). Students of Chinese linguistics all know that a very clear parallelism between the loss of nasal and homorganic stop endings is observed with respect to practically all modern Chinese dialects (except perhaps for Mandarin).⁴⁴ Thus, when Ancient **-ng* went to *-n* in Moiyán (Meixian), in case, it occurred with a high-front syllabic vowel, *-k* also went to *-t*; when Fuzhou lost the distinction between Ancient *-m*, *-n*, and *-ng* altogether and all the nasal endings went to *-ng*, the homorganic stop counterparts also all coalesced with each other and yielded *-ʔ*). Among numerous Hakka dialects, the only exception is the Huayang dialect of Sichuan, which is spoken toward the northwestern end of the Hakka speaking area; this dialect underwent a complete change of the ending consonants, as reported by Dong Tonghe in the 1940s.⁴⁵ Huayang maintains the distinction between *-n* (from *-m* and *-n*) and *-ng*, even though the stop counterparts merged completely and ended up as *-ʔ*, a distinctly Mandarin merger of ending segments.

Exactly how Huayang Hakka, to adopt the conventional way of speaking, 'underwent change', has never been seriously explored. These Sichuan Hakkas have been among Northern Chinese, more specifically Southwestern Mandarin, speakers for several centuries; thus, the Mandarin 'influence' behind these changes is undisputable. Yet, how that 'influence' actually took effect on the formation or transformation of Sichuan Hakka dialects has never been explicitly and systematically studied. Was it the case that the surrounding Mandarin speakers, at least those who came under the direct though perhaps a really limited Hakka domination within a speech community, accepted Hakka lexicon, morphology and syntax, even though they maintained their own phonology and, to some extent, phonotactics? Or did Hakka speakers simply imitate Southwestern Mandarin phonology and phonotactics, while they maintained their own lexicon, morphology and syntax?

Any inquiry into the actual mechanism of this structural transition will inevitably lead to theories of language change or transmission. The first explanation looks more reasonable for understanding what happened in the sound system of Sichuan Hakka, and yet seems highly unlikely, while the second explanation seems to be less reasonable yet very likely.

During the course of this kind of academic inquiry, one encounters certain highly intriguing questions. Why did Sichuan Hakka totally surrender to Southwestern Mandarin as far as its segmental phonemes are concerned, yet maintain its tonal system practically untouched? Does human language really evolve in three overlapping phases from gestures to suprasegmentals to segmentals, as William S-Y. Wang argues,⁴⁶ since suprasegmentals persist to this day in every known language, most prominently in the form of intonation systems? We ask these questions, because answers to these questions will shed much light on the disputes for the formation of Mandarin Chinese. Mandarin Chinese segmentals look clearly determined by those of Manchu, while it seems to maintain the typical 'Chinese' tones. For instance, only Mandarin Chinese constitutes an exception to the clear parallelism between the loss of nasal and homorganic stop endings mentioned above: Mandarin Chinese lost all stops and *-m*, yet maintains *-n* and *-ng*. Is this imbalance because the only possible ending consonants in Manchu are *-n* and *-ng*?

A fresh view will be required to solve all these puzzles.

4.2. With Cantonese

Toward the southern end of the Hakka speaking area, Wuhua Hakka exhibits an unusual complication in tonal correspondences.⁴⁷ In order to avoid unnecessary complication in presentation, let us for the time being exclude from our discussion the tones carried by Hakka syllables having Ancient nasal, liquid, or semivowel initials.

We start with the situation in Ancient Chinese before it underwent a tonal split, as shown in Table 1.

Shortly after this period, it is believed that these tones split into two, in Late Ancient Chinese, conditioned by the voicing in the initials whose syllables these

Table 1

Ancient initial	1	2	
	<i>rising-tone</i>	<i>departing-tone</i>	
p, t, k, etc.	rising	departing	A
b, d, g, etc.			B

Table 2

Ancient Chinese	1	2	
	<i>rising-tone</i>	<i>departing-tone</i>	
p, t, k, etc.	u. rising	u. departing	A
b, d, g, etc. (> p, t, k, etc.)	l. rising	l. departing	B

tones were carried by, and a situation was brought about as shown in Table 2, in which both rising and departing tones underwent a bifurcation; thus the original two columns, 1 and 2, are now each subdivided into two:

- 1) intersections of Column 1 and Row A (upper rising) and of Column 1 and Row B (lower rising) for the shang ('rising') tone; and
- 2) intersections of Column 2 and Row A (upper departing) and of Column 2 and Row B (lower departing) for the qu ('departing') tone.

In the majority of Hakka dialects, the rising-tone syllables having Ancient voiced initials (hereafter 'voiced rising-tone' for short), namely, the intersection of Column 1 and Row B, all merged with the voiced departing tone, intersection of Column 2 and Row B, as shown in Table 3. We believe that Column 2 also once underwent a bifurcation and split into two portions, the intersections of Column 2 and Row A, and of Column 2 and Row B, but in the majority of Hakka dialects they later coalesced to form a single column, the same as the original Column 2, as shown in Table 4.

In Wuhua, half of the voiced rising tone syllables, the upper half of the intersection of Column 1 and Row B, namely the intersection of Column 1 and Row B, remained in the voiced rising-tone (and eventually merged with the rising-tone syllables having Ancient voiceless initials [hereafter, 'voiceless rising-tone' for short]). However, the other half, the intersection of Column 1 and Row B, merged with the departing-tone as in any other Hakka dialect. In addition, while the voiceless departing-tone syllables, the intersection of Column 2 and Row A, remained in the departing-tone, the voiced departing-tone, the intersection of Column 2 and Row B, all merged with the rising-tone, as shown in Table 5. Thus the lower half

Table 3

Ancient initial	<u>1</u>	<u>2</u>	
	rising-tone	departing-tone	
p,t,k, etc.	u. rising	u. departing	A
b,d,g, etc. (> p',t',k', etc.)	l. departing	l. departing	B

Table 4

Ancient initial	<u>1</u>	<u>2</u>	
	rising-tone	departing-tone	
p,t,k, etc.	rising		A
b,d,g, etc. (> p',t',k', etc.)	departing	departing	B

Table 5

Ancient initial	<u>1</u>	<u>2</u>	
	rising-tone	departing-tone	
p,t,k, etc.	rising	departing	1
b,d,g, etc.	(rising)	(rising)	B
(> p',t',k', etc.)	departing		2

Table 6

Ancient initial	<u>1</u>	<u>2</u>	
	rising-tone	departing-tone	
p,t,k, etc.	u. rising	u. departing	A
b,d,g, etc. (> p',t',k', etc.)	l. rising	l. rising	B

Table 7

Ancient initial	<u>1</u>	<u>2</u>	
	rising-tone	departing-tone	
p,t,k, etc.	rising	departing	A
b,d,g, etc. (> p',t',k', etc.)	rising	rising	B

of the intersection of Column 1 and Row B, i.e. the intersection of Column 1 and Row B, merged with the departing-tone, while the intersection of Column 2 and Row B merged with the rising tone.

Through the bifurcation of the voiced rising-tone syllables in Wuhua, one can clearly see that Wuhua has two distinct layers for morphemes having a voiced rising-tone—namely:

- 1) the Mandarin-type layer, in which the voiced departing-tone merged with the voiced rising-tone, i.e. the merger of the intersections of Column 2, Row B, with Column 1, Row B, as shown in Table 6, with difference: in Mandarin, the intersection of Column 1 and Row B merged with Column 2 and Row B. Subsequently, a change took place so that the distinction between upper and lower tones was lost, as shown in Table 7.
- 2) the Cantonese-type layer, in which no merger took place between the voiced rising-tone and the voiced departing-tone as shown in Table 8; but when the whole system underwent the loss of the upper vs. lower distinction, the voiced rising-tone, lower rising-tone, was paired with the voiceless departing-tone, upper departing-tone, and the voiced departing-tone was paired with the upper rising-tone, as shown in Table 9. This case of cross-pairing may sound quite unusual, but André-George Haudricourt reports abundant cases of such pairing, e.g. Man-Yao of North Vietnam (in which Upper Tone B merged with Lower Tone C, while Upper Tone C merged with Lower Tone B) or the Tai dialect of Lianshan, Yunnan (in which Upper Tone A merged with Lower Tone C, but Upper Tone C merged with Lower Tone B!).⁴⁸ Even in the Baoding dialect of Mandarin, spoken less than one hundred miles to the south of Peking, the lower rising-tone merges with the lower departing-tone in the nonfinal syllable of phonemic phrases, while it merges with the upper rising-tone in the final syllables.⁴⁹

Table 8

Ancient initial	<u>1</u>	<u>2</u>	
	rising-tone	departing-tone	
p,t,k, etc.	u. rising	u. departing	A
b,d,g, etc. (> p',t',k', etc.)	l. rising	l. departing	B

Table 9

Ancient initial	<u>1</u>	<u>2</u>	
	rising-tone	departing-tone	
p,t,k, etc.	rising	departing	A
b,d,g, etc. (> p',t',k', etc.)	departing	rising	B

Table 10

Ancient initial	1	2	
	rising-tone	departing-tone	
p,t,k, etc.	rising	departing	A
b,d,g, etc.	rising		1
		rising	B
(> p',t',k', etc.)	departing		2

If we put these two types together to construct a diasystem, the result will be what is shown in Table 10—namely, half of voiced rising-tone, the intersection of Column 1 and Row B, turns out to be rising, just as in present-day Cantonese, though Cantonese still maintains the upper vs. lower distinction, and the other half, the intersection of Column 1 and Row B, turns out to be departing, just as in present-day Mandarin. This is what we saw in Table 1. We will return to the linguistic-geographical implication of this merger between the rising and departing tones.

5. The northern connection

Can we then define Wuhua as a variant of Hakka whose tonal characteristics were derived basically through contact with the Yue dialects, notably Cantonese? This is not entirely satisfactory.

Although basically a Hakka dialect, Wuhua Hakka maintains a clear connection with some of the northern Chinese dialects, the Wu dialects in particular, which can be seen in the intricate tonal sandhi system of the Suzhou dialect whose implication became known only very recently.⁵⁰

5.1. Developments of Hakka tones

The tonal correspondences of three major Hakka dialects, Moiyian (Meixian), Dabu, and Wuhua, with Ancient Chinese, as summarized in Yuan et al 1960,⁵¹ include three sets of unusual cases of correspondence for the departing-tone:

- those merged with the upper level-tone, and
- those merged with the upper rising-tone, and
- those merged with the lower level-tone.

The first two correspond to the upper departing-tone (the 'voiceless' departing tone) and the last to the lower departing-tone (the 'voiced' departing-tone).

In fact, the similar type of 'unusual' merger with the level-tone can be observed with respect to the Hakka rising-tone. Furthermore, the merger is quite consistent throughout these three (and actually most other) Hakka

Table 11

Ancient initial	rising	departing
p,t,k, etc.	rising	upper level
b,d,g, etc.		departing
(> p',t',k', etc.)	(also rising in Wuhua)	(also rising in Wuhua) lower level

dialects. (In order to avoid unnecessary complication in the presentation in this paper, these mergers with the level-tone on the part of both rising and departing tones were intentionally excluded from the tonal correspondence tables in the preceding section).

It is not feasible in a discussion of this scope to examine the precise reasons underlying the historical fact that the rising-tone merger with the level-tone (though very regular and utterly consistent in most known dialects of Hakka) is limited to those syllables having Ancient nasal, liquid, or semivowel initials. Again, these mergers will be excluded from our discussion below in order to avoid unnecessary complication. The tonal correspondences we are going to discuss can be charted in Table 11.

What we witness here is a clear case of merger, at least in one layer of Moiyian, Dabu and Wuhua, between:

- the upper level and (upper) departing tones,
- the lower level and (lower) departing tones, and
- the (upper) rising and (upper) departing tones,⁵²

in addition to the wide-spread merger of the voiced rising-tone with the voiced departing-tone which can be observed in almost any dialect of modern Chinese.

The above-mentioned unusual but consistent merger between the level and departing tones, and between the rising and departing tones has been regarded as one of the unique features of Hakka.⁵³ Recently, however, it was discovered that the same type of merger between the level and departing tones and between the rising and departing tones were behind the Shanghai-type dominance of initial syllable tones within polysyllabic words and phrases.⁵⁴ The phenomenon is most evident in the tone sandhi of the disyllabic words in the Suzhou dialect, as the latter constitutes a step before the Shanghai-type initial syllable dominance takes place.

5.2. Tone alternations in Suzhou

According to Wang Ping's data and analysis,⁵⁵ on the surface the Suzhou dialect has the following seven tones (Tone 6 represents the merger of Tones 4 and 6):

tone category	tonal value	numerical notation
1 upper level	- high-level	[44]
2 lower level	- low-rising	[13]
3 (upper) rising	- low-falling	[41]
5 upper departing	- falling-rising	[523]
6 lower departing	- rising-falling	[231]
7 upper entering	- (glottal) falling	[43?]
8 lower entering	- (glottal) rising	[23?]

Since Tones 7 and 8 constitute a unique group of their own in the sandhi phenomena, we will exclude them from our discussion below.

Now, the way in which traditional Chinese linguistics analyzes and describes tonal sandhi phenomena (Wang's report being no exception) is to assume that these five tones appear in real phrases and sentences in the following "changed"-form:

tone category	original tone	"changed" tone
1 upper level	- [44]	[44]
2 lower level	- [13]	[13]
3 (upper) rising	- [41]	[41]
5 upper departing	- [523]	[52]
6 lower departing	- [231]	[23]

It is obvious that what is described as "changed tones" above are in fact the tones we encounter most in ordinary sentences and that what is described as "original tones" are those found only in the final syllables of phrases and sentences or in isolation. These "changed" tones may be regarded as the underlying forms of these tonemes and the "original" tones as derived forms which function to mark the end of a phrase or sentence.⁵⁶ The real difference in pitch contours between the so-called "changed" and "original" tones consists in the slight rising contour toward the end of a syllable having Tone 5 and the falling coda of Tone 6, both of which can be analyzed as parasitic codas to end an intonation with a neutral pitch.⁵⁷

Now, in disyllabic words in Suzhou, the tone of the initial syllable has to be one of these five; the tone of the second syllable is always predictable in the following way, if it constitutes part of a compound word:

Rule 1

$$X \rightarrow \left\{ \begin{array}{l} [\text{high}(-\text{level})] / \text{Tones 2 and 5} \\ [\text{low}(-\text{level})] / \text{Otherwise} \end{array} \right\}$$

In other words, Suzhou disyllabic words maintain the five tones in their initial syllables, but overall show only five basic patterns in tone sandhi groups:

toneme combination	tone value	numerical notation
1. Tone 1 + Tone n	— high-level + low-level	[44]-[11]
2. Tone 2 + Tone n	— low-rising + high-level	[13]-[44]
3. Tone 3 + Tone n	— low-falling + low-level	[41]-[11]
4. Tone 5 + Tone n	— high-falling + high-level	[52]-[44]
5. Tone 6 + Tone n	— low-rising + low-level	[23]-[11]

Thus the tone sandhi phenomena in Suzhou look very simple and straightforward.

But this is only on the surface. If one examines the actual morphemes which are subsumed by the various types of toneme combinations listed above, Suzhou tone sandhi turns out to be both very interesting and highly puzzling. Upon close examination, one realizes that the five types of combination listed above in fact contain additional tone combinations, as follows:

- Surface Tone 1 + Tone n [44]-[11] in fact includes not only:
Tone 1 + Tone n ex. fu¹-ts¹i¹ 'husband and wife'
but also:
Tone 5 + Tone n ex. kue⁵-hua¹ 'a fragrant olive'
- Surface Tone 2 + Tone n [11]-[44] in fact includes both:
Tone 2 + Tone n ex. di²-ci¹ 'field chicken (frog)'
and:
Tone 6 + Tone n ex. lae⁶-ciaN¹ '(old) ginger'
- Surface Tone 3 + Tone n [41]-[11] in fact includes both:
Tone 3 + Tone n ex. ci³-tsaN¹ 'how-many sheets?'
and:
Tone 5 + Tone n ex. pe⁵-cin³ 'background scene'
- Surface Tone 5 + Tone n [52]-[44] in fact includes both:
Tone 3 + Tone n ex. doe³-se¹ 'short cloth'
and:
Tone 5 + Tone n ex. poe⁵-cin¹ 'half a pound'
- Surface Tone 6 + Tone n [23]-[11] in fact includes both:
Tone 2 + Tone n ex. min²-cia¹ 'famous home'
and:
Tone 6 + Tone n ex. ng⁶-tsaN¹ 'five sheets'

Note that on the surface Tone 5, for instance, merges sometimes with Tone 1 (the underlying *kue⁵ hua¹* (52)-(44) 'a fragrant olive' goes to *kue¹-hua¹* (44)-(11) on the surface), and sometimes with Tone 3 (the underlying *pe⁵-cin³* (52)-(41) 'background' goes to *pe³-cin¹* (41)-(11) on the surface). But this does not mean that what is labeled Tone 5 can, and in fact should, be subdivided into two, Tones

5a and 5b for instance, since different mergers take place with respect to one and the same morpheme depending upon the environment in ways which are not phonologically definable. For instance, with respect to the same morpheme {pe⁵} 'the back', Tone 5 of this morpheme merges with Tone 1 when it occurs in *pe¹-hy⁶* (44)-(11) 'back rear (=behind)' but with Tone 3 when it occurs in *pe¹-cin³* (41)-(11) 'back scene (=background)'.

Since this has been clarified elsewhere,⁵⁸ it is not necessary to discuss in detail here how and why Suzhou shows this kind of extensive merger among its tonemes on the surface and what the implications of these mergers are. We will simply illustrate these mergers with Table 12, in which the tonemes linked by arrows undergo a synchronic merger in the direction of the arrow.

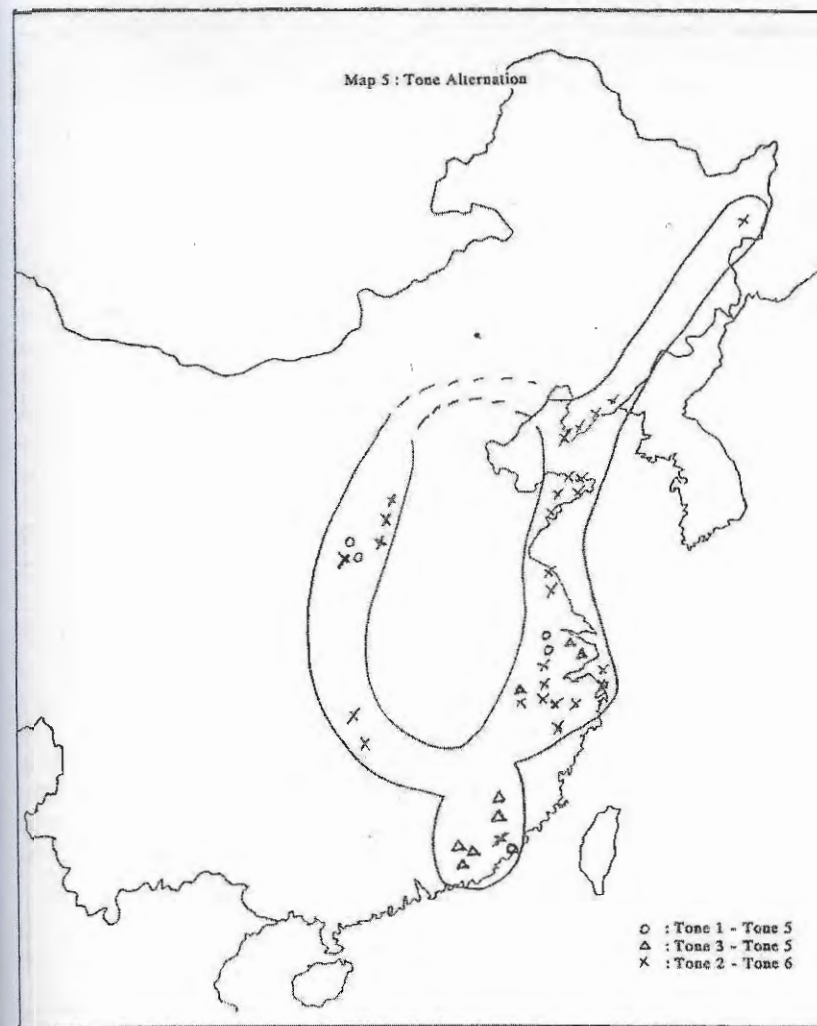
Table 12

ping	shang	qu
1	3	5
2		6

These mergers are in fact what we have seen in the three Hakka dialects discussed above, though in these Hakka dialects the mergers are not synchronic but historical.

Thus, what has been regarded as a unique tonal correspondence in Hakka now turns out to be what unites Hakka with the Wu dialects. What is of paramount interest is this: these mergers, synchronic and diachronic, should constitute part of a single dialect wave which surrounds the Central Plains, namely the same type of tone merger takes place in Chinese dialects spoken in the peripheral parts of the Central Plains, as shown in Map 5—just as in the case of the geographical distribution of those aspirates which correspond to Ancient voiced stops and affricates throughout the four tones and nonaspirates which correspond to Ancient voiced stops and affricates only when they carry the *ping* ('level') tone. This time the wave is not as round as in the case of those aspirates and nonaspirates mentioned above, but we know the reason:

- 1) the northeastern horn, the Hulin dialect of Heilongjiang is spoken by fairly recent immigrants from Liaoning; one should recall here that the Chinese were not allowed to migrate into Manchuria until the middle of the Qing dynasty.
- 2) the southern bulge is obviously caused by the southern migration of Hakkas.



Map 5 Tone alternation

Without these migrations, this wave would have been at least as round as the waves for aspirates and nonaspirates. See Map 5.

6. Concluding remarks

As was pointed out almost half a century ago by Willem A. Grootaers,⁵⁹ studies of the Chinese dialects in this century have been on the whole focused on the phonetic laws which relate all these dialects to Ancient Chinese. Chinese linguistics

has thus been concentrated on establishing hierarchical relationships among dialects in the field of dialect studies, and areal classification of dialects was one of the major concerns in relating these dialectal data with historical information. It is obvious that behind all of this is some bias from the Stammbaumthese on dialects and cognate languages. Linguists felt their primary task lay in identifying the unique feature or those feature combinations which define each dialectal group and which could point to the origin of the given dialect or dialect group.

During the earlier days of Chinese dialect studies, this was inevitable, as our knowledge on the contemporary situation of dialects in China was limited. With the increased knowledge obtained in the past few decades, we are now in a position to examine the dialectal situation in China primarily from the viewpoint of Wellentheorie. Even in the field of Indo-European studies, this kind of view or understanding on the principles for the development of languages came much later in the West European tradition of linguistic sciences—in fact only after linguists concerned themselves with the reality of linguistic developments in the Romance languages. The implication is that the case for Indo-European developments before the Christian era was special, with the well-known large-scale migration, for example, of the Germanic people or the far-reaching travels of Indo Aryans, etc. etc. When languages develop in a relatively stable environment, we need a different model for studying their developments. With the increased knowledge obtained in the past few decades, we are now in a position to examine the dialectal situation in China primarily from the viewpoint of Wellentheorie. We believe this is one of the most urgent tasks of modern Chinese linguistics. A very good example of new light to be shed through examining regional transitions in linguistic structure in Chinese was recently presented by Zhu Dexi,⁶⁰ who demonstrated that this research can be applied not only to phonology but also to syntax. He thus opened an entirely new field of syntactic studies, and increased our vistas for the future of Chinese linguistics.

Notes

* The paper was presented at the Conference on the Languages and Dialects of China, Oakland, California, in January 1986 (see *JCL* Monograph 3). The preparation of the present version is the work of Patrick Chew. [WSYW]

The original version of this paper was read at the Conference on Chinese Language and Dialects, organized by William S-Y. Wang with the support of the Wang Institute of Graduate Studies Chinese Studies Program, with the title "Current tasks of Hakka studies". Thanks are due to those who gave the author this chance, and to those who offered constructive comments and criticisms. Kun Chang, Hsin-I Hsieh, and William Labov were quick in recognizing the importance and "grandeur" of Hakka dialectal waves and offered particularly encouraging comments; Tsai-fa Cheng's speculation, offered in a written form, was thought-provoking. The author also much benefited from talking to Ting Pang-hsin and Wang Jun, whose information on the sound of their own dialects enabled the present author to rewrite the original paper. William L. Ballard, Shooji Hirata and Michael L. Sherard went through the original version and offered numerous comments and improvements, most if not all of which are with much appreciation

incorporated into the present version, together with all the additional comments from Ballard who read the rewritten version also. Chinese examples in this paper are given pseudo-phonetic/phonemic notation. Tones are marked with raised Arabic numerals given to the end of each morpheme. The ending segments of the so-called entering-tone syllables were originally given in their phonemic transcription, as entering-tones are marked as such throughout this paper. As anxiety was repeatedly expressed at the Conference, we followed the contemporary Chinese practice of marking both tones and stop endings for such syllables, even though we know that this is a typical case of overdifferentiation of sounds. [MJH]

- 1 Hashimoto 1973a, 15-34, together with the bibliography, 565-580.
- 2 Hashimoto 1972b.
- 3 Hashimoto 1973b.
- 4 Sagart 1982.
- 5 Luo 1984.
- 6 Yu 1975.
- 7 MacIver 1905.
- 8 Jian 1933.
- 9 Schaank 1979.
- 10 For Luo 1984, see Lamarre 1985.
- 11 Tsai-fa Cheng suggested the etymology of "Xia (summer, an ancient name for China)", "Hua (magnificent, a name for China)", and "Ya (elegant)" for Hak (Ke) of Hakka (Kejia), reconstructing the ancient pronunciations of these characters as *gragx, *gwarag, *ngragx, and *krak respectively and seeing "a striking resemblance in the phonetic shape[s]". He will have to establish a sound law with which the loss of the voicing can be reasonably explained, as the morpheme Hak (ke) occurs with the upper tone throughout modern Hakka dialects; the aspiration of the initial consonant for Hak (ke) ought to be reasonably introduced. However, even with a perfect sound law, etymologies like this are very difficult to prove. On the contrary, some syntactic evidence defeats this etymology. For instance, Hakka words for 'Hakka people' and 'guest' are [hak-nyin] and [nyin-hak] respectively, among which the word for 'guest' maintains the older word order of "head noun + attributive word", but not the word for 'Hakka people'.
- 12 Yin 1958.
- 13 Jiangsusheng 1960, map 2.
- 14 Chao et al 1948 and the present author's own survey in the autumn of 1984.
- 15 Yang 1974.
- 16 Pan et al 1963, Fujiansheng 1963, 155-206.
- 17 Yan 1986.
- 18 Norman 1974.
- 19 Hashimoto 1973a, 439-441.
- 20 Yan 1986, 37-38.
- 21 Chao 1928, 76.
- 22 Zhang 1983, 97-98.
- 23 Gong 1981.
- 24 Luo 1933, 75-94.
- 25 Chang 1975.
- 26 Hashimoto 1973a, 434-436.
- 27 Hashimoto 1973a, 431.
- 28 Hashimoto 1973a, 435.
- 29 Hashimoto 1983 and 1984, though waves in these studies are all for suprasegmentals.
- 30 Chao 1928, 76.
- 31 Chao et al 1948.
- 32 Yang 1974.

- 33 Presence of the nonaspirates corresponding to Ancient voiced stops and affricates with the ping ('level') tone in the western half of the dialects spoken in Yangxin Prefecture was discovered during the present author's survey in the autumn of 1984.
- 34 Chen-Li 1984, Hashimoto 1976-1977, Hou 1982 and 1985, Hu 1984, Jin 1983, Qiao 1983, Shen 1983, Wen 1983 and 1985, Yang 1983, Yang-Wang 1984, and Zhao 1984.
- 35 Qian 1981.
- 36 Li 1937, 123 and Li 1973, 4; Yue 1976a, 4, Yue 1976b, 5, and Yue 1985, 32-44.
- 37 Yue 1976a, 4 and Yue 1976b, 6-7.
- 38 The present author's survey of Mr. Qu Xue-li's An'yi dialect of Shanxi in the autumn of 1956.
- 39 Yang-Ching 1971.
- 40 Personal communication, January 1986.
- 41 Jiangsusheng 1960, map 2.
- 42 Luo 1933, 94.
- 43 Hashimoto 1973a, 439-441 and O'Connor 1976.
- 44 Hashimoto 1976.
- 45 Dong 1945.
- 46 Wang 1976.
- 47 Yuan et al 1960 (1983), 164.
- 48 Haudricourt 1961, 171 and 172; Haudricourt 1972, 72 and 73.
- 49 Hashimoto 1981, 153-154; Hashimoto 1985, 88-89.
- 50 Hashimoto to appear.
- 51 Yuan et al 1960 (1983), 164.
- 52 The definition "upper" here has to be put in parentheses, as most Hakka dialects, with the exception of some Hoiliuk (Hailu) dialects, underwent the merger of upper and lower *qu* ('departing') tones.
- 53 Yuan et al 1960 (1983), 164.
- 54 Ballard 1980 and Sherard 1979.
- 55 Wang 1983.
- 56 Hashimoto 1982.
- 57 Hashimoto 1981, 153 and 1985, 88.
- 58 Hashimoto to appear.
- 59 Grootaers 1943-1945.
- 60 Zhu 1985.

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THE LEXICON IN SYNTACTIC CHANGE

Lexical diffusion in Chinese syntax¹

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Source: *Journal of Chinese Linguistics* 21, 2, 1993, 213-53.

Abstract

Both documented and ongoing evidence in Pekinese, the Southern Min dialects and the Yue dialects of Chinese were presented as examples for language contact as a major actuation factor of syntactic change and for lexical diffusion as a major type of syntactic change. The emergence of the V-neg-V(P) question form in these dialects since as early as the mid 16th century (S. Min), late 19th century (Yue) or early 20th century (Pekinese) follows the route of first appearing with high-frequency verbs such as the copula, and/or the existential/possessive verb, then gradually spreading to the optative verbs, and finally to other types of verbs. While the exit of the old form may follow different routes, a revised two-dimensional view of 'competing change' can easily account for the differences.

1. Background

It has often been claimed that the process of syntactic change in the Chinese language is mainly the process of grammaticalization. In traditional linguistic terms, many "full words" have become "empty words" or function words, creating new syntactic structures with "co-verbs" or "prepositions". The cases of the passive *bei* 被 and the disposal *ba* 把 construction are two famous examples.²

Although linguistic diffusion as a result of language contact has been discussed in the context of Chinese in the past decade,³ there has been no conclusive evidence in the realm of syntax that linguistic diffusion is a major contributing factor of the change. The controversies centering around the issues of word order change as well as the emergence of the *bei* passive and the *ba* construction are notable examples of how the same syntactic change may be argued either as an internal process of grammaticalization or an externally motivated process of linguistic borrowing.⁴ Unlike our predecessors who argued exclusively for one process over another, we

believe that both processes are important forces in shaping the development of the Chinese language. More important, however, is the understanding of how grammaticalization and linguistic diffusion work as forces of syntactic change.

In this paper, linguistic diffusion through the lexicon, or lexical diffusion, is explored as a major factor of syntactic change.

In the past century-and-a-half, linguists have been probing into the rules or "laws" of phonetic and phonological change, resulting in the famous neo-grammarians' law that "sound change takes place without exception." It was not until two decades ago that this view was challenged, and it was challenged in a most significant way for Chinese linguistics. For it was through research in Chinese dialects that the challenge was first launched.⁵ This is the theory of lexical diffusion proposed by W. S-Y. Wang for phonological change that sound change, though phonetically abrupt, occurs gradually and spreads from one lexical item to another, contrary to the neogrammarian claim that sound change occurs abruptly and applies at once without exception. Since then, many examples have been drawn from various languages supporting this new theory.⁶ However, they all relate to phonology;⁷ as yet there is sparse conclusive evidence presented from syntax to support the theory, although it was as early as 1980 that the theory of lexical diffusion was first applied to historical syntax.⁸ It was not until the past three years that there appeared a renewed interest in applying the lexical diffusion theory to syntax.⁹

Bennet 1981 attempted to find syntactic parallels to the lexical gradualness of a sound change. He defined a change as gradual "if logically possible intermediate stages between its end-points are attested;" and a syntactic change as gradual if stages 'between' (quotes are his) the old and new forms are attested. His conclusion is that evidence for an S-curve type of change in syntax is meager and that "it remains to be shown whether syntactic change has analogues of competing changes and residue."¹⁰ Kroch 1989, taking mainly the rise of the periphrastic auxiliary *do* in late Middle English as example, argued that syntactic change seems to proceed at the same rate in all contexts. Tottie 1991, using the development of negation in English as his main example, supports the view that syntactic change proceeds gradually across the lexicon and argues that the high frequency of a lexical item or construction is a factor for linguistic conservatism. In other words, high frequency lexical items or constructions will undergo syntactic changes last.

In this paper, I want to present four separate examples of both documented evidence and ongoing evidence from Pekinese, the Southern Min dialects and the Yue dialects – especially Cantonese, for language contact as a major actuation factor of syntactic change and for lexical diffusion as a major type of syntactic change. In addition, our evidence supports the thesis of the gradualness of syntactic change as well as for the differential rate of syntactic change depending on grammatical categories, lexical classification or frequency of usage.

2. Recent developments in theory and dialectology

The Chinese mainland has seen the conglomeration of peoples for thousands of years. The Chinese language, manifested in its various dialectal forms, has

exhibited features that reflect the results of both external and internal contacts – contacts with non-Sinitic languages and contacts among Sinitic languages or dialects. In this paper, I shall limit my discussion to internal contacts and their effect on syntactic change.

In his epoch-making article of 1985, Zhu Dexi explored the syntactic typology of the A-not-A or neutral question forms¹¹ among the Chinese dialects and found two major patterns mutually exclusive in distribution in contemporary dialects: the V-not-V form¹² which occurs in Northern Mandarin, most dialects of Southwestern Mandarin, Yue, Min and most Wu dialects and the F-VP form which occurs in certain Southwestern Mandarin, Southeastern Mandarin and certain Wu dialects. However, counter evidence was soon presented, pointing out that there are dialects in which both types of question forms coexist.¹³ Lien Chinfa aptly captured the situation as one in which "Zhu's observation is obviously based on an assumption that linguistic systems are homogeneous. His insight makes sense only if it refers to a stage in the past when the two types of dialects bearing the two said types of neutral question forms respectively had not come into contact."¹⁴ The actual reality is of course a picture of constant linguistic interaction among the dialects. As a result, more often than not, we witness the coexistence of various systems within a single dialect. I have tried to explain this phenomenon in a wider perspective through the concept of syntactic stratification¹⁵ and view the complexities in the interweaving of subsystems as merger from different linguistic strata formed along a temporal and spatial scale through linguistic contacts. In short, to explain the coexistence of different systems, one has to assume language contact as the cause and linguistic stratification as the result. What I had not observed at that time is the mechanism of linguistic change that relates the cause to the result.

Wang & Lien recently proposed a bidirectional diffusion among the coexisting systems in a language as an extension of the theory of lexical diffusion. They argue that "there is no conflict of lexical diffusion and a multi-layered linguistic system. This interactive model of sound change integrates internal change and contact-induced change. Contact-induced change involves a two-step process: (1) coexistence between native and borrowed elements and (2) interaction between these two strata."¹⁶ Their new insight provides just the right model for describing a major type of syntactic change that relates language contact to the stratification of syntactic structure mentioned above.

In the following section, I shall present evidence in syntax that demonstrates how, under the impetus of language contact, a new syntactic pattern is introduced, spread and absorbed into a language through the lexicon.

3. Neutral question forms

Zhu 1985 advocates two major types of neutral question forms while elsewhere I argue for three major types, considering VP-neg as a major type on a par with V-not-V and F-VP or what I call ADV-VP¹⁷ and not subsumed under V-not-V.

The present paper will follow this latter typological classification. V-not-V may have variants such as V-neg-V, VP-neg-VP, VP-neg-V or V-neg-VP. We may call VP-neg-VP the full form, in which the two VP's are identical; for example: *chi fan bu chi fan* 吃飯不吃飯? 'eat rice not eat rice = are you eating rice or not?' or *xiang qu bu xiang qu* 想去不想去? 'want go not want go = do you want to go or not?' VP-neg-V is what Zhu 1990 calls VO-neg-V. Since it includes questions of the type *chi fan bu chi* 吃飯不吃? 'eat rice not eat = are you eating rice or not?' and of the type *xiang qu bu xiang* 想去不想? 'want go not want = do you want to go or not?', it is perhaps more appropriate to call it VP-neg-V. Similarly, our V-neg-VP corresponds to Zhu's V-neg-VO and it includes both the type *chi bu chi fan* 吃不吃飯? 'eat not eat rice = are you eating rice or not?' and the type *xiang bu xiang qu* 想不想去? 'want not want go = do you want to go or not?'.

3.1 VP-neg-V versus V-neg-VP

Contrary to common belief that the patterns VP-neg-V and V-neg-VP are free variants for the V-not-V question form, a recent study by Zhu Dexi¹⁸ established that these two patterns are of typological significance: the former type occurs largely in Northern Mandarin (except Shandong and Northeastern Mandarin) and the latter in Southwestern Mandarin, Hakka, Yue and Min. Before proceeding to discussion of these two patterns, a few words about the full form is in order. The full form seems to be on the road to extinction. We do not find any dialect that uses the full form exclusively. According to Zhang 1990, Old Pekinese and the Lanzhou 蘭州 dialect use both the full form and the VP-neg-V form but with higher frequency for the former; while the Huojia 獲嘉 dialect of Henan uses the full form and the VP-neg-V form with equal frequency.¹⁹ There must have been a time when the full form was the exclusive form in some dialects in Northern Mandarin but was later replaced by the VP-neg-V form. The full form occurring in a handful of dialects is residue. The fact that this residual form occurs only in dialects that also employ the VP-neg-V form suggests that the latter may be an abbreviated form of the full form.

To return to the VP-neg-V and the V-neg-VP forms, there are many cases where both patterns co-occur within the same dialect – for example, Pekinese, Lanzhou 蘭州, Taiyuan 太原, Wuhan 武漢, Liancheng 連城 (Hakka).²⁰ This phenomenon can be explained as a result of syntactic borrowing via lexical diffusion. I shall first cite the example of Pekinese and illustrate the process of lexical diffusion.

3.1.1 The Pekinese case

According to research carried out by Zhang Min through interviewing speakers of Pekinese and examining earlier as well as contemporary texts,²¹ at the beginning of this century, only the VP-neg-V form is used in what he called Old Pekinese. Gradually, the V-neg-VP form from Southern Mandarin²² crept in and by now the new generation aged under 35 speaking what he called New Pekinese has completely

incorporated the latter form into their syntax. How did this change come about? Did it happen overnight? What is the significance of this transformation?

Zhang 1990 cited some textual samples of the V-not-V question forms in Old Pekinese spoken around the beginning of this century, as exemplified in the conversations of the novel *Chun-A-shi* 春阿氏 published in 1914. Although the full form VP-neg-VP has the highest frequency of occurrence in the text, he also found many examples of VP-neg-V:²³

1. 你的公公，婆婆，疼你不疼? (82)
ni-de gonggong, popo, teng ni bu teng?
 your dad-in-law, mom-in-law, love you not love
 'do your father-in-law and mother-in-law love you?'
2. 究竟是親戚不是? (123)
jiujing shi qinqi bu shi?
 after-all be relative not be
 'after all, is (he) a relative?'

As pointed out in Zhang 1990, of particular significance are the following two examples with disyllabic verbs:

3. 你曉得不曉? (115)
ni xiaode bu xiao-?
 you know not kn- = 'do you know or not?'
4. 可以告訴我們不可? (119)
keyi gaosu women bu ke-?
 may tell us not m- = 'can you tell us?'

showing the strong tendency of a VP-neg-V pattern which even splits disyllabic verbs in exactly the same way it dissects a VO structure.²⁴ In the entire text, only two examples bear the form V-neg-VP and both have the copula verb *shi* 是:

5. 你想是不是這個道理? (80)
ni xiang shi bu shi zhe ge daoli?
 you think be not be this CL(assifier) reason
 'do you think it is this reason?'
6. 春英之死是不是范氏所害? (115)
Chunying zhi si shi bu shi Fanshi suo hai?
 Chunying's death be not be Fan REL-PRO persecute
 'is Chunying's death due to Fan's persecution?'

We can safely conclude that at the beginning of this century, the most popular V-not-V question form in Pekinese is the full form but the VP-neg-V form has

also established itself. Moreover, one can observe the beginning of a new pattern V-neg-VP creeping into the language in questions with the copula verb.

As pointed out in Zhu 1990, the V-neg-VP form is native to the South. The invasion of this form into Old Pekinese is clearly due to language contact. With Beijing as the capitol of the nation, there are at all times people from all over the country. Southern influence is nothing new or surprising.²⁵

Thus, the syntactic change in question is actuated by language contact. It started in questions with one of the most frequently used verbs, the copula, contrary to Tottie's claim that a high frequency lexical item may be deterrent to change.

How did this change proceed? Zhang 1990 examined 6 dramas written by Lao She 老舍 (totalling 350,000 characters) during the 'fifties and found 45 examples of V-not-V questions with nominal objects. Thirty-eight of these are in the form of VP-neg-V and only 7 are V-neg-VP. In addition, 6 out of these 7 contain either the copula or the verb *you* 有. For example:

7. 孟先生知道這回事不知道?
Meng xiansheng zhidao zhe hui shi bu zhidao
 Meng Mr. know this CL matter not know
 'does Mr. Meng know about this matter?'
8. 有娃娃戴的小老虎帽兒沒有?
you wawa dai de xiao-laohu maor meiyou?
 have baby wear REL-MKR small-tiger hat not-have
 (REL-MKR = relative clause marker)
 'do you have a small-tiger hat for baby?'
9. 誰要擗女人呀? 是不是白二叔?
shei yao zou nüren ya? shi bu shi Bai er-shu?
 who want hit woman F.P. be not be Bai second-uncle?
 (F.P. = final particle)
 'who wants to beat women? Is it second uncle Bai?'
10. 學院裡現在還有沒有認識他的人?
xueyuan-li xianzai hai you meiyou renshi ta de ren?
 school-in now still have not-have know he REL-MKR person
 'is there still someone at school who knows him?'

There are 19 examples with verbal objects in the form of V-neg-VP, among which 12 contain the copula and 7 contain optative verbs. For example:

11. 是不是欠了誰的債?
shi bu shi qian-le shei de zhai?
 be not be owe-PERF-ASP someone REL-MKR debt
 (PERF-ASP = perfective aspect)
 'is it the case of owing debts to someone?'

12. 能不能給我做一對拐子?
neng bu neng gei wo zuo yi dui guaizi?
 can not can for I make one pair crutches
 'can you make a pair of crutches for me?'
13. 要不要投標呢?
yao bu yao tou-biao ne?
 want not want enter-a-bid F.P.
 'do (we) want to enter a bid?'

There is only one example of V-neg-VP with a verb that does not belong to the three categories already mentioned:

14. 你信不信我的話呀?
ni xin bu xin wo-de hua ya?
 you trust not trust my words F.P.
 'do you trust my words?'

Within a span of 40 years, the syntactic change in question gradually spread from questions with the copula to those with the existential/possessive verb and optative verbs, all high frequency daily vocabulary items. Its next step was creeping into other lexical items, as illustrated by the one example with the verb *xin* 信 above.

What is the current situation with respect to this change? Zhang 1990 examined 3 contemporary novels and dramas (totalling 610,000 characters) written in modern Pekinese, which contain 169 examples of V-not-V questions with object NP. Among these examples, only 9 are in the form of VP-neg-V; moreover, 8 out of these 9 examples have either the copula *shi* 是 or the existential/possessive verb *you* 有, which means that there is only one example with other kinds of verb.²⁶ In less than 40 years, the V-neg-VP pattern is completely absorbed and has won the battle over the VP-neg-V pattern. One important point to note here is the fact that: although *shi* 是 and *you* 有 are the first verbs to occur in the new pattern, they are also the last ones to survive in the old pattern.

Zhang 1990 also conducted a small-scale survey with 24 native speakers of Pekinese, 16 of whom were under 35 years old and 8 were above.²⁷ Ten sample V-not-V question forms were used, with 4 VP-neg-V forms (1a. *ni he shui bu he* 你喝水不喝? 'you drink water not drink = do you want to drink water?' 2a. *ni xin wo-de hua bu xin* 你信我的話不信? 'you trust my words not trust = do you trust my words?' 3a. *ni yuanyi qu bu yuanyi* 你願意去不願意? 'you be-willing go not be-willing = are you willing to go?' 4a. *ni xiang kan dianying bu xiang* 你想看電影不想? 'you want see movie not want = do you want to go to the movies?'), 4 V-neg-VP forms without aspects (1b. *ni he bu he shui* 你喝不喝水? 'you drink not drink water = do you want to drink water?' 2b. *ni xin bu xin wo-de hua* 你信不信我的話? 'you trust not trust my words = do you trust my words?' 3b. *ni yuanyi bu yuanyi qu* 你願意不願意去? 'you bewilling not be-willing go = are you willing to go?' 4b. *ni xiang bu xiang kan dianying*

你不想看電影? 'you want not want see movies = do you want to go to the movies?'), 1 V-neg-VP form where V is disyllabic (c. *ni yuan- bu yuanyi* 你願不願意? 'you willing not be-willing = are you willing?') and 1 with aspect (d. *ni chi mei chi bao* 你吃沒吃飽 'you eat NEG-PERF eat full = have you eaten to your fill?'). The results of his investigation are charted below:

	1a-3a	4a	1b-4b	c	d
New	65% (-)	70% (+)	95% (+)	80% (=)	70% (=, -)
Old	1a-2a 100% (+)	3a-4a (+, -)	1b-4b 80% (+)	c 25% (=)	d 12.5% (=)

(- = infrequent use; + = frequent use; = = acceptable)

Although the sample sentences are scanty and one may dispute the results, combined with the textual count of contemporary works mentioned earlier, it is obvious that in New Pekinese the V-neg-VP form is preferred over the VP-neg-V form and the tolerance threshold for VP-neg-V is very low. In Old Pekinese too, the V-neg-VP form is gaining ground while the VP-neg-V form has a strong foothold only in questions with less complicated verb phrases. If we combine New and Old Pekinese, 87% of the speakers frequently use the V-neg-VP form without aspect and where the disyllabic verb is not split.

The Pekinese example provides us with important explanation of the mechanism of syntactic change. We suggested earlier that the syntactic change in question is actuated by language contact whereas Zhang 1990 suggests that there is also internal motivation of simplicity and convenience for selecting the V-neg-VP form. However, it is difficult to understand why V-neg-VP is necessarily simpler or more convenient to use. For example, *chi fan bu chi* 吃飯不吃 or *xiang qu bu xiang* 想去不想 and *chi bu chi fan* 吃不吃飯 or *xiang bu xiang qu* 想不想去 employ exactly the same number of words; it is hard to claim that one form is simpler or more convenient to use than the other. In any case, even if there is internal motivation, the impetus clearly comes from outside. If the internal conditions for a change have been there all along, why is the change activated only at this very point? Therefore, we find it more convincing to attribute the cause of the change to external factor. Although we are NOT claiming that ALL syntactic changes are due to external factors, all four cases discussed in this paper are the results of language contact.

It is important to note that the syntactic change in question did not occur overnight in its entirety. The new form first appeared in the interrogative form in question with the copula *shi* 是 and the existential/possessive *you* 有 as main verb, followed by those with optative (or "auxiliary") verbs, and finally it spread to the said interrogative form with other types of verbs that take objects. Coexistence of both the new and the old forms is evident at each stage, with the new form encroaching upon an ever wider territory across the lexicon – from a few high-frequency verbs to the entire array of verbs. At present, both forms may be said to be free variants, but the battle has not seen its end yet. The process of change

clearly follows the path of lexical diffusion: it occurs gradually and spreads from one type of grammatical category to another until all types are covered.²⁸ Moreover, the change began with patterns with the most familiar and frequently used words, such as the copular sentence marked with *shi* 是 and the existential sentence marked with *you* 有.

3.1.2 A two-dimensional view of 'competing change'

Another important point already mentioned in the last section is that the very same high-frequency verbs are also the ones to linger in the old pattern, which is exactly what Tottie 1991 claims. Yet, our Pekinese case both contradicts and supports his claim. It may seem contradictory to have the very same forms both at the forefront and at the rear of one and the same syntactic change, if we view syntactic change or change in general as one form or one pattern replacing another form or another pattern.

The notion of 'competing change'²⁹ may help us solve the problem if some revision is incorporated. Within the current theory, 'competing change' implies the coexistence and competition of at least two choices. This coexisting and competing stage continues until the change is complete when one choice replaces the other. However, not all changes complete their course and there may be residues. So far we have only seen examples where residues are those forms that have never accepted the new change. So far our view is limited to the possibility that a change must necessarily imply replacement. In other words, our notion of 'competing change' is limited to one dimension.

With the Pekinese case, we want to argue for a different, two-dimensional view of 'competing change' where a new form or a new pattern enters the language and runs its own course of gradual victory and at the same time the old form or the old pattern independently runs its own course of gradual disappearance. Given the lexicon of a language, the new form or the new pattern will first attack a certain portion, which is mostly likely the most familiar and high-frequency items³⁰ as exemplified in the Pekinese case, competing with the old form or old pattern at all times along the way and gradually widening its scope of application over the rest of the lexicon. At the same time, the old form or the old pattern meets the challenge and tries to wage a battle of resistance, competing all along with the newcomer and trying to hold on to its old territory in the lexicon. There is evidently a long period of coexistence of both the old and the new over the same lexical items; so that forms like *shi xuesheng bu shi* 是學生不是 'be student not be = be a student or not', *you qian mei you* 有錢沒有 'have money not have = have money or not', *chi fan bu chi* 吃飯不吃 'eat rice not eat = eat rice or not' and *shi bu shi xuesheng* 是不是學生 'be not be student = be a student or not', *you mei you qian* 有沒有錢 'have not have money = have money or not', *chi bu chi fan* 吃不吃飯 'eat not eat rice = eat rice or not' are all acceptable, though each pair maybe at different times.

Now, when the old form or old pattern is losing ground, it may recede first from the familiar, high-frequency items or from the unfamiliar, low-frequency items. The

former is seen in the Yilan 宜蘭 dialect of Taiwan which will be discussed in section 3.2.1 and the latter is probably the case of Pekinese where we find 8/9 of the last examples of the old VP-neg-V pattern in contemporary texts to contain the high-frequency verbs *shi* 是 and *you* 有. This latter process of loss with the high-frequency items holding on to the very last seems to be in agreement with aphasic loss, in which high-frequency items and the items first acquired in a language are the last retained.

In conclusion, we view 'competing change' as consisting of two dimensions: the dimension of the incoming, winning new pattern following its own route across the lexicon and the dimension of the outgoing, losing old pattern also following its own route across the lexicon. These two routes may merge and we have step-by-step replacement in the process of change. However, they may be different and we have two processes happening independently with overlap sometimes. They may be illustrated in the following diagrams – (1) for the former type and (2) for the latter:

(N = new pattern, O = old pattern; X, Y, Z = different portions of the lexicon; a, b, c, . . . = different periods of time for completion of the process; + = occurring, - = non-occurring)

	X	Y	Z
a	N+ O-	N- O+	N- O+
b	N+ O-	N+ O-	N- O+
c	N+ O-	N+ O-	N+ O-

Diagram 1 Replacement

	X	Y	Z
a	N+ O+	N- O+	N- O+
b	N+ O+	N+ O+	N- O+
c	N+ O+	N+ O+	N+ O-
d	N+ O+	N+ O-	N+ O-
e	N+ O-	N+ O-	N+ O-

Diagram 2 Independent development

Diagram 2 represents only one of many possibilities that independent development may take. The main difference between the two diagrams is that for Diagram 1, each change is a replacement but for Diagram 2, it is not necessarily so.

With this new, two-dimensional view of 'competing change,' both the type of change described in Tottie 1991 and the type described in this section can easily be accommodated and accounted for.

3.2 VP-neg versus V-not-V

3.2.1 Southern Min

The V-not-V form, which is characteristic of Northern Chinese, is gaining ground in the Southern dialects where the predominant neutral question form is VP-neg. I shall now turn to the Southern Min dialects. In general, the modern Southern Min dialects use the ADV-VP form or the VP-neg form for neutral questions. For example, in the Yilan dialect of Taiwan,³¹ we may have:³²

15a. *li be k'i bo?* 你卜去無?
you want go NEG = 'are you going?'

or:

15b. *li kam be k'i?* 你(kam)卜去?
you ADV want go = 'are you going?'

However, the V-neg-VP form is permitted in some dialects, especially when the verb is the copula, as for example in Yilan:³³

16. *i si m si gilay nan?* 伊是(是)宜蘭人?
he be not be Yilan person = 'is he from Yilan?'

Evidently the V-neg-VP form is working its way into the neutral questions in Southern Min. Is the process of syntactic change similar to the Pekinese case?

There is evidence that by the middle of the 16th century, the V-not-V form had already started to infiltrate Southern Min. The earliest extant colloquial document for the Southern Min dialects are the four versions of the *Litchi Mirror Tale* 荔枝鏡, ³⁴ In these early documents, there are a total of 226 neutral questions, all but three have the structure of VP-neg. The three exceptions have the form of VP-neg-V and two of them contain the verb *you* 有 while one has the copula. These three examples are from the Jiajing 嘉靖 edition (1566), also the earliest extant edition.³⁵

17a. (外) 有文書沒有 (page 1B, line 8)
(Elder Brother) have official-document not have
'is there an official document?'

- 17b. (外) 有啱沒有 (page 102B, line 7)
(Elder Brother) have PARTICLE not have = 'did you?'
18. (末) 是實情不是 (page 78B, line 15)
(Judge) be truth not be = 'is it the truth?'

These are clearly borrowed syntactic forms. Sentences (17a) and (17b) are loan forms on one more count: the lexical item 沒有 is not a native Min form (the corresponding native form should be 無). The borrowing is probably from some standard dialect of the time and it occurred in the same type of sentences with the same type of high frequency words most susceptible to change already noted above in the modern Pekinese case.

Since the introduction of the V-not-V question form into Southern Min some 400 years ago, subsequent editions of the *Litchi Mirror Tale* in 1581 (Wanli 萬曆 edition), 1651 (Shunzhi 順治 edition) and 1884 (Guangxu 光緒 edition) as well as other colloquial texts such as the *Golden Flower Girl* 金花女 (1583-1619?), *Su Liuniang* 蘇六娘 and the *Schoolmate and Zither Book* 同窗琴書記 (1782), do not show any occurrence of the new pattern. This could reflect a very slow progress at the initial stage of change after the new pattern was introduced or dialectal variation.

What is the current situation with regard to this change? It seems to vary among dialects. Neither the Taizhong 台中³⁶ nor the Shantou 汕頭 dialect³⁷ uses the V-not-V form at all and they represent the type of Southern Min dialects that are as yet unaffected by the appearance of the new syntactic form in question.

In the Zhangzhou 漳州 dialect,³⁸ the dominant neutral question form is ADV-VP, while the VP-neg form appears in questions with aspects or as alternants in questions not containing the copula, the existential/possessive or the optative verbs. Among the 59 examples investigated, there are only 3 in the V-not-V form, among which only one is in the V-neg-VP form. The sole V-neg-VP form has the copula verb. In the Yilan dialect, as we noted earlier, neutral questions are mostly rendered in the VP-neg form, although the ADV-VP form may sometimes be used.³⁹ Among some 80 examples of neutral questions, the V-neg-VP form occurs exclusively in copula sentences of which there are 6 examples and in emphatic sentences using the copula of which there are 4. An example of the latter type is:

19. *li si m si be lai?* 你是^[e¹¹]是^[be³³]來?
'you be not be want come = ARE you coming?'

In these two types of sentences, the V-neg-VP form has replaced all other forms, although sometimes the ADV-VP form may be used for the emphatic type. There is no sign of V-neg-VP occurring in questions with the existential/possessive verb or with optative verbs. Thus, both Zhangzhou and Yilan represent the very beginning stage of the syntactic change in question.

An important point to note here is that while we found the VP-neg-V form in the early colloquial documents of the 16th century; in the modern dialects, we

found the V-neg-VP form. This indicates that the donor dialect in the 16th century is from Northern Mandarin while that in modern time is from Southern Mandarin. Another possibility is that the V-neg-VP form is of a late origin and did not exist in the 16th century. More documentary evidence is needed before conclusions can be made one way or another. However, the latter may seem more plausible for two reasons: the colloquial texts were supposed to be written in the style of the Chaozhou 潮州 and the Quanzhou 泉州 dialect, which are geographically far from the standard dialect of the capitol (present-day Beijing) of the time. If there had been a distinction of VP-neg-V versus V-neg-VP correlating with the North versus the South, the Southern form, due to geographical proximity, should have been of greater influence. Another reason is that we found a similar situation in Cantonese at the beginning of this century – no V-neg-VP form but VP-neg-V form –, as we shall see in section 3.2.2.

The last example of Southern Min to be discussed is Jieyang 揭陽.⁴⁰ In this dialect, the predominant neutral question form is VP-neg. However, among some 80 examples investigated, there were not a few V-not-V forms. All 6 examples with the copula were in the V-neg-VP form, just like in Yilan; and 9 out of 14 examples with optative verbs were also in the V-neg-VP form. There were even examples with other classes of verbs: half of the 14 examples with V-O were in the V-neg-VP form; 5 of the 12 examples with action verbs were in the V-neg-V form while 2 of the 14 examples with adjectives were also in the V-neg-V form. However, none of the 10 examples with the existential/possessive verb appeared with the V-not-V form. Thus, while the Jieyang case confirms the stages of lexical diffusion of the said syntactic change at la Pekinese as far as the copula and the optative verbs are concerned, there is a major departure with regard to the existential/possessive verb, which seems to be resistant to change in all of the Min dialects observed so far. As to why the existential/possessive verb, also a high-frequency lexical item in Southern Min, constitutes an exception needs further investigation.

3.2.2 Yue

Unlike the Southern Min dialects which have dramas and stories written in the colloquial language as early as the 16th century, no such documents are known to exist in the Yue dialects. The earliest extant colloquial materials are all textbooks compiled by missionaries learning the dialects. Most of these textbooks are written for standard Cantonese.⁴¹

Although the native neutral question form for the Yue dialects is VP-neg⁴², many modern dialects, particularly those around the delta area⁴³, favor the V-neg-V and V-neg-VP patterns of the North except where aspects are employed. I shall take standard Cantonese as an example and trace the syntactic change from the last quarter of the last century⁴⁴ through various textbooks compiled for learners of Cantonese, such as *Forty Chapters of Random Prose* 駢語四十年 of 1877,⁴⁵ Ball's *Readings in Cantonese Colloquia of 1894 and Cantonese Made Easy* of 1924,⁴⁶

Wisner's *Beginning Cantonese* 教話指南 of 1906,⁴⁷ Jones & Woo's *A Cantonese Phonetic Reader* of 1912 and O'Melia's *First Year Cantonese* 第一年粵語法 of 1938. The results are charted below:

	1877	1894	1906
VP-neg	18 VP[m]呢(12)/呀(1) VP未呢(5)	5 VP[m]呢(3) VP嗎(1)/麼(1)	26 VP[m]呢(11) VP[m]曾呢(11) VP嗎(4)
V-not-V			
VP-neg-V	12 有NP有(2)/呀(1) 有NP有呢(2) 有VP有(1)/呢(3) AuxVP[m]Aux呀(1) VO[m]V呢(1) 曉得[m]曉呢(1)	6 係NP[m]係(呢)(2) 係NP[m]係(1) 有NP有呢(2) AuxV[m]Aux呢(1)	29 係NP[m]係呢(7) AuxV[m]Aux呢(7) VO[m]V呢(4) 有VP有呢(8) 有NP有呢(2)
V-neg-V	9 S,好[m]好呢(2) V[m]V(1)/呢(4) 有有呢(2)	2 V[m]V呢(1) S,係[m]係呢(1)	19 V[m]V(呢)(12) S,好[m]好呢(5) S,係[m]係呢(2)
V-neg-VP	0	0	0
VP-neg-VP	0	VP[m]VP呢(1)	0

[m] = general negative marker; S = sentence; Aux = optative verbs; numerals indicate number of occurrences in the text

	1883-1924	1912	1938
VP-neg	13 VP[m]曾呀/呢(8) VP未呀/呢(3) VP未曾呀/呢(2)	3 VP未呀(3)	26 VP未(呢/呀)(19) VP[m]呢(6) VP[m]曾(1)
V-not-V			
VP-neg-V	50 有NP有呢(15)/呀(9) 有VP有呀(5)/呢(5) VO[m]V呀(5)/呢(2) 係NP[m]係(呀)(6) AuxV[m]Aux呀2/呢	8 VO[m]V呀(4) AuxV[m]V呀(1) 有NP有呢(1) 有VP有呀(1) 知道[m]知呢(1)	25 有NP有(1)/呢(7) 係NP[m]係呢(7) 有VP有(1)/呀(4) 有VP有呢(1) VO[m]V呢(4)
V-neg-V	10 V[m]V呀(2)/呢(1) 係[m]係呢(2)/呀(1) 好[m]好呀(2) 有有(呢)(2)	11 V[m]V呀(5) V[m]V呢(1) 有有呀(3) 有有(2)	33 S,係[m]係呢(14) S,係[m]係(5) V[m]V呢(13) 有有呢(1)

	1883-1924	1912	1938
V-neg-VP	0	2 係[m]係NP(2)	13 係[m]係NP呢(5) V[m]VO(呢)(4) 係[m]係S呢(2) 有有NP呢(2)
VP-neg-VP	0	0	4 VP[m]VP呢(4)

The 1877 textbook distinguishes itself from the rest by having almost half of the neutral questions – 18 out of a total of 39 – in the VP-neg form. In addition, two-thirds of the VP-neg forms have the pattern ^{VP+嗎} +呢, a pattern native to the Yue dialects but gradually declining as time progressed. An example is:⁴⁸

20. 嗰個人你中意佢唔呢? (5)
that CL person you like him not F.P.
'do you like that person?'

The V-not-V form had already established itself with the patterns of VP-neg-V and V-neg-V. With the VP-neg-V pattern, three-fourths of the examples involve the possessive/existential/ aspectual verb, for example:

21. 嗰張床有蚊帳冇呢? (8)
that CL bed have mosquito-net not-have F.P.
'does that bed have a mosquito-net?'

22. 你有點燈冇? (9)
you have light light not-have
'did you light the light?'

There is one example with an optative verb and one with a disyllabic verb treated like a VO structure, just as the cases in Pekinese discussed in 3.1.1:

23. 佢嘅說話你曉得唔曉呢? (26)
his words you understand not under- F.P.
'do you understand what he said?'

Example (23) shows that the VP-neg-V pattern not only entered the language but had firmly established itself. The only anomaly is that no example with the copula verb is found in the neutral question forms, which may be accidental, since the textbook does not seem to be compiled in a graded manner for beginners.

Examples from Ball 1894 are scanty. However, the pattern seems to be akin to Wisner 1906. By this time, already more than half of the neutral questions – nearly

two-third in Wisner – were in the V-not-V form, which means that by this time, the Northern pattern was already getting an upper hand.

Ball 1894 does not have examples with aspect markers. The VP-neg form has two major patterns: one where *neg* consists of the general negative marker [m] plus the question particle [ni] and the other where *neg* consists of a composite form of the merger of the general negative marker [m] plus the question particle [a] or [é], yielding [ma] or [mé] respectively.⁴⁹ For example:⁵⁰

24. *nei ying tak ch'ut m ni?* 你認得出唔呢? (123)
you recognize can out not F.P.
'can you recognize?'
25. 想來我處賣餸嗎? (163)
söng loi ngo shü mai-ts'iu ma?
want come my place show-off-beauty F.P.
'do you wish to come to woo me?'

Among the 26 VP-neg forms in Wisner 1906, almost half involve the aspect marker 曾 and half contain other kinds of verbs. Some examples are:

26. 你食飯唔飽呢? (lesson 15, p.11, henceforth 15.11)
nei shik faan m ts'ang ni
you eat rice not yet F.P. = 'have you eaten yet?'
27. 你話咁多夠唔呢? (34.23)
nei wa kom toh kau m ni
you say this much enough not F.P.
'do you think this much is enough?'

Among the V-not-V forms, the 11 examples that contain the verb functioning either as the possessive verb or as the past tense marker:

28. 佢有書冇呢? (2.2)
k'ui yau shue mo ni
he have book not-have F.P. = 'does he have books?'
29. 你有去佢處冇呢? (3.3)
nei yau hui k'ui shue mo ni
you have go his place not-have F.P.
'did you go to his place?'

may be interpreted as of the VP-neg form if we take 有 as parallel to 唔曾; on the other hand, 冇 is also a composite form of *neg* plus the existential/possessive verb 有 and so the pattern fits in with V-neg-V. In this paper, we shall take the second

interpretation, and treat 冇 as a verb. Among the VP-neg-V form, 7 have the copula 係, 7 contain optative verbs and only 4 involve other kinds of verbs. For example:

30. 佢係外國人唔係呢? (20.14)
k'ui hai ngoikwokyan m hai ni
he be foreigner not be F.P. = 'is he a foreigner?'
31. 使講價唔使呢? (9.6)
shai kong ka m shai ni
need talk price not need F.P. = 'do you need to bargain?'
32. 師奶喺處唔係呢? (18.13)
sznaai hai shue m hai ni
lady-of-the-house locate place not locate F.P.
'is the lady of the house in?'

The 19 V-neg-V forms contain some 7 instances of tags such as 係唔係 (=是不是) 'yes or not', 好唔好 'okay or not'.

It is evident that by this time, the V-not-V form has entered Cantonese in the parts of the lexicon that contain high-frequency items such as the copula, the optative verbs, the possessive verb/past-tense marker as well as other parts of the vocabulary too.

Since Ball 1924 is a revised and enlarged edition of his original book of 1883, it is expected to include examples of both the late 19th and the early 20th century. However, it lacks the VP + [m] + Final-Particle type of VP-neg question form (that is, the VP-neg form containing no aspect marker, such as VP [m] found in Ball 1894 and Wisner 1906 and lacks an important new form (V-neg-VP) displayed in Jones & Woo 1912; therefore, it is best placed in a time span between Wisner 1906 and Jones & Woo 1912. In this textbook, some four-fifth of the examples of neutral questions are of the V-not-V form, and no example of the imperfective VP-neg form is found, which means that by that time, Cantonese was already very much like Mandarin, using the V-not-V form for neutral questions and the VP-neg form only for questions in the perfective. In other respects, the types of neutral question forms found in the textbook in question are very similar to those found in Wisner. Up to this point, of special notice is the fact that the V-neg-VP form has not appeared at all.

It was in Jones & Woo's *A Cantonese Phonetic Reader* of 1912 that we found 2 examples of the V-neg-VP form among a total of 24 neutral questions occurring in the text. Both contain the copula:

33. 係唔係中國算至大嘅城呀? (IV.20)
hai m hai tsɿkwək syn tsi ta:i ta:i kees seŋ a
be not be China count most big REL-MKR city F.P.
'is it considered the biggest city in China?'

34. 隻船, 係唔係, 今晚開身去天津呀? (VII.1)
tse syn hai m hai kamma:n h isan həy t'intsæn a
 CL boat be not be tonight set-sail go Tianjin F.P.
 'is the boat going to Tianjin tonight?'

This agrees completely with what Zhang Min found in the novel *Chun-A-shi* published about the same time in Old Pekinese. This is by no means coincidental, but confirms our observation that the syntactic change of V-neg-VP was actuated by language contact and started from questions with one of the high frequency item in the lexicon, the copula. In other respects, this text shows that the VP-neg form is on the decline. There are only 3 VP-neg forms with the negative aspect marker 未. It also shows that the VP-neg-V form has found its way into the entire lexicon. There are 6 examples with 有 as the main verb, 5 of which have the question ending with a tag-like 有:

35. 還有第二啲有冇? (V.20)
tsuŋ jau taijiti jau mou
 still have other have not-have = 'is there some other?'

and 6 other examples with all kinds of verbs. The remaining 6 examples are of the V-neg-V form and contain different kinds of verbs. In short, by this time, the V-not-V form was winning over the VP-neg form, with V(P)-neg-V as the predominant form, but with V-neg-VP entering the scene through the familiar lexical diffusion route.

By 1938, the V-neg-VP form has begun to cover questions with the possessive verb 有 as well as other types of lexical items than the copula verb. However, O'Melia made this note concerning the VP-neg-V versus V-neg-VP form with respect to 有: "It is a matter of indifference, or rather, of euphony, whether you say 你有錢有呢 or 你富有錢呢, i.e. whether you give the object before repeating the verb or vice versa."⁵¹ This means that both forms coexist for a period of time until the V-neg-VP form wins over. Y.R. Chao's *Cantonese Premier* 粵語入門 of 1947 remarked that the V-neg-VP form – what he calls the 'close' form – is preferred,⁵² and among the 34 examples of V-not-V questions with objects found in the text, only 4 have the form VP-neg-V while the rest have the form V-neg-VP. On the other hand, Huang & Kok, in their *Speak Cantonese* of 1960, gave both forms as choice-type questions, although they described the VP-neg-V form as placing emphasis upon the object.⁵³ As late as 1980, Gao Huanian 高華年 cited examples not only of both the VP-neg-V and the V-neg-VP types, but also the VP-neg type in his *Guangzhou Fangyan Yanjiu* 廣州方言研究. All these just show that while the new pattern is working its way through the lexicon, old patterns try to hold on to their former territories. The residual rate varies with speakers. As a native speaker of Hong Kong Cantonese myself, I have never used any form other than the V-neg-VP for neutral questions, for example.

To sum up, the introduction of the V-not-V question form into Cantonese, first the V(P)-neg-V and next the V-neg-VP form, follows more or less the same route and the same stages of lexical diffusion that we observed in Pekinese or in the Southern Min dialects.

At this point one might pose the question: did the syntactic change described in the three different cases above proceed via lexical item or was it determined by grammatical category – from copula to existential/possessive to optative, etc.? Can one explain the process of change by grammatical category alone? Both the copula and the possessive/existential verb in Chinese are one-item categories of high frequency usage. The optative verbs contain a small number of items, all of high frequency usage. The conditioning factor for change can be assigned to grammatical category alone if no other factor is involved at the same time and if one can show that the change proceeds in such a manner subsequently too. There is no evidence that when the change occurred, ALL optative verbs were affected at once or ALL transitive verbs of action, for example, were affected at once with no exceptions. Recalling the Jieyang dialect of Southern Min discussed at the end of section 3.2.1, none of the groups of examples categorized by verb classes in the V-not-V question forms occur without exceptions. Therefore, the more plausible, in fact, the only reasonable claim is that the change proceeded via lexical diffusion, beginning with high frequency verbs.

4. The comparative construction

Another example of lexical diffusion in progress is the recent change observed in the comparative construction in a socially determined variety of Cantonese spoken in Hong Kong. For the comparative degree of comparison, the form **A + ADJ + 過 + B** (where ADJ stands for a comparative predicate and A, B the two terms for comparison) is used in colloquial speech; for example:

36. k'æy kou kuə ŋə 佢高過我
 he tall surpass I = 'he is taller than I am'

However, recently the pattern **A + pei 比 + B + ADJ** of Northern Chinese has begun to creep into the literary stratum of Hong Kong Cantonese, beginning with structures with less colloquial expressions and with speakers who are more educated. Among a small number of speakers whom I investigated, those with less than high school education rarely use the *pei* 比 form, while those educated beyond middle school level use the *pei* 比 form typically within their circle but not with speakers below their educational level – for example, not with children or blue-collar workers. Or, within the speech of the same speaker, expressions with colloquial or vulgar words will prefer the use of *kuə* 過, for example:

37. k'æy kəŋj ε lek kuə ŋə 佢講得 [好] 過我
 he speak smart surpass I = 'he speaks better than I do'

38. *k'æy tUk sy seŋ kuə ŋə* 佢讀書超過我
 he read book smart surpass
 I 'he studies better than I do'

The words *lek*⁵ and *seŋ*³⁵ are colloquial and particular to Cantonese. In addition, in derogatory remarks, the *pei* 比 form is not used. However, the following sentence may have both variants depending on style — (a) is colloquial while (b) is literary:

- 39a. *k'æy tUk sy lek kuə ŋə* 佢讀書比我過我
 he read book smart surpass I
 'he studies better than I do'

- 39b. *k'æy tUk sy pei ŋə lek* 佢讀書比我過我
 he read book compare I smart = 'ibid'

This is a case of sociolinguistic change via lexical diffusion. It is interesting to note that the route which the change takes, although determined by the style of speech — formal versus informal — is at the same time determined by the type of vocabulary — vulgar versus refined, since the style of speech is to a great extent determined by the lexical item employed.

5. Concluding remarks

Syntactic change is lexically gradual,⁵⁴ with analogues of competing changes and residue. The rate of change varies, depending on individual dialects and individual speakers and is hard to generalize. The higher the frequency of use of a lexical item the more susceptible it is to syntactic change and at the same time may also be the more resistant to extinction. Evidence for lexical diffusion abounds in the syntax of many dialects. I have selected here the most obvious cases supported either by historical documents or witnessed in its process as the beginning of further research into lexical diffusion in Chinese grammar.⁵⁵

Notes

- 1 The writing of this paper and the collection of dialectal information on which this paper is based, are supported by research grants from the National Endowment for the Humanities (grant #RO-22033-90) and the Chiang Ching-kuo Foundation. An earlier version was read at the Third International Symposium on Chinese Languages and Linguistics at the National Tsing Hua University in Hsinchu, Taiwan, July 1-3, 1992. I am indebted for Professor William S-Y. Wang for his suggestions while revising this paper.
- 2 All standard Mandarin forms are given in Pinyin romanization without tone marks.
- 3 See for example Hashimoto 1978, 1987.
- 4 For an overview of the controversies, see Peyraube 1988.
- 5 See W. Wang 1969 and 1979.
- 6 See W. Wang 1977 and 1989 for some prominent examples.

- 7 Very recently, the theory is being applied to historical lexicology, or changes in the (total) lexicon of a language. See Fischer 1989.
- 8 See Mei 1980 and Bennet 1981.
- 9 So far there are only five published papers — Kroch 1989, Cheng 1990, 1991; Her 1991 and Gunnell Tottie 1991 — and several unpublished ones — Cheng 1989, Hsieh 1989 and Ogura 1991.
- 10 See Bennett 1981, especially pp. 115, 120, 130.
- 11 A-not-A question forms refer to the so-called *fanfu wenju* 反復問句 or *zhengfan wenju* 正反問句 in Chinese, which are generally regarded as a kind of disjunctive question with the two disjuncts being the affirmative and the negative of a proposition. See for example W. Wang 1967. A different view is expressed in Huang 1988. Since there is confusion regarding the use of the term 'V-not-V' or 'A-not-A' to cover Zhu's two major types of questions, VP-*bu*(不)-VP and F-VP, we prefer to use the term 'neutral question' as suggested in Yue-Hashimoto 1988.
- 12 Zhu terms it 'VP-*bu*(不)-VP'. Since his VP-*bu*(不)-VP covers V-neg-V (e.g. *chi bu chi* 吃不吃? 'eat not eat = are you eating or not?'), VP-neg-VP (e.g. *chi fan bu chi fan* 吃飯不吃飯? 'eat rice not eat rice = are you eating rice or not eating rice?'), VP-neg-V (e.g. *chi fan bu chi* 吃飯不吃? 'eat rice not eat = are you eating rice or not?') and V-neg-VP (e.g. *chi bu chi fan* 吃不吃飯? 'eat not eat rice = are you eating rice or not?'), as we shall see in the following sections, we shall use 'V-not-V form' as the cover term to avoid confusion.
- 13 See for example S. Wang 1985 and Shi 1990. Actually among the majority of dialects we investigated, more than one type of neutral question forms coexist, as we shall see in section 3.
- 14 Quotations from personal communication.
- 15 See Yue-Hashimoto 1991.
- 16 Quotations from personal communication with Lien Chinfa.
- 17 See Yue-Hashimoto 1988, 1992a and 1992b for details.
- 18 See Zhu Dexi 1985 and 1990.
- 19 See He 1990, 1991.
- 20 Examples are all taken from dialects that either I myself or my colleagues of the Comparative Chinese Dialectal Grammar Project (supported by the NEH and the CCKF) investigated in detail. More examples can be found in Zhang 1990.
- 21 Information is taken from Zhang Min's unpublished dissertation. At the time when he wrote the dissertation, he was not aware how important his data were in providing what I consider decisive evidence supporting lexical diffusion in syntax. Discussions of this section are entirely based on his account. See Zhang 1990, especially pp. 72, 76-79. Subsequently, at my suggestion, Zhang Min uncovered more examples of lexical diffusion among the dialects he investigated and presented a paper in absentia at the First International Conference on Chinese Linguistics in Singapore in June, 1992. However, at the writing of this paper, his paper was not available to me.
- 22 It is beyond the scope of the present paper to bring up arguments concerning the probable homeland of the V-neg-VP form, which is discussed in Yue-Hashimoto 1992b. The encroachment of the V-neg-VP form into New Pekinese is mostly likely from contact with Southern Mandarin.
- 23 The V-not-V form with aspects, as with the great majority of dialects, is VP-*meiyou* 沒有 which can be considered either a VP-neg-V form (if one considers aspects to be derived from verbs) or a VP-neg form (if one allows *neg* to include cases of the combination or merger of the negative marker and aspects or final particles). Either analysis does not affect our main contention in this paper.
- 24 Zhu 1990 cites similar examples from the novel *Golden Lotus* 金瓶梅 of the Ming dynasty. See Zhu 1990, p. 222.
- 25 We can cite a very recent example of borrowing a **Verb + Destination** word order which is characteristic of the South, into standard Mandarin which native word order is

- dao** 到 + **Destination** + **Verb**. As a result, both forms are currently used. For example, *ta qu-le Beijing* 他去北京 'he go PERFECTIVE-ASPECT Beijing = he went to Beijing' is now as acceptable as *ta dao Beijing qu le* 他到北京去了 'he to Beijing go FINAL-PARTICLE = he went to Beijing'.
- 26 For details, see Zhang 1990, pp. 77-78.
- 27 See Zhang 1990, p. 76, for details.
- 28 However, the change was not determined by grammatical category alone, but by lexical item. See discussion at the end of section 3.2.2.
- 29 See W. Wang 1969.
- 30 The claim here is based on empirical evidence, but other possibilities exist. As we shall see in section 4, the literary portion of the lexicon seems to be attacked first.
- 31 The Yilan dialect was investigated during the summer of 1990 in Seattle. My informant was Ms. Yeo Shuchen 葉淑珍 then 30 years old, a native of Zhuangwei village 莊園鄉, Meicheng district 梅城鎮, situated to the east of the town of Yilan.
- 32 All dialectal forms are given in broad IPA notation without tone marks and with both standard and dialectal characters.
- 33 The Yilan dialect described here is strictly restricted to the variety mentioned in footnote 31. Prof. Li Jen-kuei, a native of Yilan, indicated that his variety of the dialect does not tolerate the V-not-V form at all.
- 34 For a study of the neutral question forms in these documents, see Yue-Hashimoto 1991.
- 35 Since the text was written in characters, no IPA transcriptions will be given.
- 36 Information of the Taizhong dialect was supplied in the fall of 1990 by Prof. Chang Yu-hung.
- 37 See Shi 1990.
- 38 The Zhangzhou examples were collected in the summer of 1991 in Hong Kong. My informant is Mr. Wu Si 吳錫, then 51 years old, who is from the city of Zhangzhou.
- 39 As noted in Yue-Hashimoto 1991, most ADV-VP questions in Yilan are non-neutral and carry the connotation of doubt.
- 40 The Jieyang dialect was investigated during the fall of 1990 in Seattle. My informant is Mr. Xu Bingchu 許秉初, then 74 years old, who is from the first district 第一區 of Jieyang city.
- 41 They show differences in phonology, usage of words and even syntactic patterns from contemporary standard Cantonese. There is thus the possibility that these materials purportedly standard Cantonese may not be standard Cantonese at all. However, at least with respect to the materials the materials used in this study, at the time when they were compiled, there was no comment or criticism that they did not reflect standard Cantonese. We have to presume that not only the compilers but also the users of such materials could not distinguish standard Cantonese from other dialects to prove this possibility. D. Ball, for one, has written on various Yue dialects of the delta area such as Dongguan (*China Review* 18, 1890), Shunde (ibid 25, 1900). It is thus unlikely that Ball cannot distinguish standard Cantonese from other Yue dialects. In addition, we cannot expect standard Cantonese not to have undergone any change within a century. As far as phonology is concerned, there may be greater risk involved in accepting these documents as standard Cantonese, since the pronunciation of neighboring dialects may differ even within close distance. To be sure, syntactic patterns may vary too, but to a much lesser extent, especially among Yue dialects of the delta area, although the standard metropolitan dialect is prone to be more susceptible to change than a rural dialect in a remote area.
- 42 See Yue-Hashimoto 1992a.
- 43 Our preliminary investigation of 16 Yue dialects around the delta area – such as Panyu 番禺, Conghua 從化, Huaxian 花縣, Zengcheng 增城, Bao'an 寶安, Dongguan 東莞, Zhongshan 中山, Sanshui 三水, Gaoming 高明, Shunde 順德, Nanhai 南海, Jiangmen 江門, Xinhui 新會,

- Doumenzhen 斗門鎮, Heshan 鶴山, Enping 恩平 – indicates an overwhelming preference for the V-neg-V and V-neg-VP forms. However, there are still strongholds of the VP-neg form, as observed in the Kaiping 開平, the Taishan 台山 (both investigated by myself) and the Yulin 雲林 (information due to Zhou Lieting 周烈婷) dialect, for example.
- 44 Recently a text dated 1841 was discovered by Prof. Benjamin T'sou, but I have not seen it yet.
- 45 The author of this book is unknown. The book, which was published by the St. Paul's College in Hong Kong, remains unknown until an alumnus of this college ran across it accidentally at the library of the Nankai University in Tianjin. A photo-copy was presented to the college in 1985. A statement on the cover of the book described it as a translation into the Cantonese colloquial from a collection called *Zi'erji* 自語集 (*From Nearby*).
- 46 The first edition of J.D. Ball's *Cantonese Made Easy* of 1883 was not available when I wrote this article, however, the 4th edition (revised and enlarged) was accessible through the generous help of Zhang Min. The lesson text of the 4th edition is essentially the same as that of the 3rd edition, which I recently checked at the library of the Chinese University of Hong Kong.
- 47 Thanks are due to Zhang Min for drawing my attention to this book and for providing me with a copy.
- 48 The text is written entirely in characters; therefore, no transcriptions will be given for the examples.
- 49 Justification for this interpretation was given in Yue-Hashimoto 1988. The main argument is that questions with [ma] in the Yue dialects can only be in the affirmative: *nei hœy ma?* 'you go F.P. = are you going?' is grammatical but not **nei m hœy ma?* 'you not go F.P. = are you not going?' The most reasonable explanation is that [ma] is the contraction of [m] + [a]. Since [ma] already contains the negative marker [m], it is natural that [m] would not occur again before the verb.
- 50 The examples are given in Ball's transcription.
- 51 See O'Melia 1938, pp. 31-32.
- 52 See Chao 1947, pp. 91-92.
- 53 See Huang & Kok 1960, p. 11.
- 54 Although not discussed in this paper, an intermediate stage can easily be attested in dialects with a native ADV-VP form and a borrowed V-not-V question form where a fused form of the two can also be found. An example is the Shantou dialect where the following 3 forms (taken from Shi 1990, p. 182) are all acceptable:
- a. k'a? 有來? ADV have come = 'did (he) come?'
- b. 有來阿無? have come or not-have = 'ibid'
- c. k'a? 有來阿無? ADV have come or not-have = 'ibid'
- The fused form (c) can be regarded as a product of an intermediate stage.
- 55 Currently, with the support of a grant from the Chiang Ching-kuo Foundation, an in-depth synchronic-diachronic study of lexical diffusion in syntax in several dialects is being undertaken by Lien Chinfa on Taiwanese neutral question forms as well as the comparative construction, by Zhang Min on neutral question forms in Mandarin and by myself on the comparative construction in Cantonese. It is hoped that the Wu dialects will be covered soon.

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ARGUMENTS AGAINST 'SUBJECT' AND 'DIRECT OBJECT' AS VIABLE CONCEPTS IN CHINESE*

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1.0 Introduction

Thirty-one years ago Tsu-lin Mei (1961) argued against the traditional doctrine that saw the subject-predicate distinction in grammar as parallel to the particular-universal distinction in logic, as he said it was a reflex of an Indo-European bias, and could not be valid, as 'Chinese . . . does not admit a distinction into subject and predicate' (p. 153). This has not stopped linguists working on Chinese from attempting to define 'subject' (and 'object') in Chinese. Though a number of linguists have lamented the difficulties in trying to define these concepts for Chinese (see below), most work done on Chinese still assumes that Chinese must have the same grammatical features as Indo-European, such as having a subject and a direct object, though no attempt is made to justify that view. This paper challenges that view and argues that there has been no grammaticalization of syntactic functions in Chinese. The correct assignment of semantic roles to the constituents of a discourse is done by the listener on the basis of the discourse structure and pragmatics (information flow, inference, relevance, and real world knowledge) (cf. Li & Thompson 1978, 1979; LaPolla 1990).

1.1.0 Syntactic functions

Subject and direct object are generally referred to in the literature as 'grammatical relations'. I will break with tradition and use GRAMMATICAL RELATIONS to refer to all of the relational systems that might be involved in a grammar: syntactic relations, semantic relations, and pragmatic relations. In this paper I will be discussing syntactic relations, and I will use the term SYNTACTIC FUNCTION to refer to the concepts 'subject', 'direct object', and 'indirect object'. These terms represent particular restricted neutralizations of semantic roles in particular

syntactic environments (see below). In order for us to say that a language has a 'subject', etc., we need to find that in most syntactic environments (i.e. in most constructions) in the language, there is such a restricted neutralization. In fact we need to find THE SAME restricted neutralization in all or most of the constructions in the language for the concept of, for example, 'subject' to make any sense. It is especially important when working with non-Indo-European languages that we not assume the existence of particular grammatical categories, such as 'subject', 'object', 'definiteness', etc., in those languages without proper justification. Cumming puts it well in the following quote:

. . . if a number of independent properties converge on one construction or linguistic unit, then they can be said to define a category which is real for that language. Thus, the category 'subject' can be said to be a useful one for English, since the properties of preverbal position and government of verb agreement converge on the same NPs. However, if there is only one property (or a cluster of interdependent properties) which is unique to the construction or unit in question, then the use of a higher level term is not justified. Thus in a language in which preverbal NPs have no other unique properties, it is not useful to refer to these NPs as 'subject', since that term imputes properties which go beyond simple word order.

(1984: 365)¹

As 'subject' is the most important syntactic function cross-linguistically, the lion's share of the discussion in this paper will deal with determining if Chinese has grammaticalized this syntactic function.

Comrie, in beginning his discussion of 'subject' (1981, Chapter 5), lays down the following preliminaries, which apply equally well to the present work:

First, we are not committed a priori to the view that subject is a necessary descriptive category in the grammar of every language: there may well be languages where it is not appropriate, though equally there are languages (including English) where it is appropriate. Secondly, we are not committed to the view that, even in a language where subject is generally valid, every sentence will have a subject. Thirdly, we are not committed to the view that the translation of a sentence from language X where a certain noun phrase is subject will necessarily have the same noun phrase as subject in language Y.

(p. 100)

There is no universal notion of 'subject' (Platt 1971; Johnson 1977, Van Valin 1977, 1981; Foley & Van Valin 1977, 1984; Gary & Keenan 1977; Comrie 1981); it is impossible to discuss the notion of 'subject' outside of a particular grammatical theory. As Marantz has pointed out, 'There can be no right definition of "subject" . . . only a correct (or better) syntactic theory' (1984: 3). (See also Marantz 1982, 1984 for arguments why syntactic functions should not be seen as

primitives or tied to semantic roles.) Sanders (1984: 222) states it more generally: 'It is simply true in general that empirically significant concepts are inherently incompatible with rigorous definition, i.e. in terms of necessary and sufficient conditions, except within the specific context of a particular scientific theory'.

In this paper, I will define 'subject' as an NP that can be shown to have special GRAMMATICALIZED referential properties, beyond the prominence that might be associated with its semantic role, as evidenced by a restricted neutralization of semantic roles in various syntactic environments. With this as our definition of subject, we can say that subjects are not universal, as not all languages show this type of restricted neutralization (see S. Anderson 1976, Van Valin 1977, 1981, Faarlund 1989, and Bhat 1991).

In order to determine if a language has such a grammaticalized subject, we can follow the methodology used, for example, in S. Anderson 1976, Van Valin 1981, and Faarlund 1989, that of examining various constructions in the language to determine which argument of the verb, if any, figures as the syntactic pivot in each of the constructions. Essentially, a pivot is 'any NP type to which a particular grammatical process is sensitive, either as controller or target' (Foley & Van Valin 1985: 305).² To determine if there is a pivot for a particular construction, we will look for restricted neutralizations among the semantic roles of the arguments of the verb. For ease of discussion, we will use what Dixon (1979: 59) has called 'universal semantic syntactic primitives' to refer to the three major types of argument. These are S, the single argument of an intransitive verb;³ A, the argument which prototypically would be the agent of a transitive verb; and P, the argument which prototypically would be the patient of a transitive verb.⁴ In a given language, if S and P function in the same way in a particular syntactic construction, and differently from A (and any other possible roles), then we can say that there is a neutralization of the distinction between S and P, and so the syntactic pivot for that construction is [S, P]. If on the other hand S and A function in the same way in a particular syntactic construction, and differently from P (and any other possible roles), then we can say there is a neutralization of the distinction between S and A, and so the syntactic pivot for that construction is [S, A]. In a language where all or most of the constructions in a language have [S, P] pivots, [S, P] can be said to be the subject of that language, and the language can be said to be syntactically ergative (e.g. Dyrbal, which has an [S, P] pivot for all coordination and subordination, indispensability, and relative clauses).⁵ If, on the other hand, [S, A] is the major pivot pattern for all or most of the syntactic constructions of the language, then that grouping can be said to be the subject, and the language can be said to be syntactically accusative (e.g. English, which has an [S, A] pivot for coreferentiality between conjoined clauses, 'raising', and indispensability). If no consistent pattern emerges, then it is hard to say what the subject should be (e.g. Jaceltec, which has an [S, P] pivot for relativization, wh-question formation, and clefting, and an [S, A] pivot for cross-clause coreference). If there is no neutralization in any construction of the language, or unrestricted neutralization, then that language has no syntactic pivots, and it makes

no sense to talk of grammatical subjects, ergativity or accusativity (e.g. Archi—See Kibrik 1979, Van Valin 1981).⁶

The question then is what constructions should we look at in determining whether or not there are pivots in Chinese? Paul Schachter (1977) has shown that a distinction must be made between the semantic role-related properties and the reference-related properties of what we call 'subjects' in Indo-European languages. Dixon (1979) also points out that what he terms 'universal syntactic phenomena' (imperatives, jussive complements, etc.) are of no use in determining syntactic relations. Therefore, I will not discuss imperatives, jussive complements, or other role-related grammatical structures. We will look only at reference-related constructions such as 'raising', cross-clause coreference, relative clauses, reflexives, and certain Chinese-specific constructions (Section 2).

1.2. *Syntactic functions in Chinese*

We saw above that many scholars believe it is impossible to define 'subject' cross-linguistically (universally), but many do try to define subjects for individual languages. There have been a number of attempts to define a subject for Chinese, though no one has succeeded in this venture (see S. Lü 1979, Li & Thompson 1978, 1981, and L. Li 1985 on the difficulties of trying to define 'subject' for Chinese). In their attempts to define 'subject' in Chinese, scholars can be roughly divided into three camps: those who define 'subject' as the agent (possibly actor) (e.g. L. Wang 1956, T. Tang 1989), those who define it as the topic or whatever comes first in the sentence (e.g. Chao 1968), and those who believe both are right (S. Lü 1979, L. Li 1985). Several authors have also argued that though there is a 'subject' in Chinese, it does not play an important role in Chinese grammar (e.g. L. Li 1985, Li & Thompson 1981).

Those authors who define subjecthood simply on the basis of selectional restrictions vis-a-vis the verb are confusing semantics and syntax. They claim that subjects have such a selectional restriction, while topics do not. This definition would imply that subjects are not topics, though some that hold this view do say that the subject can also be a topic. That an NP has a selectional restriction vis-à-vis the verb simply means that that NP is an argument of the verb. This is a necessary condition for subjecthood, but not a sufficient one. Chinese syntax is sensitive to semantics in that the actor of a transitive verb will precede that verb, while an undergoer can either precede or follow the verb, depending on the pragmatic status (topicality) of the referent of the NP (see LaPolla 1993), but distinguishing actor from undergoer is not the same as distinguishing subject and object (cf. the comments to this regard by S. Lü [1979: 72]). A simple intersection of actor and topic in a particular sentence also does not make a subject. In Chinese there is no restriction on what semantic role can be the topic, though as actors are cross-linguistically more often within the presupposition (and the speaker, possibly the most common actor, is ALWAYS within the presupposition), they are very often topics,⁷ and this is what seems to have led to the confusion. Word order⁸ is to the

largest extent controlled by the nature of information flow (see LaPolla 1990, Chapter 3, LaPolla 1993), and secondarily by semantics. Syntactic functions play no part in the determination of the order of constituents in a sentence.

Shibatani (1988) claims that Chinese has an [S, A] 'subject', without giving much evidence. The methodology in that paper is flawed, in that Shibatani takes Japanese *wa* and *ga* marked NP's as prototypical topics and subjects, respectively, and uses the Japanese translations of sentences in other languages to determine whether that language has topics or subjects. Shibatani states that '[b]ecause of the merger between topic and subject in Western languages, the discussion of the grammatical subject in the West has been confounded by two basically distinct notions – an actor (or agent) and an entity which is being talked about' (1988: 2). In Japanese, on the other hand, according to Shibatani, these two distinct notions have distinct markings, *ga* and *wa* respectively. It seems then that Shibatani is equating actor with subject.

Tan 1988 also argues for the existence of a grammatical subject in Chinese, but the argumentation is again quite flawed, in that Tan attempts to use an NP's ability to appear in cleft constructions or to be questioned, etc. as proof of subjecthood. The problem is that Tan is not trying to prove the clefted or questioned NP is a 'subject' as opposed to some other syntactic function, but as opposed to being a 'topic', i.e., she feels that simply showing some argument to not be a 'topic' will prove that it is a 'subject'. As the clefted or questioned NP is a focused constituent, of course it could not be a 'topic', but that does not automatically prove it is a 'subject' (a methodological error also made in Tsao 1979).

Those who define 'subject' as whatever NP is sentence-initial are making almost the opposite mistake. Topichood is a pragmatic relation, not a syntactic one. Though the subject in languages that have this syntactic function is often also a topic, it need not be, as can be seen in sentence focus sentences⁹ in English with 'dummy' subjects, such as *It's raining*. On the view of those who define 'subject' as topic (e.g. S. Lü 1979, L. Li 1985), a patient NP becomes a subject anytime it appears before the agent. There are then no 'topicalized' structures, since the 'topicalized' NP becomes the subject, as in the following examples from L. Li 1985: 70:

- (1) a. Wo yijing zhidao zhe jian shi le.
1sg already know this CL affair ASP
I already know about this affair.
b. Zhe jian shi wo yijing zhidao le.
this CL affair 1sg already know ASP
This affair, I already know about.

On Li's analysis, in (1a) *zhe jian shi* 'this affair' is an object, while in (1b) it is a subject. At the same time, Li (following S. Lü 1979) says that 'subject' in Chinese has two natures: as the topic and as whatever role it is.¹⁰ S. Lü's original

idea (1979: 72–73) was that since 'subject' and 'object' can both be filled by any semantic role, and are to a certain extent interchangeable, then we can say that subject is simply one of the objects of the verb that happens to be in topic position. One of the examples of what he means by 'interchangeable' is (2) (S. Lü 1979: 73):

- (2) a. Chuanghu yijing hu le zhi.
window already paste ASP paper
The window has already been pasted with paper.
b. Zhi yijing hu le chuanghu.
paper already paste ASP window
The paper has already been pasted on the window.

S. Lü gives the analogy of a committee where each member has his own duties, but each member can also take turns being chairman of the committee. Some members will get to be chairman more than others, and some may never get to be chairman, but each has the possibility of filling both roles. This concept of the dual nature of 'subject' is S. Lü's (and L. Li's) solution to the problem of defining the concept of 'subject' in Chinese. It is clear that this definition does not give us a consistent definition for 'subject'; it simply states that the subject is the topic, and can be any semantic role.

In his monumental grammar, Y. R. Chao (1968) spoke of 'subjects', but not in the rigorous sense defined here. He loosely defined them as whatever came first in the sentence, and understood them more as topics than the kind of 'subjects' found for example in most Indo-European languages.

Li & Thompson (1974b, 1976a) argue persuasively for analyzing Chinese as a topic-prominent language. They also point out that '[t]here is simply no noun phrase in Mandarin sentences which has what E. L. Keenan [1976] has termed "subject properties"' (1976: 479). Aside from this, though, they give only one explicit argument, that of 'pseudo-passives' (see §2.7 below), to support the idea that there is no identifiable subject. In their later *Mandarin Chinese: A Functional Grammar* (1981), they do recognize a 'subject' for Chinese, but it 'is not a structurally [i.e. syntactically—RJL] definable notion' (1981: 19), and not very important structurally. For this reason they regard Chinese as a topic-prominent language rather than a subject-prominent language.

The 'subject' that Li & Thompson speak of is distinguished from 'topic' because it has a 'direct semantic relationship with the verb as the one that performs the action or exists in the state named by the verb' (p. 15), whereas the 'topic' need not necessarily have such a relationship with the verb. If this is the only criterion for determining a 'subject', though, then we are again simply substituting semantic relations for syntactic relations, and there is no subject that can be defined in syntactic terms.

In section 2, below, I will try to support Li & Thompson's earlier subjectless analysis of Chinese by presenting further arguments. Following the methodology outlined in §1.1, we will look at various reference-related constructions in Chinese with the intention of determining the pivot, if there is one, in each construction. We will see that there is no syntactic pivot in any of these constructions, so the concept of 'subject' as a syntactic function beyond semantic role simply does not exist in Chinese.

Section 3 deals with the question of whether there is a syntactic function 'direct object' in Chinese. As with the question of 'subject', there has been much discussion, but little resolution, often for the same reasons: confusion of semantics for syntax, or pragmatics for syntax. Again as with 'subject', 'object' is not a universal phenomenon (see for example Gil 1984, Collinge 1984), so we need to find a restricted neutralization of semantic roles in terms of behavioral and coding properties in order to say there is a grammaticalized direct object in Chinese.

J. Anderson (1984: 47) argues that the concept of 'object' is 'necessarily associated with subject-forming languages . . . unless the notion can be generalized over all second-ranking derived relations, if any other such there be'. If this is the case, then showing that there has been no grammaticalization of 'subject' should obviate the need for a lengthy discussion of 'object', but as there are other opinions on the connection between 'subject' and 'object' (see for example S. Lü 1979: 71, Gil 1984), and as the *ba* construction (see §3.2) figures crucially in many analyses of Chinese grammar, I will assume it is necessary to delineate the arguments against the syntactic function of 'object' in Chinese.

2.0 The question of 'subject' in Chinese

2.1.0 Cross-clause coreference

Our first test for subjecthood is to determine whether there are any constraints on deletion and coreference in complex constructions in Chinese. In a language with an [S, A] pivot for coordination (the accusative pattern), such as English, an argument shared by two conjoined clauses can be represented by a zero pronoun in the second clause only if it is in the S or A role in both clauses, as in (3a).

- (3) a. The man went downhill and \emptyset saw the dog.
 b. The dog went downhill and \emptyset was seen by the man.
 c. *The dog went downhill and the man saw \emptyset .

If instead the argument the two clauses have in common is in the P role in the second clause, in order for the two clauses to be conjoined, the representation of the argument (here the zero pronoun) must appear as the derived S of a **PASSIVE** construction, as in (3b). It is not possible to have the A role NP of the

first clause corefering with a zero pronoun in the O role of the second clause, as in (3c).

In a language with an [S, P] pivot for coordination (the ergative pattern), such as **Dyirbal** (Dixon 1980: 461ff), a shared argument which appears as a zero pronoun in the second of two conjoined clauses must be in the S or P role in each clause, as in (4a). If the NP in the second clause is instead in the A role, in order for the two clauses to be conjoined and for the argument to appear as a zero pronoun in the second clause, the shared argument must appear as the derived S of an **ANTIPASSIVE** construction (4b). It is not possible to say the equivalent of (3a), with a transitive second verb and a zero anaphor referring to an A role argument not appearing as a derived S, as evidenced by (4c). (These examples from Dixon 1980: 461-2.)

- (4) a. **balan guda bujan bagul yarangu buran**
 she+ABS dog+ABS descend+PAST he+ERG man+ERG see+PAST
 The dog went downhill and was seen by the man.
 (Lit.: The dog went downhill and the man saw \emptyset .)
 b. **bayi yara bujan bulralhanyu bagun gudagu**
 he+ABS man+ABS descend+PAST see+PAST+ANTI he+ABS dog+DAT
 The man went downhill and saw the dog (with antipassive indicator *ya-y* on the second verb).
 c. ***bayi yara bujan buran bagul guda**
 he+ABS man+ABS descend+PAST see+PAST he+ERG dog+ABS
 The man went downhill and saw the dog (with transitive verb and A argument (yarangu) unexpressed).

In Chinese we don't find either the English or the Dyirbal type of restriction on cross-clause coreference. In Chinese it is possible for the shared argument of a conjoined structure to appear as a zero pronoun regardless of whether it is in the A or P role; there is no need for a passive or antipassive construction:

- (5) a. **Xiao gou zou dao shan dixia, nei ge ren jiu kanjian le.**
 little dog walk to mountain bottom that CL person then saw ASP
 The little dog went downhill and was seen by the man.
 (Lit.: The little dog went downhill and the man saw \emptyset)
 b. **Nei ge ren zou dao shan dixia, jiu kanjian le xiao gou.**
 that CL person walk to mountain bottom then saw ASP little dog
 The man went downhill and saw the little dog.

In (5a) the shared argument of the two conjoined clauses appears as an S role NP in the first clause, and a P role NP (here a zero pronoun) in the second of the two clauses, without appearing in any type of passive construction (cf. (3c)). In (5b) the shared argument of the two conjoined clauses appears as an S role NP in the first clause and an A role NP in the second clause, without appearing in any type of anti-passive construction (cf. (4c)).

Comrie (1988: 191) points out that '[i]n any given language, there is necessarily interplay between the strictly grammatical factors and the extralinguistic (world knowledge) factors that help in determining anaphoric relations', but then goes on (p. 193) to show how, in English, grammatical constraints on the control of anaphor can force a particular interpretation of a sentence, even though the result is nonsensical, as in (6):

- (6) The man dropped the melon and burst.

Because of the grammatical constraints on conjunction reduction in English, this sentence has to be interpreted as saying that the man burst after dropping the melon. In Chinese there are no such grammatical constraints, so the Chinese equivalent of (6) would be interpreted as saying that the melon burst after the man dropped it:

- (7) Nei ge ren ba xigua diao zai dishang, sui le.
that CL person BA watermelon drop LOC ground broke-to-pieces ASP
That man dropped the watermelon on the ground, (and it) burst.
The same structure, but with different semantics, yields different results:
- (8) Nei ge ren ba xigua diao zai dishang, huang le.
that CL person BA watermelon drop LOC ground get-flustered ASP
That man dropped the watermelon on the ground, (and he) got flustered.
It is semantics (real world knowledge) that determines coreference in these examples, not syntactic function.

Coreference in Chinese is in fact quite free. In the following three examples we have A=A (and P=P) coreference, S=P coreference, and A=S coreference respectively:

- (9) Wo na le ta de qian, \emptyset jiu reng \emptyset le.
1sg pick-up ASP 3sg GEN money then throw ASP
I picked up his money and threw it.
- (10) Yi zhi xiao-jir bu jian le, laoying zhua zou le \emptyset .
one CL chick not see ASP eagle grab go ASP
One chick disappeared, an eagle carried it away.
- (11) Nei ge ren na-zhe gunzi \emptyset pao le.
that CL person holding stick run ASP
That person ran away holding a stick.

We see no restricted neutralization of argument type which would allow us to identify a pivot in any of these examples. Similar examples can be found in any Chinese discourse or text.

In the examples above, the referent of the zero anaphor was an argument of both of the verbs in each example sentence, but this is not always the case. As shown in Li & Thompson 1976a, 1979, and 1981, and Tao 1986, it is generally the topic

of the sentence or discourse, not the 'subject', that controls cross-clause coreference; the coreferent constituent need not even be an argument of the verb in the first clause. Li & Thompson (1976: 469-470) give the following three examples ([12]-[14a] - [14b] is my own).

- (12) Nei ke shu yezi da, suoyi wo bu xihuan \emptyset .
that CL tree leaves big so 1sg not like
That tree (topic), the leaves are big, so I don't like it (the tree).
- (13) Nei kuai tian daozi zhangde hen da, suoyi \emptyset hen zhiqian.
that CL field rice grow very big, so very valuable
That field (topic), rice grows very big, so it (the land) is very valuable.
- (14) a. Nei chang huo xiaofangdui laide zao, *(suoyi \emptyset hen lei).
that CL fire fire brigade came early, so very tired
That fire (topic), the fire brigade came early, so they're very tired.
b. Nei chang huo xiaofangdui laide zao, suoyi sunshi bu da.
that CL fire fire brigade came early, so loss not big
That fire (topic), the fire brigade came early, so there wasn't much loss.

In examples (12) and (13), the zero anaphor in the second clause corefers with the topic of the first clause, and not what is usually referred to as the 'subject'. In example (14a) the zero anaphor cannot corefer with fire *brigade*, as the fire brigade is not the primary topic of the clause, even though it is what many linguists would call the 'subject' of the verb in the first clause and a logical candidate for 'subject' of the second clause. The zero anaphor also cannot corefer with the topic because the inanimacy of the topic is not compatible with the semantics of the verb *lei* 'tired'. Only in (14b) can we have the topic as the controller of the zero anaphor. The evidence in these examples is consonant with Givón's statement that 'the main behavioral manifestation of important topics in discourse is continuity, as expressed by frequency of occurrence' and participation in equi-topic chains (1984a: 138), but as the topic that is participating in the cross-clause coreference is not an argument of the verb, no case can be made for subject control of cross-clause coreference, and the idea that 'subject' and 'topic' are one and the same (as argued, for example, in Givón 1984a) is also then questionable. To sum up, we can see from these examples that cross-clause coreference is dependent on a complex interplay of semantic and pragmatic factors, but does not depend on syntactic factors such as syntactic relations.

2.2.0 Relativization

Keenan & Comrie (1979a) give the following hierarchy of accessibility to relativization (p. 650) and constraints on that accessibility (p. 653):

ACCESSIBILITY HIERARCHY (AH)
SU > DO > IO > OBL > GEN > OCOMP
ACCESSIBILITY HIERARCHY CONSTRAINT

- a. If a language can relativize any position on the AH with a primary strategy, then it can relativize all higher positions with that strategy.
- b. For each position on the AH, there are possible languages which can relativize that position with a primary strategy, but cannot relativize any lower position with that strategy.

By 'primary strategy' is meant the 'unmarked' type of relative, the type where no pronoun is retained (if there are both types). The basic import of these constraints is that if a language has a primary form of relativization, it will relativize subjects, as 'in absolute terms Subjects are the most relativizable of NP's . . . Subject is . . . the most relativizable position on the AH' (p. 653). We can then use this hierarchy in our search for a subject in Chinese. If only one NP type is relativizable, then based on Keenan and Comrie's generalizations, that NP will be a subject. Keenan and Comrie 1979b presents data from a number of languages, such as Aoban (Melanesian) and Arabic, showing a strict [S, A] pivot for relativization. That is, only S and A can be relativized on without a pronoun being retained.

In a language with an [S, P] pivot for relativization, such as Dyirbal, an NP to be relativized on must be in the S (naturally or derived by antipassivization) or P role in the subordinate clause (Dixon 1980: 463). In Yidiny, another Australian language, the NP must be in the S (again, either naturally or derived by antipassivization) or P role in both the subordinate and the matrix clause (Dixon 1980: 462). (15) is an example of a Yidiny relative construction (from Dixon 1980: 459):

- (15) **wagujangu bunya wawal gudagangu bajalnyum.**
 man+ERG woman+ABS see+PRES dog+ERG bite+CAUS-SUBORD
 The man is looking at the woman who had been bitten by the dog.

The two clauses of this sentence share the absolutive argument *bunya* 'the woman'. If instead we wanted to say the equivalent of 'The man is looking at the dog which had bitten the woman', then the relative clause must first be antipassivized, so that the A role NP appears in the absolutive (derived-S) case (from Dixon 1980: 463):

- (16) **wagujangu gudaaga wawal bajaajinyum bunyaanda.**
 man+ERG dog+ABS see+PRES bite+ANTIPASS+TNS woman+DAT
 The man is looking at the dog which had bitten the woman.

In Chinese, though, we find that an NP in any semantic role can be relativized upon. Consider the following examples (see the explanations of relevant semantic roles below; exx. (17i) and (17m) are adapted from Shi 1989: 246-47; the indexed zero in each example indicates the position the referent would have in a non-relative clause structure):

- (17) a. Wo θ_1 zai nei ge shitang chi fan de pengyou mai le shu.
 1sg LOG that CL cafeteria eat rice REL friend buy ASP book
 My friend who eats in that cafeteria bought some/a book(s).
- b. Gangcai θ_1 bu shufu de nei ge reni zou le.
 just-now not comfortable REL that CL person go ASP
 The person who was not well just now left.
- c. Wo taoyan wo pengyou zai nei ge shitang chi θ_1 de fani.
 1sg dislike 1sg friend LOG that CL cafeteria eat REL rice
 I dislike the rice my friend eats in that cafeteria.
- d. Wo bu xiang zai wo pengyou θ_1 chi fan de nei ge shitangi
 1sg not want LOG 1sg friend eat rice REL that CL cafeteria
 chi fan.
 eat rice
 I don't want to eat at the cafeteria where my friend eats.
- e. Wo mai pinguo gei ta_i de nei ge pengyou_i lai le.
 1sg buy apples give 3sg REL that CL friend come ASP
 The friend I bought the apples for came.
- f. Ta gei θ_1 A+ de xuesheng_i bu duo.
 3sg give A+ REL student(s) not many
 He does not give A+ to many students.
- g. Wo gei θ_1 bang mang de nei ge reni yijing zou le.
 1sg give help busy REL that CL person already leave ASP
 The person I helped already left.
- h. Wo yong θ_1 lai xie zi de maobii bu jian le.
 1sg use come write characters REL brush not see ASP
 The brush(es) I use to write characters disappeared.
- i. Wo renshi θ_1 baba xie guo hen duo shu de nei ge reni.
 1sg know father write ASP very many book(s) REL that CL person
 I know that man whose father wrote many books.
- j. θ_1 Bi wo gao de nei ge reni zou le.
 compared-to 1sg tall REL that CL person leave ASP
 That person who is taller than me left.
- k. Wo bi ta_i gao de nei ge reni zou le.
 1sg compared-to 3sg tall REL that CL person leave ASP
 That person that I am taller than just left.
- l. Xiaofangdui lai de zao de nei chang huoi sunshi bu da.
 fire-brigade come CD early REL that CL fire loss not big
 The loss from the fire that the fire brigade came early to was not big.
- m. Lisi cai gu lai θ_1 θ_1 zhi gan le ji tian jiu bei ta
 Lisi just hire come only work ASP several day then BEI 3sg
 baba kaichu de nei ge reni you lai le.
 father dismiss REL that CL person again come ASP
 The man whom Lisi had just hired and who worked for only a few days,
 and was fired by his (Lisi's) father has come again.

From these examples we can see that it is possible not only to relativize on A (17a), S (17b), and P (17c), it is also possible to relativize on a locative (17d), a goal (17e, f), a benefactive (17g), an instrument (17h), a possessor (17i), either argument in a comparative structure (17j, k), and a topic (whether an argument of the verb or not) (17l). It is even possible for the referent to fill two different semantic roles (P and S) within the same relative clause, as in (17m). Keenan & Comrie (1979b: 334) claim (citing Harlow 1973) that in all but subject and object relativizations in Chinese a pronoun must be retained. If we compare (17e), (17g), and (17f); we can see that only in (17e) is the pronoun retained, possibly because of the nature of this particular serial verb construction: the verb *mai* 'buy' in Chinese is not ditransitive, so if there is a goal argument it must be coded in a serial construction with the verb *gei* 'give'. In (17k) there is also a pronoun, for the same reason: to express the 'object' of comparison, the verb/preposition *bi* 'compared-to' must be added to a topic-plus-stative verb construction (see §2.2.3, below, for details). In both of these constructions, the secondary verb (*gei* or *bi*) would not be added unless it was needed to add an argument, and this is probably why they require the pronoun when the arguments they are adding are relativized.¹¹ In (17f,g) the goal/beneficiary does not require a pronoun, as *gei* here is the main verb; in fact (17f) would be less acceptable with the plural pronoun added. This question is secondary, though, as there is clearly no restriction on the neutralization of semantic roles such that we could determine a single pivot for this construction.

As relativization is referential by definition, a language that has no grammatical encoding of pragmatic referentiality (i.e., has no syntactic functions) should be free of restrictions on relativization (Foley & Van Valin 1977). We can see from the above that this is in fact the situation in Chinese.

2.3.0 Comparatives

Descriptions of the structure of the *bi* comparative in Chinese (see ex. (18) below) often refer to the 'subject'. For example, Li & Thompson (1981) state that the item being compared '... must be the subject or the Topic ... of the verb phrase that expresses the [comparative] dimension' (p. 569). McCawley (1989) criticizes the inclusion of topics in Li & Thompson's analysis because sentences with comparison of a fronted object, as in (19a, b), are ungrammatical. Yet there are examples where the topic can be compared. Li & Thompson give sentence (20):

- (18) *Wo bi John gao.*
1sg compared-to John be-tall
I am taller than John.
- (19) a. **Gou bi mao wo xihuan.*
dog compared-to cat 1sg like
b. **Gou wo bi mao xihuan.*
dog 1sg compared-to cat like

- (20) *Xiang bi xiong bizi chang.*
elephant comp-to bear nose be-long
Elephants have longer noses than bears.

There is a very real difference between the topic-comment structure of (20), which is a 'double nominative' (Teng 1974) structure, and a structure such as that in (19). In the former, the nominal *bizi* 'nose' is part of the predication, whereas in the latter, *wo* '1sg' is not part of the predication. In the comparative construction there is always a topic about which a comment is being made, but there can only be one (this does not include the 'object' of the comparative verb/preposition *bi*). The examples in (19) are bad because there are two topics outside the predication.

A. Y. Hashimoto (1971) says that compared constituents 'need not be subject NP's ...; they may be NP's dominated by Time or Place expressions or prepositional phrases; however, they cannot be the object NP's' (p. 34).

Tsao (1990: 278ff) argues that 'direct objects' can be compared, as long as they appear in the secondary topic position (following the primary topic) or the tertiary topic position (following the secondary topic), and the comparison is done on two NPs at the same level of topicality, either both secondary or both tertiary topics. For him (19) would not be completely ungrammatical as long as *wo* '1sg' appears before the items being compared:

- (19') a. ?*Wo gou bi mao xihuan.*
1sg dog compared-to cat like
I like cats more than (I do) dogs.¹²

In general, though, in Chinese the problem is that the constituent that expresses the comparative dimension is an **INHERENTLY** comparative¹³ single argument **PREDICATION** (stative verb), unlike English, where the constituent expressing the comparative dimension is a 'gradable' **ADJECTIVE** or **ADVERB** (Leech & Svartvik 1975). Because of this, to compare two 'objects' of a verb such as *xihuan* 'like', the whole clause must be repeated, with the comparative *bi* coming between the two clauses, as in (21):

- (21) *Wo xihuan ta bi wo xihuan ni duo.*
1sg like 3sg compared-to 1sg like 2sg be-more
I like him more than I like you.

Duo is a single argument verb, so the structure of a sentence that compares 'objects' must be the same as one that compares 'subjects', i.e. **X PP VP**, where **X** is the constituent being compared (a simple NP, or a whole clause as in [21]), and **PP** includes *bi* and the constituent **X** is being compared to. The **X** constituent is the topic about which an assertion is being made. The restriction on comparatives in Chinese then is not a function of 'subject' control, but is due to the nature of information structure and the class of verbs used in comparatives: a one argument

verb, such as a verb used in a comparative construction, can take only one direct argument (the topic), so it is irrelevant to talk of 'subject' vs. 'non-subject'. A second factor is that the items being compared must be topical at the same level (i.e. must both be primary, secondary, or tertiary topics).

2.4.0 Raising to subject

Raising is seen by many (e.g. Chomsky 1981, Bresnan 1982) as a subject controlled construction, that is, only the subject of an embedded clause can be 'raised' to the subject of a verb such as *seem* (22):

- (22) a. It seems Paul bought the car.
 b. Paul seems to have bought the car.
 c. *The car seems Paul to have bought.
 d. It seems Paul is happy.
 e. Paul seems to be happy.
 f. The car seems to have been bought by Paul.

There is no problem 'raising' the A role or the S role NP of an embedded clause, as in (22b) and (22e), but 'raising' the P role NP results in the ungrammatical (22c). For the P role NP to be raised, it must first be passivized, and thereby become a derived-S, as in (22f). English then has an [S, A] pivot for this construction.

I was unable to find an example of 'raising' in any clearly ergative language (that is, a language where I would expect to find an [S, P] pivot for 'raising'), though as mentioned earlier, Dyrirbal has an [S, P] pivot for all constructions involving subordinate clauses (see Dixon 1972, 1980).

If we are to find a pivot for this construction in Chinese, we would need to find either an [S, A] or [S, P] restriction, yet in Chinese the equivalents of (22c), with the P role NP raised, and (22b), with the A role NP raised, are both perfectly acceptable:

- (22) a'. Haoxiang Paul mai le chezi.
 seem buy ASP vehicle
 It seems Paul bought the car.
 b'. Paul haoxiang mai le chezi.
 seem buy ASP vehicle
 Paul seems to have bought the car.
 c'. Chezi haoxiang Paul mai le.
 vehicle seem buy ASP
 The car seems Paul to have bought.

As we can see from these examples, either of the referential constituents, or neither, can appear before *haoxiang* 'seem' in Chinese, no matter what the semantic role, and there is no need for any passive construction.¹⁴ As there is no restriction on the semantic roles which can be involved in raising, no evidence can be found

for identifying a pivot for this construction, and thus there is no evidence from raising for establishing a subject in Chinese.

2.5.0 Indispensability

Keenan (1976) gives indispensability as one of the properties of his Subject Properties List. He says, 'A non-subject may often simply be eliminated from a sentence with the result still being a complete sentence. But this is usually not true of b[asic]-subjects' (p. 313). Connolly (1989: 1) also defines 'subject' as 'a NP which is required in (almost) every sentence and is some how distinguished from all other NPs'. In terms of looking for a restricted neutralization, if we found one NP type which could not be eliminated from the clause without the clause being incomplete, we would have possible evidence of a subject. For example, consider the following sentences:

- (23) a. Mark eats pizza when he is happy.
 b. Mark eats when he is happy.
 c. *Eats when he is happy.

In (23b) the P role NP can be deleted without affecting the acceptability of the sentence, though (23c), with the A role NP deleted, is unacceptable. It is also the case that the single NP of intransitive clauses is also indispensable in English:

- (24) a. Mark is sleeping.
 b. *Is sleeping.

There is then an [S, A] pivot for indispensability in English. In Dyrirbal, ellipsis is quite common, though according to Dixon (1972: 70) every sentence must contain an NP in the absolutive¹⁵ case. As the absolutive case is the unmarked case for the P role NP in a transitive sentence, in what Dixon calls a 'simple' sentence (i.e., one where there is unmarked case assignment) the A role NP (for which the unmarked form is the ergative case) can be left unspecified ([25b]), but not the P role NP ([25c]) (examples from Dixon 1972: 59, 70):

- (25) a. **balan dugumbil baggul yarangu balgan.**
 she+ABS woman+ABS he+ERG man+ERG hit
 Man is hitting woman.
 b. **balan dugumbil balgan.**
 she+ABS woman+ABS hit
 woman is being hit [by someone].
 c. ***baggul yarangu balgan.**
 he+ERG man+ERG hit

The verb in these examples is not inflected to agree with either NP, and though Dixon uses a passive to translate (25b), the verb form is the same in both (25a)

and (25b). Absolutive is also the case of the single direct argument of intransitive clauses (26a), and this argument cannot be ellided (26b):¹⁶

- (26) a. balan dugumbil baniju.
she+ABS woman+ABS come
Woman is coming.
b. *baniju.
come

We then have a clear [S, P] pivot pattern for indispensability in Dyirbal. In Chinese, on the other hand, the verb phrase alone can be a complete sentence, as in (27):

- (27) Chi le.
eat ASP
I/you/he/she ate.

There are also no 'dummy' subjects in Chinese, as are found for example in English sentences dealing with weather phenomena such as *It's raining*:

- (28) Xia yu le.
fall rain ASP
(It's) raining.

In discussing 'subjectless' verbal expressions, Chao (1968: 61) states that '[a]lthough it is possible to supply subjects to such verbal expressions . . . they should be regarded as sufficient by themselves, because (a) there is not always one specific form of a subject that can be supplied, and (b) sometimes no subject can be supplied.'

We can see from this that there is no indispensable NP in the Chinese clause, and therefore indispensability also can not be evidence for a 'subject' in Chinese.

2.6. Reflexives

The control of reflexives is often said to be a property of subjects (Tan 1988, C. Tang 1989). C. Tang (1989: 99) formalizes this for Chinese with a categorical rule that states that 'The antecedent of a reflexive must be a subject'. As the following examples show, this is not descriptively adequate ([29a] is from Sun 1989):

- (29) a. Mama bu neng yongyuan ti nii zhaogu (ni)ziji.
Mom not able forever for you look-after yourself
Mom won't be able to look after you (lit. '(your)self') forever.
b. Woi zhen fan, buguan woi zai nali, zong you ren lai
1sg very annoy not-matter 1sg LOC where always have people come
ganshe zijii de shi.

- interfere self GEN affair
I'm really annoyed, no matter where I am, someone always interferes with what I am doing (Lit.: '. . . interferes with self's business').
c. You ren lai jinggao Zhu Laobani shuo zijii de erzi
have person come warn Zhu boss say self GEN son
zai tou dongxi.
DUR steal thing(s)
Someone came to warn Boss Zhu that his (Zhu's) son was stealing things.
d. Wo jintian gei nii pai le hao duo ren de zhaopian, xianzai
1sg today give 2sg hit ASP very many people GEN photo now
gei nii pai zijii de.
give 2sg hit self GEN
I took pictures of a lot of people for you today, now I'll take your picture (Lit.: '. . . take self's picture').

In none of the above cases could the antecedent of *ziji* 'self' be said to be in an immediately preceding 'subject' slot.

In general, reflexives in Chinese are pragmatically or semantically controlled. That is, the nature of the discourse situation, the semantics of the verb used, the topicality/referentiality of the participants, or the psychological perspective will determine the antecedent of the reflexive pronoun.¹⁷ The concept of psychological perspective is from Zubin, Chun, & Li 1990 and Li & Zubin 1990; it refers to the degree of access to the perceptual thought processes of the character in the text under examination. This is comparable to Kuno's (1976, 1987) 'empathy' hierarchies, which Van Valin (1990: 212) reduces to a single principle 'E (more topical NP) > E (less topical NP)', i.e., empathy is with the more topical NP. The topicality of the controller of the reflexive anaphor then seems to be the key factor.

The influence of context is especially clear from a comparison of (30a) and (30b), below, in which the clause containing *ziji* (*Lao Zhang . . . gaosu Lao Wang zijii de erzi zai tou dongxi*) is the same in both examples, but the antecedent which controls *ziji* is different because of the different contexts:

- (30) a. Lao Zhang mingming zhidao Wang Huan (Lao Wang de erzi)
old Zhang clearly know Wang Huan old Wang GEN son
ba neixie lingjian nazoule, keshi yao zugou de zhengju
BA those spare-parts take: leave-ASP but want sufficient REL proof
cai neng gaosu Lao Wang, zijii, de erzi zai tou dongxi.
then can tell old Wang self GEN son DUR steal thing(s)
Old Zhang clearly knew that Wang Huan (Old Wang's son) took those spare parts, but he needed sufficient proof before he could tell Old Wang that self's (Old Wang's) son was stealing things.
b. Lao Zhang, mingming zhidao to erzi ba neixie lingjian nazoule,
old Zhang clearly know 3sg son BA those spare-parts take: go

keshi gaosu Lao Wang zijig_i de erzi zai tou dongxi,
but tell old Wang self GEN son DUR steal thing(s)
Lao Zhang ye daomei le.
old Zhang also in-trouble ASP.

Old Zhang clearly knew his son took those spare parts, but (if he) told Old Wang that self's (Old Zhang's) son was stealing things, he would also be in trouble.

In the two examples, *ziji* refers to either Lao Wang (30a) or Lao Zhang (30b) because it is known from the respective preceding contexts whose son is doing the stealing. The antecedent of *ziji* is determined by the semantics the whole utterance, not the syntactic function of the antecedent or its position in the sentence. This being the case, reflexives also give us no evidence for establishing a subject in Chinese.

2.7.0 Pseudo-passives

A common sentence type in Mandarin is where no A role is expressed, and the P role NP is in initial position, as in (31):

- (31) Jiu he le.
wine drink ASP
I/you/he/she drank the wine.

These are often called passives and given passive translations in English (e.g., (31) would be translated as 'The wine was drunk') by those wishing to establish syntactic relations for Chinese (e.g. Tan 1988), and the initial NP is seen as the subject. This type of 'passive' is only felicitous with inanimate patients; as there is no passive morphology, an animate noun in preverbal position would have to be interpreted as the agent of the verb unless intonation or some other clue informs the listener that it is the patient of the verb (cf. Teng 1975). An example of when it is logically clear that the sentence initial animate NP could not possibly be the agent is (32) (from L. Li 1986: 347):

- (32) Ta qiechu le liuzi le.
2sg cut-out ASP tumor ASP
He cut out (his) tumor. (i.e., He had his tumor cut out.)

An ambiguous case would be (33), the meaning of which only becomes clear when we know that Michael is only six years old.

- (33) Michael zuijin mei qu zhao-xiang.
M. recently N-A go take-pictures
a. Michael hasn't taken pictures recently.
b. Michael hasn't had his picture taken recently.

It is clear from this that there really is no innate passive sense to the verb in this type of construction, and that in (31), *Jiu he le*, *jiu* cannot be a subject. It must then be a topical theme in an active sentence without an agent. A similar analysis is given in Li & Thompson 1976: 479-450, and Li & Thompson 1981: 498-499.

A good example to show that this type of construction is not passive is (34), which could be said if two old friends pass in the street and one does not notice the other. The person who was not noticed could call out

- (34) Eh, Lao pengyou dou bu renshi la!
hey old friend all not recognize/know SFP
Hey, (you) don't recognize (your) old friend!?

To read this as a passive sentence would be inappropriate to the situation, as the emphasis is on the person addressed not recognizing the speaker rather than it being on the speaker not being recognized by someone.

Another example is the first two parts of the famous saying in (35), below, which would not make sense if considered to be passivized.

- (35) Tian bu pa, di bu pa (zhi pa Guangdongren shuo Guanhua).
heaven not fear, earth not fear (only fear Cantonese speak Mandarin)
(I'm) not afraid of heaven or earth, (just afraid of a Cantonese speaking Mandarin).

Looking at (36), below, we can see another problem with the 'passive' analysis, pointed out by Lü Shuxiang (1986: 340):

- (36) a. Wo bu he jiu, yi di ye bu he.
1sg not drink wine one drop even not drink
I don't drink wine, not even one drop.
b. (Ni) bie guan wo, ni shei ye bie guan.
(2sg) don't pay-attention 1sg 2sg who also don't pay-attention
Don't pay attention to me, don't pay attention to anyone.

If we were to say that the first clause of (36a) is active, but the second clause is passive because the P role NP occurs in initial position, then the parallelism is thrown off. In (36b) the topic is animate, and so the actor (ni) must be expressed in the second clause or shei 'anyone' would be seen as the actor, and the meaning would be 'Don't anyone bother me' (or 'Nobody bother me'). Comparing the two examples, we can see that they are both meant to be parallel structures, and both clauses of both sentences are active. The preverbal position of the P role NP is obligatory with *ye* 'also; even' (Derek Herforth, p.c.), and not related to any optional 'repackaging' (Foley & Van Vâlin 1985) strategy such as passivization.

One last argument against establishing a subject in Chinese also involves this type of topic-comment structure. Givón (1984a: 145) states that 'one may . . . view the grammar of subjectization as, in large part, the grammar of differentiating the subject

from the direct object case-role.¹⁸ If we look at the example below, we can see that as there are two topic positions in Chinese, first and second (after the A-role NP) position in the sentence.¹⁹ The A and P roles are differentiated solely on the basis of semantics; there is no marking for which NP is the 'subject' and which is the 'object'.

- (37) a. Zhangsan fan dou chi le.
Zhangsan rice all eat ASP
Zhangsan ate all the rice.
b. Fan Zhangsan dou chi le.
rice Zhangsan all eat ASP
Zhangsan ate all the rice.

Y. R. Chao (1968: 325) gives the following ambiguous example:

- (38) Zhe ge ren shei dou bu rende.
this CL man who all not know
a. Nobody knows this man.
b. This man doesn't know anybody.

If we accept Givón's statement, then since 'subject' and 'object' are not differentiated by the grammar, no subjectization has taken place.

To summarize this section briefly, we have looked at cross-clause coreference, relativization, *bi* comparatives, raising to subject, indispensability, reflexives, and pseudo-passives, and have found no restricted neutralizations of semantic roles in any of these constructions that would support the recognition of a subject in Chinese.

3.0 The question of 'direct object'

As with the question of 'subject', we would need to find restricted neutralizations in behavior or marking of semantic roles for us to be able to say there is a syntactic direct object in Chinese.

3.1.0 Behavioral properties

In terms of behavioral properties, many of the same tests we used for 'subject' above, such as relativization and indispensability, apply equally well to the question of 'object'. As we found no restricted neutralizations in any of the constructions considered above, such as relativization, we have no behavioral evidence from those tests for a direct object in Chinese. One type of behavioral property unique to grammaticalized objects is what is known as 'dative shifting' ('promotion to direct object'), a construction with marked ('less usual') assignment of direct object status, that is, where an otherwise non-canonical direct object argument of a three argument verb is marked or behaves as (is 'promoted' to) a

direct object (Givon 1984b). The contrast between marked and unmarked assignment of direct object status can be seen from the examples in (39):

- (39) a. John gave a dog to the boy.
b. John gave the boy a dog.

In (39a) the NP in the immediate post-verbal direct object position is the theme *a dog*, and this is the unmarked assignment to direct object. In (39b) it is the recipient *the boy* which is the immediate post-verbal direct object position, and this is a marked assignment of direct object position. These two possibilities are referred to as 'alternate syntactic frames' in Dixon 1989. Chinese does not allow such alternate syntactic frames, as is pointed out by Dixon (1989: 99). With a small number of ditransitive verbs (those expressing 'giving' or 'sending'), it is possible to have the goal argument in other than immediate post-verbal position by putting it in a second clause with *gei* 'give', but this breaks the sending and giving into two clauses/actions:

- (40) a. Wo song haizi shu.
1sg send child book(s)
I sent the child(ren) (a) book(s).
b. Wo song shu gei haizi le.
1sg send book(s) give child ASP
I sent (a) book(s) to the child(ren).

This alternate form is not possible with ditransitives where there is no actual giving, and is not possible with *gei* 'give' itself:

- (41) a. *Wo gaosu yi jian shi gei ni.
1sg tell one CL affair give you
(I'll tell you about something.)
b. *Wo gei yi zhi you gei haizi.
1sg give one CL dog give child(ren)
(I gave a dog to the child(ren)).

There is also an alternant where the *gei* clause is placed before the verb, and this can be done with a wider range of verbs, but in this case the reading is a benefactive one:

- (42) Wo gei haizi song shu.
1sg give child(ren) send book(s)
I sent (a) book(s) for the children.

In each of these cases the goal or beneficiary remains in immediate post verbal (including *gei* as a verb) position, and does not take on the position (or markings) of a direct object.

A second behavioral property claimed for 'objects' in Chinese is inability to appear in the *shi* . . . (*de*) cleft construction. T-C. Tang (1983: 190) claims that objects, whether direct or indirect, cannot be clefted, that is, they 'cannot alone become the informational focus' (see also Teng 1979: 105). Examples of the *shi* . . . (*de*) cleft construction are given in (43b, c):

- (43) a. Ta ji gei wo liwu.
3sg mail give 1sg present
He sent me a present.
b. Ta *shi* ji gei wo liwu *de*.
3sg COP mail give 1sg present NOM
He SENT me a present.
c. Shi ta ji gei wo liwu (*de*).
COP 3sg mail give 1sg present NOM
He sent me a present.

This construction places a focal NP in the immediate post-copula focus position and nominalizes the main verb. As evidence that objects cannot become the informational focus, Tang (p. 190) gives the following sentences:

- (44) a. *Ta ji gei wo *shi* liwu *de*.
b. *Ta ji *shi* gei wo liwu *de*.
c. *Ta ji gei *shi* wo liwu *de*.

All grammatical examples of the *shi* . . . (*de*) cleft construction have the verb within the *shi* . . . (*de*) phrase. As the function of *de*, when it appears, is to nominalize the verb, of course the verb must be within the nominalized phrase, and this excludes post-verbal arguments if the copula *shi* is to appear before *de*. The restriction then is not on 'objects' per se, or on any particular semantic role, but on post-verbal position. This can be seen from the fact that post-verbal arguments other than 'objects' and 'indirect objects' are also barred from appearing in this construction, such as the locative argument in (45):

- (45) a. Wo ba nei ben shu fang zai zhuozi shang.
1sg BA that CL book place LOC table on
I put that book on the table.
b. *Wo ba nei ben shu fang *shi* zai zhuozi shang *de*.

Other evidence that it is position and not semantic role that is the limiting factor is the fact that a 'fronted' P role NP CAN be the informational focus in a cleft construction, as in (46):

- (46) Shi pingguo wo mei mai.
COP apples 1sg N-A buy
It was APPLES I didn't buy.

There is also an alternate cleft construction, what Tang (1983) refers to as a 'changed cleft' construction, which CAN take post-verbal arguments, as the linear order of *shi* and *de* is reversed, avoiding the problem mentioned above:

- (47) a. Wo mei mai *de shi* pingguo.
1sg N-A buy NOM COP apples
What I didn't buy was APPLES.

We can see from the above that the restrictions on clefting are not related to semantic role, and so do not point to a restricted neutralization of semantic roles that we might identify as a 'direct object' in Chinese.

3.2.0 Marking properties

In terms of marking properties, as undergoers (P role and non-actor S role arguments) can occur either preverbally or postverbally, and there is no agreement of any argument with the verb, to prove the grammaticalization of a direct object, we would need to find some type of unique marking that distinguishes the argument said to be the direct object. It is often considered that the *ba* construction in Mandarin provides just this type of unique marking (see for example Sun & Givon 1985, in which *ba* is referred to as the OM ['object marker']). In the *ba* construction, the particle *ba* occurs between two NPs and (most often) before a resultative verb complex:

- (48) NP₁ *ba* NP₂ V₁ (V₂) *le*

In this construction, V₁ is most often transitive, and V₂ is always intransitive or a movement/locative verb. NP₂ is then said to be the direct object of V₁ or the complex verb made up of V₁ and V₂ if there is a resultative complement, as in (49):

- (49) Zhangsan ba yifu xi huai le.
Zhangsan BA clothes wash broken ASP
Zhangsan ruined the clothes washing them.

In this case, *yifu* 'clothes' is the P of the verb *xi* 'wash', and is the S of the stative verb *huai* 'broken'. This configuration is said to have developed out of a serial verb construction where the first verb (*ba* - hich means 'hold' when it acts as a full verb) grammaticalized into a direct object-marking preposition or particle (Y.C. Li 1974; Li & Thompson 1974a, 1974c, 1976b, 1981; Peyraube 1987, 1989). We need to look more carefully, though, at the grammatical and semantic relations that hold between the constituents of a *ba* construction.

As has been pointed out elsewhere (than 1983, Z. Ma 1985), the post-*ba* position can be filled not only by a patient, but also by an agent, a locative, an

instrument, or an NP that has no selectional relation to the verb, but is involved in the action. Consider the examples below (from X. Ma 1987: 428-29):

- (50) a. Luobo ba dao qie dun le.
radish BA knife cut dull ASP
The radish made the knife dull (when I/you/he cut it).
- b. Ta ba bi xie to le.
3sg BA pen(cil) write blunt ASP
He made the pen(cil) blunt from writing with it.
- c. Zhe bao yishang ba wo xi lei le.
this package clothes BA 1sg wash tired ASP
Washing this pack of clothes has made me tired.
- d. Zhe xie shi ba toufa chou bai le.
this few affair BA hair worry white ASP
Worrying about these affairs has made (my/yours/his/her) hair turn white.
- e. Xiao Wang ba haizi dong bing le.
Little Wang BA child freeze sick ASP
Little Wang (did something such that his) child got sick from being too cold.

The examples above show several different possible relationships between the constituents of the *ba* construction: (50a) has the P of V_1 in initial position, the S of V_2 in the post-*ba* position, and no A argument specified; (50b) has the A of V_1 in initial position, the instrument of V_1 , which is also the S of V_2 , in post-*ba* position, and no P argument specified; (50c) has the P of V_1 in initial position, and the A of V_1 , which is also the S of V_2 , in post-*ba* position; (50d) has a non-argument topic in initial position, the S of V_2 in post-*ba* position, and no core argument of V_1 anywhere in the sentence; (50e) has the possessor of the S of both V_1 and V_2 in initial position and the S of both verbs in post-*ba* position.

As can be seen from these examples, there is no consistent relationship between the post-*ba* NP and the P of V_1 . The only consistent relationship holding in these *ba* constructions is that between the post-*ba* argument and the S of V_2 .

It might be argued that these verb complexes should be treated as single verbs, so the post-*ba* argument would then be the object of that single complex verb. That this would be incorrect can be seen from the fact that there cannot be, for example, a complex verb *xi-lei* 'to wash-tired', with clothes as the subject and a person as the object, as would have to be the case in (50c).

A second point is that the relationship between the post-*ba* NP and the S of V_2 only holds when there IS a V_2 . In the following examples there is no V_2 :

- (51) a. Wo ba ni de qian mai le shu le.
1sg BA 2sg GEN money buy ASP book ASP
I bought books with your money.

- b. Ta ba diren dang pengyou.
3sg BA enemy act-as friend
He takes enemies to be friends.

In each of these examples there is only one verb, and there is no regularity to the semantics of the post-*ba* NP: in (51a), the post-*ba* NP is an instrument; in (51b), the post-*ba* NP is a locative. The use of *ba* in (51b) changes a non-causative verb into a causative one by adding an extra argument to an otherwise equational construction. (See also exx. (55a, b) for similar semantics.)

This lack of relationship with a specific semantic role is in concord with Tsao's (1987) analysis of the post-*ba* NP as a 'secondary topic', and with one of the functions of *ba* itself as clarifying the transitivity relation between the primary topic (the clause-initial NP) and this secondary topic (cf. Chao 1968: 702). I believe Thompson (1973) is correct in being more explicit about the transitivity function of the *ba* construction. She does call the post-*ba* NP the 'direct object', but of the whole sentence, not the verb, a somewhat broader notion of direct object (see also L. Li 1986: 352 for a similar argument). Her 'semantic condition' on the use of *ba* is that '[a] NP_i may be fronted with *ba* if the rest of the sentence answers the question, "What did the agent do to NP_i?", that is, if it is semantically the "direct object" of the sentence' (p. 220). We can see from the examples above that the pre-*ba* NP is not always an agent, so this condition does not always hold in *ba* constructions. In other words, it would be more correct to say that something affects something else, with no reference to semantic role or grammatical function. This transitivity function is clear in examples such as the following ([52a] is from a love song; [52b] is from Li & Thompson 1981: 469, their [27]):

- (52) a. Wo shou zai Xishan ba lang deng.
1sg stay LOC West-Mountain BA man wait
I stay at West Mountain and wait for (my) man.
- b. Ta ba xiao mao ai de yao si.
3sg BA small cat love CD want die
S/He loves the kitten very much (i.e. 'so much s/he could die').

Generally 'wait' and 'love' are not verbs of high transitivity, but to emphasize how much energy the woman/child is putting into waiting/loving, the *ba* construction is used. Li & Thompson (1981: 469) offer the explanation that sentence (52b) 'hyperbolically creates an image that such intense love must have some effect on the "small cat"'. From this example, though, we can see that *ba* here is intensifying the transitivity, but not intensifying the affectedness of the undergoer, as can be seen from the fact that the complement of result refers to the actor of the loving, not the undergoer. That the cat is not necessarily affected by the loving can be seen in the fact that the same sentence could be used about a fan loving a movie star that s/he had never met. Likewise, in

the following example, it is the one doing the loving, not the one loved who can't sleep:

- (53) *Ta ba ni ai de shui bu liao jiao.*
 3sg BA 2sg love CD sleep not able sleep (n.)
 She loves you so much she can't sleep.

As pointed out by McCawley (1989: 31), it is also possible to have ambiguity as to who is being affected in a sentence of this type, as in (54):

- (54) *Ta ba wo xiang si le.*
 3sg BA 1sg think die ASP
 a. He misses me so much he could die.
 b. He makes me miss him so much I could die.

Another argument against seeing the *ba* construction as marking a direct object is that of the 'retained' object (a post-verbal object in a *ba* or *bei* construction – See Thompson 1973). Consider the examples below, both from Li & Thompson 1981: 471:

- (55) a. *Wo ba ta erzi huan le xingming.*
 1sg BA 3sg son change ASP name
 I changed his/her son's name.
 b. *Ta ba huo jia le yi-dian you.*
 3sg BA fire add ASP a-little oil.
 S/He added a little oil to the fire.

In no sense could we say that *ta erzi* 'his/her son' is the direct object of *huan* 'change', or that *huo* 'fire' is the direct object of *jia* 'add'; (55a) is a case of possessor raising (Fox 1981), and there is no grammatical non-fronted form for (55b) without *ba* or *gei* to allow an added argument.

As we have found no consistency in the use of *ba* for marking a P role argument or any other type of argument, it cannot be used as evidence for the grammaticalization of the syntactic function 'direct object' in Chinese. We have, then, found neither behavioral or coding properties that could justify establishing the syntactic function 'direct object' in Chinese.

4.0 Conclusion

In this paper we have looked at various constructions in Chinese to see if there are any restricted neutralizations of semantic roles that would point to a grammatically viable category of either 'subject' or 'direct object' in that language. We have found none. We have also compared the classic accusative and ergative

syntactic patterns and found Chinese to differ from them both. My conclusion is that Chinese has not grammaticalized either an accusative or an ergative pattern, and so the syntactic categories 'subject' and 'direct object' simply do not exist in Chinese.²⁰

Notes

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1 There are actually two parts to the question of 'subject':

... in order to say that a given grammatical relation exists in a given language this claim must be justified both language-internally and cross-linguistically. Language-internally, this means that a number of logically independent criteria must be established that serve to identify the grammatical relation in question as being syntactically significant in the language in question. Cross-linguistically, ... in assigning the same name to grammatical relations established independently in different languages, it must be the case that the relations in the two languages have a reasonable degree of overlap ...

(Comrie 1981: 60)

In this paper we will be concerned only with the language-internal question of 'subject', etc.

- 2 This concept is from Dixon 1979, but see also Foley & Van Valin 1984: 107-124, 1985: 304-306 for a discussion of the nature of pivots and the distinction between Pragmatic Pivots and Semantic Pivots. A Semantic Pivot is sensitive to semantic factors, while a Pragmatic Pivot is sensitive to the topicality of a referent. For Dixon, pivots are a surface phenomenon, as there is a deep universal subject. Foley & Van Valin's Role and Reference Grammar is a monostratal theory, and what Dixon calls deep subject properties, Foley & Van Valin analyze as role-related properties different from the reference-related properties that define pragmatic pivots. (The term 'pivot' goes back to Chao 1968, but there refers to the shared argument of a biclausal structure.)
- 3 The single argument of intransitive verbs can also be agentive or non-agentive. This semantic distinction is significant in the determination of word order in presentative and other constructions in Chinese (see LaPolla 1990, Chapter 3, LaPolla 1993), but it is not important for the discussion of pivots, as the question of which of two or more NPs is pivot is only relevant with transitive verbs.
- 4 These 'primitives' are 'semantic-syntactic' in the sense that in terms of transitive verbs the distinction is semantic, while in terms of intransitive verbs, the neutralization of semantic roles is syntactic. See Du Bois 1985 for arguments why A, S, P (his 'O') are not universal or primitives. Nonetheless, I will use them here, as Du Bois does, because they are useful heuristic notions. I am using 'P' instead of Dixon's (and Van Valin's) 'O' to refer to the patient of a prototypical transitive verb, following Comrie 1978, 1981. Dixon's use of 'O' stems from his positing of a level of 'deep' subject and object (see footnote 2). Though we are essentially talking about the same thing, I prefer not to use 'O' because of its association with 'object' and the confusion that might arise from this association.

- 5 I want to emphasize that I am talking here about syntactic ergativity; morphological ergativity has no necessary relationship to this syntactic type (Comrie 1981: 65 ff.), though it so happens that Dyirbal is morphologically ergative (with a pattern split according to person) as well.
- 6 This paragraph is partially adapted from Van Valin 1981: 862; see also Van Valin 1977, Comrie 1981: 64, 118.
- 7 See Silverstein 1981: 243 on the speaker and addressee as the 'maximally presupposable entities' and the most 'natural' topics.
- 8 I am dealing here only with the order of constituents in a sentence, not the order within constituents such as NPs. It might be said that the order of relative clause before head reflects information structure, but it is not clear how one could relate determiner-head order to pragmatic structure (though see Takashima 1985, 1987 for one attempt at this in the language of the Chinese oracle-bone inscriptions).
- 9 This term is from Lambrecht, to appear; roughly, a sentence-focus sentence is a sentence without a topical subject, as the entire sentence is focal.
- 10 Though in a later article L. Li (1986: 349) claims that not only the syntactic function, but also the semantic role of a referent changes with a change in position in a sentence. Li claims that in (i) the referent of '1pl' is a patient, while in (ii) it is an agent:
- (i) Zhe yi xia, jiu mang huai le women zhe xie ren.
this one time then busy ruin ASP 1pl this few people
This time we really got busy.
- (ii) Women zhe xie ren jiu mang huai le.
1pl this few people then busy ruin ASP
We really got busy.
- 11 Tsao (1990: 430-32) gives arguments to show that the degree of topicality of the relativized NP is directly correlated to the naturalness of it being relativized upon. In the case of (17k), the NP involved is not highly topical, and so not as relativizable.
- 12 This structure is much more acceptable when the items being compared are inanimate, as in (i):
- (i) wo daishu bi jihe xihuan.
1sg algebra compared-to geometry like
I like algebra more than (I do) geometry.
- This possibility is not available at all when the 'objects' are human, as in (21), below.
- 13 Unmodified Mandarin Chinese stative verbs, such as *gao* 'tall' are INHERENTLY comparative because a clause without the comparative PP is still comparative (Light 1989). For example, if there were two people standing in front of me and I said *John gao* (Lit. 'John tall'), it would mean 'John is taller (than the other person)', not 'John is tall'. To say the latter, the stative verb must be modified by *hen* 'very' or some other adverb.
- 14 See Tsao 1990: 378ff for other examples of 'raising' in Chinese showing the possibility of all arguments being 'raised'.
- 15 In Dixon 1972, the absolutive case is referred to as the 'nominative' case; I am here using 'absolutive' to conform with the examples cited above from Dixon 1980.
- 16 It is possible for the absolutive marked NP to not include a lexical noun, but there must at least be a noun class marker, and so there is still an overt absolutive NP, as in (i):
- (i) bayi baniju.
he+ABS come
(Man) is coming.

- 17 The nature and use of *ziji* 'self' in Chinese is actually quite complex. See J. Sun 1989 and Zubin, Chun, & Li 1990 for more complete discussions. See Li 1990 for a more complete discussion of psychological perspective framing, and Yan Huang 1989 for a thorough refutation of the Government-Binding analysis of reflexives and discussion of a possible Gricean analysis.
- 18 Though see Hopper & Thompson 1980 for arguments on why P case marking should be seen as 'functionally motivated by the Transitivity of the clause as a whole, rather than by the need to distinguish subject from P' (p. 292).
- 19 The case I am speaking of here is when there is both an A role NP and an P role NP in preverbal position – ignoring for the time being the question of the *ba*-construction (see §3.2) and preverbal temporal and locational phrases
- 20 For those whose theoretical orientation would preclude them from accepting my conclusion, the fact remains that the differences in syntactic patterning presented here are very real; a theory that assumes 'subject' and 'direct object' as universals must be able to explain how these categories can evince such radically different behavior in different languages.

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Randy J. LaPolla

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INTRODUCTION TO VOLUME IV

Tibeto-Burman

This volume of the set is devoted to articles about the Tibeto-Burman branch of the Sino-Tibetan family, which includes everything in the family aside from the Sinitic (Chinese) varieties (see Volume I on the relationships within the family). The major languages with extant old texts are Tibetan, Burmese, Tangut (Xīxià), and Newar, and much of the literature is about these older languages, though there are hundreds of languages and dialects within the family spread across Southwest China, Myanmar, Northeast India, Thailand, Bangladesh, and northern Vietnam.

Our first two papers, Chapters 54 and 55, are classics that concern the verbal morphology of Old Tibetan. Fang-Kuei Li's 1933 article "Certain phonetic influences of the Tibetan prefixes upon the root initials" starts us off. It is the first rigorous application of the method of internal reconstruction to any Sino-Tibetan language. In the paper, Prof. Li disagrees with Conrady's earlier (1896) analysis (also followed by Wolfenden 1929) taking the *b-* prefixed forms in the Tibetan verb paradigms as the basic form, arguing instead that the prefixless forms should be taken as basic and showing how the different initials found in the paradigms are due to the influence of the different prefixes. Prof. Li shows that the voiceless unaspirated forms in the paradigms are secondary, so there is only a voiced-voiceless aspirated contrast at base, and he also argues that the voiced vs. voiceless aspirated contrast cannot be shown to consistently mark transitive vs. intransitive, as had been posited by Conrady. He also argues against the analysis of certain forms as passive. He gives several examples of word families and the derivations of the different members of each word family.

Following this, W. South Coblin, who was trained by Prof. Li and also worked closely with him on key Tibetan texts (e.g. Li & Coblin 1987), continues where Prof. Li had left off in his "Notes on Tibetan verbal morphology" (Coblin 1976). In this article Prof. Coblin applies the results of Prof. Li's internal reconstruction to Tibetan verb paradigms that consist of four forms (present, perfect, future, imperative). He also builds on the work presented in Simon (1929), Shafer (1950–1951), Durr (1950), Uray's (1953) critique of the work of Shafer and Durr, Nishida (1958), and Chang (1971). He adopts or refines a number of rules proposed in these earlier works and also posits a number of cluster simplification and vowel assimilation rules that allow him to explain all but a few of the 266 verb paradigms he

considers. Hill (2011: 446) summarizes the patterns of cluster simplification that Prof. Coblin pointed out as “Coblin’s Law”: “Prefixes are lost when the resulting cluster is not phonotactically possible”.

As mentioned in the discussion of word families in Sinitic in Volume III, the discussion of word families in Sino-Tibetan started with Wolfenden’s 1928 article on word families in Tibetan in which the prefix *m-* is involved in some of the forms. He also extended the scope of this work on word families to look at cross-linguistic word families in his 1937 article comparing Tibetan, Kachin, and Chinese forms, as well as in his 1929 magnum opus. Another scholar very much involved in this work was Walter Simon (e.g. 1929, 1941, 1942, 1949, 1971, 1977, 1980). In carrying out the earlier work on word families the scholars were often quite conservative in terms of what alternations they would allow in their word families, but later expanded the work to include more possible variants.¹ The short paper presented here in Chapter 56, Simon (1977), “Alternation of final vowel with final dental nasal or plosive in Tibetan”, is still rather conservative in terms of the variants included, but that may be simply a matter of what the paper is trying to show: in their Addenda to the 1929 reprint of Jäschke’s 1881 dictionary of Tibetan, A. H. Francke and Walter Simon had mentioned a pattern of variation such that they found “a final vowel in the case of verbs, a dental nasal in the case of adjectives, and a dental (voiced) plosive in the case of nouns” (Simon 1977: 51). This article presents a large amount of data showing such word families and concludes (p. 57) that in fact the pattern mentioned “is merely one of several possible patterns”.

The next article, Chapter 57, is a short but important one by Robbins Burling, “The addition of final stops in the history of Maru (Tibeto-Burman)” (1966). Prof. Burling has a very large number of publications in several different areas of anthropology and linguistics, and he has made major contributions to Tibeto-Burman studies, including his early *Garó grammar* (1961), “Proto-Bodo” (1959), “The ‘Sal’ languages” (1983; see Chapter 10 in Volume I), his overview of genetic relations in Northeast India (2003, now updated as Post and Burling 2017), and his more recent trilogy on Garó (2004), among others.² The paper we present here argues that when we do comparative reconstruction, we can’t always take the more complex form as the historically prior one. In this case, when comparing Maru words with final consonants with cognates in related languages that do not have final consonants, we find that the Maru words are innovative, and he identifies the conditions on the appearance of the final consonant. This finding is also relevant to efforts to determine the reasons for the variants in word families, as we might also be tempted to see the stop finals as suffixes if we didn’t have good knowledge of the development of the language.

Our next topic is the phenomenon of “pronominalization”, first discussed by Brian Hodgson in his description of Dhimál in Hodgson (1847). This refers to the typological feature of having copies of the free personal pronouns of the language appearing after the verb, either as a suffix or as a free form. What he was referring to was not cognate forms shared across languages, but the unique pronouns of the

individual languages appearing after the verb or suffixed to the verb, as in the case of Dhimál, for which he gives *Ká khika* (1sg), *Ná khina* (2sg), and *Wá khiwa* (3sg), *Kyéł khi kyel* (1pl), *Nyel khi nyel* (2pl), and *Ubal khi* (3pl) for the present tense indicative auxiliary, and says of the suffixed forms, “Is this inflection, after all, nothing more than the reduplicated pronoun, added to the root, after the manner of the plural?” (1847: 120). Hodgson divided the “Himalayan races”, as he called them, into two groups based on whether they spoke what he called “simple or non-pronominalized” languages or “complex or pronominalized” languages (1880: 105). That is, he wasn’t dividing the languages by the manifestation of some cognate features or shared innovations, but dividing the people based on the typological nature of their language as simple or complex, and he judged their intellectual and cultural levels accordingly. That this was a typological rather than cognate feature was also understood by Eugénie J. A. Henderson when she wrote her article “Colloquial Chin as a pronominalized language” (1957), which we present here in Chapter 58. Kuki-Chin had already been recognized as having a prefixal paradigm, though it was analyzed in the *Linguistic Survey of India* (Konow 1904) as nominal prefixing and not a system of pronominalization;³ but based on Hodgson’s work Henderson created a list of typological features that a language should have to be considered a pronominalized language and, on the basis of that list, argues that, like Dhimál, colloquial Tiddim Chin could also be considered a pronominalized language as it also showed a pattern of suffixing (different from the Dhimál pronouns) to the verb. And so she argues that more languages than Hodgson had originally assumed manifest this typological phenomenon and thus the phenomenon (not the forms—she did no comparison of forms—but the use of the pronouns of the individual languages for marking person on the verb) might be a general Tibeto-Burman typological trait.

The following paper, Chapter 59, still on this topic, is “Pronominal verb morphology in Tibeto-Burman” by Jim Bauman (1974; see also Bauman 1975). In this article Bauman’s main goal was to argue against the idea current at the time that the systems found in the pronominalized languages were the result of contact with the Munda language. In this he was successful, as that idea was no longer current after Bauman’s article appeared. To replace that hypothesis with another possible origin for the system, he argues that it is possible that the patterns found were due to native development. He compares some of the systems described up to that point to show commonalities, but does not try to reconstruct a paradigm to Proto-Tibeto-Burman. In the article it seems he is only considering the possibility that there was just one ancestral system, and is not considering the possibility that different systems were innovated more than once, even given the obvious historical transparency of the Dhimál suffixes as clearly copies of the Dhimál free pronouns and their lack of similarity to forms in other languages. In trying to make his case that the languages that currently do not manifest any trace of “pronominalization” must have had such systems in the past but lost the pattern, he also looks at the free pronouns and compares them with the affixes and finds commonalities, showing that there was a clear grammaticalization relationship

between some of them (i.e. that the suffixes derive from the pronouns or obvious sources such as the number “two” for duals) but does not see this as a problem for assuming a deep history for the forms. Based on this he also argues for reconstructing an inclusive/exclusive distinction to Proto-Tibeto-Burman, but LaPolla (2005), based on a much larger sample of languages, shows that the inclusive forms are clearly innovative and largely language-specific. In a later article, Bauman (1979) also argues that the patterns found in the systems of the pronominalized languages represented an ergative pattern.

Our next article, Chapter 60, LaPolla (1992a), “On the dating and nature of verb agreement in Tibeto-Burman” is a response to the assumptions of Bauman’s work and those who tried to build on it by reconstructing a single paradigm of verbal suffixes that were said to pattern in a split-ergative way to Proto-Tibeto-Burman or even Proto-Sino-Tibetan. LaPolla (1992a) argues 1) that there is not enough evidence to allow us to assume a system already existed in Proto-Tibeto-Burman (never mind Proto-Sino-Tibetan) and was lost in all of the languages with old documentary evidence except for Tangut; 2) that the Tangut system is clearly a Tangut-specific grammaticalization of the Tangut free pronouns into suffixes (just as happened in Dhimal, but with different forms);⁴ 3) that since the systems found are transparent grammaticalizations like this, then from a methodological point of view, we should not reconstruct them to the deepest level proto-language of the entire family; 4) that the languages that manifest what might be considered to be cognate systems have a very limited geographic distribution, along a known migration route, so might be due to a single shared innovation later than Proto-Tibeto-Burman; and 5) that the pattern manifested in Tangut and other languages used to argue for a split-ergative pattern actually is a hierarchical pattern, not a split-ergative pattern.

This was followed up in Chapter 61, LaPolla (1994b), “Parallel grammaticalizations in Tibeto-Burman languages: evidence of Sapir’s ‘drift’”, where it was shown that there are many types of parallel grammaticalizations in Tibeto-Burman (and even Sino-Tibetan)—i.e. functionally and even structurally similar constructions built of unique (often non-cognate) forms in the different languages—and pronominalization is one of them. It is shown that quite a few other languages manifest obvious pronominalization patterns similar to that of Dhimal, where unstressed copies of the pronouns unique to that language become prefixes or suffixes on the verb (see also LaPolla 2001).⁵ This is not to deny that some languages share a particular cognate system, but that the system that some people are trying to say was part of Proto-Tibeto-Burman was actually only one of many that grammaticalized in the family, and so represents a shared innovation among those languages and thus can be used as evidence for seeing those languages as a separate subgroup within Tibeto-Burman (see LaPolla 2017, 2013 for discussion). Other patterns discussed in LaPolla (1994b) are the parallel development of non-cognate agentive marking, anti-agentive marking,⁶ direction marking, causative marking, and sets of existential verbs in which the type of referent determines the use of the particular existential verb.

Further evidence of parallel innovation of person-marking systems is presented in our next article, Chapter 62, by Tej R. Kansakar, “Verb agreement in Classical Newar and Modern Newar dialects” (1999). In this very polite but well-argued article, Prof. Kansakar evaluates some of the opinions that have been expressed about Classical Newar and various Newar dialects in terms of the origin and dating of the so-called conjunct/disjunct marking (see Chapter 63, DeLancey 1992, for more on this phenomenon), and the person marking found in the Dolakha and Pahari dialects of Newar. Comparing the forms and discussing different historical possibilities, Prof. Kansakar argues against reconstructing either type of morphology to Proto-Newar, suggesting that as the Dolakha and Pahari dialects are surrounded by Kiranti languages, the patterns found in those varieties (which do not appear to be cognate with each other) might be due to contact.

The discussion of parallel innovations of morphology in Tibeto-Burman leads us to Scott DeLancey’s 1992 article (Chapter 63) looking at the historical development of the so-called conjunct/disjunct forms in Tibetan varieties, Newar, and Akha: “The historical status of the conjunct/disjunct pattern in Tibeto-Burman”. To quote from Prof. DeLancey’s abstract:

Several Tibeto-Burman languages show a peculiar pattern of distribution of copulas and/or finite verb forms, in which one set occurs with first person subjects in statements, second person subjects in questions, and in complement clauses of *verba dicendi* when the complement and main clause subjects are coreferential, and another set in all other contexts. When the evidence for and against reconstructing the system at the branch or family level is assessed, it appears that this “conjunct/disjunct” pattern is a recent secondary innovation in all of the languages in which it is found.

(p. 39)

The term “conjunct-disjunct” for this phenomenon was originated by Austin Hale in his well-known article on this phenomenon in Newar (Hale 1980), trying to discuss all of the patterns found as syntactic patterns, based on a Generative Semantics-style analysis, with covert speech act frames for all utterances. But this name (and presenting it as a syntactic phenomenon) has been criticized by others working on this phenomenon, which is now seen as part of evidential marking systems, such as Jackson T.-S. Sun (e.g. 1993, footnote 15) and Nicolas Tournadre (e.g. 1991, footnote 14, 2008; see Tournadre and LaPolla 2014 for a more comprehensive discussion of this phenomenon, now often referred to as egophoricity, incorporated into a theory of evidential marking). Also, in the earlier literature, such as Brian Hodgson’s work (e.g. 1847), the terms conjunct and disjunct referred to bound and free forms, respectively; e.g. free pronouns vs. affixed pronouns.

The last three articles are about three important aspects of Tibeto-Burman linguistics, though don’t form a single topic like the earlier articles. The first is Chapter 64, a seminal article on nominalization and its role in various structures,

particularly clausal modifying constructions, by James A. Matisoff: “Lahu nominalization, relativization, and genitivization” (1972). Prof. Matisoff shows the different nominalization constructions used in Lahu, in particular those built with the particle *ve*, including what is now often referred to as “stand-alone nominalization”, where a nominalized clause is used as an utterance by itself. He also shows how the same pattern of nominalization is found in several other Tibeto-Burman languages and Mandarin Chinese. Over the years, this article spawned a large number of articles showing similar constructions in Tibeto-Burman and Sinitic languages, and several edited volumes and special issues of journals on the topic (see, e.g., *Linguistics of the Tibeto-Burman Area* 31.2 2008, *Language and Linguistics* 9.4 2008, and Yap et al. 2011). The article was also intended to counter the idea current among generativists at the time that one could learn everything about languages from just studying English and that linguistic fieldwork was not necessary.

The next article, Chapter 65, is a classic and well-known article by Alton L. Becker on the classifier system of Burmese: “A linguistic image of nature: the Burmese numerative classifier system” (1975). It is stated in the article that it was inspired by Robbins Burling’s 1965 article on Burmese classifiers, which ended with the suggestion that someone should try to make sense of the forms listed, and also Hla Pe’s 1967 article on Burmese classifiers. The article shows that the classifier system is not random, and not straightforwardly based on size or shape, but based on the Burmese worldview. Too little of this sort of work has been done due to the influence of Structuralism, which champions the analysis of forms divorced from context and culture, even though it has been argued that all conventionalized aspects of language necessarily reflect the cognitive and cultural conceptions of the speakers (e.g. LaPolla 2015). See also Adams and Conklin (1973) for a more comprehensive cross-linguistic discussion of classifier semantics.

Chapter 66, our last article in the volume, and the four-volume set as a whole, is another classic article, this time on the origin of tones in Southeast Asian languages, by James A. Matisoff: “Tonogenesis in Southeast Asia” (1973). Prof. Matisoff discusses the relationship between monosyllabicity and the development of tones,⁷ how interrelated the different elements of the syllable are in terms of influencing each other historically, and how changes in the consonants can lead to the development of tones. Although he discusses Paul K. Benedict’s (1972a, 1972b, 1973) view that Proto-Sino-Tibetan had at least two tones in non-stopped syllables,⁸ he is non-committal and argues that tone can be seen as a cyclical feature historically. As always, Prof. Matisoff’s writing is in an informal style (which he says he learned from Yuen-Ren Chao) and shows his good sense of humour: the tongue-in-cheek preface to the article is worth the price of admission alone!

Notes

- 1 LaPolla (1994a) was a reaction to some scholars who posited excessively loose associations, as it argued that for word family relations (i.e. irregular correspondences) to be recognized, there must be regular correspondence in the majority of the parts of the form;

- e.g. if we want to say that two forms with different finals form a word family, then all but the finals should be regular, as assumed in Simon’s article presented here.
- 2 See the full list of his publications and fieldwork, and papers about his contributions, in Post, Morey and DeLancey (2015).
- 3 Hodgson (1856) had arbitrarily limited the characterization of pronominalization to nominal prefixing and verbal suffixing of pronouns, and so Konow did not include languages with prefixes only in the pronominalized category; he also considered the verbs in Tibeto-Burman languages to be nouns, and so the prefixed forms were seen as possessive forms used as if they were clauses—e.g. ‘my going’ used as ‘I am going’ (1904: 16–18).
- 4 Later research by Gong (2001; see also Gong 2003) showed that there are actually two parts to the Tangut system: the suffixes, which follow a hierarchical pattern, and changes in the verb root, which occur when the action is direct; i.e. when the first or second person is the actor of the clause. He did not discuss a possible origin for the change in the verb root, though the *-u* direct action suffix that Ebert (1987, 1990) talks about as a common feature of related systems is a very likely possibility.
- 5 As argued by Bauman (1974), the difference between the system being prefixal or suffixal is not important; it is still the same phenomenon of pronouns becoming cliticized to the verbs.
- 6 See LaPolla (1992b) for a more complete discussion of anti-agentive marking, LaPolla (1995a) for a more complete discussion of agentive marking, and LaPolla (1995b) for discussion of the paths of development of these two types of marking (among others). LaPolla (2004) gives a summary of much of this research.
- 7 See also Mazaudon (1977) on tonal development and DeLancey (1985) on the cyclical nature of the grammaticalization of morphology.
- 8 Benedict had based this view on his earlier assumption that Karen was a separate branch outside the rest of Tibeto-Burman, and also on the assumption that the Chinese tones go back to the proto stage, but Benedict later (see Benedict 1976, Chapter 6 in Volume I) realized Karen should be within Tibeto-Burman proper, as word order is not a proper criterion for determining genetic affiliation, and we now understand Chinese tones to have been secondary, in the case of the *shāng* and *qù* tones derived from segmental suffixes, with the *píng* tone being the contrasting unaffixed forms (see the discussion of Downer 1959, Mei 1970, and Pulleyblank’s work in Volume III, Chapters 39 and 40).

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CERTAIN PHONETIC INFLUENCES OF THE TIBETAN PREFIXES UPON THE ROOT INITIALS

Fang-Kuei Li

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If one reads any Tibetan grammar, one is impressed in the very beginning by the definite rules which govern the prefixes, i. e. certain prefixes appear only before certain definite types of initials and do not appear before others. The native grammarians are equally sensitive of these and form rigid statements about them,¹ which we may summarize as follows:

<i>r-</i> (<i>ra-mgo</i>)	appears before	11 consonants:	<i>k, t, ts, g, d, b, dz, ñ, n, ñ, m.</i>
<i>l-</i> (<i>la-mgo</i>)	„ „	10 „	<i>k, t, p, ts, g, d, b, dz, ñ, h.</i>
<i>s-</i> (<i>sa-mgo</i>)	„ „	11 „	<i>k, t, p, ts, g, d, b, ñ, n, ñ, m.</i>
<i>b-</i> (<i>sñon-qtzug</i>)	„ „	10 „	<i>k, t, ts, ts, s, g, d, z, z.</i>
<i>g-</i> („)	„ „	11 „	<i>t, ts, ts, s, s, d, z, z, y, ñ, n.</i>
<i>d-</i> („)	„ „	6 „	<i>k, p, g, b, ñ, m.</i>
<i>q-</i> („)	„ „	10 „	<i>g, d, b, dz, dz, kh, th, ph, tsh, tsh.</i>
<i>m-</i> („)	„ „	11 „	<i>g, d, dz, dz, kh, th, tsh, tsh, ñ, ñ, n.</i>

Such dictates of euphony as formulated by the native grammarians more or less according to their system of writing seems at once inadequate in the light of modern linguistics. As a matter of fact, the *s* in *sl-* and *sr-* is also undoubtedly a prefix although it is considered by the natives as having an initial *s-* with a *ra-btags* and a *la-btags*; on the other hand, I believe, *lh-*, in some cases at least, is not to be considered as a prefix *l* followed by an *h*, but rather as a simple consonant. Furthermore, *s-*, *s'-* in some cases are not simple initials but represent a combination of prefix plus initial. The details of these will have to follow, but it is evident that these euphonic phenomena will have to be interpreted in more scientific terms, before any serious phonological study can be pursued.

When a prefix is said not to be able to stand before a certain initial, it is necessary to examine what this statement exactly means. It may mean, I believe, any one of the following three things. Firstly, a prefix may not be able to exist before a certain consonant because of the dissimilatory tendency of similarly articulated sounds; thus, prefix *b-* cannot stand before labial initials, prefix *g-* cannot stand before guttural initials, prefix *d-* cannot stand before dental plosives, fricatives, and affricatives etc. This not only applies to the prefix placed immediately before the initial but also when it is separated by another interposed prefix. Thus, in verbs like *s-kum-pa*, *b-s-kums*, *b-s-kum*, *s-kums* "to contract, to draw in (the legs)", we find a regular *b-* prefix in the perfect and in the future form, but in roots with a labial initial this prefix regularly disappears, thus: *s-pon-ba*, *s-pans*, *s-pan*, *s-pons* "to give up, to renounce". Forms like *b-s-pans*, *b-s-pan* cannot exist because *b-* is dissimilated by the following initial *p-*.

Secondly, a prefix may influence the following initial, so as to modify its manner of articulation in a definite way. This kind of phonetic influence takes place irrespective of the function of the prefix and the meaning of the root, and the result of this is that certain initials will not be found after certain prefixes. What I believe to be obvious examples of this is that in Tibetan after prefixes *s-*, *b-*, *g-*, *d-*, are not found aspirated consonants and after *q-* are not found spirants. In other words, aspirated consonants after *s-*, *b-*, *d-*, *g-*, and spirants after *q-* are changed into other sounds. The details of these will have to be given later, but Tibetan, so far as I can see, is particularly rich in this sort of phonetic change; and I propose to make a special study of this in the present paper.

There is of course a third possibility, namely, the following initial may influence the prefix in a definite way, so that before certain initials only certain prefixes are allowed. This is particularly evident in Lhota Naga where an old prefix *me-* is differentiated into *n-* and *m-* according to the following initial.² In classical Tibetan, however, I do not find definite traces of this type, except possibly prefixes *d-* and *g-* whose notorious compensatory behavior has made many people suspect them of a single origin.

It is indeed strange that while various functions of the Tibetan prefixes have been from the very beginning zealously studied, the purely mechanical phonetic reactions which must certainly have taken place between the prefix consonant and the root initial have remained so far untouched and that grammars seem to be simply satisfied with the euphonic statements of the native grammarians, more or less modified, without further inquiry. Conrady's pioneer work, *Eine Indochinesische Causativ-Denominativ-Bildung*, 1896, is chiefly interested in the functions of the prefixes, but he advocates a theory that the quality of the initial, i.e. tenuis, media or aspirata, is associated with definite grammatical functions in Tibetan³— a theory which has greatly influenced his work. Before pronouncing whether this theory is to what extent correct, I believe that Conrady might have materially improved his work by trying to find out what the initials of the verbs he deals with really are, minus the influence of the prefixes. For in verbs like *q-dud-pa*, *b-tud*, *g-dud*, *dud* or *thud*, "to bend down, to bow," *q-debs-pa*, *b-tab*, *g-dab*, *thob* "to throw, to strike", etc. where we have all three initials *d-*, *t-*, *th-* appearing in one verb, it is really a problem to determine what

the true initial (or initials) is and under what conditions it is differentiated into *d-*, *t-*, *th-*. Conrady gives *tud-pa*, *tab-pa* as the original stems, evidently considering that the perfect forms with the *b-* prefix are the original stems. Similarly he gives *krol-ba* as the original stem for *akhrol-ba*, *p. f. d-krol*. Instead of deriving the other forms from his reconstructed stem and showing how the initials may be influenced by the prefixes, he concludes by saying that these roots are contaminated forms and really 'unvereinbar',⁴ thus completely ignoring the possibility that these different initials may be due to the mechanical working of the prefixes.

Wolfenden recently studies the Tibetan prefixes from an entirely different point of view in his most stimulating book *Outlines of Tibeto-Burman Linguistic Morphology*. He is mainly interested in tracing the functions of the prefixes and their later adaptations and leaves out entirely the problem of their phonetic influences. However, in agreement with Conrady, he maintains that the perfect form in *b-* with a following surd is nearer the original than the form with *a-* and an aspirated initial.⁵ Whether this viewpoint is acceptable or not we shall later see, but it seems certain and is generally felt that in the so-called three or four-rooted verbs presenting various types of initials, some form (or forms) of the initial must be original and the others secondarily developed. It is quite possible that a functional interchange of consonants might have been operating in these cases, but it seems to me that a clearer understanding of such forces can only be obtained by first realizing what mechanical influences the prefix and the root-initial may possess for each other. In the following pages I shall study the various combinations of prefixes and initials and try to show what the original form may be.

Prefix *s-*

1. *sk-* < *s-kh-*

- s-kam-pa* 'to long for': *kham* 'appetite'
s-kor-ba, *b-s-kor* 'to surround': *kho-ra* 'circumference' *khor-mo-yug* 'continually'
s-kol-ba, *b-s-kol* 'to boil': *khol-pa* 'boiled, bubbling', *khol-ma* 'anything boiled'
s-kyogs-pa 'to turn (the neck)': *khyog-po* 'curved, bent'
s-kyor 'the hollow of the hand filled with a fluid': *khyor* 'a handful'
s-kyes, *s-kyas-ma*, *s-kyos-ma* 'a present': *khyos-ma* 'a present'

It is well to remember here the fundamental principle formulated by Conrady that the prefixed forms of the Tibetan written language are derived from the prefixless forms (op. cit. p. 3). The prefixless simple nouns (or adj.) as quoted above are beyond the slightest doubt original forms and therefore present the initial in the original state, namely *kh-*. The derivatives with the *s-* prefix present without exception an unaspirated *k-*. The reason for such a change is simple: the *s-* deprives the following aspirated initial of its aspiration. For this reason we find no aspirates after *s-* in Tibetan. An excellent example of this force of *s-* can be found

in English, cf. *tone* and *cope* pronounced [t'oun] and [k'oup] but *stone* and *scope* pronounced [stoun] and [skoup].

Conrady's explanation that the aspirated consonants are derived from prefix *s-* with an unaspirated surd or sonant seems to me to have put the cart before the horse, for in that case we cannot understand why in Tibetan we have *sk-* side by side with *kh-*, etc. If *sk-*, etc. has become *kh-*, etc., in classical Tibetan we shall have no *sk-* at all. On the other hand, some dialectical forms in *kh-* versus Tib. *sk-* as cited by Conrady are definite proofs that Tib. *sk-* comes from *s-kh-* and that the dialectical *kh-* comes from a prefixless form and is therefore original. For instance, *kham* is thought to be the provincial (Wt.) pronunciation for *r-kam*, *s-kam*, but the dialects so far as we can gather from Jäschke seem to have regularly the pronunciation *k-* for *sk-*, *rk-*, never *kh-*. According to our theory, *kham* represents the original form, and *s-kam* is a derivative coming from *s-kham*. The examples can be readily multiplied if we recognize such intransitive verbs like *a-khum-pa*, *khums* 'to shrink', *a-khol-ba*, *khol* 'to boil, intr.', etc. as possessing an original *kh*. The prefixless perfect forms as well as the present forms with *a-* present alike an aspirated surd, and there is no reason to think that this is not their original initial, but the *s-* derivatives have all *k-*:

- s-kum-pa*, *b-s-kums*, *b-s-kum*, *s-kums* 'to contract': *a-khum-pa*, *khums* 'to shrink'
s-kol, *b-s-kol* 'to boil, tr.': *a-khol-ba*, *khol* 'to boil, intr.'
s-kyur-ba, *b-s-kyur* 'to throw, to cast off': *a-khyur-ba* 'to be separated'
s-kur-ba, *b-s-kur* 'to send, to transmit': *a-khur-ba*, *khur* 'to carry, to convey';
khur 'burden'
s-koñ-ba, *b-s-kañs*, *b-s-kañ*, *s-koñs* 'to fulfill': *a-kheñs-pa*, *kheñs* 'to be full'
s-kyil-ba, *b-s-kyil* 'to bend': *a-khyil-ba* 'to wind, to twist, intr.'
s-kyom-pa, *b-s-kyoms*, *b-s-kyom*, *s-kyoms* 'to shake, agitate': *a-khyom-pa*
a-khyoms 'to rock, to reel, intr.'
s-kyel-ba, *b-s-kyal*, — *s-kyol* 'to conduct, to accompany': *a-khyol-ba*, *khyol*
'to be carried, to be brought somewhere'

Similarly the origin of many combinations of *s+* unaspirated surd can be proved to come from an *s-* with an aspirated surd.

2. *st-* < *s-th-*

- s-tuñ-ba*, *b-s-tuñs*, *b-s-tuñ*, *s-tuñs* 'to shorten': *thuñ-ba* 'short'
s-tod 'the upper, higher part', *s-tod*, *b-s-tod* 'to exalt': *thod* 'a head-ornament;
over, above the door'
s-tim-pa, *b-s-tims*, *b-s-tim*, *s-tims* 'to penetrate, to be absorbed': *thim-pa* 'to
disappear by being absorbed', also *a-thim-pa*
s-tob-pa, *b-s-tab*, *b-s-tob*, *s-tob* 'to force to accept, to feed': *thob-pa* 'to get,
to obtain'
s-tun-pa, *b-s-tun* 'to agree': *a-thun-pa*, *m-thun-pa* 'to agree'

s-tugs-pa 'thick, thickness': *a-thug-pa*, *m-thug-pa* 'thick'
s-ton-pa, *b-s-tan-pa* 'to show': *a-thon-pa*, *thon*, —, *thon* 'to come out, to step forth (from the crowd)'

3. *sp-<s-ph-*

s-puñ-ba, *s-puñs* 'to heap, to accumulate': *phuñ-po* 'a heap'
s-poñ-ba, *s-pañs*, *s-pañ*, *s-poñs* 'to give up, to renounce': *phoñs-pa* 'poor, needy', *a-phoñs-pa*, *a-phoñs* or *phoñs* 'to be poor, to be deprived of'
s-pra-ba, *s-pras*, —, *spros* 'to adorn': *phra* 'ornament, jewel'
s-phrin-ba, *s-prinš* 'to send a message, to give information': *phrin*, *a-phrin* 'news'
s-pañs, 'height': *a-phañ*, *a-phañs* 'height'
s-por-ba, *s-par-ba* 'to lift up': *a-phar-ba* 'to leap, to be raised'
s-pur-ba 'to make fly, to scare up': *a-phur-ba*, *phur* 'to fly'
s-pel-ba 'to increase': *a-phel-ba*, *phel* 'to increase, intr.'
s-po-ba, *s-pos*, —, *s-pos* 'to change, tr.': *a-pho-ba*, *a-phos*, *a-phos* 'to change place, to migrate'
s-pyañ-ba 'to make hang down': *a-phyañ-ba*, *a-phyañs* 'to hang down'
s-prul-ba 'to juggle': *a-phrul-ba* 'juggery'
s-pro-ba, *s-pros* 'to make go out': *a-phro-ba*, *a-phors* 'to emanate'
s-prod-pa, *s-prad-pa*, 'to deliver': *a-phrod-pa*, *phrod* 'to be delivered'

4. *sl-<s-lh-*

s-lad-pa, *b-s-lad* 'to mix, to adulterate': *lhad* 'an alloy'
s-lan-pa 'to mend': *lhan* 'together', *lhan-pa* 'a patch'
s-le-ba, *lhas* 'to braid': *lhas lhas-ma* 'a braid', *lhe-ba* 'to braid'

These simple nouns in *lh-* in contrast with their derivatives with *sl-* undoubtedly show that we are dealing with roots with an original initial *lh-* and that the development into *sl-* is exactly parallel to the preceding types, *sk-*: *kh-*, *st-*: *th-*, *sp-*: *ph-*. In fact *lh-* has to be treated as a simple consonant, which may be defined as a voiceless or whispered *l* in contrast to the voiced *l*.⁶ This pronunciation is kept at least in Eastern Tibet according to Jäschke. The reason why the Tibetans have written it as an *h-* with a *la-mgo* is probably, because they had no good equivalent for it when they first borrowed their alphabet from the Indians and the *lh-* is probably as good as any that came close in expressing it. Furthermore, the perfect root of the Tibetan verb often appears in a prefixless form, and here *lhas*, the perfect of *s-le-ba*, clearly indicates that we have here a simple prefixless initial *lh-*.

On the other hand, *sl-* can equally well be derived from *s-l-*:

s-log-pa, *slogs*, *b-s-log* 'to turn round, about': *log-pa* 'to return'⁷
s-loñ-ba, *s-lañ-ba*, *b-s-loñs*, *b-s-lañ*, *s-loñs* 'to cause to rise': *lañ-ba lañs*,
 — *loñs* 'to rise'⁷
s-lob-pa, *b-s-labs*, *b-s-lab*, *slobs* 'to learn, to teach': *lob-pa*, *lobs* 'to learn'

5. *s-<s-tsh-*

sañ-ba, *(b)-sañs* *(b)-sañ* 'to cleanse': *tshañs-pa* 'purified', *a-tshañ-ba*, *tshañs*,
b-tsañ 'to make clean'
sad-pa 'to test, examine': *tshad*, *tshod* 'measure, the right measure', *tshod*
l-ta-ba 'to try, to prove'
sig-pa 'to hitch up, as porters do with a load on their back': *tshigs* 'member
 between two joint, joint'
sib-bu 'a sort of small pox, measles': *tshibs* 'measles'
sim-pa 'to be well, well off': *tshim-pa* 'to be content, adj. contented'
sog-pa, *b-sags*, *b-sag*, *sogs* 'to gather, to heap up': *tshogs* 'an assemblage,
 accumulation', *a-tshogs-pa*, *tshogs* 'to assemble'

6. *ś-<s-tśh-*

śad 'the mark of punctuation (<a cutter)': *tśhad-po* 'rent, torn, a limited time',
a-tśhad-pa, *tśhad* 'to be cut'
śam, *g-śam* 'the lower part of a thing': *tśham la a-bebs-pa* 'to throw down,
 to cause to lie down'
śas 'part': *tśha* 'part, portion'
śom-pa, *bśoms* or *b-śams*, *b-śam*, *b-śoms* 'to prepare, to make ready':
tśhom-pa 'to be finished, accomplished'

Prefix *b-*7. *bk-<b-kh-*

b-kal perf. of *a-khal-ba* 'to send things, to charge': *khal* 'burden, load'
b-ku-ba 'to extract, to make an extract of a drug by drawing out the juice':
khu-ba 'fluid, liquid'
b-kyigs, *b-kyig* perf. and fut. of *a-khyig-pa* 'to bind'
b-krus, *b-kru* perf. and fut. of *a-khrud-pa* 'to wash'
b-kur-ba 'to carry, convey': *a-khur-ba*, *khur* 'to carry'
b-kon perfect of *a-khon-pa* 'to bear a grudge'

The above examples show conclusively that *bk-* is derived from *b-kh-*. But the examples can be readily increased if we take into consideration the following regular type of transitive verbs:

a-gegs-pa, *b-kag*, *d-gag*, *khog* 'to hinder'
a-geñs-pa, *b-lkañ*, *d-gañ*, *khon* 'to fill'
a-gebs-pa, *b-kab*, *d-gab*, *khob* 'to cover'
a-ges-pa, *b-kas*, *d-gas*, *khos* 'to split'
a-gog, *b-kog*, *d-gog*, *khog* 'to take away, to rob'
a-god-pa, *b-kod*, *d-god*, *khod* 'to establish, to build'
a-grems-pa, *b-kram*, *d-gram*, *khroms* 'to put down, to scatter'
a-grol-ba, *b-krol*, *d-grol*, *khrol* 'to liberate'

It has usually been considered that the perfect roots in *bk-* are probably the original,⁸ and from this Conrady built up two causative series of these types: Intr. *g-*: tr. *k-* and *kh-* and Intr. *kh-*: tr. *k-* (op. cit. p. 54). But it seems to me doubtful whether the perfect roots here actually represent an original unaspirated surd initial. There is much to be said for the view held by Francke and Simon that the verb in general falls into two groups, the present and the future forming one group and the perfect and the imperative the other.⁹ The first group has a sonant initial and the second group a surd initial. The problem, however, is to see if we can find out whether the surd initial is aspirated or not. In the first place, the imperative is without a prefix and therefore is likely to present the initial in its original form, uninfluenced by any prefix, and secondly we know that *b-* prefix does not exist before an aspirated consonant which makes us suspect that a loss of aspiration has probably taken place where *b-* stands. But a proof of this is furnished in verbs of this type with a labial initial.

a-bud-pa, phud, ———, phud 'to pull off'
a-bogs-pa, phog, d-bog, phog 'to impart advice'
a-bigs-pa, phigs, d-big, phigs 'to pierce'
a-bebs-pa, phab, d-bab, phob 'to cast down'
a-bul-ba, phul, d-bul, phul 'to offer'

This type is exactly parallel to the preceding type with the exception that the perfect root has no *b-* prefix. The perfect *b-* evidently is dissimilated here on account of the labial initial, but at the same time it presents a very interesting phenomenon, namely, the perfect root shows instead of an unaspirated surd an aspirate as initial. If, as it is generally believed, *bk-* represents an original initial *k-* with a *b-* prefix, we shall not be able to understand why, in the case of labials where the *b-* prefix cannot exist on account of dissimilation, we have aspirates instead of unaspirated surds. A type such as *a-b-* with perfect in *p-* simply does not exist in Tibetan.¹⁰ It is evident, then, that in the type *a-g-*, *b-k-*, *d-g*, *kh-* as well as in the type *a-b-*, *ph-*, *d-b-*, *ph-* we are really dealing with two stem forms, *g-*: *kh-* and *b-*: *ph-*; the present and the future have a sonant initial, the perfect and the imperative an aspirated surd. I may remark also that this interchange of initials belongs primarily to be transitive verbs, and rarely occurs in the neuter or intransitive verbs.

Of the types of present and perfect roots, Francke and Simon (pp. 144-145) give *a-g-*: *kh-* as a separate type, but, among the examples given, 13 out of 14 all have labial initials, with a single exception *a-dul-ba, thul* 'to conquer' which has also a perfect *b-tul*. As a matter of fact a type *a-g-*: *kh-* does not exist by itself, and *a-b-*: *ph-* type is but a variant of their type I, *a-g-*: *b-k-*, with the *b-* prefix dissimilated. To be more exact, we may speak only of an original type *a-g-*: *b-kh-* which gives *a-g-*: *b-k-* or *a-b-*: *ph-* according to whether the *b-* is dissimilated or not. The perfect *thul* may be from an accidental dropping of *b-* and is clearly exceptional, but even there the initial is *th-*, not *t-*.

8. *bt-<b-th-*

b-tug-pa 'to reach': *thug-pa* 'to reach'
b-tub 'fit, practical', *b-tub-pa* 'to be able': *thub-pa* 'to be able to cope with'
b-tum-pa 'to wrap around': *thums* 'covering, a parcel wrapped up'
b-tags, b-tag perf. and fut. of *a-thag-pa* 'to weave': *thags* 'texture, web'
b-tig-pa, b-tigs 'to drop, to let fall in drops': *thigs-pa* 'a drop', *thig-le* 'a spot',
a-thig-pa, a-thigs 'to fall in drops'
b-tus, b-tu, b-tus perf., fut., and imp. of *a-thu-ba* 'to gather': *thus-mi* 'an assemblage of men'

Similar to the type *a-g-*: *b-k-* discussed above which goes back to an original alternation of sonant and aspirate in the verbal initial,¹¹ we have here *a-d-*: *b-t-*,

a-diñ-ba, b-tiñ, g-diñ, thiñs 'to spread on the ground'
a-dud-pa, b-tud, g-dud, dud or *thud* 'to bend down'
a-dul-ba, b-tul or *thul, g-dul, thul* 'to tame, to conquer'
a-degs-pa, b-tegs, g-deg, theg 'to lift, to support', cf. *theg-pa* 'a vehicle; to be able to carry'
a-debs-pa, b-tab, g-tab, thob 'to cast, to throw'
a-dogs-pa, b-tags, g-dags, thogs 'to bind'
a-don-pa, b-ton, g-don, thon 'to cause to go'

9. *btś-<b-tśh-*

b-tśags, bśag perf. and fut. of *a-tśhag-pa* 'to tread'
b-tśaṅs, b-tśaṅ perf. and fut. of *a-tśhaṅ-ba, imp. tśhoṅs* 'to hold, to keep'
b-tśabs, b-tśab perf. and fut. of *a-tśhab-pa* 'to conceal'
b-tśam perf. of *a-tśham-pa* 'to agree'
b-tśas, b-tśa, perf. and fut. of *a-tśha-ba, imp. tśhos* 'to prepare, to bite'
b-tśiṅs, b-tśiṅ perf. and fut. of *a-tśhiṅs-pa, imp. a-tśhiṅs* 'to bind'
b-tśibs, b-tśib perf. and fut. of *a-tśhibs-pa, imp. tśhibs* 'to ascend'
b-tśus, b-tśu perf. and fut. of *a-tśhu-ba, imp. tśhus* 'to scoop water, to irrigate', cf. *tśhu* 'water'
b-tśes, b-tśe perf. and fut. of *a-tśhes-pa, imp tśhes* 'to assure'
b-tśems, b-tśem perf. and fut. of *a-tśhems-pa* 'to chew'
b-tśos, b-tśo perf. and fut. of *a-tśhos, imp. tśhos* 'to prepare, to gnaw off'

It is impossible to agree with Wolfenden and Conrady in considering that the *b-ts-* represents the original initial. The imperative uninfluenced by any prefix shows an aspirate *tśh-* and such simple noun as *tśhu* 'water' possesses also an aspirated initial. There is not the slightest reason to believe that the initial of *tśhu* is secondary while that of its derivative *b-tśus* represents on the contrary the original.

Verbs showing an alternation of *q-dz-*: *b-tś-* (< *btśh-*) like *q-g-*: *b-k-* (< *b-kh-*) are,

q-dzil-ba, b-tśil, gzil 'to expel'
q-dzal-ba, b-tśal, g-žal, q-džol 'to weigh, to repay'
q-dzil-ba, b-tśil, g-žil 'to expel'
q-džug-pa, b-tśug, g-žug, tśhug 'to put in, to cause'¹²
q-džun-pa, b-tśun, g-žun tśhun 'to subdue, to soften', cf. *q-tśhun-pa* 'to be tamed'
q-džum-pa, b-tsum, g-žum 'to shudder, to shrink', cf. *tśhum-pa* 'to shrink, to crouch with fear'
q-džur-ba, b-tśur 'to be entangled'
q-džoms-pa, b-tśom, g-žom, tśhom 'to conquer, to finish', cf. *tśhom-pa* 'to be finished'

The *ž-* in the future forms is probably due to the prefix *g-* which softens the *dž-* into *ž-* as suggested by Simon (*Wortgleichungen* p. 30).

10. *bts-* < *b-tsh-*

b-tsa-ma 'fruit', *b-tsas-ma* 'harvest, wages', *b-tsa-ba, b-tsas* 'to bring forth, to bear': *tsha-bo* 'grand-children'
b-tsags also *tshags, b-tsag* perf. and fut. of *q-tshag-pa, imp. tshog* 'to cause to trickle, to sift', cf. *tshag-ma, tshags* 'sieve, filter'
b-tsañ fut. of *q-tshañ-ba, perf. tshañs* 'to press into, to stuff'
b-tsir, g-tsir or *b-tsir* perf. and fut. of *q-tshir-ba, imp. tshir* 'to press out, to wring'
b-tses, b-tse or *g-tse* perf. and fut. of *q-tshe-ba* 'to hurt, to damage'
b-tsems or *tshems, b-tsem* perf. and fut. of *q-tshem-pa, imp. tshems* 'to sew', cf. *tshem-po* 'seam'
b-tsags, b-tsog perf. and fut. of *q-tshog-pa, imp. tshog* 'to hew'
b-tsoñs, b-tsoñ perf. and fut. of *q-tshoñ-ba, imp. tshoñ* 'to sell', cf. *tshoñ* 'trade'
b-tsos, b-tso perf. and fut. of *q-tshod-pa, q-tshed-pa, imp. tshos, tshod* 'to cook vegetables', cf. *tshod-ma* 'vegetables'
b-tsol perf. and fut. of *q-tshol-ba, imp. tshol* 'to seek'

Alternation of *q-dz-*: *b-ts-* (< *b-tsh-*):

q-dzugs-pa, b-tsugs, g-zugs, zugs 'to prick into'
q-dzud-pa, b-tsud, ———, tshud 'to put, to lead', cf. *q-tshud-pa, tshud* 'to be put'
q-dzum-pa, b-tsum, g-zum, tshum 'to close one's eyes, mouth'
q-dzog-pa, b-tsogs, b-tsog 'to heap together', cf. *tshogs* 'an assemblage, accumulation', *q-tshogs-pa, tshogs* 'to assemble'

Prefix *g-*

11. *gt-* < *g-th-*

g-tigs-pa 'to fall in drops': *thigs-pa* 'a drop'
g-tibs-pa 'to be gathering of clouds': *q-thibs-pa, thibs* 'to gather of clouds', *thib-pa* 'dark'
g-tim-pa 'to disappear': *thim-pa* and *q-thim-pa* 'to disappear'
g-tug-pa, g-tugs 'to reach': *thug-pa* 'to reach'
g-tub-pa 'to be able': *thub-pa* 'to be able'
g-tubs-pa 'to cut to pieces': *q-thub-pa, q-thubs, g-tub, q-thub* or *b-tub* 'to cut to pieces'
g-tum-pa 'to veil, to wrap up': *thums* 'covering', *q-thum-pa, q-thums* or *b-tums, b-tum, q-thum* or *b-tum* 'to cover'
g-toms-pa 'filled up', *g-tams-pa* 'full': *tham-pa* 'complete, full', *thams-tsad* 'whole, all'
g-tor-ba 'to scatter': *q-thor-ba, b-tor, g-tor, q-thor* 'to be scattered'

12. *g-tś-* < *gtśh-*

g-tśags-pa 'to love': *tśhags-pa* 'to love'
g-tśog-pa, b-tśag, ———, tśhogs 'to break, to split': *q-tśhag-pa tśhags* 'to break, to be broken off', *tśhogs-pa* 'to be broken'
g-tśod-pa, b-tśad, g-tśad, tśhod 'to cut': *tśhod-pa* 'to be cut off', *tśhad-po* 'rent, torn'

13. *gts-* < *g-tsh-*

g-tsag vulg. for *q-tshag-pa* and *q-dzag-pa* 'to filter'
g-tsañ 'clean, cleanness': *tshañs* 'purified', *q-tshañ-ba, tshañs, b-tsañ* 'to make clean'
g-tsir fut. of *q-tshir-ba* 'to press'
g-tse-ba, g-tses fut. and perf. of *q-tshe-ba* 'to hurt'

14. *gž-* < *g-dž-* (see the future roots of the verbs listed under 9.)

15. *gz-* < *g-dz-* (see the future roots of the verbs listed under 10.)

16. *gl-, kl-* < *g-lh-, g-l-*

g-lan-pa, g-lon-pa 'to patch, to mend': *lhan-pa* 'to join; a patch', cf. *s-lan-pa* 'to mend'
k-lon-pa 'to mend', cf. the preceding verb
g-leb-pa 'to make flat': *leb-mo* 'flat', *lhub* 'width', *lhab-lhub* 'wide, flowing'
g-lod-pa 'to loosen, to comfort': *lhod-pa* also *lad-pa* 'loose, easy'
g-lon-pa, g-lan-pa 'to return an answer': *lhon-pa* 'to return, to give back', *lan* 'a return, an answer', cf. *l-don-pa* 'to give back' (§ 27)
g-log-pa, lhog-pa 'a large ulcer or sore'
k-lub-pa, k-lubs 'to cover e.g. the body with ornaments': *lhub-pa* 'to fasten e.g. ornaments to the ear'

Prefix *d-*17. *dk-* < *d-kh-*

d-krol perf. and fut. of *a-khrol-ba*, imp. *khrol* 'to cause to sound, to play musical instruments', cf. *khrol-don* 'a musical instrument'
d-kri-ba, *d-kris* 'to wind up, to wrap a garment round the body'; *a-khri-ba*, *a-khris* 'to wind, to twist oneself'
d-kyu-ba 'to run a race': *a-khyu-ba*, *a-khyus* 'to run'
d-krigs-pa 'darkened, dim': *a-khrig-pa* 'to be clouded (of the sky)'
d-krug-pa 'to stir up': *a-khrug-pa*, *a-khrugs* 'to be disturbed'

18. *dp-* < *d-ph-*

d-pyañ-ba 'to suspend, to make hang down': *a-phyañ-ba*, *a-phyañs* 'to hang down'
d-pyo-ba 'to change': *a-pho-ba*, *a-phos* 'to change place'

Prefix *a-*19. *atśh-* < *a-ś-*

a-tśhad-pa, *b-śad*, *b-śad*, *śod* 'to explain, to tell': *śod-pa*, *b-śad* 'to say, to declare'
a-tśhar-ba, *śar* 'to rise, appear': *śar* 'east (<rising sun)', *śar-pa* 'grown up youth (collective noun, probably from the rising generation)'
a-tśhi-ba, *śi* 'to die'
a-tśhigs-pa 'to bind': *śig-ge-ba*, *śig-śig* 'close-bounded'
a-tśhegs-pa, *b-śags*, *b-śag*, *śog* 'to cleave, split': *g-śog-pa* also *b-śog-pa*, *g-śag-pa*, *g-śeg-pa*, *g-śags* or *b-śags*, *g-śag* or *b-śag*, *g-śog* 'to cleave, split'
a-tśhor-ba, *śor* 'to escape'
a-tśhor-ba, *b-śor*, *g-śor* 'to pursue, chase'

This type of verbs with their perfects in *ś-* (intr.) or *b-ś-* (tr.) is fundamentally different from the type *a-tśh-* with their perfects in *tśh-* (intr.) or *b-tś-* (tr.); both the prefixless perfects and the imperatives and their cognates show unquestionably an original *ś-* as initial while the latter type has *tśh-*. This *ś-* must not be thought of as the weakening of *tśh-* (cf. Conrady, op. cit. p. 19); as *tśh-* and *ś-* both can exist as root initials without a prefix, we see no reason why weakening takes place in one verb and not in the other, nor can we assume that *b-ś-* is weakened from *a-tśh-*, for *b-tśh-* gives regularly *btś-* (9). The present forms in *a-tśh-*, then, goes back to *a-ś-*, and as prefix *a-* does not exist before *ś-*, we may safely assume the development *a-ś* > *a-tśh-*.

20. *atsh-* < *a-s-*

a-tsho-ba, *sos*, ———, *sos* 'to live, exist; to feed, intr.' perf. *b-sos* 'to feed, tr.', cf. *g-so-ba*, *g-sos* or *b-sos* 'to feed, to nourish'

Similar to the preceding type, verbs showing an alternation of *a-tsh-* and *s-* go back to an original initial *s-* and are different from those showing an alternation of *a-tsh-* and *tsh-* or *b-ts-* which go back to *tsh-*. We have equally here (19 and 20) to guard against confusion with 5 and 6 which also show an alternation of *ś-*: *tśh-* and *s-*: *tsh-*. There the prefixless forms in *tśh-* and *tsh-* are the test forms for an original *tśh-* and *tsh-*, and show that the *ś-* and *s-* are secondary forms from *s-tśh-* and *s-tsh-*, while here in 18 and 19 the prefixless *ś-* and *s-* and the existence of *tśh-* and *tsh-* only after an *a-* definitely speak for an original *ś-* and *s-* and for an affricativizing of *ś-* and *s-* into *tśh-* and *tsh-* after the prefix *a-*.

There are, however, certain uncertainties in verbs of this type,

a-tshab-pa, *tshabs* or *b-sabs*, *b-sab*, *tshob* 'to pay back, to refund'

While *tshabs* and *tshob* speak for an original *tsh-*, *b-sabs* and *b-sab* favor an original *s-*. It seems to me that this probably represents a mixed type of inflection. We have probably originally two verbs from one root with different prefixes, thus

a-tshab-pa, *tshabs*, ———, *tshob*
 [*sab-pa*], *b-sabs*, *b-sab*, [*sabs*] (<*s-tshab-pa*)

A blend of these two verbs gives us the forms actually found in Tibetan.

21. *adz-* < *a-ź-*

a-dźig-pa, *b-źig*, *g-źig*, *b-śig* 'to destroy; to be ruined', cf. *źig-ral-ba* 'ruined'
a-dźu-ba, *a-dźus* 'to melt, to digest': *źu-ba* 'to melt, to digest', *źun-pa* 'melted'
a-dźug-pa, *źugs*, ———, *źugs* 'to go, to walk'
a-dźo-ba, *b-źos*, *b-źo*, *a-dźos* 'to milk', cf. *źo* 'milk'
a-dźog-pa, *b-źag*, *g-źag*, *źog* 'to put, to arrange'
a-dźog-pa, *b-źogs*, *g-źog*, *źog* 'to cut, to carve'

There are also uncertain forms like *a-dźoms-pa*, *b-tśom* or *źom*, *g-źom*, *tśhom* 'to conquer' which may also be due to a blend as in 19. In such a case a development of *s-dź-* into *ź-* has to be assumed.

22. *adz-* < *a-z-*

a-dźad-pa, *zad* 'to be on the decline'
a-dźar-ba, *b-zar*, *g-zar* 'to hang down', cf. *zar-babs* 'tassel, gold-brocade', *zar-bu* seems to be 'tassel'
a-dźin-pa, *b-zuñ*, *g-zuñ*, *zuñs* 'to take hold, to catch', also *zin-pa*
a-dźur-ba, *b-zur*, *g-zur*, *zur* 'to make way, to step aside', cf. *zur* 'edge, side, corner'
a-dzer-ba 'to say': *zer-ba* 'to say'
a-dźoms-pa 'to come together': *zom* 'point, summit'

There are again some uncertain forms such as,

a-dzugs-pa or *zug-pa*, *b-tsugs* or *zugs*, *g-zug*, *zugs* 'to prick into', cf.
a-tshugs-pa, *tshugs* 'to go into, to penetrate'
a-dzum-pa, *b-tsum* or *zum*, *g-zum*, *tshum* 'to close one's eyes, mouth'

The *z-* forms speak for an original *z-* and the *tsh-* or *b-ts-* forms for an original *tsh-*, which, as we have noticed above (in 10), alternates with *dz-*. A blend as suggested in 19 probably explains best such irregularities,

a-dz-, *b-ts-* (<*b-tsh-*), *g-z-* (<*g-dz-*), *tsh-*
z- (<*s-dz-*), *b-z-* (<*b-s-dz-*), ———, *z-* (<*s-dz-*)

It is to be noticed that we have to assume here the development of *s-dz-* into *z-*. There is of course another uncertainty in verbs like *a-dzed-pa*, *b-zed*, *g-zed* 'to hold out, forth' where we have equal right to consider *dz-* as the original initial, in so far as a cognate with a prefixless *z-* initial is not forthcoming. The *b-z-* form is easily understood as weakening from *b-dz-*.

Prefix *l-*

23. *lk-* < *l-kh-*

l-kob 'fat, heavy, plump': *khob* 'fat, heavy, clumsy'

24. *ltś-* < *l-tśh-*

l-tśud-pa, *l-tśus*, *l-tśu* 'to turn round, to twist': *a-tśhu-ba* 'to be twisted';
tśhu-ba 'sinew'; cf. also *g-tśud-pa*
l-tśu-ba also *g-tśu-ba* 'screw', prob. related to the preceding stem

25. *lt-* < *l-th-*

l-tem-pa 'the state of being full': *them-pa* 'to be full'
l-tams-pa, *b-l-tams*, *b-l-tam* 'to be full, to be born': *tham-pa* 'complete, full'

26. *lt-* < *d-lh-* (?)

l-tuñ-ba, *lhuñ* 'to fall off'

27. *ld-* < *d-l-* < *q-l-* (?)

l-dañ-ba *l-dañs* or *lañs* ———, *l-doñ* 'to rise': *lañ-ba*, *lañs*, ———, *loñs* 'to rise', *s-lañ-ba* or *sloñ-ba*, *b-s-lañs*, *b-s-lañ*, *s-loñs*, 'to cause to rise'
l-dugs-pa, *l-dugs* or *b-lugs*, *b-lug*, *b-lugs* 'to pour, to cast metals', cf. *lhug-pa* 'to pour', *lugs* 'the casting of metals'
l-dab-l-dib 'silly-talk': *lab-pa* 'to say, to talk'
l-dud-pa, *b-lud*, *b-lud*, *b-lud* 'to give to drink'

l-dum-pa 'round': *z-lum-pa* 'round, circular'

l-dog-pa, *log*, ———, *log* 'to return': *z-log-pa* 'to cause to return' *log-pa* 'to return', *s-log-pa* 'to turn around'

l-doñ-ba *l-doñs* or *loñ* 'to become blind': *loñ-ba* 'blind, to be blind'

l-don-pa 'to give back': *lhon-pa* 'to return, to give back'

l-dob-pa 'to apprehend quickly': *lob-pa* 'to learn', also *s-lob-pa*

Notice that in these two sections (25, 26) the *l-* is properly speaking not the prefix but the true root initial, while *d-* is the prefix. I suspect, however, that even *d-* is probably not the original prefix but goes back to some other form. Although there are verbs with *d-* prefix but their paradigms are different from those presented here, namely, *d-l-*, *l-* or *d-l-*, *b-l-*, *b-l-*, *l-* or *b-l-*. On the other hand verbs with *q-* prefix often present paradigms of this sort,

q-dź-, *dź-* or *ź-*, or : *d-l-*, *l-* or
q-dz-, *b-ź-*, *b-ź* *q-dź-* : *d-l-*, *b-l-*, *l-* or *b-l-*

If we recall such developments as *q-s->q-tsh-*, *q-z->q-dz-*, etc., we can easily understand that a development of *q-l-* into *q-dl-* and through metathesis into *l-d-* is highly probable.

Prefix *r-*

28. *rk-* < *r-kh-*

r-kam-pa 'to desire': *kham* 'appetite'

29. *rt-* < *r-th-*

rta 'horse': *tha-s-kar* 'Rosssstern'

r-tuñ-ba, *b-r-tuñs*, *b-r-tuñs* 'to make short': *tuñ-ba* 'short'

r-ten-pa, *b-r-ten*, *b-r-ten*, *r-ton* 'to adhere to, to depend on': *q-then-pa* 'to lean, to repose on (in W.)'

b-r-tan-pa 'firm, steadfast': *q-than-pa* 'firmness'

30. *ris-* < *r-tsh-*

r-tsis 'counting', secondary form *tshis*

r-tsi 'all fluid of somewhat greater consistency, paints, varnish': *tshi-ba* 'tough, viscous, sticky matter, clammy dirt'

31. *rdź-* < *r-ź-*

r-dzed-pa, *b-r-dzed*, *b-r-dzed* 'to honor, reverence': *že-sa* 'reverence'

Conclusions

Above is but a preliminary study of the sandhi rules which govern the prefixes and the root initials. I have limited myself solely to Tibetan, without going into

comparisons with other related languages. For I believe that thus far the comparisons of words made among this group of languages have unfortunately been less rigorous and less systematic than modern linguistics would like to demand. Words that have been suggested for comparison show at their best that they are in some way related but the exact line of correspondence and the exact relation have so far remained beyond our comprehension. This is not accidental for we have no good phonology for each of these languages to serve as control in making our etymologies. In Tibetan, however, where word-formation and derivation seem quite transparent, there is the possibility that certain phonological problems can be tackled from those words whose etymology is clear, and unless linguistic experience leads us astray, we are certain to find the phonetic reactions when different prefixes and initials are put together. The result of such a preliminary study has been given above and it is hoped that this will serve as a basis for further phonological study and if possible for comparison with other languages.

One feature comes out distinctly from the above study, namely, the consonantal alternation. It is true that change of consonant has been observed long ago, and Conrady has even definitely stated that *g-*, etc. are originally intransitive and *k-* and *kh-*, etc. transitive in force. We shall have to modify his observation both as to the consonants themselves and their functions. In the first place, the distinct consonantal alternation is sonant: aspirate, the unaspirated surd does not come in. Conrady's transitive *k-* derived from *s-k-*, *b-k-*, *d-k-* etc. are shown to come from *kh-* through a purely mechanical influence of the prefix. It is interesting to observe that in the schemes of transitive and intransitive initials he has only *g-* and *kh-* for the intransitive and although he gives *k-* in addition for the transitive, the *k-* is invariably preceded by *s-* (given in his scheme as *s-k-*) or *b-* rarely *d-* (not stated in his scheme) (p. 54). Such *k-* is all tracable to *kh-*. Further if *kh-*, an original transitive initial, can be used as an intransitive, why *k-* does not figure at all in the intransitive scheme? Conrady has given some forms with *k-* which seems to alternate with *kh-* or *g-*, but such cases are rare and seem to be largely adjectives and particularly associated with reduplicating adjectives such as *koñ-koñ* 'concave, excavated': *khoñ* 'inside', *kor-kor* 'round': *kho-ra* 'circle', *kyag-kyag* 'thick, run into clots': *khyags-pa* 'frozen, ice', *kyag-kyog* 'curved': *khyog-po*, *kyom-kyom*: *khyom-khyom* 'of irregular shape', *tob-tob smra-ba* 'to talk confusedly': *dob-dob smra-ba* 'to talk nonsense', *tsoñ-tsoñ=tshoñ-tshoñ* 'straight', etc. It is conceivable that some phonetic peculiarity may be connected with the reduplicated forms of descriptive words such as these¹³ and from this creep in other forms of *k-*, etc. alternating with *kh-*, etc. On the whole the unaspirated surds do not as a rule take part in the derivation of words in Tibetan. The alternation is between *g-* and *kh-*, *d-* and *th-*, *b-* and *ph-*, *dz-* and *tsh-*, *dz-* and *tsh-*.¹⁴ Conrady's transitive *k-* initial does not exist.

Now as to the functions of such consonantal alternation. Whether *kh-* is a really transitive and *g-* an intransitive initial, no sufficient evidence can be offered from Tibetan alone, and I can hardly agree with Conrady in thinking that the nominal *kh-* forms are all of transitive origin. Tibetan material abounds in

kh- intransitives and *g-* transitives and it is hardly necessary to think that such simple nouns or adjectives as *tshu* 'water', *khu* 'liquid', *thuñ-ba* 'short', *tshod-mo* 'vegetable', etc. are transitive in origin while *gañ-ba* 'full', *gad-mo* 'laugh', *gegs* 'obstacle', *gor-mo* 'round', *riñ-ba* 'long' represent the original substantival initial. Denominatives can be formed from both types with the same prefixes *s-*, *r-*, etc. and moreover strictly according to the phonetic rules formulated above. If *kh-* really represent the transitive and *g-* the intransitive, we should have *a-kheñs-pa* meaning 'to fill' and *a-geñs-pa* meaning 'to be full' instead of just the reverse as found in Tibetan. Conrady's roundabout way of explain these is distinctly unsatisfactory.

But he has gone a step further and maintains that *kh-* comes really from *sk-* or *sg-* without, however, giving how and under what phonetic conditions *kh-* arises while *sk-* and *sg-* are found still existing. It is plain that we have to guard against all such over-simplifications. In the first place we are not justified to assign a transitive function to *kh-* and an intransitive function to *g-*, and, secondly, we have equally no evidence to show that *kh-* really comes from *sk-* or *sg-*. Colloquial Tibetan may present such a type of *g-*: *kh-* as intr.: tr. (Jäschke, *Tib. Gr., Addenda* p. 139-140) as well as some other languages, but before the phonological problem is cleared up, we are not to conclude that such has been the original state of affairs.

Such an alternation of sonant and aspirate appears most clearly in the transitive verbs with *a-* in the present. The present and the future have sonants and the perfect and imperative have aspirates, for examples see 7-10. There are some other formal distinctions which seem to favor such a classification: both the perfect and the imperative take the negative *ma-*, while the sonant group takes *mi-*; and both of them sometimes take the suffix *-s*. The difference in meaning of these two groups as suggested by Francke and Simon is that the sonant group is more durative in force and the aspirate group represents more the active part of the verb. But such a distinction is only observed from transitive verbs of this particular type and cannot be generalized for all initials in the Tibetan language.

For this type of verb, Bacot's observation on the prefix *b-* is important. This prefix, according to him, denotes perfect active but present passive. This is but two modes of looking at the same fact; looking at it actively, we get, for instance, 'one has filled up something', and at it neutrally (or medio-passively) 'something is in the state of being filled up'. It happened that for transitive verbs a passive translation 'something is filled up' corresponds to the active. But this is equally true of the intransitive active verbs, where the active perfect is also taken to denote a mere state—neuter voice—and therefore largely used as an adjective or as a substantive, for example:

khol perf. of *a-khol-ba* 'to boil, intr.', taken in the active voice means 'it has boiled', but taken in the neuter voice (=an adjective or substantive), we have *khol-pa* 'boiled, bubbling', *khol-ma* 'anything boiled'. The actual trend of thought is that something having boiled is therefore in the state

of being boiled, and it is not correct to derive *khól-pa* as a passive from *s-kól-ba* 'to boil, tr'.

gril perf. of *a-gril-ba* 'to be twisted' (the original idea is probably to get twisted, not passive). Cf. *gril* 'a roll, rolled' denotes as a neuter the state of being rolled up, not as a passive to *s-gril-ba* 'to wrap, to wind'.

grib perf. of *a-grib-pa* 'to grow dim, to get dark', also used as a noun 'shadow' (<what has become dark).

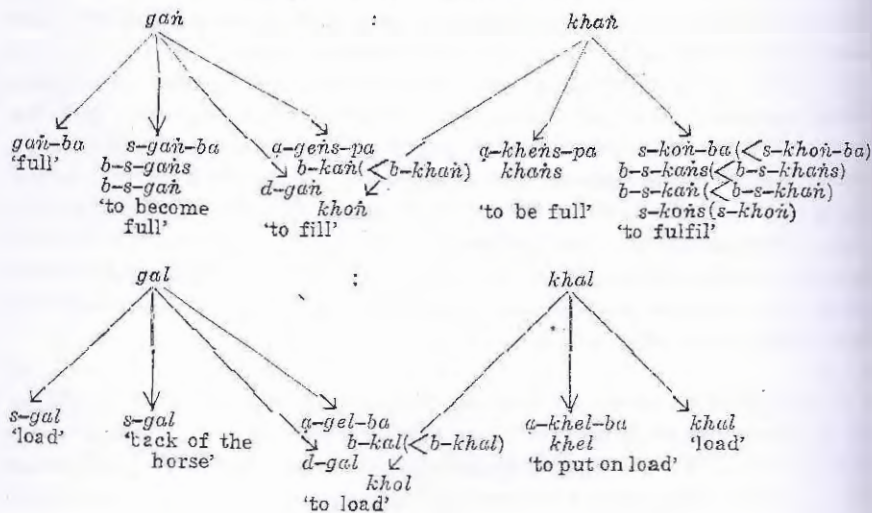
tshad perf. of *a-tshad-pa* 'to be cut, to decay', *tshad-po* 'tom, rent'.

tshogs perf. of *a-tshogs-pa* 'to assemble', used as a noun 'an assemblage' (=what has gathered together).

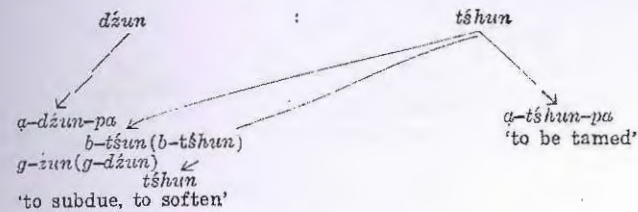
These examples can be readily increased, but it seems clear that not only in the transitive verbs but also in the intransitives the perfect functions in two ways either as the perfect in the active voice or as an adjective or substantive in the neuter voice. This distinction of voice is more fundamental than that of the active and the passive, for we can hardly speak of a passive of the intransitive. The active or passive in Tibetan is largely determined by the meaning of the verb and by the so-called case particles (really postpositions) but the active or neuter function belongs to the perfect proper and not, as indicated by Bacot, to the prefix *b-*, which probably represents an acting subject as suggested by Wolfenden.

Further, the prefixless perfects and substantives, it seems certain, represent the primary form from which a verbal or a substantival idea can be developed, and there it makes no distinction of sonant or aspirate. The function of this interchange of consonants remains still in the dark, but from this investigation we shall be able to trace the rather complicated derivation of words. The following types can be observed:

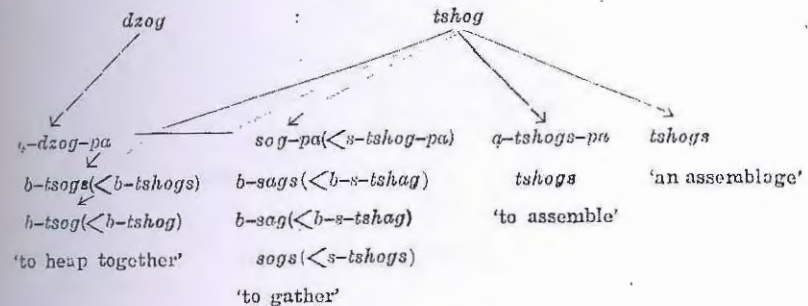
Type I. g- : k- (<kh-) : kh-



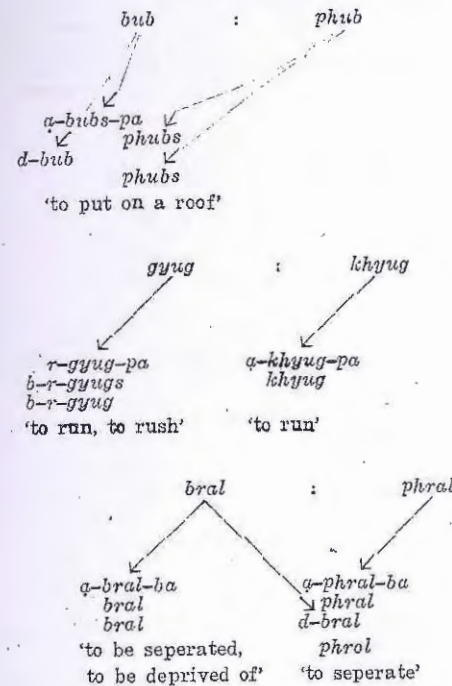
Sub-Type a.

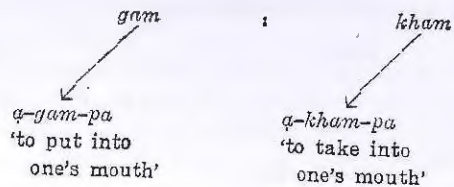


Sub-Type b.

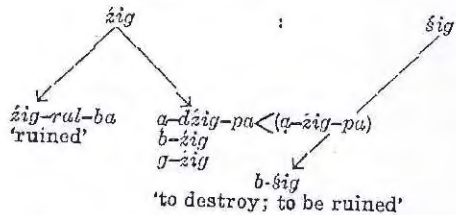


Type II. g- : kh-

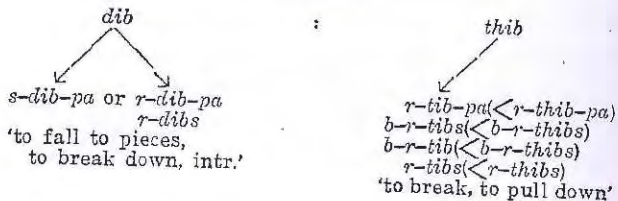




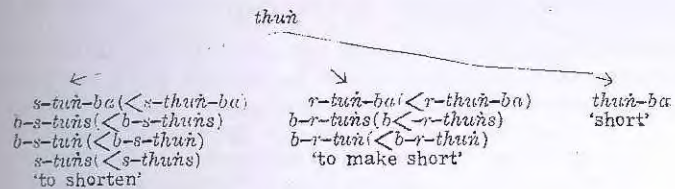
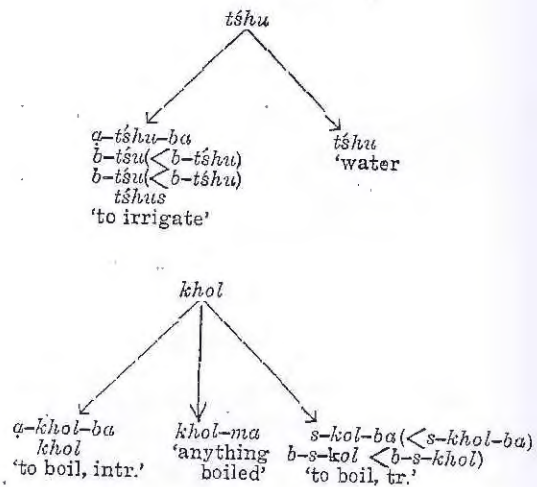
Sub-Type a.



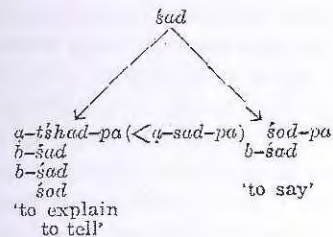
Type III. g- : k- (<kh-)



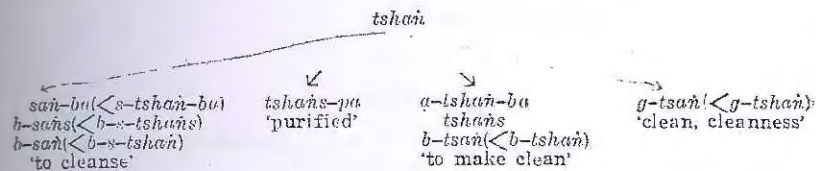
Type IV. k- (<kh-) : kh-



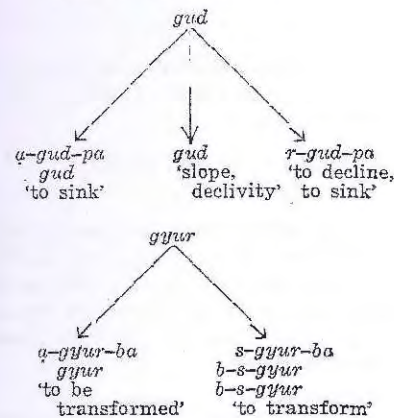
Sub-Type a.



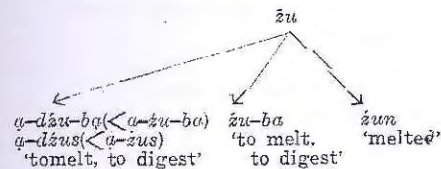
Sub-Type b.

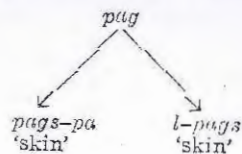


Type V. g- invariable



Sub-Type a.



Type IV. *k*-invariable

In the above types only the initials are taken into consideration, the suffixes, the *da-drag*, and the vocalic changes are temporarily left out. It is clear that in the first three types the stem shows an alternation of the initial consonant and its appearance in Tibetan as having a sonant, an unaspirated surd, and an aspirate as in type I, or as having only sonant and unaspirated surd or aspirate as in type II and III, depends upon mere chance. Type I represents more or less the complete set of derivation, while type II and III have certain forms of initials missing. In the last three types although they may present certain change of initials, the stem goes back to an invariable initial. I have also listed some of the words with affricative or sibilant initials under sub-types because of certain special sandhi changes which these initials have undergone.

Notes

- 1). Cf. Foucaux, *Grammaire de la langue tibétaine, appendices*, and Bacot, *Les slokas grammaticaux de Ton-mi Sambhota* pp. 51-54.
- 2). Cf. Wolfenden, *Outlines of Tibeto-Burman Linguistic Morphology*, 149, 156.
- 3). Op. cit. pp. 54-55.
- 4). Op. cit. pp. 27 ff.
- 5). Op. cit. p. 49.
- 6). Y. R. Chao noted it as *l* in the pronunciation of *lha-sa*, cf. Yu and Chao, *Love Songs of the 6th Dalai lama Tshangs dbyangs rgyo mtsho*, p. 26.
- 7). Cognate to these verbs we have,

l-dan-ba, *l-dans* or *lañs*, ———, *ldoñ* 'to rise'
l-dog-pa, *log*, ———, *log* 'to return'

In these verbs we have to reckon with a metathesis of *d-l-* into *l-d-* as suggested by Simon (*Tibetisch-Chinesische Wortgleichungen* pp. 30-31). But it is not necessary to accept his wholesale consideration of *r-* and *l-* prefixes as due to metathesis: for in that case we cannot understand why we have at the same time *lg-* and *gl-*, etc. The *d-* in the above two verbs is then a prefix attached to the present root, the perfect roots present, as they often do, a plain initial (*l-*).

- 8). Cf. Conrady, op. cit. pp. 26 ff.
- 9). Jäschke, *Tibetan Grammar, addenda* by A. H. Francke and Simon, p. 144.
- 10). There is, of course, a type *a-b-*: *b-* which corresponds to *a-g-*: *g-*, or *a-g-*: *b-g-*

a-bub-pa, *bub*, ———, *bubs* 'to be turned upside down'
a-bor-ba, *bor*, ———, *bor* 'to throw'

- Cf. *a-gol-ba*, *gol* 'to part'
a-gyel-pa, *gyel*, ———, *gyel* 'to fall, to tumble'
a-gyed-pa, *b-gyes*, *b-gye* 'to divide'

- 11). It is interesting to observe the note made by Jäschke in his dictionary under *thag* (p. 228), 'In *thag-pa* and other words beginning with *th-* (e. g. *than*, *tho*), *d-* sometimes takes the place of *th-*, and this uncertainty in the use of the initial letter dates perhaps from a time when the aspirated pronunciation of the media first began to be adopted in C., and was not yet generally introduced.' It seems to me that some of these variations may really go back to an old alternation of *d-*: *th-*.
- 12). The colloquial form of the perfect of this verb is *tshug* (Jäschke, *Tib. Gr., Addenda* p. 140) which according to the usual rule that perfect is used for all tenses, corresponds to *b-tšug*, but goes back to a prefixless form, cf. *b-tul*, *thul* pf. of *a-thul-ba* 'to tame'. The *tsh-* is original.
- 13). Cf. the reduplicated forms in Colloquial Pekinese with a change of tone, 罇 (3): 罇 (3) 罇 (1) 罇, 快 (4): 快 (4) 快 (1) 快, etc. It seems that reduplication has a peculiar phonetic feature different from the usual tone-sandhi.
- 14). We may add some rare instances of *ž-*: *š-*, *l-*: *lh-*, etc., such as *a-dzig-pa b-žig g-žig*, *b-šig* 'to destroy; to be ruined' (*žig*: *šig*), *lugs* 'the casting of metals' *lhug-pa* 'to pour', etc.

NOTES ON TIBETAN VERBAL MORPHOLOGY¹

W. South Coblin

Source: *T'oung Pao* 62, 1/3, 1976, 45-70

Transcription of the Tibetan alphabet

I. Consonants

ཀ k, ཁ kh, ག g, ལ ng, ཅ c, ཆ ch, ཇ j, ཉ ny, ཏ t, ཐ th, ཌ d, ཎ n,
པ p, ཕ ph, བ b, མ m, ཙ ts, ཚ tsh, ཛ dz, ཞ w, ཟ zh, འ z, ཡ ' , ལ y,
ར r, ལ l, ཤ sh, ས s, ཨ h, ཨ (not transcribed).

II. Vowels

ཨ a, ཨ i, ཨ u, ཨ e, ཨ o.

The many and varied problems of Written Tibetan (WT) verbal morphology have been of interest to students of Tibetan and Tibeto-Burman linguistics for over a century and have given rise to a long series of studies.² A number of these investigations have involved WT verbs having more than one root, and have demonstrated the probability that these multiple roots are the result of derivational processes acting upon one or, in some cases, two stems.³ In the present paper we shall comment on some of the observations made in these earlier studies and add several suggestions of our own regarding residual problems involving the multi-rooted verbs.

At the outset we propose to accept the conclusions of Li (1933) with regard to the influences of the prefixes upon WT root initials. Without repeating his arguments we may restate Li's findings as follows:

Prefix s-

1. *sk-* < *s-kh-*
2. *st-* < *s-th-*

3. *sp-* < *s-ph-*
4. *sl-* < *s-lh-*
5. *s-* < *s-tsh-*
6. *sh-* < *s-ch-*

Prefix b-

7. *bk-* < *b-kh-*
8. *bt-* < *b-th-*
9. *bc-* < *b-ch-*
10. *bts-* < *b-tsh-*

Prefix g-

11. *gt-* < *g-th-*
12. *gc-* < *g-ch-*
13. *gts-* < *g-tsh-*
14. *gzh-* < *g-j-*
15. *gz-* < *g-dz-*
16. *gl-, kl-* < *g-lh-, g-l-*

Prefix d-

17. *dk-* < *d-kh-*
18. *dp-* < *d-ph-*

Prefix '-

19. *'ch-* < *'-sh-*
20. *'tsh-* < *'-s-*
21. *'j-* < *'-zh-*
22. *'dz-* < *'-z-*

Prefix l-

23. *lk-* < *l-kh-*
24. *lc-* < *l-ch-*
25. *lt-* < *l-th-*
26. *ld-* < *d-lh-(?)*
27. *ld-* < *d-l-* < *'-l-(?)*

Prefix r-

28. *rk-* < *r-kh-*
29. *rt-* < *r-th-*

30. *rts-* < *r-tsh-*31. *rj-* < *r-zh-*

In the present paper Li's rules 6, 14, 15, 16, 19, 20, 21, 22, 26, 27, and 31 will be identified by number. The remaining rules will be referred to simply as "deaspiration" (deasp.).

We shall be concerned here exclusively with verbs for which four roots, traditionally called present (Pres.), perfect (Per.), future (Fut.), and imperative (Imp.), are attested in lexicographical sources.⁴ Our object will be to suggest hypothetical stems for these verbs and to identify the phonological processes through which their WT forms may be derived.

Let us begin by examining the following examples:

1. *'khyig* *bkyigs* *bkyig* *khyigs*
2. *'thog* *btogs* *btog* *thogs*

These WT roots can be derived from hypothetical stems by positing the following paradigm and applying Li's rules:

Stem.	Pres.	Per.	Fut.	Imp.	Rules
	'--	b--s	b--	--s	
1. <i>*khyig</i>	<i>'khyig</i>	<i>*bkhyigs</i>	<i>*bkhyig</i>	<i>khyigs</i>	
	<i>'khyig</i>	<i>bkyigs</i>	<i>bkyig</i>	<i>khyigs</i>	deasp.
2. <i>*thog</i>	<i>'thog</i>	<i>*bthogs</i>	<i>*bthog</i>	<i>thogs</i>	
	<i>'thog</i>	<i>btogs</i>	<i>btog</i>	<i>thogs</i>	deasp.

However, in the following examples we encounter a problem, for the vocalism of their imperatives differs from that of the other three roots:

3. *'chag* *bcags* *bcag* *chogs*
4. *'chang* *bcangs* *bcang* *chong(s)*

This type of vowel alternation was discussed by Shafer (1951.1022-3) who commented, "The Old Bodish verb types show that whenever the imperative of an *-a-* stem verb has been recorded, the vowel is *-o-*." Noting that various Tibeto-Burman languages have an imperative *-o-* suffix he goes on to suggest, "Good evidence points therefore to the deduction that an imperative ending *-o* existed in proto-Bodic and that in the ancient dialects of Bodish proper the root vowel *-a-* was assimilated to the following imperative ending *-o-*, which then disappeared before writing was introduced into Tibet." Shafer's theory has been adopted by Nishida (1958.37, n. 3) and reiterated by Benedict (1972.126-7);

and, while we still regard it as rather tenuous, we admit it as a possibility for want of a more satisfactory explanation for the *-o-* vowel imperatives. We may symbolize the derivation of the *-o-* vowel forms by adding to the paradigm already proposed above the element **-o* which we shall read as "*-a->-o-*" in the presence of the hypothetical suffix **-o*". This modified paradigm, which we shall designate as Paradigm I, now enables us to account for verbs such as examples 3 and 4:

Stem.	Pres.	Per.	Fut.	Imp.	Rules
	'--	b--s	b--	--s*o	
3. <i>*chag</i>	<i>'chag</i>	<i>*bchags</i>	<i>*bchag</i>	<i>chogs</i>	
	<i>'chag</i>	<i>bcags</i>	<i>bcag</i>	<i>chogs</i>	deasp
4. <i>*chang</i>	<i>'chang</i>	<i>*bchang</i>	<i>*bchang</i>	<i>chongs</i>	
	<i>'chang</i>	<i>bcangs</i>	<i>bcang</i>	<i>chongs</i>	deasp.

The following verbs do not have initial '-:

5. *rkam* *brkams* *brkam* *rkoms*
6. *sgab* *bsgabs* *bsgab* *sgobs*
7. *lta* *bltas* *blta* *ltos*
8. *zla* *bzlas* *bzla* *zlos*

They may, however, be assigned to Paradigm I because '- does not occur in WT before initial configurations such as *rk-*, *sg-*, *lt-*, *zl-*, and may be assumed to have been lost from such environments, thus:

	'--	b--s	b--	--s*o	
5. <i>rkam</i>	<i>*'rkam</i>	<i>brkams</i>	<i>brkam</i>	<i>rkoms</i>	
	<i>rkam</i>	<i>brkams</i>	<i>brkam</i>	<i>rkoms</i>	'->∅
6. <i>sgab</i>	<i>*'sgab</i>	<i>bsgabs</i>	<i>bsgab</i>	<i>sgobs</i>	
	<i>sgab</i>	<i>bsgabs</i>	<i>bsgab</i>	<i>sgobs</i>	'->∅
7. <i>lta</i>	<i>*'lta</i>	<i>bltas</i>	<i>blta</i>	<i>ltos</i>	
	<i>lta</i>	<i>bltas</i>	<i>blta</i>	<i>ltos</i>	'->∅
8. <i>zla</i>	<i>*'zla</i>	<i>bzlas</i>	<i>bzla</i>	<i>zlos</i>	
	<i>zla</i>	<i>bzlas</i>	<i>bzla</i>	<i>zlos</i>	'->∅

Verbs of the following type may also be included under paradigm I by assuming a dissimilatory loss of the prefix *b-* before bilabial initials:

9. *'phyag* *phyags* *phyag* *phyogs*
10. *'bri* *bris* *bri* *bris*

Thus:

	'--	b--s	b--	--s-*o	
9. <i>phyag</i>	' <i>phyag</i>	* <i>bphyags</i>	* <i>bphyag</i>	<i>phyogs</i>	b- > ∅
	' <i>phyag</i>	<i>phyags</i>	<i>phyag</i>	<i>phyogs</i>	
10. <i>bri</i>	' <i>bri</i>	* <i>b-bris</i>	* <i>b-bri</i>	<i>bris</i>	b- > ∅
	' <i>bri</i>	<i>bris</i>	<i>bri</i>	<i>bris</i>	

The verb '*jib bzhibs bzhib jibs* is problematical, for while the imperative form indicates that the stem initial should be *j-*, we have no rule at hand by which we may derive the initial *zh-* of the perfect and future forms. However we note that, following the suggestion of Simon (1929.30), Li (1933.144) has posited his rule 14. *gzh- < g-j-* whereby *j-* is softened to *zh-* after the prefix *g-*. Referring to Simon's article we find that together with the change *gzh- < g-j-* he also suggests another, *bzh- < b-j-*, and we now propose that this sound change has produced the perfect and future forms of the verb '*jib-pa*, thus:

	'--	b--s	b--	---s-*o	
11. * <i>jib</i>	' <i>jib</i>	* <i>bjibs</i>	* <i>bjib</i>	<i>jibs</i>	
	' <i>jib</i>	<i>bzhibs</i>	<i>bzhib</i>	<i>jibs</i>	<i>bzh- < b-j-</i>

The verb *nyan mnyan mnyan nyon* presents several interesting problems. First we may suppose that an original '- prefix was lost from the present form because '-' is not found before *ny* in WT. Next, following Chang (1971.759, rule I) we may suspect that the prefix *b-* in the perfect and future forms was nasalized to *m-* before *ny*, since *b* does not occur before *ny* in WT. Finally, since *-s* does not follow *n* in WT, we may suggest that a final *-s* was lost from the perfect and imperative forms *mnyan* and *nyon*. There is evidence, however, that this final *-s* became *-d* before being lost, because Thomas (1935-63.II, 97 and 157) records two early occurrences of the perfect root *mnyan* written as *mnyand*, with final *da-drag*.⁵ This situation is not surprising, for as Li (1959.58, n. 3) noted with regard to *-d* in perfect verb roots, "The Tibetan suffix *-d(da-drag)* here is definitely a morpho-phonemic variant of the suffix *-s*, usually found in the perfective."

With these points decided we may now account for the WT forms of the verb *nyan-ba*:

	'--	b--s	b--	--s-*o	
12. <i>nyan</i>	*' <i>nyan</i>	* <i>bnyans</i>	* <i>bnyan</i>	* <i>nyons</i>	
	*' <i>nyān</i>	* <i>mnyans</i>	<i>mnyan</i>	* <i>nyons</i>	b > m
	*' <i>nyan</i>	<i>mnyand</i>	<i>mnyan</i>	* <i>nyond</i>	s > d
	*' <i>nyan</i>	<i>mnyan</i>	<i>mnyan</i>	<i>nyon</i>	d > ∅
	<i>nyan</i>	<i>mnyan</i>	<i>mnyan</i>	<i>nyon</i>	'- > ∅

In addition we may also include in Paradigm I certain other verbs whose perfect and imperative roots lack *-s*, e.g.

	'--	b--s	b--	--s-*o	
13. * <i>khal</i>	' <i>khal</i>	* <i>bkhals</i>	* <i>bkhal</i>	* <i>khols</i>	
	' <i>khal</i>	* <i>bkhald</i>	* <i>bkhal</i>	* <i>khold</i>	-s > -d
	' <i>khal</i>	* <i>bkhal</i>	* <i>bkhal</i>	<i>khol</i>	-d > ∅
	' <i>khal</i>	<i>kkal</i>	<i>kkal</i>	<i>khol</i>	deasp.

Finally, certain verbs whose stems end in *-d* may be included in Paradigm I, with the assumption that final **-ds* clusters were simplified to *-d*, e.g.

	'--	b--s	b--	--s-*o	
14. * <i>shad</i>	*' <i>shad</i>	* <i>bshads</i>	<i>bshad</i>	* <i>shods</i>	
	*' <i>shad</i>	<i>bshad</i>	<i>bshad</i>	<i>shod</i>	-ds > d
	' <i>chad</i>	<i>bshad</i>	<i>bshad</i>	<i>shod</i>	Li, #19

One such verb, '*dud btud bdud thud*, is particularly interesting, since it is necessary to posit two stems for it, one for the present and future forms and the other for the perfect and imperative. Li(1933.141) has noted that the two-stem dichotomy of such verbs coincides strikingly with the fact, observed by Francke and Simon (1929.144), that the present and future roots of WT verbs are both negated by the particle *mi* and express a durative sense, while the perfect and imperative roots are negated by *ma* and "express the active part of the verb". The roots of '*dud-pa* may thus be derived as follows:

	'--	b--s	b--	--s-*o	
15. * <i>dud/thud</i>	' <i>dud</i>	* <i>btuds</i>	<i>bdud</i>	* <i>thuds</i>	
	' <i>dud</i>	* <i>btud</i>	<i>bdud</i>	<i>thud</i>	-ds > d
	' <i>dud</i>	<i>btud</i>	<i>bdud</i>	<i>thud</i>	deasp.

Paradigm I does not enable us to derive the present forms of verbs such as 16. '*khru* *bkrus bkru khrus* and 17. '*tshod* *btsos btso tshos*, and for them we must posit a new paradigm, '-d b--s b-- --s-*o, which we call Paradigm II, thus:

	'--d	b--s	b--	--s-*o	
16. * <i>khru</i>	' <i>khru</i>	* <i>bkhru</i>	* <i>bkhru</i>	<i>khru</i>	
	' <i>khru</i>	<i>bkrus</i>	<i>bkrus</i>	<i>khru</i>	deasp.
17. * <i>tsho</i>	' <i>tshod</i>	* <i>btshos</i>	* <i>btsho</i>	<i>tshos</i>	
	' <i>tshod</i>	<i>btsos</i>	<i>btsos</i>	<i>tshos</i>	deasp.

In certain cases it is impossible to decide whether a verb belongs to Paradigm I or Paradigm II, e.g.

	I	'--	b--s	b--	--s-*o	
18.	<i>tshol</i>	' <i>tshol</i>	* <i>btshols</i>	* <i>btshol</i>	* <i>tshols</i>	
		' <i>tshol</i>	* <i>btshold</i>	* <i>btshol</i>	<i>tshold</i> ⁶	-s > -d
		' <i>tshol</i>	* <i>btshol</i>	* <i>btshol</i>	<i>tshol</i>	-d > ∅
		' <i>tshol</i>	<i>btsol</i>	<i>btsol</i>	<i>tshol</i>	deasp.
	or: II	'--d	b--s	b--	--s-*o	
		*' <i>tshold</i>	* <i>btshols</i>	* <i>btshol</i>	* <i>tshols</i>	
		*' <i>tshold</i>	* <i>btshold</i>	* <i>btshol</i>	<i>tshold</i>	-s > -d
		' <i>tshol</i>	* <i>btshol</i>	* <i>btshol</i>	<i>tshol</i>	-d > ∅
		' <i>tshol</i>	<i>btsol</i>	<i>btsol</i>	<i>tshol</i>	deasp.

Let us now consider the following cases:

19.	<i>byed</i>	<i>byas</i>	<i>bya</i>	<i>byos</i>
20.	<i>len</i>	<i>blangs</i>	<i>blang</i>	<i>long(s)</i>
21.	<i>sem(s)</i>	<i>bsams</i>	<i>bsam</i>	<i>soms</i>
22.	<i>sel</i>	<i>bsal</i>	<i>bsal</i>	<i>sol</i>
23.	' <i>byin</i>	<i>phyung</i>	<i>dbyung</i>	<i>phyungs</i>
24.	' <i>dzin</i>	<i>bzung</i>	<i>gzung</i>	<i>zung(s)</i>

Among these verbs, those whose stem vowels may on the basis of the perfect and future forms be identified as *-a-* have an *-e-* vocalism in the present roots, while those whose stem vowel is *-u-* have *-i-* in the present forms. We also observe that each verb whose perfect, future, and imperative forms end in root final *-ng* has final *-n* in its present root. Shafer (1951.1028) noted that forms such as 20. *len* and 24. '*dzin* are attested in early sources with *da-drag*, i.e. as *lend* and '*dzind*, and concluded, certainly correctly, that original stem final *-ng* in these words was partially assimilated to the following *-d*. He then proposed (p. 1028-9) that forms such as 20. *len*, 22. *sel*, 23. '*byin*, and 24. '*dzin* originally had a present suffix **-ed* (or perhaps "proto-Bodish" **-et*) to whose vocalism the root vowels *-a-* and *-u-* were assimilated as *-e-* and *-i-* respectively. On the other hand, for forms such as *sem(s)* he preferred a present suffix **-se* or **-es* (p. 1024). Nishida (1958.35-36) noted (as we have with regard to 12. *nyan-ba* above) that the *da-drag* is found in the perfect as well as present forms of verbs, and also that post-final *-s* and *da-drag* are in complementary distribution in WT, with *-s* occurring after final *-m*, *-g*, *-ng*, and *-b*; and *-d* after *-n*, *-r*, and *-l*. This led him to reconstruct a suffix **-ed* for present roots (p. 38) and **-dV* for the perfect forms (p. 39; *V* = vocalism of some sort which did not affect the vowels *-a-* and *-u-*). The vowel **ε* would have caused the *-a-* > *-e-* and *-u-* > *-i-* changes in the

present forms, and later *-d* would have changed to *-s* after final *-m*, *-g*, *-ng*, and *-b*, yielding the distributional situation of WT.

Here we may propose a somewhat different explanation which will allow us to avoid speculation with regard to the vocalisms of the present and perfect suffixes of these verbs. For 16. '*khru*d *bkrus* *bkru* *khru*s, where there can be no question of changes in the suffixes due to a stem-final stop, we posited *-d* and *-s* as markers of the present and perfect roots respectively; and we now note that a similar situation obtains in the case of 19. *byed* *byas* *bya* *byos*. This suggests that perhaps present *-d* and perfect *-s* were also original in examples 19-24.

We might thus propose that the presence of the original suffix *-d* caused the *-a-* > *-e-* and *-u-* > *-i-* changes which resulted in our problematical present forms, and also caused the assimilatory change *-ngd* > *-nd*.⁷

However, we must further qualify our statement concerning the *-u-* > *-i-* change because the present roots of verbs such as 16. '*khru*d (< '*khru*-*d*) and *zlug*s (< **zlug*d) *bzlug*s *bzlug* *zlug*s (Paradigm II) indicate that the mere presence of post-final *-d* could not have caused this vowel shift. Indeed, it would appear that this change occurred only in the presence of a final **-ngd* (> *-nd*) cluster. After these changes had terminated, *-d* changed to *-s* after *-g*, *-ng*, *-b*, and *-m*; and *-s* changed to *-d* after *-n*, *-r*, and *-l*. It would appear that there was some confusion in the behavior of *-d* after *-m*, however, resulting in cases where it was sometimes lost altogether before the *-d* > *-s* change occurred. For example, for '*grem*(s) *bkram* *dgram* *khrom*s, *sum* ~ *sum*s *bsum*s *bsum* *tshum*s, and 21. *sem*(s) *bsams* *bsam* *soms* present forms with and without *-s* are attested; and the vocalism of *skem* *bskam*s *bskam* *skom*s, *ltem* *bltam*s *bltam* *ltom*s, and '*dem* '*dams* *gdam* '*dom*s indicates that an original *-d* suffix must have occurred in the present roots of these verbs.

Having dealt with these problematical points we may now propose a paradigm to account for examples 19-22:⁸

Paradigm III	--d	b--s	b--	--s-*o	
19.	<i>bya</i>	* <i>bya-d</i>	* <i>b-byas</i>	* <i>b-bya</i>	<i>byos</i>
		<i>byed</i>	* <i>b-byas</i>	* <i>b-bya</i>	<i>byos</i> a > e
		<i>byed</i>	<i>byas</i>	<i>bya</i>	<i>byos</i> b > ∅

Here we must assume that the suffix *-d* differed from stem-final *-d* in some way at the time the *a* > *e* vowel change occurred, since, as we have seen, we have verb forms such as 14. '*chad* *bshad* *bshad* *shod* where *-a-* did not change to *-e-* before stem-final *-d*. The possible existence of such a difference seems less surprising when we consider that according to the traditional grammatical treatments *da-drag* sometimes behaved differently from final *-d* with respect to morphophonemic variant forms which followed it, e.g. after *da-drag*, *-to*, *-tu*, and *-te* were used, while after *-d*, *-do*, *-du*, and *-de* were employed.

20.	*lang	*langd	blangs	blang	longs	
		*lengd	blangs	blang	longs	a > e
		lend ^p	blangs	blang	longs	-ngd > -nd
		len	blangs	blang	longs	-d > ∅
21.	*sam	*samd	bsams	bsam	soms	
		*semd	bsams	bsam	soms	a > e
		sems	bsams	bsam	soms	-d > -s
22.	*sal	*sald	*bsals	bsal	*sols	
		*seld	*bsals	bsal	*sols	a > e
		*seld	bsald ¹⁰	bsal	*sold	-s > -d
		sel	bsal	bsal	sol	-d > ∅

Several verbs may be placed in either Paradigm II or Paradigm III, e.g.

25.	*skyal	'--d	b--s	b--	--s-*o	
		*'skyald	*bskyals	bskyal	*skyols	
		*'skyeld	*bskyals	bskyal	*skyols	a > e
		*'skyeld	*bskyald ¹¹	bskyal	*skyold	-s > -d
		*'skyel	bskyal	bskyal	skyol	-d > ∅
or: III	*skyal	skyel	bskyal	bskyal	skyol	'- > ∅
		--d	b--s	b--	--s-*o	
		*skyald	*bskyals	bskyal	*skyols	
		*skyeld	*bskyals	bskyal	*skyols	a > e
		*skyeld	*bskyald	bskyal	*skyold	-s > -d
		skyel	bskyal	bskyal	skyol	-d > ∅

Let us now proceed to the next set of examples:

26.	rkyong	brkyangs	brkyang	rkyongs
27.	skong	bskangs	bskang	skong(s)
28.	zlo	bzlas	bzla	zlos
29.	gsob	bsabs	bsab	sobs
30.	gshom	bshams	bsham	shoms
31.	gcod	bcad	gcad	chod
32.	gtong	btang	gtang	thongs
33.	gnon	mnan	gnan	non

Here we encounter new vowel problems, for while the perfect and future roots of these verbs point to an *-a-* vocalism in the stems, the present forms have *-o-* vowels. Shafer (1951.1023) notes that many verbs exhibiting this *a/o* vowel

alternation, such as our examples 29-33, have pre-initial *g-*; and he proposes (p. 1024) that this *g-* derives from an earlier present prefix **go-*, to whose *-o-* vocalism the *-a-* vowels of the verbal stems would have been assimilated. On the other hand, for verbs such as our examples 26-28, where no pre-initial *g-* is present, he posits (p. 1024) a hypothetical present suffix *-*o* as the cause of the *-a-* > *-o-* assimilation and comments, "This type of change would accord with the evidence pointing to *-o-* in imperatives of *-a-* roots coming from a suffix *-o-*." Nishida (1958.39) accepts Shafer's prefix **go-*, but in place of his present suffix *-*o* suggests a prefix **γo*. The *-o-* vowel of this prefix, like that of **go-*, would have brought about the *-a-* > *-o-* change in the *-a-* vowel stems; but, unlike the *g-* of **go-*, the velar fricative initial *γ-* of the prefix **γo-* would have been lost before the WT period.

Here we may suggest that Shafer's *-o* suffix and Nishida's **γo-* prefix for the present roots are unnecessary. To begin, we observe that forms to which these affixes would be added all begin with initial clusters before which pre-initial *g-* does not occur in WT, e.g. 26. *rkyong*, 27. *skong*, and 28. *zlo*. We do not find in WT such initial configurations as **grk-*, **gsk-*, and **gzl-*. We might thus suspect that Shafer's **go-* occurred in the present tense forms of these verbs and that pre-initial *g-* was lost from such clusters as **grk-*, etc. before WT times. This would allow us to account for all *a/o* vowel alternations with only one type of present affix. However, we may now ask if the *-o-* vocalism of Shafer's prefix is not superfluous. Might we not in fact suspect that pre-initial *g-* itself is responsible in some way for the *-a-* > *-o-* change in the present roots of verbs? At first glance the future roots of such verbs as 31. *gcod-pā*, 32. *gtong-ba*, 33. *gnon-pa* would seem to rule against this possibility, for these forms have the *g-* pre-initial and still preserve the *-a-* vocalism, i.e. *gcad*, *gtang*, and *gnan*. Here we may profitably compare verbs of the following type:

23.	'byin	phyung	dbyung	phyungs
34.	'gegs	bkag	dgag	khogs
35.	'gebs	bkab	dgab	khob
36.	'bogs	phog	dbog	phog

In each of these cases the future forms have pre-initial *d-* rather than *g-*. It is quite interesting to note here that pre-initial *g-* and *d-* are in complementary distribution in WT, i.e.

g- may occur before *c, ny, t, d, n, ts, zh, z, y, sh,* and *s*
d- may occur before *k, g, ng, p, b,* and *m*

This situation suggests a possible solution to our dilemma. We may now propose that the original future prefix of verbs such as our examples 31-36 was *d-*, and that pre-initial *d-* later dissimilated to *g-* before the stem initials *c*(~ *ch*),

ny, t(-th), d, n, ts(-tsh), zh, z, y, sh, and s. If we now assume that this *d* > *g*-change took place only after the *-a* > *-o*-vowel change which had affected the present forms, then we may safely explain this vowel change as having been brought about by the presence of pre-initial *g*-.¹² The later *d* > *g*-change would then have given rise, for example, to a WT form *gcad* (<**dcad*) next to WT *gcod* (<**gcod*).

With these problems behind us we may now propose a paradigm through which the roots of examples 26-30 may be derived:

Paradigm IV	g--	b--s	b--	--s-*o	
26. * <i>rkyang</i>	* <i>grkyang</i>	<i>brkyangs</i>	<i>brkyang</i>	<i>rkyongs</i>	
	* <i>grkyong</i>	<i>brkyangs</i>	<i>brkyang</i>	<i>rkyongs</i>	a > o
	<i>rkyong</i>	<i>brkyangs</i>	<i>brkyang</i>	<i>rkyongs</i>	g- > ∅
77. * <i>skang</i>	* <i>gskang</i>	<i>bskangs</i>	<i>bskang</i>	<i>skongs</i>	
	* <i>gskong</i>	<i>bskangs</i>	<i>bskang</i>	<i>skongs</i>	a > o
	<i>skong</i>	<i>bskangs</i>	<i>bskang</i>	<i>skongs</i>	g- > ∅
28. * <i>zla</i>	* <i>gzla</i>	<i>bzlas</i>	<i>bzla</i>	<i>zlos</i>	
	* <i>gzlo</i>	<i>bzlas</i>	<i>bzla</i>	<i>zlos</i>	a > o
	<i>zlo</i>	<i>bzlas</i>	<i>bzla</i>	<i>zlos</i>	g- > ∅
29. * <i>sab</i>	* <i>gsab</i>	<i>bsabs</i>	<i>bsab</i>	<i>sobs</i>	
	<i>gsob</i>	<i>bsabs</i>	<i>bsab</i>	<i>sobs</i>	a > o
30. * <i>sham</i>	* <i>gsham</i>	<i>bshams</i>	<i>bsham</i>	<i>shoms</i>	
	<i>gshom</i>	<i>bshams</i>	<i>bsham</i>	<i>shoms</i>	a > o

The following interesting cases should also be included under Paradigm IV:

37. <i>dpag</i>	* <i>gdpag</i>	* <i>bdpags</i>	* <i>bdpag</i>	<i>dpogs</i>	
	* <i>gdpog</i>	* <i>bdpags</i>	* <i>bdpag</i>	<i>dpogs</i>	a > o
	<i>dpog</i>	* <i>bdpags</i>	* <i>bdpag</i>	<i>dpogs</i>	g- > ∅
	<i>dpog</i>	<i>dpags</i>	<i>dpag</i>	<i>dpogs</i>	b- > ∅

The imperative form of *dpog-pa* indicates that the initial cluster *dp-* should be taken as part of the stem.

38. <i>myang</i>	* <i>gmyang</i>	* <i>bmyangs</i>	* <i>bmyang</i>	<i>myongs</i>	
	* <i>gmyong</i>	* <i>bmyangs</i>	* <i>bmyang</i>	<i>myongs</i>	a > o
	<i>myong</i>	* <i>bmyangs</i>	* <i>bmyang</i>	<i>myongs</i>	g- > ∅
	<i>myong</i>	<i>myangs</i>	<i>myang</i>	<i>myongs</i>	b- > ∅
39. <i>sed</i>	<i>gsed</i>	* <i>bseds</i>	<i>bsed</i>	* <i>sed</i>	
	<i>gsed</i>	<i>bsed</i>	<i>bsed</i>	<i>sed</i>	-ds > -d

In certain cases it is impossible to determine whether a verb belongs to paradigm I or Paradigm IV, e.g. 40. *rku brkus brku rkus*:

I	'--	b--s	b--	--s-*o	
40. <i>rku</i>	*' <i>rku</i>	<i>brkus</i>	<i>brku</i>	<i>rkus</i>	
	<i>rku</i>	<i>brkus</i>	<i>brku</i>	<i>rkus</i>	'- > ∅
or: IV	g--	b--s	b--	--s-*o	
	* <i>grku</i>	<i>brkus</i>	<i>brku</i>	<i>rkus</i>	
	<i>rku</i>	<i>brkus</i>	<i>brku</i>	<i>rkus</i>	g- > ∅

For examples 31-33 we must posit a different paradigm:

Paradigm V	g--	b--	d--	--s-*o	
31. * <i>chad</i>	* <i>gchad</i>	* <i>bchad</i>	* <i>dchad</i>	* <i>chods</i>	
	* <i>gchod</i>	* <i>bchad</i>	* <i>dchad</i>	* <i>chods</i>	a > o
	* <i>gchod</i>	* <i>bchad</i>	* <i>gchad</i>	* <i>chods</i>	d- > g-
	* <i>gchod</i>	* <i>bchad</i>	* <i>gchad</i>	<i>chod</i>	-ds > -d
	<i>gcod</i>	<i>bcad</i>	<i>bcad</i>	<i>chod</i>	deasp.
32. * <i>thang</i>	* <i>gthang</i>	* <i>bthang</i>	* <i>dthang</i>	<i>thongs</i>	
	* <i>gthong</i>	* <i>bthang</i>	* <i>dthang</i>	<i>thongs</i>	a > o
	* <i>gthong</i>	* <i>bthang</i>	* <i>gthang</i>	<i>thongs</i>	d- > g-
	<i>gtong</i>	<i>btang</i>	<i>gtang</i>	<i>thongs</i>	deasp.
33. * <i>nan</i>	* <i>gnan</i>	* <i>bnan</i>	* <i>dnan</i>	* <i>nons</i>	
	<i>gnon</i>	* <i>bnan</i>	* <i>dnan</i>	* <i>nons</i>	a > o
	<i>gnon</i>	* <i>bnan</i>	<i>gnan</i>	* <i>nons</i>	d- > g-
	<i>gnon</i>	<i>mnan</i>	<i>gnan</i>	* <i>nons</i>	b- > m-
	<i>gnon</i>	<i>mnan</i>	<i>gnan</i>	* <i>nond</i>	-s > -d
	<i>gnon</i>	<i>mnan</i>	<i>gnan</i>	<i>non</i>	-d > ∅

For verbs such as 23-24 and 34-36 we propose the following paradigm:

Paradigm VI	'--d	b--	d--	--s-*o	
23. * <i>byung/</i>	*' <i>byungd</i>	* <i>bphyung</i>	<i>dbyung</i>	<i>phyungs</i>	
<i>phyung</i>	*' <i>byingd</i>	* <i>bphyung</i>	<i>dbyung</i>	<i>phyungs</i>	u > i
	*' <i>byind</i> ¹³	* <i>bphyung</i>	<i>dbyung</i>	<i>phyungs</i>	-ngd > -nd
	*' <i>byind</i>	<i>phyung</i>	<i>dbyung</i>	<i>phyungs</i>	b- > ∅
	<i>'byin</i>	<i>phyung</i>	<i>dbyung</i>	<i>phyungs</i>	-d > ∅
24. * <i>zung</i>	*' <i>zungd</i>	<i>bzung</i>	* <i>d-zung</i>	<i>zungs</i>	
	*' <i>zingd</i>	<i>bzung</i>	* <i>d-zung</i>	<i>zungs</i>	u > i
	*' <i>zind</i>	<i>bzung</i>	* <i>d-zung</i>	<i>zungs</i>	-ngd > -nd
	*' <i>zind</i>	<i>bzung</i>	<i>gzung</i>	<i>zungs</i>	d- > g-

	'dzind ¹⁴	zung	gzung	zungs	Li, #22
	'dzin	zung	gzung	zungs	-d > ∅
34. *gag/	*'gagd	*bkhag	dgag	khogs	
*khag	*'ged	*bkhag	dgag	khogs	a > e
	'gegs	*bkhag	dgag	khogs	-d > -s
	'gegs	bkag	dgag	khogs	deasp.

The verb 41, 'gengs bkang dgang khongs, which probably belongs to Paradigm VI, is interesting in that its present root did not undergo the *-ngd > -nd* change. Instead, after the failure of this rule, *-d* changed to *-s* as it regularly did after *-g*:

41. *gang/	*'gagd	*bkhag	dgang	khongs	
*khang	*'gengd	*bkhag	dgang	khongs	a > e
-----	-----	-----	-----	-----	-ngd > -nd
	'gengs	*bkhag	dgang	khongs	-d > -s
	'gengs	bkang	dgang	khongs	deasp.

A similar phenomenon seems to have occurred in the case of *sngangs bsngangs bsngang sngongs* (Paradigms II/III).¹⁵

We observe that the stem initials of these two verbs are velars, and it seems possible that the presence of these velar initials may have arrested the *-ngd > -nd* change. With this in mind it is interesting to note that while on the one hand there appear to be no velar initial words which underwent the *-ngd > -nd* change, on the other hand there are among verbs with fewer than four attested roots several examples where words with velar initials appear to have failed to undergo this change, e.g.

'khengs (<*khengd?)	khengs	"to be full"
grungs (<*grungd?)	bgrungs bgrung	"to make clear or clean" (Semichov)
(Note that the <i>-u- > -i-</i> did not occur in <i>grungs</i> .)		
'grong ~ 'grongs ¹⁶ (<*grongd?)	grong	"to die"

Nevertheless it must be noted that at least two multiple-rooted verbs with non-velar stem initials also have present forms ending in *-ngs*, i.e.

<i>stongs bstangs bstang</i> (?)	"to accompany; to empty" (Jäschke)
~ <i>stongs bstongs stong</i>	"to accompany; put together" (Semichov)
'phongs phongs	"to be poor, deprived of"

These may merely be blends of some sort, or they may indicate that the conditions which arrested the **-ngd > -nd* change were more complex than we suppose. Moving on we encounter verbs for which a seventh paradigm must be assumed:

Paradigm VII	'--	b--s	d--	--s-*o	
42. *gum/	'gum	*bkhums	dgum	khums	
*khum	'gum	bkums	dgum	khums	deasp.
43. *zhig/	*'zhig	bshigs	*d-zhig	shigs	
*shig	*'zhig	bshigs	gzhig	shigs	d > g-
	'jig	bshigs	gzhig	shigs	Li, #21
44. *byi/	'byi	*bphysis	dbyi	physis	
*phyi	'byi	physis	dbyi	physis	b > ∅

Finally, for the following three verbs a slightly different paradigm must be posited:

Paradigm VIII	'--d	b--s	d--	--s-*o	
45. drang	*'drangd	*bdrangs	*d-drang	drongs	
	*'drend	*bdrangs	*d-drang	drongs	a > e
	'drend ¹⁷	*bdrangs	*d-drang	drongs	-ngd > -nd
	'drend	drangs	drang	drongs	b > ∅; d > ∅
	'dren	drangs	drang	drongs	-d > ∅
46. *bu/	'bud	phus	dbu	phus	
*phu					
47. *dzug/	*'dzugd	*btshugs	*d-dzug	tshugs	
*tshug	'dzugs	*btshugs	*d-dzug	tshugs	-d > -s
	'dzugs	*btshugs	*gdzug	tshugs	d- > g-
	'dzugs	*btshugs	gzug	tshugs	Li, #15
	'dzugs	btugs	gzug	tshugs	deasp.

The eight paradigms proposed for WT four-rooted verbs together with the number of verbs assigned to each paradigm may now be listed as follows:

	Pres.	Perf.	Fut.	Imp.	No. of verbs
I	'--	b--s	b--	--s-*o	55
II	'--d	b--s	b--	--s-*o	5
III	--d	b--s	b--	--s-*o	9
IV	g--	b--s	b--	--s-*o	29
V	g--	b--	d--	--s-*o	4
VI	'--d	b--	d--	--s-*o	14
VII	'--	b--s	d--	--s-*o	16
VIII	'--d	b--s	d--	--s-*o	3

In addition, we should note the number of those verbs which could belong to two or more paradigms:

I/II	6	I/IV	67	VI/VIII	3
II/III	8	IV/V	1	VII/VIII	1
I/II/III	1	I/VII	3	VI/VII/VIII	16

Finally we note that 25 verbs are exceptional and cannot be confidently assigned to any of the eight paradigms.

One criticism leveled by Uray (1953:51-2) at the separation of the various verbal categories distinguished by Shafer (1951) was that Shafer relied too heavily upon the presence or absence of the prefix *'*- and the suffix *-s*, which Uray justifiably describes as "belonging to the most unstable elements of Classical Tibetan".¹⁸ A glance at our eight paradigms indicates that our scheme is also subject to Uray's objection, for the basis for separating paradigms I, II, and III and also VI, VII, and VIII is the presence or absence of *'*-, *-s*, or *-d* (which in many cases became WT *-s*).

Indeed the fact that some paradigms, such as I and IV, contain many verbs while others, such as II and III, contain only a handful leads us to suspect that the number of paradigms was originally fewer than it is now and that new verbal categories have arisen through simplifications and/or analogical changes of some sort. Perhaps future studies may throw further light on the origins and subsequent developments of the various paradigmatic patterns.

We close by listing the sound changes mentioned in this study, other than those proposed by Li (1933). Ordered changes or sets of changes are designated by capital letters.

- I. A. 1. *-a* > *-e*: *-a* changes to *-e* in the presence of post-final *-d*.
 2. *-u* > *-i*: *-u* changes to *-i* in the presence of final *-ngd* (> *-nd*).
 3. *-ngd* > *-nd*: *-ng* changes to *-n* before *d* (except in syllables with stem-initial velars).
- B. 1. *-d* > *-s*: *d* changes to *s* after *g*, *ng*, *b*, and *m*.
 2. *-s* > *-d*: *s* changes to *d* after *n*, *r*, and *l*.
- C. *-d* > \emptyset : *d* is lost after *n*, *r*, and *l*.
- II. A. *-a* > *-o*: *-a* changes to *-o* in the presence of pre-initial *g*.
 B. 1. *d* > *g*: *d* changes to *g* before *c* (*-ch*), *ny*, *t* (*-th*), *d*, *n*, *ts* (*-tsh*), *zh*, *z*, *y*, *sh*, and *s*.
 2. *g* > \emptyset : pre-initial *g* is lost everywhere except before *c* (*-ch*), *ny*, *t* (*-th*), *d*, *n*, *ts* (*-tsh*), *zh*, *z*, *y*, *sh*, and *s*.
- III. A. *b* > \emptyset : *b* is lost before bilabials.
 B. *b* > *m*: *b* changes to *m* before nasals.
- IV. *-ds* > *-d*: *s* is lost after *-d*.
 V. *b-j* > *bzh*: *j* changes to *zh* after *b*.
- VI. *'* > \emptyset : Initial *'* is lost everywhere except before *kh*, *g*, *ch*, *j*, *th*, *d*, *ph*, *b*, *tsh*, *dz*, and vowels.

Appendix

In the following table is recorded the entire corpus of four-rooted WT verbs considered in this study. The verbs are listed according to one or more of the eight paradigms proposed above, and within each paradigm regular verbs are listed first, followed by verbs which exhibit irregularities of some sort. Verbs which could not be assigned to any of the eight paradigms are listed at the end of the table as "irregular verbs". For each verb the following information is given:

1. The four WT roots.
2. The hypothetical stem form or forms, marked by * when the stem does not actually occur as one of the roots.
3. English gloss.
4. Notes on exceptional features of irregular forms.

When more than one form of a particular root is given, the form given first is that accepted by us as "regular" from the standpoint of our proposed paradigms, while those listed below it are considered to be "irregular" variants. When several variant forms are considered regular, they are separated by vertical slashes. All forms and glosses not taken from Jäschke (1881) are marked with superscript letters according to the following scheme:

C: Csoma (1834)	G: Dge-bshes (1957)
D: Desgodins (1899)	S: Semichov (1963)
d: Das (1902)	T: Thomas (1935-63)

The verbs are arranged according to the spelling of their present roots, in the order of the Tibetan alphabet.

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
Paradigm I						
—	b-s	b--	--s* ⁰			
Regular						
rkam	brkams ^S	brkam ^{D,G}	rkoms ^S	rkam	"desire, long for"	
skya	bskyas	bskya	skyos ^{S,G}	skya	"move, convey"	
'khal	bkal ^{S,G}	bkal ^{S,G}	khol	*khal	"spin"	
'khyig	bkyigs	bkyig	khyigs ^{S,G}	*khyig	"bind"	
rgal	brgal	brgal	rgol	rgal	"step over, pass"	
sgab	bsgabs ^{S,G}	bsgab ^{S,G}	sgobs ^S	sḡab	"cover"	
mga	bmgas	brnga	mngos	mga	"mow, cut, reap"	
mga ^S	brmga ^S	brmga ^S	mgon ^S	mga ⁿ	"reward, repay" ^S	

(continued)

(continued)

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
'chag	bcags	bcag	chogs ^s 'chog(?)	*chag	"tread, walk"	
'chang	bcangs	bcang	chong(s)	*chang	"hold, keep"	
'chad	bshad	bshad	shod	*shad	"explain, relate"	
'chab	bcabs	bcab	chobs ^s chob	*chab	"conceal"	
'cha'	bcas	bca'	chos	*cha'	"make, prepare"	
'ching	bcings	bcing	ching(s)	*ching	"bind, fetter"	
'chib	bcibs	bcib	chibs	*chib	"mount, ascend"	
'chu	bcus	bcu	chus	*chu	"ladle, scoop"	
'che	bces	bce	ches	*che	"assure, promise"	
'cho ^D	bcos	bco	chos	*cho	"make, build"	
'chos						
'jib	bzhibs	bzhib	jibs ^G 'jibs ^s	*jib	"suck"	
nyan	mnyan ^s	mnyan ^s	nyon	nyan	"listen, hear"	
snyad	bsnyad	bsnyad	snyod	snyad	"relate, report"	
lta	bltas	blta	ltos	lta	"look, view"	
stad	bstad	bstad	stod	stad	"put on, lay on"	
'thu	btus	btu	thus	*thu	"gather, pick up"	
'thung	btungs	btung	thungs ^{s,G} thung	thung	"drink"	
'thum	btums	btum	thums ^s 'thum btum	*thum	"cover"	
'thog ^s	btogs ^s	btog ^s	thogs ^s	*thog	"pluck, pull" ^s	
'dud	btud	bdud	thud dud	*dud/thud	"bend, bow down"	
rdal	brdal	brdal	rdol	rdal	"spread, extend"	
ldag	bldags	bldag	ldogs ^{s,G} ldog	ldag	"lick"	
ldab	bldabs	bldab	ldobs ^s ldob	ldab	"repeat, do again"	
ldad	bldad	bldad	ldod	ldad	"chew"	
snad	bsnad	bsnad ^s	snod	snad	"harm, injure"	
'phyag	phyags ^{s,G} 'phyags	phyag ^s	phyogs ^s	phyag	"sweep, clean"	
'byug	byugs	byug ^{s,G}	byugs	*byug	"smear, anoint"	
'brab	brabs	brab ^{s,G}	brobs	brab	"catch; beat"	
'bral	bral	bral ^s	brol	bral	"be separated from"	
'bri	bris ^{s,D}	bri ^s	bris ^{s,D}	bri	"draw, write"	
'brim	brim(s)	brim ^s	brim(s)	brim	"distribute"	
'bru	brus	bru	Brus	bru	"dig, chisel"	

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
'brub	brubs ^s	brub ^s	brubs ^s	brub	"overflow"	
'breg	breg(s)	breg ^s	bregs ^{s,G} brog(s)	breg	"cut off, mow"	
'tshag	btsags	btsag	tshogs ^{s,D,G} tshog	*tshag	"strain, filter"	
'tshog	btsogs ^{s,D}	btsog	tshogs ^s tshog	tshog	"hew, chop"	
'tshong	btsongs	btsong	tshongs ^s	*tshong	"sell"	
zla	bzlas	bzla ^{s,G}	zlos	zla	"traverse"	
sran	bsran	bsran	sron	sran	"suffer, endure"	
slan	bslan ^s	bslan ^s	slon ^s	slan	"to mend, repair"	
Irregular						
skyag	bskyags	bskyag	skyog	skyag	"spend, expend"	Lacks Imp. -s.
skrab	bskrabs ^s	bskrab ^s	skrabs ^s	skrab	"trample"	Lacks Imp. -o.
'khyal	bkyal ^s	bkyal ^s	kyal	?	"talk nonsense"	Lacks Imp. -o- Pres. and Per. initials do not agree.
'gom	bgoms ^G goms ^D	bgom ^G	'goms ^s	*gom	"tread, pass"	'- prefix of Imp.
sngag	bsngags	bsngag	sngog	sngag	"praise"	Lacks Imp. -s.
'jo	bzhos	bzho	gzhos ^s 'jos	*zho ¹⁹	"to milk"	Imp. g-prefix.
ltab	bltabs	bltab	ltob	ltab	"fold, put together"	Imp. lacks -s.
Paradigm II						
'-d	b--s	b--	--*o			
Regular						
'khrud	bkrus	bkru	khrus ^{s,G}	*khru	"bathe, wash off"	
'tshod	btsos	btso	tshos	*tsho	"cook, boil"	
rdeb(s)	brdabs	brdab	rdobs ^s	*rdab	"fing down"	
Irregular						
'khrid	bkris ^{s,D}	bkri	khrid ^s	*khri	"lead, conduct"	Imp. final -d.
'cheg	bshags	bshag	shog	*shag	"cleave, split"	Lacks -s in Pres. and Imper.
Paradigms I/II						
'-	b-s	b--	-s-*o			
'-d	b-s	b--	-s-*o			
'khol	bkol	bkol	khol	khol	"use as a servant"	
'bor	bor	bor ^s	bor	bor	"throw, cast"	
'byon	byon	byon ^s	byon	byon	"go, travel"	
'brul ^s	brul ^s	brul ^s	brul ^s	brul	"fall, drop; be ruined" ^s	

(continued)

(continued)

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
'tshol	btsol btsal ^{S,D,G}	btsol btsal ^{S,D,G}	tshol	tshol	"seek, try to get"	
zlug(s)	bzlags	bzlug	zlags ^S	zlug	"give notice"	
Paradigm III						
--d	b--s	b--	--s*o			
Regular						
byed	byas	bya	byos	bya	"make, do"	
len	blangs	blang	long(s)	*lang	"get, receive; catch"	
shum	bshums	bshum	shum(s)	shum	"weep"	
sem(s)	bsams	bsam	soms ^{S,G}	*sam	"think, ponder"	
			som			
sel	bsal	bsal	sol	*sal	"remove"	
Irregular						
bgvid	bygis	bgvi	gyis	*gyi	"make"	b- of Pres.
lteb	bltabs ^S	bltab ^S	ltebs ^{S,G}	*ltab	"double, turn down"	Lack of -s in Pres. and presence of -e- in Imp.
sub	bsubs	bsub	subs ^{S,G}	sub	"plug up; erase"	Lack of Pres. -s
sums	bsums(?)	bsum	tshums ^S	?	"bind, tie"	Disagreement of initials in Pres. and Imp.
sum	btsums ^S	btsum ^S				
Paradigms II/III						
'---d	b---s	b---	---s*o			
---d	b---s	b---	---s*o			
Regular						
skud	bskus	bsku	skus	*sku	"smear, besmear"	
skem	bskams	bskam	skoms ^S	*skam	"make dry"	
			skom(s)			
skyel	bskya ^{S,G,d}	bskya ^{S,G,d}	skyol	*skyal	"conduct, accompany"	
	bskyel	bskyel				
ltem	bltams ^S	bltams ^S	ltoms ^S	*ltam	"full"	
sdud	bsdus	bsdu	sdu	*sdu	"collect, amass"	
sbed	sbas	sba	sbos	sba	"hide, conceal"	
sbrud	sbrus	sbru	sbrus	sbru	"stir, knead"	
Irregular						
sngangs	bsngangs	bsngang	sngongs	*sngang	"frighten"	Presence of -a- in Imp.
Paradigms I/II/III						
'-	b--s	b--	--s*o			
'--d	b--s	b--	--s*o			
--d	b--s	b--	--s*o			

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
snyeg(s)	bsnyegs	bsnyeg	snyogs	*snyeg	"hasten; overtake"	
Paradigm IV						
g--	b--s	b--	--s*o			
Regular						
rkyong	brkyangs ^{S,G}	brkyang	rkyongs ^{S,G}	*rkyang	"extend, stretch"	
	brkyang					
skong	bskangs	bskang	skongs ^S	*skang	"fulfill"	
			skong(s)			
skyong	bskyangs	bskyang	skyongs ^S	*skyang	"guard, defend"	
skyob	bskabs	bskyab	skyobs ^S	*skyab	"protect, defend"	
			skyob(s)			
skyom	bskyams ^{S,G,D}	bskyam ^{S,G,D}	skyoms ^{S,G,D}	*skyam	"shake, agitate"	
sgog	bsgags	bsgag	sgogs ^{S,D}	*sgag	"make one swear"	
sgrag	bsgrags	bsgrag	sgrags ^{S,G,D}	*sgrag	"call out, proclaim"	
sgrong ^{S,G}	bsgrangs ^{S,G}	bsgrang ^{S,G}	sgrongs ^{S,G}	*sgrang	"count, rocken"	
snyob	bsnyabs	bsnyab	snyobs ^D	*snyab	"stretch out"	
stob	bstabs	bstab	stobs ^S	*stab	"feed"	
			stob			
snom	bsnams	bsnam	snom(s)	*snam	"smell"	
dpog	dpags	dpag	dpogs ^S	dpag	"measure; fix"	
spog	spags	spag	spogs ^{S,D,d}	spag	"move, remove, shift"	
sbong	sbangs	sbang	sbongs ^{S,G}	sbang	"steep, soak"	
sbyong	sbyangs	sbyang	sbyongs ^{S,G,D}	sbyang	"clean, purge"	
			sbyung ^D			
myong	myangs	myang	myongs ^S	myang	"taste, experience"	
rtsom	brtsams	brtsam	rtsom(s)	*rtsam	"begin, set about"	
rdzong	brdzangs	brdzang	rdzongs ^{S,G}	*rdzang	"send, dispatch"	
zlo	bzlas	bzla ^{S,G}	zlos	*zla	"say, tell"	
rlob	brlabs	brlab	rlobs	*rlab	"bless"	
rlom	brlams	brlam	rloms	*rlam	"adhere to, strive for"	
srong	bsrangs	bsrang	srong(s)	*srang	"make straight"	
slong	bslang	bslang	slong(s)	*slang	"cause to rise"	
slob	bslabs	bslab	slob(s)	*slab	"learn; teach"	
gsed	bsed ^{S,G}	bsed ^{S,G}	sed ^S	sed	"sort, select"	
gsob	bsabs	bsab	sobs ^G	*sab	"complete, fill up"	
gshom	bshams	bsham	shom(s)	*sham	"prepare, put in order"	
shom						
Irregular						
klog	bklags	bklag	klog	*klag	"read"	Imp. lacks -s.
gshog	bshags	bshag	gshog	*shag	"cleave, split"	Imp. prefix g-
shog		gshag				

(continued)

(continued)

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
<i>Paradigms I/IV</i>						
'--	b--s	b--	--s*o			
g--	b--s	b--	--s*o			
rku	brkus	brku	rkus	rku	"steal, rob"	
rko	brkos	brko	rkos	rko	"dig, hoe"	
skug ^{s,G}	bskugs ^{s,G}	bskug ^{s,G}	skugs ^s	skug	"gamble"	
skung	bskungs	bskung	skungs ^{s,G}	skung	"bury, hide"	
skum	bskums	bskum	skums ^s	skum	"contract, draw in"	
			skum(s)			
sko	bskos ^s	bsko	skos	sko	"appoint, charge"	
	(b)skos					
skyi	bskyis	bskyi	skyis	skyi	"borrow"	
skyung	bskyungs	bskyung	skyungs ^s	skyung	"leave behind, lay aside"	
			skyung(s)			
skyog ^s	bskyogs ^s	bskyog ^s	skyogs ^s	skyog	"put, place" ^s	
skru	bskru	bskru	skrus ^{s,G}	skru	"wait, cut"	
sgug	bsgugs	bsgug	sgugs ^s	sgug	"wait, expect"	
			sgug(s)			
sgo	bsgos	bsgo ^s	sgos ^s	sgo	"say, bid, order"	
sgong	bsgongs	bsgong	sgongs ^s	sgong	"make round"	
			sgong(s)			
sgying	bsgyings	bsgying	sgyings ^s	sgying	"yawn, gape"	
sgrig	bsgrigs	bsgrig	sgrig(s)	sgrig	"put in order"	
sgrib	bsgribs	bsgrib	sgrib(s)	sgrib	"darken, obscure"	
sgrim	bsgrims	bsgrim	sgrim(s)	sgrim	"hold fast, endeavor"	
					"collect, gather"	
sgrug	bsgrugs	bsgrug	sgrug(s)	sgrug	"make, finish"	
sgrub	bsgrubs	bsgrub	sgrub(s)	sgrub	"raise, erect"	
sgreng	bsgrengs	bsgreng	sgreng(s)	sgreng	"draw in, inhale"	
rngub	brngubs	brngub	rngubs	rngub	"bless, dedicate"	
sngo	bsngos	bsngo	sngos	sngo	"vex, annoy"	
sngog	bsngogs	bsngog	sngogs	sngog	"barter, change"	
rje	brjes	brje	rjes ^s	rje		
			brjes			
myong	bmyongs	brnyong	myongs ^s	myong	"ensnare; stretch out"	
snyug	bsnyugs	bsnyug	snyugs ^s	snyug	"dip in"	
snyung	bsnyungs	bsnyung	snyungs ^{s,D}	snyung	"make less; reduce"	
snyeng	bsnyengs	bsnyeng	snyengs	snyeng	"fear"	
snyeng(s) ^{s,D}						
snyob ^s	bsnyobs ^s	bsnyob ^s	snyobs ^s	snyob	"stretch out" ^s	
rtob/rtab	brtabs ^s	brtab ^s	rtobs ^s	rtab	"confused, in a hurry"	

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
sti	bstis	bsti	stis	sti	"rest; honor, esteem"	
sting	bstings	bsting	stings	sting	"scold, abuse"	
stim	bstims	bstim	stims	stim	"enter, penetrate"	
stung	bstungs	bstung	stungs	stung	"make shorter"	
rdib	brdibs ^s	brdib ^s	rdibs ^s	rdib	"fall apart; give way"	
rdung	brdungs	brdung	rdung(s)	rdung	"beat, strike"	
rdeg	brdegs	brdeg	rdeg(s)	rdeg	"beat, strike"	
sdum	bsdums	bsdum	sdum(s)	sdum	"make agree"	
sdeb	bsdebs	bsdeb	sdebs	sdeb	"mix, blend"	
sdo	bsdos	bsdo	sdos	sdo	"risk, venture"	
sdog	bsdogs	bsdog	sdogs	sdog	"prepare, make ready"	
sdong	bsdongs	bsdong	sdongs ^s	sdong	"unite, join"	
sdom	bsdams/ bsdoms	bsdam/ bsdum	sdom(s)	sdom/ *sdam	"bind, tie"	
mog ^{s,G}	brnogs ^{s,G}	brnog ^{s,G}	mogs ^{s,G}	mog	"hide" ^{s,G}	
snub	bsnubs	bsnub	snub(s)	snub	"suppress, destroy"	
snum	bsnums	bsnum	snum(s)	snum	"smell"	
snem	bsnems	bsnem ^s	snems ^s	snem	"shake, cause to move"	
sno ^s	bsnos ^s	bsno ^s	snos ^s	sno	"mix together" ^s	
spong/ spang	spangs	spang	spongs	spong/*spang	"give up"	
rtsi	brtsis	brtsi	rtsi(s)	rtsi	"count, calculate"	
rtsig	brtsigs	brtsig	rtsig(s)	rtsig	"build up, wall up"	
rtseg	brtsegs	brtseg	rtsegs ^{s,D,G}	rtseg	"stack up, build up"	
			rtsog			
rtseng	brtsengs	brtseng	rtsengs ^s	rtseng	"tuck up, truss up"	
			rtsong(s)			
rdzi	brdzis	brdzi	rdzi(s)	rdzi	"press, beat, oppress"	
rdzu	brdzus	brdzu	rdzu(s)	rdzu	"disguise"	
rdze	brdzes	brdze	rdze(s)	rdze	"tuck up, turn up"	
zlum	bzlums ^{s,G}	bzlum ^{s,G}	zlums ^{s,G}	zlum	"collect, gather together"	
zlo ^{s,G}	bzlos ^s	bzlo ^s	zlos ^s	zlo	"call, invite" ^{s,G}	
sri	bsris	bsri	sris	sri	"retain"	
sring	bsrings	bsring	sring ^{s,G}	sring	"stretch; reach"	
srung	bsrungs	bsrung	srung(s)	srung	"guard, watch"	
srub	bsrubs	bsrub	srubs	srub	"stir up"	
sro	bsros	bsro	sro(s)	sro	"to warm"	
slu	bslus	bslu	slu(s)	slu	"entice, seduce"	
sle	bsles ^{s,D}	bsle ^{s,D}	sles ^s	sle	"braid, plait"	

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<i>Pres.</i>	<i>Per.</i>	<i>Fut.</i>	<i>Imp.</i>	<i>Stem</i>	<i>Meaning</i>	<i>Exceptional features</i>
sleb	bslebs	bsleb	slebs ^S	sleb	"reach, extend"	
slog	bslogs	bslog	slogs ^S	slog	"turn"	
Paradigm V						
g--	b--	d--	--s-*o			
gcod	bcad	gcad	chod	*chad	"cut"	
gtong	btang	gtang	thongs ^S	*thang	"give"	
			thong ^{D, G, d}			
			tong			
gtod	btad	gtad	thod ^{C(p. 79)}	*thad	"deliver up; lean on"	
			gtod ^S			
			btod			
gnon	mnan	gnan ^S	non ^{S, G}	*nan	"press, overcome"	
Paradigms IV/V						
g--	b--s	b--	--s-*o			
g--	b--	d--	--s-*o			
gsod	bsad	bsad/gsad	sod	*sad	"kill"	
Paradigm VI						
'--d	b--	d--	--s-*o			
Regular						
'gug(s)	bkug ^{S, T}	dgug	khugs	*gug/*khug	"call, summon"	
	bgug					
'gegs	bkag	dgag	khogs ^G	*gag/*khag	"hinder, lock up"	
			khog			
'gengs	bkang	dgang	khongs ^G	*gang/*khang	"fill; soil, smear"	
			'khongs ^S			
			khong			
'gel	bkal	dgal	khol	*gal/*khal	"load; charge with a task"	
'grem(s)	bkram	dgram	khroms	*gram/*khram	"put down"	
'joms	bcom	gzhom	choms	*jom/ *chom	"conquer; suppress"	
'degs	bteg	gdeg	thegs ^G	*deg/theg	"raise, hold up"	
'deg			theg			
'debs	btab	gdab	thobs ^{S, G}	*dab/*thab	"cast, throw"	
			thob			
'byin	phyung	dbyung	phyungs ^S	*byung/ phyung	"cause to come forth"	
			phyung			
'dzin	bzung	gzung	zung(s)	zung	"seize, take holf of"	

<i>Pres.</i>	<i>Per.</i>	<i>Fut.</i>	<i>Imp.</i>	<i>Stem</i>	<i>Meaning</i>	<i>Exceptional features</i>
Irregular						
'gebs	bkab	dgab	khob	*gab/*khab	"cover, protect"	Imp. lacks -s.
'jums ²⁰	bcum	gzhum	chum	*jum/chum	"shudder, shrink"	Imp. lacks -s.
			'jum			
'bebs	phab	dbab	phob	*bab/*phab	"cast down"	Imp. lacks -s.
'bogs	phog	dbog	phog	*bog/phog	"give, impart"	Imp. lacks -s.
Paradigm VII						
'--	b--s	d--	--s-*o			
Regular						
'gum	bkums	dgum ^{S, G, D, T}	khums ^D	*gum/khum	"kill"	
		dkum	khum(s)			
			khum ^{S, G}			
'jig	bshigs ^{S, G}	gzhig	shigs ^{S, G}	*zhig/shig	"destroy"	
	bshig ^{G, C, T}					
	bzhig					
'ding	btings	gding	thing(s)	*ding/thing	"spread, strew, scatter"	
'dri	dris	dri ^{S, G}	dris ^{S, D, G}	dri	"ask"	
			'dris			
'drub	drubs	drub	drub(s)	drub	"sew, embroider"	
'dreg	dregs ^S	dreg ^S	dregs ^S	dreg	"cut, shave"	
'phral	phral	dpral ^D	phrol	phral	"separate, part"	
		dbral				
'phri	phris	dpri ^{S, d}	phri(s)	*phri	"lessen, diminish"	
		dbri				
'bab	bab(s)	dbab ^{S, G}	bobs	*bab	"descend, fall"	
'byi	phyis	dbyi	phyis ^G	*byi/phyi	"wipe off"	
			byis ^S			
'brad	brad	dbrad ^{S, G}	brod	brad	"scratch, scrape"	
'dzum	btsums ^G	gzum	tshums ^G	*dzum/tshum	"close, shut"	
	btsum		tshum			
Irregular						
'gog	bkog	dgog	khog	*gog/khog	"take away, pull out"	Per. and Imp. lack -s.
'jug	bcugs ^T	gzhug	chug	*jug/chug	"put in"	Imp. lacks -s.
	bcug					
'jog	bzhogs	gzhog	zhog	*zhog	"cut, hew"	Imp. lacks -s.
'thub	btubs ^{S, D, d}	gtub	gtubs ^S	*thub	"cut to pieces"	Presence of g- in Imp.
	'thubs		'thub			
			btub			

(continued)

(continued)

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
Paradigms I/VII						
'--	b--s	b--	--s-*o			
'--	b--s	d--	--s-*o			
'thag	btags	btag/gtag ^{S,D}	thogs	*thag	"grind"	
			thog			
'dral	dral	dral ^S	dral ^{S,G}	dral	"tear apart"	
'tsho	bsos	bso/gso	sos	*so	"nourish, feed"	
Paradigm VIII						
'--d	b--s	d--	---s-*o			
'dren	drang(s)	drang	drongs	drang	"pull, drag"	
bud	phus	dbu	phus	*bu/phu	"blow, inflate"	
	phu ^D					
dzugs	btsugs	gzug ^D	tshugs ^{S,G}	*dzug/*tshug	"stick into, plant"	
		gzugs	zug(s)			
Paradigms VI/VIII						
'--d	b--	d--	---s-*o			
'--d	b--s	d--	---s-*o			
'bugs	phug ^{S,D} / phugs ^D	dbug ^{S,D}	phugs ^G / phugs ^{S,D}	*bug/phug	"hollow out pierce"	
'bubs	phub(s)	dbub	phubs ^S	*bub/phub	"put on a roof"	
'byed	phye	dbye	phyes	*bye/phye	"open"	
	phye		phye			
Paradigms VII/VIII						
'--	b--s	d--	--s-*o			
'--d	b--s	d--	--s-*o			
'big(s)	phigs	dbig	phig(s)	*big/phig	"pierce, bore"	
Paradigms VI/VII/VIII						
'--d	b--	d--	--s-*o			
'--	b--s	d--	--s-*o			
'--d	b--s	d--	--s-*o			
Regular						
'khrol	bkrol ^S	dkrol	khrol ^S	khrol	"play, cause to sound"	
	dkrol					
'god	bkod ^{S,D,G}	dgod	khod	*god/khod	"plan; establish"	
	bgod					
'grol	bkrol	dgrol	khrol	*grol/khrol	"loose; release"	
'jil	bcil	gzhil	cil ^S	*jil/*cil	"expel, eject"	
'jun	bcun	gzhun	chun ^{S,G}	*jun/chun	"subdue, punish"	
'thor	btor	gtor	thor ^{S,D}	thor	"be scattered, fly asunder"	
			'thor			

Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
'dul	btul	gdul	thul	*dul/thul	"subdue; till"	
'don	bton	gdon	thon	*don/thon	"expel; cause to go out"	
'drid	drid ^S	drid ^S	drid ^S	drid	"cheat, deceive"	
'dril	dril	dril	dril	dril	"to be turned, rolled; together"	
'drud	drud	drud ^S	drud	drud	"rub, file, rasp"	
'bud	phud	dbud	phud	*bud/phud	*take or pull off"	
'byol	byol	dbyol	byol	byol	"make way, step aside"	
'dzud	btsud	gzud ^{S,G}	tshud	*dzud/tshud	"put, lay"	
'dzur	bzur	gzur	zur	zur	"give way; keep aloof"	
Irregular						
'jal	bcal	gzahl	'jol	*jal/*cal(?)	"weigh, measure"	'- and initial of Fut.
Irregular verbs²¹						
'grog ^S	'grogs ^S	grogs ^S	grogs ^S	*grog	"be friendly with" ^S	
rngod	brngos	brngod ²²	rngos	*rngo?	"parch, roast"	-d in Fut.
gcom ^S	bcams ^S	bcom ^S	coms ^S	*cam?	"destroy, overcome" ^S	-o- of Fut.
			'choms ^S			
'chog ^{S,D}	bcags ^S	bcag ^S	chogs ^S	*chag	"strike, beat" ^{S,D}	-o- of Pres.
'jur	bcur	bcur ^S	cur/chur ^S	*jur/?	"entangled"	Stems irregular.
'jog	bzhag	gzhang	zhogs ^T	*zhag	"put, place"	-o- of Pres.
			zhog			
gnyog	gnyags	gnyag	gnyogs	?	"desire"	
theg	gteg	gteg	thegs	theg	"support, maintain"	
'dem	'dams	gdam	'doms	*dam	"investigate, examine"	
'dogs	btags	gdag	thogs	*dag/ *thag	"bind, fasten"	-o- of Pres.
		gdags				
'doms ^S	gdams ^S	gdams ^S	gdoms ^S	*dam	"persuade, convince" ^S	
'phen	'phangs	'phangs	phong/ phangs	*phang	"throw, cast"	
'phrog	phrogs	dbrog	phrogs ^{S,D}	*phrog/ *brog	"rob"	Stems irregular.
'bag	dbags ^{S,G} / 'bags	dbag	dbogs	*bag	"soil, pollute"	
'bod	bos	bod	bos	?'	"call, exclaim"	-d of Fut.

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Pres.	Per.	Fut.	Imp.	Stem	Meaning	Exceptional features
'byong	byang	'byang ^s	byongs ^s	byang	"be cleansed; skilled"	'- of Fut.
'bral ^s	phrul ^s	dbral ^s	phrol ^s	?	"strip, tear." ^s	-u- of Perf.
'bros	broṣ	'bro ^{s,d}	bros	*bro	"flee"	'- of Fut.
'ju	bzhus	bzhu zhus ^s	gzhu ^s (b)zhu?	zhu	"melt, thaw"	Presence of prefixes and lack of -s in Imp. forms.
za	bzas	bza	zos zo	za	"eat"	Lack of affixes in Pres.
g-yob	g-yabs ^{s,G}	g-yab ^{s,G}	yobs ^s	*yab	"move about, brandish"	
g-yab ^G	g-yobs					
shu	bshus shud ^s	bshu	shu(s)	shu	"take off, strip"	Lack of affixes in Pres.
shong	bshangs	bshang	shong(s)	*shang	"empty, remove"	Lack of g- in Pres.
sang	bsangs	bsang	sangs ^s	sang	"do away with, cleanse"	Lack of affix in Pres. ²³
gsang	gsangs ^D	gsang ^D	songs ^D / gsangs ^s / gsongs ^G	?	"conceal"	

Notes

- I wish to express my gratitude to Professor Li Fang-kuei, who first aroused my interest in Tibetan verbal morphology and from whose advice and guidance I have continued to benefit. I hasten to add, however, that all errors of fact and opinion in the present paper are entirely my own.
- The extensive body of literature on WT verbal morphology has been summarized and evaluated by Uray (1953). To the list of materials mentioned by him should be added Nishida (1958) and Chang (1971).
- In particular we refer here to Li (1933), Shafer (1951), Nishida (1958), and Chang (1971).
- We take Jäschke (1881) as our basic lexicographical source, but we have made frequent use of Desgodins (1899), Das (1902), Dge-bshes (1957), and Semichov (1963). The entire corpus of 266 verbs considered in this paper is listed in the appendix.
- We may propose that the -s> -d change took place after -n, -r, and -l, where the *da-drag* occurs in early WT texts.
- This form is attested in Thomas (1935-63.II, 351:32.B 1).
- Shafer (1951.1028-9) seems to have toyed with the idea that -d alone may have caused these vowel changes, for he said, "The cause of the shift of the root vowel -u- to -i- and of the root vowel -a- to -e- in the present form is not so clear. The

materials are insufficient to decide whether the *a> e* shift in the present is due to the assimilation of the root vowel -a- to the vowel of a proto-Bodish transitive present tense suffix *-et, or whether the Archaic Bodish -d drag unlauded a preceding root -a- to -e-, and -u- to -i-."

- Further problems involving 23. 'byin-pa and 24. 'dzin-pa will be discussed presently.
- Shafer (1951.1028, n. 4) notes several occurrences of the form *lend* in early materials. Cf. also Li (1961.353) *len-pha* (-pa), where, as pointed out by Li (p. 240), the use of *pha* (-pa) after -n indicates that an earlier *da-drag* must have been present.
- The form *bsald* is attested in the Lhasa Treaty Inscription of 821-2, east face, line 41. Cf. Li (1955.32 and 64).
- Cf. Thomas (1935-63.II, 163.10), *bsgyald*, identified as a variant form of *bskyald*. Thomas lists *bskyald* in his glossary but all text examples given for it are actually spelled *bskyal*.
- Four exceptions to this theory appear in our data:

- 'chog bcags bcag chogs
- 'jog bzhag gzhag zhogs
- 'dogs btags gdags thogs
- shong bshangs bshang shongs

The presence of the present prefix '- in examples 1-3 makes it impossible to explain their -o- vocalism, and we can only guess that these forms may have undergone some sort of analogical change based perhaps on those paradigms which mark present forms with '-. In the case of example 4. *shong-ba* we may more confidently suggest that an earlier *g-* was deleted through later scribal practice, perhaps due to the loss of *g-* before *sh-* in speech. This was probably the origin of the alternant form *shom-pa* for our 30. *gshom-pa* and may also explain the following pairs of variants:

shog-pa ~ *gshog-pa* "wing"
shong ~ *gshong* "pit, hole"

- Cf. Li (1961.344) 'byin-pha, where the use of -pha indicates that earlier *da-drag* must have been present.
- Various occurrences of the form 'dzind in early sources are noted by Shafer (1951.1028, n. 1). Cf. also Li (1961.348) 'dzin-pha (-pa).
- Note that the vocalism of the present root *sngangs* is also irregular, since we would expect -e- rather than -a- here.
- Form written with post-final -s ap. Semichov (1963).
- Attested in Thomas (1935-63.II, 223:61.15).
- One need only note the variant forms with and without '- and -s listed in the appendix to the present paper to realize just how "unstable" these elements are in WT.
- As observed by Li (1933.148) the stem of this verb is probably *zho; cf. zho "milk". Thus Semichov's form, *gzhos*, is closest to the hypothetical imperative form *zhos.
- Given by Jäschke and Das in quoted text examples.
- No comments are added in this section for verbs which clearly cannot be assigned to any of the above paradigms. Two-stemmed verbs whose stems do not adhere to the Present-Future versus Perfect-Imperative dichotomy are identified with the gloss "stems irregular".
- Jäschke comments, "perhaps erroneous for *brngo*."
- Cf. 'tshang-ba "to remove, make clean". Could this be the "displaced" present root of this verb?

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ALTERNATION OF FINAL VOWEL WITH FINAL DENTAL NASAL OR PLOSIVE IN TIBETAN

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As was pointed out in the 'Addenda' (by A. H. Francke, assisted by W. Simon) to the 1929 reprint of Jäschke's *Tibetan grammar* (pp. 120-1), we observe an alternation of final vowel with final dental nasal or plosive in a number of closely related words. The examples adduced show sometimes a tripartite scheme, a final vowel in the case of verbs, a dental nasal in the case of adjectives, and a dental (voiced) plosive in the case of nouns, as e.g. *dro-ba* 'to be warm', *dron-po* (or *-mo*) 'warm', and *drod* 'heat'. A bipartite pattern, which is in fact more frequent, has also been observed and illustrated by a few examples, such as *za-ba* 'to eat' and *zan* 'food'.

For the more systematic approach attempted here, limited to dictionary entries and omitting therefore examples in *-te*, it has been found necessary to precede the tripartite scheme (list D) by three bipartite lists to represent alternations of final vowel with either *-n* (list A) or *-d* (list B), and to include in a further list (list C) alternations of *-n* with *-d*, most of these latter cases having already appeared in the preceding two lists. Roman figures have been used to mark further subgroups. Mere variants have been indicated by I, clear distinctions in meaning by II, and both these subgroups have been further subdivided.

I have refrained from discussing the question of an original dental fricative (*ð*) after the final vowel, lost at a later period, as suggested in the 'Addenda', or alternatively of considering *-n* or *-d* as suffixes. In addition to comparative material a re-examination of the problem will have to take the not infrequent cases into account where we note absence of final *-d* to mark the 'future form' of verbs ending in *-d*, or where presence and absence of final *-d* is used to contrast transitive or intransitive, and active or passive uses of verbs.¹

List A

1. *rku(-ba)* 'to steal, rob' / *rkun(-ma)* 'thief, theft'² (II)
2. *skyi(-ba)* 'to borrow' / *skyin(-pa)* 'loan' (II)
3. *gla* 'wages' / *glan(-pa)* 'to patch,³ to return (as an answer)' (II)
4. *mgo* 'head' / *mgon(-po)* 'master, lord, principal' (IIc)
5. *hgro(-ba)* 'to walk' / *hgron(-po)* 'traveller, guest, foreigner' (II) → B-D
6. *rga(-ba)* 'to be old' / *rgan(-pa)* 'old' (IIb) → B-D
7. *rgyu(-ba)* 'to go, move, wander' / *rgyun* 'flow, current, stream', *rgyun-du* 'continually'⁴ (II) → B-D
8. *sgre(-ba)* / *sgren(-mo)* 'naked' (I)
9. *na* / *nan(-po)* 'bad' (I)
10. *no* 'face, countenance' / *nnon(-po)* 'visible, conspicuous' (IIc)
11. *rna(-ba)* 'to mow, cut, reap' / *rnan(-pa)* '[the thing reaped =] reward, fee, hire, wages' (II)
12. *sna* 'before, soon, early' / *snan* 'formerly, before, *snon* 'idem' (IIIf)
13. *sno* / *snon (-bo, -po, -mo)* 'blue, green' (I)
14. *gci(-ba)* 'to make water' / *gcin* 'urine' (II) → B-D
15. *c'e(-ba)* / *c'en(-po)* 'great' (I) → B-D
16. *hc'i(-ba)* (< **hśi(-ba)* (*śi(-ba)* / *śin* (in *śin-sa* 'cemetery', *gśin(-po or -mo)* 'dead person') (II) → B-D
17. *nyi(-ma)* 'sun, day' / *nyin(-mo)* 'day' (I)
18. *nye(-ba)* 'to be near; near' / *nyen* (in *nyen-skor*, variant of *nye-skor* 'relative') (I)
19. *snyi(-ba, -bo, -mo)* / *snyin(-po)* 'soft, smooth' (I)
20. *brnya(-ba)* / *brnyan(-pa)* 'to borrow' (I)
21. *mt'o(-ba)* 'to be high; highness; high' / *mt'on(-po)* 'high' (IIh) → B-D
22. *ht'u(-ba)* / *ht'un(-pa)* 'to gather', *ht'un* 'gatherer' (II)
23. *do* '(the equals =) two, a pair, couple' / *don* '(equivalent =) sense, meaning, signification' (IIc) → B-D
24. *dro(-ba)* 'to be warm' / *dron(-po)*⁵ 'warm' (IIb) → B-D
25. *hdre(-ba)* 'to be mixed with' / *hdren(-ma)* 'mixture, medley' (II)
26. *nu(-ba)* 'to suck' / *snun(-pa)* 'to suckle' (IIa) → B-D
27. *rna(-ba)* 'ear' / *nyan(-pa)* (< **nyran*)⁶ 'to hear', *snyan(-pa)* 'to praise; glory' (IIe) → B-D
28. *rno(-ba)* (Jäschke: 'literary form') / *rnon(-po)* (Jäschke: 'usual form') 'sharp, acute, edged, pointed' (I)
29. *p'o* 'man, male' / *dpon(-po)* 'master, lord' (IIc)
30. *p'yi* 'behind, after, outside' / *p'yin* (in *p'yin-c'ad* 'later, afterwards, outside') (Ia) → B-D
31. *p'ra(-mo)* 'fine, thin, minute' / *p'ran* 'little, small, trifling' (I) → B-D
32. *bye* (in *bye-brag* 'difference, diversity'), *dbye(-ba)* 'partition, division, section, class' / *dbyen(-pa)* 'difference, dimension, discord, section' (I)
- 33a. *ma* / *man* 'below' (Ia) → B-D

- b. *dma(-ba)* 'to be low' / *dman(-pa)* 'low, little, inferior' (IIb)
34. *rma* 'wound', *rma(-ba)* 'to wound' / *rman(-po)* 'wounded' (IIc)
35. *rmu(-ba)* 'dullness, heaviness, fog' / *rmun(-po)* 'dull, heavy, stupid' (IIc)
36. *rmo(-ba)* 'to plough' / *rmon(-pa)* 'act of ploughing' (II) → B-D
37. *smyo(-ba)* 'to be insane, mad' / *smyon(-pa)* 'insane, frantic, mad' (IIb)
38. *bisa(-ba)* 'to bear, bring forth' / *mts'an* 'nephew'⁷ (II)
39. *rtse(-ba)* / *rtsen(-pa)* 'to play' (I) → B-D
40. *ts'a(-ba)* / *ts'an* 'to be hot, warm' (I) → B-D
41. *ts'u* / *ts'un* 'hitherward, on this side' (Ia)
42. *za(-ba)* 'to eat' / *zan* 'food' (II) → B-D
43. *ya* / *yan* 'above' (Ia)
44. *ri(-ba)* 'worth' / *rin* 'price, value' (I)
45. *lo* 'talk, report, rumour, saying' / *lon* 'notice, tidings, message' (I)
46. *śu(-ba)* 'to take off, strip' / *śun(-pa)* 'bark, rind, peel, skin' (II)
47. *sra(-ba)* 'hard' / *sran(-pa)* 'to endure, suffer'⁸ (IIe)
48. *gso(-ba)* 'to feed, rear' / *gson(-pa)* 'to live; life'⁹ (IIa)

Explanatory remarks

As explained in the preliminary remarks, pattern I indicates mere variants of a final vowel and vowel + *n*, pattern II marks distinctions in meaning by means of a final -*n*.

Pattern I. The examples marked as I are the following: 8 (*sgre*), 9 (*na*), 13 (*sno*), 15 (*c'e*), 17 (*nyi*), 18 (*nye*), 19 (*snyi*), 20 (*brnya*), 28 (*rno*), 31 (*p'ra*), 32 (*bye*), 39 (*rtse*), 44 (*ri*), 45 (*lo*).

Pattern Ia. The subgroup Ia consists of four words (Jäschke refers to some of them as 'roots') denoting location in space, *ma* 'below', *ya* 'above', *ts'u* 'this side', and *p'a* 'that side' (the last two reflecting Chinese *bii-tsyy* 彼 此), to which *p'yi* 'behind, after, outside' may be added. The variant in -*n* may in these cases go back to an earlier *na* 'in'. In the same way *mgon-po* (list A, no. 4) may possibly go back to **mgo-na po* 'the man at the head'.

Pattern II. In its basic form pattern II is a verb/noun pattern. List A includes the following 15 examples: 1 (*rku*), 2 (*skyi*), 3 (*gla*), 5 (*hgro*), 7 (*rgyu*), 11 (*rna*), 14 (*gci*), 16 (*hc'i*), 18 (*nye*), 22 (*ht'u*), 25 (*hdre*), 36 (*rmo*), 38 (*bisa*), 42 (*za*), 46 (*śu*).

The following other patterns have been observed.

IIa (verb/verb): 26 (*nu*), 48 (*gso*).

IIb (verb/adjective): 6 (*rga*), 21 (*mt'o*), 24 (*dro*), 33b (*dma*), 37 (*smyo*).

IIc (noun/noun): 4 (*mgo*), 23 (*do*), 29 (*p'o*).

IId (noun/adjective): 10 (*no*), 34 (*rma*), 35 (*rmu*).

IIe (noun/verb): 27 (*rna*).

IIIf (adjective/noun): 45 (*sra*).

IIg (adverb/adverb): 12 (*sna*).

List B

1. *rke(-ba)* 'lean, meagre' / *rked(-pa)* 'waist'¹⁰ (IIe)
2. *skud(-pa)* 'to besmear, daub' / F. *bsku* (III)
- 3a. *skye* / *skyed* 'growth, increase' (I)
- b. *skyed(-pa)* 'to generate' / *skye(-ba)* 'to be born' (IV)
4. *hk'rid(-pa)* 'to lead' / F. *bkri*¹¹ (III)
5. *hk'rud(-pa)* 'to wash, bathe' / F. *bkru* (III)
6. *bgod(-pa)* 'to divide' / F. *bgo* (III)
7. *bgvid(-pa)* 'to make, do, act' / F. *bgvi* (III)
8. *bgrud(-pa)* 'to husk, shell' / F. *bgru* (III)
- 9a. *hgyed(-pa)* 'to divide' / *hgye(-ba)* 'to be divided' (IV)
- b. *hgyed(-pa)* 'to divide; to fight' / F. *bkye*¹² (III)
10. *hgro(-ba)* 'to walk' / *bgrod* 'walk, gait'¹³ (II) → ACD
11. *rga(-ba)* 'to be old' / *rgad* 'old' (IIb) → ACD; *rgud(-pa)* 'to decline, get weak, frail'
- 12a. *rgyu(-ba)* 'to go, walk, move, wander' / *rgyud* 'string, cord, chain of mountain, thread of tradition'¹⁴ (II) → ACD
- b. *rgyud(-pa)* 'to fasten or file on a string' / F. *brgyu* (III)
13. *na* 'I' / *ned* 'we' (IIIh)
14. *nu(-ba)* 'to weep' / *nud(-mo)* 'a sob' (II)
15. *rnod(-pa)* 'to parch, roast, fry' / F. *brno*?¹⁵ (III)
16. *sno(-ba)* / *snod(-pa)*¹⁶ 'to become green' (I)
- 17a. *gci(-ba)* / *gcid(-pa)* 'to make water' (I) → ACD
- b. *gcid(-pa)* 'to make water' / F. *gci* (III)
- 18a. *gcud(-pa)*, *lcud(-pa)* 'to twist' / *hc'u(-ba)* 'to be twisted' (IV)
- b. *gcud(-pa)*, *lcud(-pa)* 'to twist' / F. *gcu*, *lcu* (III)
19. *lci(-ba)*, *lji(-ba)* 'heavy' / *ljid(-pa)* 'heaviness' (IIe)
20. *c'e(-ba)*, *c'en(-po)* 'great' / *c'ed* 'importance', *c'ed-du* 'on account', *mc'ed(-pa)* 'to spread' (IIe) → ACD
21. *mc'i(-ba)* 'to say' / *mc'id* 'talk, discourse, speech' (II)
22. *mnyed(-pa)* 'to rub' / F. *mnye* (III)
23. *lta(-ba)* 'to look' / *ltad(-mo)* 'sight, spectacle' (II)
24. *mt'o(-ba)*¹⁷ 'to be high' / *stod* 'upper, higher, former part of a thing, the upper half' (II); *stod(-pa)* '(to raise =) to praise, commend, laud' (IIa) → ACD
25. *do* '(the equals =) a couple, pair, two' / *dod* 'equivalent' (IIc) → ACD
26. *dro(-ba)* 'to be warm' / *drod* 'warmth, heat' (II) → ACD
27. *bda(-ba)* 'to drive (out), chase' / *hded(-pa)* 'idem' (I)
- 28a. *hdu(-ba)* 'to come together' / *sdud(-pa)* 'to collect' (IV), *mdud(-pa)* 'knot'
- b. *sdud(-pa)* 'to collect' / F. *bsdu* (III)
29. *na(-ba)* 'to be ill, sick' / *nad* 'disease, sickness' (II)
30. *nu(-ba)* 'to suck'¹⁸ / *nud(-pa)* 'to suckle'¹⁹ (IV) → ACD
31. *rna(-ba)* 'ear', *nyan(-pa)* 'to hear', *snyan(-pa)* 'to praise; glory' / *snyad(-pa)* 'to relate, report' (IIa) → ACD
32. *sne(-mo)* 'extremity, end', *snye(-ma)* '(end =) ear of corn' / *snyed* (in *hdu snyed*, *de-snyed* '(extreme quantity =) so much, so many')²⁰ (I)
33. *spya* / *spyad* (in *spya(d)-dños* 'implements, things') (I)
34. *p'a* 'father' / *spad*²¹ (in *p'a-spad* 'father and children') (IIIh)
35. *p'yi* 'behind, after, outside' / *p'yid(-pa)* 'to retard, prolong, maintain'²² (IIg) → ACD
36. *p'ra(-mo)* 'thin, fine, minute' / *p'rad* 'particle' (IIe) → ACD
37. *hp'yi(-ba)* / *hp'yid(-pa)* 'to wipe, blot out' (I)
38. *hp're(-ba)* 'to incline, lean against' / (*h*)*p'red* 'across, oblique' (IIb)
39. *byed(-pa)* 'to make' / F. *bya* (III)
40. *bro(-ba)* 'to taste' / *brod* 'taste' (II)
41. *blu(-ba)* 'to buy off, ransom, redeem' / *blud(-pa)*²³ 'release, ransom, redemption' (II)
42. *hbud(-pa)* 'to blow' / F. *dbu* (III)
- 43a. *hbyed(-pa)* 'to open' (trans.) / *hbye(-ba)* 'to open' (intrans.) (IV)
- b. *hbyed(-pa)* 'to open' (trans.) / F. *dbye* (III)
44. *hbru(-ba)*²⁴ / *hbrud(-pa)* 'to dig' (I)
45. *sbed(-pa)* 'to hide' / F. *sba* (and *sba(-ba)* 'privy parts') (III)
- 46a. *sbru(-ba)* / *sbrud(-pa)* 'to stir; to knead' (I)
- b. *sbrud(-pa)* 'to stir; to knead' / F. *sbru* (III)
47. *sbre* / *sbred* 'steppe fox, corsac'²⁵ (I)
48. *ma* 'mother' / *smad*²⁶ (in *ma-smad* 'mother and children' and *bu-smad* 'wife and children') (IIIh)
49. *ma* 'below' / *smad(-pa)*,²⁷ *smod(-pa)* 'to blame' (IIg) → ACD
50. *rmo(-ba)* / *rmod(-pa)* 'to plough' (I) → ACD
51. *gtsod* (*btso*d) / *gtso* 'Tibetan antelope' (I)
52. *rtsa* / *rtsad* 'root' (I)
- 53a. *rtse(-ba)* / *rtsed(-pa)* 'to play' (I) → ACD
- b. *rtse(-ba)* 'to play' / *rtsed* 'play' (II)
- 54a. *ts'a(-ba)* 'hot' / *hts'od(-pa)*, *hts'ed(-pa)* 'to cook' (IIg) → ACD
- b. *hts'od(-pa)* 'to cook' / F. *btso* (III)
55. *za(-ba)* 'to eat' / *zad* (< *hdzad(-pa)*) 'to be consumed, spent' (IIa) → ACD
56. *yi* / *yid* 'soul, mind' (I)
57. *re* / *red* 'to be' (I)
58. *lu(-ba)* 'to throw up phlegm' / *lud(-ma)* 'phlegm' (II)
59. *ši(-ba)* 'to die' / *šid*, *gšid(-ma)* 'funeral repast' (II) → ACD
60. *si* (in *si-sgra* 'whistle') / *sid* (in *sid-sgra* 'idem') (I)

Explanatory remarks

To patterns I and II (with its subgroups), which have been used as in list A, patterns III and IV have been added. Pattern III refers to the cases, already mentioned in the preliminary remarks, where we note absence of final *d* marking (often with the addition of a *b*-prefix) the 'future form' of verbs ending in *-d*,²⁸ and pattern IV

refers to cases where presence and absence of final *-d* is used to contrast transitive or intransitive and active or passive (or causative) uses of verbs.

Pattern I (variants): 3a (*skye*), 16 (*śho*), 17a (*gci*), 19 (*lci*, *lji*), 27 (*bda*), 32 (*snye*), 33 (*spy*), 37 (*hp'yi*), 44 (*hbru*), 46a (*sbru*), 47 (*sbré*), 50 (*rmo*), 51 (*gtsod*), 52 (*rtsa*), 53a (*rtse*), 56 (*yi*), 57 (*re*), 60 (*si*).

Pattern II (verb/noun): 10 (*hgro*), 14 (*ñu*), 21 (*mc'i*), 23 (*lta*), 24 (*mt'o*), 26 (*dro*), 29 (*na*), 40 (*bro*), 41 (*blu*), 53b (*rtse*), 58 (*lu*), 59 (*śi*).

IIa (verb/verb): 28a (*nyan*), 55 (*za*).

IIb (verb/adjective or adverb): 11 (*rga*), 38 (*hp're*).

IIc (noun/noun): 25 (*do*).

IId (noun/adjective): ———.

IIe (adjective/noun): 1 (*rke*), 20 (*c'e*), 36 (*p'ra*).

IIf (adverb/adverb): ———.

IIg (adverb/verb): 35 (*p'yi*), 49 (*ma*).

IIh (other changes): plural: 13 (*na*); s-prefix: 34 (*p'a*), 48 (*ma*).

Pattern III: 2 (*skud*), 4 (*hk'rid*), 5 (*hk'rud*), 6 (*bgod*), 7 (*bgyid*), 8 (*bgrud*), 9b (*hgyed*), 12b (*rgyud*), 15? (*rñod*), 17b (*gcid*), 18 (*gcud*, *lcud*), 22 (*mnyed*), 28b (*sdud*), 39 (*byed*), 42 (*hbud*), 43b (*hbyed*), 45 (*sbed*), 46b (*sbrud*), 54b (*h̄ts'od*).

Pattern IV: 3b (*skyed*), 9a (*hgyed*), 18a (*gcud*, *lcud*), 28a (*hdu*), 30 (*mu*), 43 (*h̄byed*).

List C

1. *hgron* (A 5) / *bgrōd* (B 10)
2. *rgan* (A 6) / *rgad* (B 11)
3. *rgyun* (A 7) / *rgyud* (B 12)
4. *gcin* (A 14) / *gcid* (B 17)
5. *c'en* (A 15) / *c'ed* (B 20)
- *6. *snyan(-pa)* / *snyad(-pa)*²⁹
7. *mt'on* (A 21) / *stod* (B 24)
- *8. *h̄t'an(-pa)* 'firmness' / *h̄t'ad(-pa)* 'idem'³⁰
9. *don* (A 23) / *dod* (B 25)
10. *dron* (A 24) / *drod* (B 26)
11. *snun* (A 26) / *nud* (B 30)
12. *p'yin* (A 30) / *p'yid* (B 35)
13. *p'ran* (A 31) / *p'rad* (B 36)
14. *dbyen* (A 32) / *h̄byed* (B 43)
15. *dman* (A 33b) / *smad* (B 49)
16. *rmon* (A 36) / *rmod* (B 50)
17. *rtsen* (A 39) / *rtse* (B 53)
18. *ts'an* (A 40) / *h̄ts'od* (B 54)
19. *zan* (A 42) / *zad* (B 55)

- *20. *yun* 'time' / *yud* 'very small portion of time, moment'
- *21. *śan* 'difference, distinction' / *śad* '(distinguishing mark =) mark of punctuation'
- *22. *śan(-pa)* 'butcher' / *gśed(-ma)* 'executioner, hangman'; *gsod(-pa)*, perf. *bsad* 'to kill'
23. (*g*)*śin* (A 16) / (*g*)*śid* (B 59)
- *24. *sran(-bu)* / *srad(-bu)* 'thread'³¹
- *25. *sran(-ma)* / *srad(-ma)* 'peas, beans, lentils'
- *26. *lhan* 'together', *lhan(-pa)* 'to join, patch'³² / *lhad* 'alloy'

Explanatory remarks

As mentioned in the preliminary remarks, most items of the above list have already been included in lists A or B. Special interest attaches therefore to the asterisked examples which illustrate apparently the existence of an alternation final nasal and final dental plosive, i.e. without, in some cases, members of the word family ending in a final vowel.

List D

1. *hgro* (A 5, B 10) / *hgron* (A 5, C 1) / *bgrōd* (B 10, C 1)
2. *rga* (A 6, B 11) / *rgan* (A 6, C 2) / *rgad* (B 11, C 2)
3. *rgyu* (A 7, B 12) / *rgyun* (A 7, C 3) / *rgyud* (B 12, C 3)
4. *gci* (A 14, B 17) / *gcin* (A 14, C 4) / *gcid* (B 17, C 4)
5. *c'e* (A 15, B 20) / *c'en* (A 15, C 5) / *c'ed* (B 20, C 5)
6. *h̄c'i*, *śi* (A 16, B 59) / (*g*)*śin* (A 16, C 23) / (*g*)*śid* (B 59, C 23)
7. *mt'o* (A 21, B 23) / *mt'on* (A 21, C 7) / *stod* (B 24, C 7)
8. *do* (A 23, B 25) / *don* (A 23, C 9) / *dod* (B 25, C 9)
9. *dro* (A 24, B 26) / *dron* (A 24, C 10) / *drod* (B 26, C 10)
10. *nu* (A 26, B 30) / *snun* (A 26, C 11) / *nud* (B 30, C 11)
11. *rna* (A 27, B 31) / *snyan* (A 27, C 6) / *snyad* (B 31, C 6)
12. *p'yi* (A 30, B 32) / *p'yin* (A 30, C 12) / *p'yid* (B 35, C 12)
13. *p'ra* (A 31, B 36) / *p'ran* (A 31, C 13) / *p'rad* (B 36, C 13)
14. *ma*, *dma* (A 33, B 49) / *dman* (A 33, C 15) / *smad* (B 49, C 15)
15. *rmo* (A 36, B 50) / *rmon* (A 36, C 16) / *rmod* (B 50, C 16)
16. *rtse* (A 39, B 53) / *rtsen* (A 39, C 17) / *rtse* (B 53, C 17)
17. *ts'a* (A 40, B 54) / *ts'an* (A 40, C 18) / *h̄ts'od* (B 54, C 18)
18. *za* (A 42, B 55) / *zan* (A 42, C 19) / *zad* (B 55, C 19)

Explanatory remarks

The tripartite scheme of list D has been arrived at by combining relevant examples of lists A–C, which therefore may be considered as in fact incomplete when

presented under the three bipartite schemes. List D clearly shows that the pattern set out in the 'Addenda' and mentioned in the preliminary remarks, according to which a final vowel indicates a verb, a final dental nasal an adjective, and a final dental plosive a noun, is merely one of several possible patterns.

Addendum

Two further examples of alternation, to be inserted between nos. 1 and 2, and nos. 49 and 50 of list B, must be mentioned.

- (a) *skad* 'speech, words, talk, news' / *skan* in *re skan* 'how say' (perhaps = 'do you (does he) mean to say . . .') (II). (The proposed meaning of *skan* is tentative, cf. also *BSOAS*, xxxi, 3, 1968, 560–1.)
- (b) *rma(-ba)* 'to ask' / *rma(-pa)* 'wonderful' (Iib) (cf. English 'to wonder' in the meaning 'to be desirous to know').

Notes

- Some cases of the latter kind have already been mentioned by A. Conrady. See p. 45 of his *Indochinesische Causativ-Denominativ-Bildung*, Leipzig, 1896.
- The noun *rkud* adduced in the meaning 'theft' in the 'Addenda' (p. 120), has been omitted in this paper as its meaning clearly needs re-examination. The word occurs several times in a Tun-huang fragment (No. 753 of the *Catalogue of the Tibetan manuscripts from Tun-Huang in the India Office Library* by Louis de La Vallée Poussin, OUP, 1962, p. 236) edited by F. W. Thomas (*Zeitschrift für vergleichende Rechtswissenschaft*, L, 1936, 275–87). In a note (p. 285) Thomas considers the dictionary meaning 'misfortune' inadequate and modifies it to 'penalty', without however mentioning the dictionary to which he is referring. The word has not been included in our Western dictionaries. The Tibetan–Mongolian dictionary by Sumatiratna (*Corpus Scriptorum Mongolorum*, VI–VII), Ulan Bator, 1959, I, 83, gives the meaning *bisirel* 'faith, reverence, worship'. A verb *rkud-pa* (*rkud-par hgyur*) occurs in the meaning '[?] to be stolen =] to disappear' in the last sentence of chapter lxi of the Tibetan version of the *Mahākarmavibhaṅga* (ed. S. Lévi, Paris, 1932, 205), there apparently corresponding to *antardhāsyanti* of the (otherwise different) Sanskrit sentence of the chapter (ibid., 50).
- From the semantic point of view cf. ex. 3 in *AM*, xvii, 2, 1972, 217.
- The semantic link is apparently the idea of a continuous uninterrupted movement, or, in the case of *rgyud* (see below list B, ex. 12), of an extended line. *rgyud* 'tantra' reflects the etymology of Sanskrit *tantra*, meaning 'thread, string, line, warp' and belonging with *tan* 'to extend, spread, stretch'.
- Jäschke refers to *dron-mo* as 'colloquial' in the English edition of his dictionary; in the first (German) edition he notes it as 'vulgar'. *dron-po* occurs in classical Tibetan. See, e.g., J. Nobel, *Suvarṇaprabhāsottama-sūtra*. II. *Wörterbuch*, Leiden, 1950, 103.
- See 'Ear, sharp and hearing—a Tibetan word family', in M. Boyce and I. Gershevitch (ed.), *W. B. Henning memorial volume*, London, 1970, 407.
- See Stuart N. Wolfenden, *Language*, IV, 4, 1928, 279.
- From the semantic point of view cf. Latin *durus* 'hard', from which English *endure* is derived.
- cf. *AM*, xix, 1, 1974, p. 96, n. 45.

- cf. also *rka* 'small furrow' and *rko-ba* (in Tsang *rkod-pa*) 'to dig', and, from the semantic point of view, French *tailler* 'to cut' and *la taille* 'waist'.
- Jäschke (*Dict.*, 61) places a question mark after *bkri*. Nobel (see p. 52, n. 5) adduces (p. 20) an example for *bkri*. Das in the entry *hk'rid* of his *Dictionary* gives *bkri* erroneously as perfect form instead of future.
- Nobel (see p. 52, n. 5) notes (p. 37) *bgye* and *dgye*. For a further example of *dgye*, see *Tibetan Tripitaka*, XLIII, 198³ (*dgye-bar brtsams-nas*).
- In the 'Addenda' (loc. cit., p. 121) A. H. Francke cites *grod* 'march' from the *gZer-myig*.
- See above, p. 52, n. 4.
- br̄io* has been conjectured by Jäschke (*Dict.*, 134) instead of Csoma's *br̄iōd* (*Dict.*, 247).
- Noted by Csoma (*Dict.*, 321).
- cf. below no. 49 (*ma / smad-pa*).
- cf. above, list A, no. 26.
- Western Tibetan, according to Jäschke (*Dict.*, 305).
- cf. *BSOAS*, xxxviii, 3, 1975, p. 614, no. 10.
- cf. below, no. 48 (*ma / smad*).
- Suggested by Jäschke (*Dict.*, 350).
- Variant of *glud* 'idem' and related to *glan-pa* and *lhan-pa* 'to patch'. Cf. also above list A, no. 3, and p. 51, n. 3.
- Also *hdru/hdrud*.
- Professor C. R. Bawden kindly refers me to the entry *kirsa* in Kowalewski's *Dictionnaire mongol-russe-français*, III, 1849, 2553, where the Tibetan equivalent *sbre* has been adduced, as well as Manchu *kirsa*. For the latter word the Latin name listed by Professor Jerry Norman in his *Manchu-English dictionary*, Taipei, 1967, is 'Cynalopex corsac (Linnaeus)'.
- cf. above, no. 34, *p'a* and *spad*.
- cf. above, no. 24, *mt'o-ba* and *stod-pa*.
- As a special case, not to be included in this list, the future form *bco* of *hc'os-pa* 'to make, prepare, build' must be mentioned, which may go back to an earlier **hc'ods-pa*.
- cf. *BSOAS*, xxxviii, 3, 1975, p. 614, ex. II B 6 and n. 29.
- Csoma, *Dict.*, 191.
- Das's entry (*Dict.*, 1287) is *srad-bu* in Tibetan script, followed by *sran-bu* in transcription. The obvious Chinese cognate of *sran-bu* is *hsien* 鐵, Karlgren, *Grammata Serica* 155 r, *sjan* 'idem'.
- See above, p. 55, n. 23.

THE ADDITION OF FINAL STOPS IN THE HISTORY OF MARU (TIBETO-BURMAN)

Robbins Burling

Source: *Language* 42, 3, 1966, 581-6

It has become commonplace in historical linguistics to recognize instances in which final consonants have been lost from the ends of words.¹ When inspecting sets of apparent cognates which differ only in that one language has final stops which are missing in the other, few linguists would hesitate to conclude that the stopped items represent the older form. More specifically, among the Tibeto-Burman languages, where some languages have a much fuller complement of final stops than others, it has been generally taken for granted that languages with many final stops are, in that feature, more conservative than languages with few or no final stops. Nevertheless, in the Maru language, which is spoken in northern Burma and which is quite closely related to Burmese, certain final stops seem to be intrusive, though they have developed in an entirely regular way from unstopped syllables. That is, certain Maru syllables which have final stops are cognate with unstopped Burmese syllables, and it will be the purpose of this paper to argue that the open syllable forms of Burmese are the more conservative.

Maru belongs to a group of closely related languages sometimes referred to collectively as the 'Kachin' languages, all of which are spoken in northern and northeastern Burma and which, with Burmese, form a distinct subgroup of Tibeto-Burman.² Data from three languages will be presented in this paper: Maru, Atsi (which is another 'Kachin' language), and Burmese. These three languages share many features though they are well beyond the range of mutual intelligibility. In them, as in many other languages in southeast Asia, syllables are likely to correspond with morphemes. They display contrasting tones, a sharply limited set of contrasting elements in postvocalic (syllable final) position as compared to prevocalic (syllable initial) position, and a reduction of tonal contrasts in stopped syllables as compared to open and nasal syllables. The only final stops in Atsi and Maru are /-p/, /-t/, /-k/, and /-ʔ/. All final stops are unreleased and bring the

syllable to an abrupt conclusion. Burmese has even more restricted postvocalic contrast, since it has but a single stopped form. This is always glottal in absolute final position, though it assimilates to the initial of the next syllable when that follows in close juncture. The restricted tonal contrasts of stopped syllables, together with a tendency for vowel allophones of stopped syllables to be quite different from those of open syllables, suggests a rather fundamental distinction between stopped and unstopped (either open or nasal) syllables. A few examples which demonstrate these generalizations are given in Table 1.³

For the most part, where one language has a stopped syllable, cognates in the other languages also have stops, although, as can be seen in Table 1, there have been a number of shifts among the various stops. Nevertheless, in two crucial cases, Maru alone of the three languages has stops, while apparent cognates in both Atsi and Burmese have open syllables. These crucial cases are listed in Table 2, and they appear to be entirely regular. The only complication is that the vowel which usually becomes /-au/ in Atsi becomes /-ui/ when following *y, a situation occasionally obscured because initial *y develops into Atsi /v/. Specific lexical items demonstrating these correspondences are given in Table 3.

One's first guess upon surveying these terms might well be that the final Maru stops represent the more ancient forms, which both Burmese and Atsi have lost. If we examine the situation in more detail, however, this interpretation becomes untenable. To demonstrate this, we must consider in some detail the regular correspondence among the tones in the more common situation in which all three languages

Table 1

	<i>Burmese</i>	<i>Atsi</i>	<i>Maru</i>
fat	shú	tshú	tsháu
dig	dú	dú	dáu
blood	θwêi	sùi	sā
egg	ù	ǔ	áu
enter	wín	vâŋ	wà
mortar	shóun	tshúm	tshám
throat	cháun	khyùŋ	khyōŋ
flower	bân	bân	bîn
deer	shaʔ	tshat	tshéʔ
drink	θauʔ	šuʔ	šók
sew	chouʔ	khyup	khyáp
black	neʔ	noʔ	nòʔ

Table 2

<i>Burmese</i>	<i>Atsi</i>	<i>Maru</i>
-ei	-i	-it
-ou	-au/-ui	-uk

Table 3 Lexical items showing Maru stops

	Burmese	Atsi	Maru
die	θéi	šī	šit
leg	chéi	khyí	khyit
rice beer		í	it
skin	yéi		γit
water	yéi		γit
grandchild	myéi		myit
parrot	cēi	jī	jit
wash		chí	chit
grandmother		phyí	phyit
dung	chéi	khyí	khyit
in front	šèi	hī	γ'it
seed		jī	jit
horn	chóu	khyúí	khyúk
green, dark	nyóu	nyúí	nyúk
sweet	chóu		chúk
mushroom		mâu	múk
cry	ŋóu	ŋâu	ŋúk
nephew		áu	úk
widower	phóu	pháu	phúk
difficult		vúí	γúk
copulate	lôu	láu	lúk
sky	môu	mâu	múk
bone	yôu	vúí	γúk
dye	shôu	tsháu	tshúk
old (things), bad	shôu	tshâu	tshúk
smoke	khôu	khâu	khúk
steal	khôu	khâu	khúk
stab	thôu	tháu	thúk
grandfather	phôu	phâu	phúk
breast	nôu	nâu	núk
feather		mâu	múk
stop up	shòu		tshúk

have open or nasal syllables. Burmese /' (sometimes referred to as the 'first' Burmese tone) is low and somewhat rising; it corresponds either to Atsi /' (mid, short, falling) or /' (high, short, falling) and to Maru /' (low).⁴ Burmese /' ('second' tone) is high and somewhat falling; it corresponds to Atsi /' when appearing with verbs (including 'adjectives') but to /' (low, medium long, falling) on nouns, and to Maru /- (mid, level, long).⁵ Burmese /' ('third' tone) is short and falling, and it corresponds regularly to Atsi /' (high, even, long) and to Maru /' (high). These correspondences can be numbered 1, 2, and 3 following the convention in Burmese;

Table 4 Tone correspondences

	Burmese	Atsi	Maru
1.	Ŷ	Ŷ, Ŷ	Ŷ (low)
2.	Ŷ	Ŷ, Ŷ	Ŷ (mid)
3.	Ŷ	Ŷ	Ŷ (high)

the essential phonetic fact to note is that these appear in Maru as low, mid, and high tones, respectively. These relationships are summarized in Table 4.

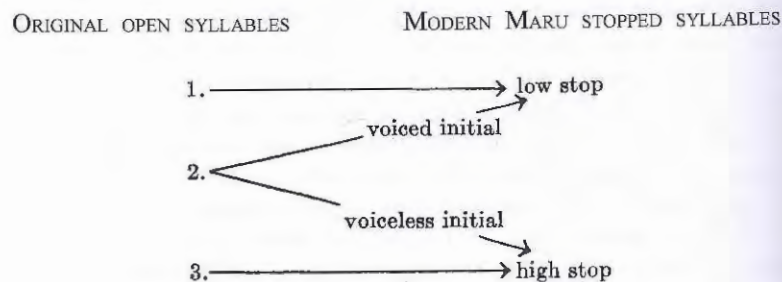
It will be noticed that the Burmese and Atsi items given in Table 3 exhibit the regular tone correspondences shown in Table 4, but the Maru items, being stopped, seem to be aberrant.

Burmese stopped syllables show no tonal contrasts at all; indeed, the stopped syllables are generally said to constitute the fourth Burmese tone, since they never contrast among themselves, but contrast collectively with all unstopped syllables. Similarly, there is no minimal contrast among the stopped syllables in Atsi, and all stopped syllables can be said to display an additional Atsi tone. Nevertheless, it is important to note that the stopped Atsi syllables do appear in two quite different allotones, for stopped syllables with voiced initials are pitched distinctly lower than stopped syllables with voiceless initials. In Maru, however, stopped syllables do fall into two contrasting tones. Phonetically, these sound very much like the allotones of Atsi stopped syllables, but in Maru they do not pattern consistently according to the initial consonant, and abundant minimal pairs force the recognition of two contrasting stopped tones (e.g. *phúk* 'widower', *phúk* 'grandfather'; *múk* 'mushroom', *múk* 'feather').

This leads to the crux of the problem. We might start by assuming that the Maru examples in Table 3 represent the older pattern, but we should be reluctant to assign more than two contrasting tones to the stopped syllables of the ancestral language. And yet, from two tones, it would be impossible to derive the more complex tonal patterning now found in the open syllables of the apparent cognates in Burmese and Atsi. It is this that forces us to doubt whether the original forms could have been stopped after all.

The ancestral language has to be credited with at least three contrasting unstopped syllable tones, in order to provide for the various tones in the consistently unstopped syllables of the modern languages. If we start with the hypothesis (contrary to that just considered) that the ancestral forms of the sets given in Table 3 had open syllables, and had the proper open syllable tone which would lead to the tones of Atsi and Burmese, can we predict the tone of the newly stopped syllables of Maru? We can do so by means of the following rules: (1) Forms which fall into tone set 1 (i.e. lead to Burmese /' and to Atsi /- or /') usually give rise to the low tone in Maru; but with the vowels shown in Table 2, they result in a low stopped tone instead (see sets glossed in Table 3 as 'die, leg, rice beer, skin, water, horn,

green, sweet, mushroom, cry, nephew, widower, difficult'). (2) Syllables of tone set 3 (which lead to Burmese /ˈ/ and to Atsi /ˈ/) usually give rise to a high tone in Maru, but with these same vowels they result instead in a high stopped tone (see sets glossed in Table 3 as 'in front, seed, breast, feather, stop up'). (3) Syllables of tone set 2 (which lead to Burmese /ˌ/ and Atsi /ˌ/ or /ˈ/) usually result in the Maru mid tone, but with these same vowels they split along lines reminiscent of the Atsi rule for allotones. (4) When the syllable derived from original tone 2 begins with a voiced initial, the tone falls together with the low stopped tone derived from the older open tone 1 (see sets glossed in Table 3 as 'grandchild, parrot, copulate, sky, bone'); but when the syllable begins with a voiceless initial, it falls together with high stopped syllables deriving from older open tone 3 (see sets glossed in Table 3 as 'wash, grandmother, dung, dye, old, smoke, steal, stab, grandfather'). Thus, the three open tones are regularly reduced to the two stopped tones of Maru, a situation readily summarized in diagrammatic form:



By recognizing the Maru stops which follow these vowels to be new, we simplify the comparisons among the three languages in one other way. Somehow we must explain the presence of the two contrasting stopped tones of Maru. We might suppose that this contrast is an old one which has been lost in Burmese and Atsi, but by recognizing these stops as new, we can see that their development alone would have been enough to break up an old allophonic pattern into a new phonemic contrast. If we imagine that an earlier form of Maru had the same allophonic variation as that found in present day Atsi stopped syllables (with low pitch in syllables having voiced initials and higher pitch in syllables having voiceless initials), then this closure of syllables would have broken up the older pattern, since the tone on some of the newly stopped syllables became high or low without influence of the initial. All syllables derived from tone 1 became low regardless of the initial, and syllables derived from tone 3 became high. A contrast was then introduced where none had existed before. Indeed, OTHER stopped Maru syllables which ARE cognate with stopped syllables in Burmese and Atsi do tend to be low when having voiced initial but otherwise tend to be high, suggesting an earlier more pervasive pattern.

The hypothesis that certain final stops of Maru are intrusive, therefore, results in a far simpler historical interpretation than does the opposite hypothesis. The

ancestral language can be assumed to have had but a single stopped tone and no more open syllable tones than are found in the modern languages. The tones of the modern languages can be unambiguously derived from simple reconstructed forms. Moreover, once these intrusive stops are recognized as necessary, their phonetic shapes can be seen as not at all unreasonable. A final velar stop was introduced only after high back vowels, very likely indeed after a vowel glide which moved toward the high back position. An apical stop was introduced only after a high front vowel, which may have included a glide toward high front.

Two conclusions would seem to be warranted: (1) Until each individual case is carefully investigated, we cannot maintain the easy assumption that the forms in Sino-Tibetan languages which have final stops are necessarily more conservative than cognates lacking the stops; and (2) without a full understanding of the tones of the various languages, any attempt to understand their historical relationships is foredoomed to serious limitations.

Notes

- 1 This paper represents a fragment of a general comparative study of the subgroup of Tibeto-Burman to which Burmese belongs. All the data given here were collected from native speakers while I was a lecturer at the University of Rangoon under the Fulbright Program in 1959 and 1960. I have worked upon the data at scattered intervals since then, and I am particularly grateful to the Center for Advanced Studies in the Behavioral Sciences in Stanford, California, which afforded me time to analyze my materials, and to a grant from the Faculty Research Fund of the Horace H. Rackham School of Graduate Studies at the University of Michigan, which provided funds for research assistance. William Gedney read an earlier draft of this paper; the present version incorporates most of his many thoughtful suggestions.
- 2 The term 'Kachin' is subject to confusion since the Jinghpaw language is often referred to as 'Kachin proper', although it is a more remote member of the Tibeto-Burman family and lacks any specially close ties to Maru or to Burmese.
- 3 The transcription used for Burmese follows closely that used by William Cornyn in his *Outline of Burmese grammar*, Language Dissertation No. 38, Supplement to *Lg.* 20:4 (1944). The transcriptions for Atsi and Maru were devised by me and are very much alike. Both Atsi and Maru have stops and nasals in three positions, as well as two types of affricates /p t k ts c/. In each of these five positions, stops and affricates may be either voiceless aspirated (/pʰ/ etc.), glottalized (/pʷ/ etc.), or plain voiced (/b/ etc.) Nasals may be either plain (/m/ etc.) or glottalized (/mʷ/ etc.). Labials and velars may be followed by a 'medial' /y/. Other initials include /s š h v l p y/ in Atsi, and /s š y w h γ/ in Maru. Both Atsi and Maru have five simple vowels. Atsi supplements these with the diphthongs /ai au ui/, while Maru has /ai au oi/. Final stops and nasals occur only after the simple vowels, and in Maru there are severe limitations upon the freedom with which vowels combine with final consonants. The cognate correspondences among the initials of the various languages have been worked out in considerable detail but are not particularly relevant to the point at issue here. The reader is asked to accept, without lengthy discussion or proof, the cognate status of the initial consonants and of all vowels except the particular three which became stopped in Maru. The correspondences among the tones are more crucial to the argument of the paper and will be described more fully in the text.
- 4 The presence in Atsi of two tones corresponding to a single tone in Burmese and Maru is an unresolved puzzle. It may be necessary to assume an extra tone in the original

language to account for the Atsi tones, but for present purposes they can be considered together.

- 5 It may seem odd to base alternative tone correspondences upon a syntactic difference, as I have done in Atsi. Although my data on Atsi syntax are not complete enough for me to make a definitive statement, the situation seems to have developed somewhat as follows: Atsi verbs seem always to require a suffix and my informant was reluctant to pronounce a verb base without a suffix. Nouns, on the other hand, were readily pronounced in isolation. If we imagine an older Atsi tone to have corresponded consistently to the Burmese second tone, then nouns bearing this tone became Atsi /'. Verbs having this tone, however, fell together tonemically with /', which otherwise corresponds to the first Burmese tone. As a result, no verbs in Atsi as spoken by my informant bore the tone /'.

COLLOQUIAL CHIN AS A PRONOMINALIZED LANGUAGE

Eugénie J. A. Henderson

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IT is over 100 years since Brian Houghton Hodgson was persuaded by what he described as 'great peculiarities in the use of the pronouns'¹ in certain of the languages of the southern Himalayan region to 'divide the Himalayan races primarily into two groups, distinguished by the respective use of simple or non-pronomenalised [*sic*], and of complex or pronomenalised languages'.² This method of classification was taken over by Sten Konow in the third volume of the *Linguistic Survey of India* and has been widely accepted by linguists since that time. 'Pronominalization' has been taken to mean pronominal usage of a certain kind, particularly within the verbal complex, and has on the whole been regarded as a non-typical feature of Tibeto-Burman languages, probably to be accounted for by alien influences, and restricted, within the Tibeto-Burman family, to the languages grouped together by Konow under the name 'Himalayan'.

The Kuki-Chin languages are described by Konow as belonging to the Burmese branch of the Tibeto-Burman family. So far as I am aware, no one has ever suggested classing them as 'pronominalized' in Hodgson's sense, but I have been interested to find that my Chin material, collected in the field in 1954, exhibits features closely akin to those regarded as peculiar to the pronominalized languages. Most of these features are not proper to what I shall call 'formal literary style', which accounts for their absence in the texts on which Konow's classification was based. They are almost entirely lacking in my own narrative texts, except in the passages of direct speech where a more informal style of discourse is felt appropriate.

In order to assess the degree to which colloquial Chin may be regarded as a pronominalized language, it is necessary to recall what has been meant by the term in the past.

Hodgson drew attention to a number of features, the presence of which might be regarded as a mark of 'pronominalization' in the language concerned. Such features may be summarized as follows:

- 'marks of genuine inflection' in the pronouns³
- the frequent occurrence of pronominal forms at the end of the sentence⁴
- the 'reduplication' of the first and second personal pronouns in verbal constructions⁴
- the use of conjunct and disjunct pronominal forms⁵
- the prefixation and/or suffixation of conjunct pronominal forms.⁵

Konow noted the use of 'short forms of personal pronouns as prefixes'⁶ (*d, e*), and 'a tendency to distinguish the person of the subject by adding pronominal suffixes to the verb, so that a kind of regular conjugation is effected' (*b, e*).⁷ In addition, he pointed out that (*f*) 'dual' pronominal forms,⁸ and (*g*) inclusive and exclusive forms of the first person plural⁹ are frequently found in pronominalized languages. More recently, in the latest edition of *Les langues du monde*, a further feature has been commented upon, namely, (*h*) the absence of pronominal forms to mark the third person as subject.¹⁰

Colloquial Tiddim Chin usage in regard to these eight pronominalizing characteristics is set out below:¹¹

(a) Marks of inflection in the pronouns

The examples Hodgson gives from Dhimal show vowel and consonant alternances, e.g. *ka, keng, kangko* 'I, me, of me'; *na, neng, nangko* 'you, you, of you'; *wa, weng, oko* or *wanko* 'he, him, of him', etc.¹² In Tiddim Chin the alternance is tonal. There are two mutually predictable forms of every noun and pronoun, which may be regarded as the expression of *direct* and *oblique* case. The alternance is perfectly regular, and is as shown below:

<i>Direct case</i>		<i>Oblique case</i>
Rising tone	<i>alternates with</i>	Falling tone
Falling tone	" "	Level tone
Level tone	" "	Rising tone.

The following examples demonstrate how this tonal inflection operates for the disjunct pronominal forms. It will be observed that there are alternative forms for some of the pronouns.¹³

<i>Direct case</i>		<i>Oblique case</i>
<i>1st pers. s.</i>	/kei, /kei_ma?	\kei, /kei_ma
<i>2nd pers. s.</i>	/naŋ, /naŋ_ma?	\naŋ, /naŋ_ma
<i>3rd pers. s.</i>	ǎ_ma?	ǎ_ma

Direct case

1st pers. p. (incl.) /ei, /ei_te, /ei_ma?, /ei_ma:u

1st pers. p. (excl.) \kou, \kou_te, \kou_ma:u

2nd pers. p.

(missing in material to hand)

3rd pers. p.

ǎ_ma:u, ǎ_ma:u_te

Oblique case

\ei, /ei_te, /ei_ma, /ei_ma:u

\kou, \kou_te, \kou_ma:u

ǎ_ma:u, ǎ_ma:u_te

(b) Frequent occurrence of pronominal forms at the end of the sentence

In Tiddim Chin there is a sharp contrast here between colloquial and formal literary usage. Sentences in formal literary style almost invariably end with a verb followed by a particle, never with a pronominal form. In colloquial style final pronominal forms abound. This is best illustrated by comparing literary and colloquial usage side by side, as follows:

<i>Formal literary style</i>		<i>Colloquial style</i>
(pron. prefix + verb + particle)		(verb ± pron. suffix)
kǎ_pai \hi	I went	ṽpai \iŋ
nǎ_pai \hi	you went	ṽpai _te?
ǎ_pai \hi	he went	ṽpai
ṽpai \hi	we (incl.) went	ṽpai \haŋ
kǎ_pai u? \hi	we (excl.) went	ṽpai \uŋ
nǎ_pai u^hi	you (pl.) went	ṽpai u? _te?
ǎ_pai u^hi	they went	ṽpai u?

Compare also the literary *kǎ_pai/di:ŋ\hi* 'I will go', etc., with the following colloquial forms:

ṽpai /niŋ	I will go
ṽpai ni _te?	you will go
ṽpai _in _te?	he will go
ṽpai \ni	we (incl.) will go, i.e. let us go
ṽpai \nu:ŋ	we (excl.) will go
ṽpai nǔ _te?	you (pl.) will go
ṽpai _un _te?	they will go

In formal literary style negation is accomplished by the interpolation of the word /kei between the verb and the final particle, e.g. *kǎ_pai /kei \hi* 'I did not go'. In colloquial style a negative pronominal form is frequently used, which was felt by my informants to be a fusion of /kei and the pronominal suffix found in affirmative sentences. Thus we have *ṽpai \in* 'Go!' (Singular) but *ṽpai \ken* 'Don't go', which was said by my informants to be 'for /kei \in'. See also:

ṽpai /keŋ	I didn't go
ṽpai /kei _te?	you didn't go

ṽpai /kei	he didn't go
ṽpai \xaŋ	we (incl.) didn't go
ṽpai /kei \uŋ	we (excl.) didn't go

In other similar constructions we find forms which may be interpreted as a fusion of *le*² 'if' with a pronominal suffix. Comparison with literary usage is of particular interest here since formal style demands that a special form of the verb be used before *le*². Chin verbs are inflected, having two alternating forms like nouns and pronouns, but the manner of inflection is quite different. The verbal inflection may be effected by variations in tone, vowel, final consonant, or length, or by certain combinations of these. According to the grammatical contexts in which it is used, one form of the verb may be regarded as the exponent of indicative, the other of subjunctive mood. In literary style the subjunctive form of the verb is required in constructions ending with the particle *le*². In colloquial style, on the other hand, the indicative form is used, and the sentence is closed by a pronominal suffix, sometimes incorporating the particle, sometimes preceded by it. Compare for example:

Formal Literary Style		Colloquial Style	
(pron. prefix + verb (subj.) + particle)		(verb (indic.) + particle ± pron. suffix, or verb (indic.) + 'fused' suffix)	
kǎ \pai le ²	if I go	ṽpai \leŋ	
nǎ \pai le ²	if you go	ṽpai \le te ² , ṽpai \le ʽcin	
ǎ \pai le ²	if he goes	ṽpai le ²	
ĩ \pai le ²	if we (incl.) go	ṽpai \le :əŋ	
nǎ \pai _u ² le ²	if you (pl.) go	ṽpai \le _u ² ʽcin, ṽpai \le _u ² te ²	
ǎ \pai _u ² le ²	if they go	ṽpai (_u ²) le ²	

(c) Reduplication of first and second personal pronouns in the verbal complex

There is no parallel in my Chin material to this feature, which appears to be peculiar to Dhimal. Hodgson's examples include such forms as *kyel hin kyel* 'we laughed', *nyel hin nyel* 'you (pl.) laughed', beside *ubal hin* 'they laughed'.¹⁴

(d) The use of conjunct and disjunct pronominal forms

The Tiddim Chin disjunct pronominal forms have already been listed under (a). In common with certain other Tibeto-Burman languages not classed as pronominalized, such as Karen, Chin has a series of short pronominal prefixes, which may be affixed to either nouns or verbs in formal style, and to nouns only in colloquial style. They are:

	Singular	Plural	
1st Pers.	kǎ-	(incl.)	ĩ-
		(excl.)	kǎ- (with suffix _u ²)

	Singular	Plural		
2nd pers.	nǎ-	nǎ-	(" " ")	
3rd pers.	ǎ-	ǎ-	(" " ")	

Also to be regarded as conjunct are the pronominal forms which follow the verb in colloquial style, e.g. *\iŋ*, */niŋ*, *\ni*, *\nu :ŋ*, *_te²*, *ʽcin*, *\uŋ*, */keŋ*, *\xaŋ*, etc.

(e) Prefixation and/or suffixation of conjunct pronominal forms

As has been amply demonstrated already, colloquial Chin uses both prefixed and suffixed pronominal forms. Hodgson and others after him have remarked upon the variations in usage in this matter in the Tibeto-Burman field as a whole. Hodgson cites the Kiranti language as prefixing nouns and suffixing verbs.¹⁵ This is also true of colloquial Chin, but not of literary Chin, which prefixes both nouns and verbs. A Tiddim Chin verb may not, according to my informant, have both pronominal prefix and suffix at the same time. Hodgson also notes that in some languages both disjunct and conjunct forms may be used together 'prefixally', e.g. Bodo *angni apha*, Vayu *ang upa*, Dhimal *kang apa* or *kapa* 'my father'.¹⁶ He points out the similarity here to Kuki (Chin), which may use parallel constructions.

(f) The use of dual pronominal forms

I have not discovered any such forms in my material.

(g) The use of both inclusive and exclusive forms for the first person plural

Such forms occur in Chin, and have been indicated in the preceding sections.

(h) The absence of pronominal forms to mark the third person

Here one may refer back to forms already quoted, such as *ṽpai* 'he went' beside *ṽpai \iŋ* 'I went', *ṽpai te²* 'you went'; *ṽpai le²* 'if he goes' beside *ṽpai \leŋ* 'if I go', *ṽpai \le ʽcin* 'if you go'.

From the foregoing examination we find that out of eight features regarded as characteristic of the pronominalizing languages, colloquial Tiddim Chin, even in such relatively scanty material as is available, can provide reasonably close parallels for six. It appears not unlikely that improved knowledge of the Chin languages and of others equally remote geographically from the so-called pronominalized groups will bring further similarities to light. In this event linguists may be obliged to conclude that, contrary to what has often been supposed, pronominalization is after all a genuine Tibeto-Burman family trait.

Notes

- 1 *On the Kocch, Bodo and Dhimál tribes*, Calcutta, 1847, 116.
- 2 Footnote to the reprint of 'On the Kocch, Bodo, and Dhimál tribes', in *Miscellaneous essays relating to Indian subjects*, I, London, 1880, 105. Earlier references are to be found in the essay 'On the physical geography of the Himalaya', written in Darjeeling in 1846, and later published in *Selections from the Records of the Government of Bengal*, xxvii, Calcutta, 1857, and in the revised reprint in this same volume of a paper on the 'Origin and classification of the military tribes of Nepal', originally read to the Bengal Asiatic Society in 1833.
- 3 *On the Kocch, Bodo and Dhimál tribes*, Calcutta, 1847, 113. 'The declension of the pronouns seems to be the least imperfect part of the structure of the Bodo and Dhimál tongues, and in the latter exhibits throughout marks of genuine inflection.'
- 4 *ibid.*, 116. 'There are two great peculiarities in the use of the pronouns in these tongues; one is, that in both languages the pronouns frequently stand as the last word in the sentence; and this whether they be personal or possessive. The other peculiarity is confined to the Dhimál, and consists in the reduplication of the first and second persons. . . .'
- 5 'Comparative vocabulary of the languages of the broken tribes of Népal', *JASB*, xxvi, 1857, 429 ff., 481; *ibid.*, *JASB*, xxvii, 1858, 393 ff., 439 ff.
- 6 *LSI*, iii, 1, 276.
- 7 *LSI*, iii, 1, 179.
- 8 *ibid.*, 179.
- 9 *ibid.*, 179.
- 10 A. Meillet and M. Cohen, *Les langues du monde. Nouvelle édition*, Paris, 1952, 558-60. 'Le trait distinctif de ces langues est d'inclure les pronoms personnels dans le verbe, sous des formes diverses de préfixes et de suffixes. Aucune ne marque le pronom de la 3^e personne sujet; en dehors de ce fait, chaque parler a ses règles propres, et ils ne pratiquent pas tous cette inclusion au même degré.'
- 11 The Chin illustrations in this paper are all taken from the Tiddim Chin (Kamhau) dialect, since I have more material to draw upon in this dialect than in any other. Examples are given in phonetic transcription as the orthography does not always indicate such relevant phenomena as tone and vowel length. The transcription will be largely self-explanatory to those familiar with the alphabet of the International Phonetic Association, but it may be helpful to point out that the symbol ~ is used to mark the vowel of a syllable which is short and unstressed in relation to the syllable immediately following.
- 12 *On the Kocch, Bodo and Dhimál tribes*, Calcutta, 1847, 113-14.
- 13 Certain explanatory notes of the examples are called for. It will be seen that where the pronominal form has more than one syllable the last syllable only is inflected, i.e. /ei alternates with /ei/, but /ei/te with /ei\te/, etc. A short syllable closed by a glottal stop is usually pronounced on a low pitch, and is accordingly preceded in the phonetic transcription by the symbol ~. Functionally, however, this pitch is a realization of 'falling tone', as is clearly shown by its rôle in these examples. Level tone syllables may not be closed by a glottal stop, so that this sound does not figure in, for example, the oblique case of the third person singular, although present in the direct case. My informant was aware that the direct case forms of the first person plural exclusive were 'irregular' in his usage. He believed that the 'expected' forms, /kou/, /kou\ma:u/, etc., were to be found in the neighbouring and very closely akin Teizang dialect.
- 14 *On the Kocch, Bodo and Dhimál tribes*, Calcutta, 1847, 116.
- 15 'Comparative vocabulary of the languages of the broken tribes of Népal', *JASB*, xxvii, 1858, 389.
- 16 *ibid.*, *JASB*, xxvi, 1857, 481.

PRONOMINAL VERB MORPHOLOGY IN TIBETO-BURMAN

Jim Bauman

Source: *Linguistics of the Tibeto-Burman Area* 1, 1, 1974, 108-55

0.0. Introduction

The most commonly proffered typological evaluation of Tibeto-Burman (T-B) as a language family characterizes it as consisting of monosyllabic roots strung together into higher syntactic organizations in an analytic manner, there being little if any derivational or inflectional morphology. It is also characterized as semantically terse, expressing few redundancies within its structure. Skirting the issue of whether this description is synchronically accurate or not, the proponents of this view have used it as a springboard from which questions of wide relationship and diachronic development have been launched. It certainly constitutes a concise heuristic principle, and in early comparative linguistic work proved useful in circumscribing the field of T-B, separating it off from neighboring families such as Austroasiatic with its disyllabic stems exhibiting a pervasive derivational morphology; Indo-Aryan with its complex system of noun and verb classification seen in its various declensions and conjugations, its syncretic inflections, and its complicated system of agreement and concord relations; and Altaic with multi-syllabic roots, a multitude of agglutinative affixes on both nouns and verbs some of which express agreement relations, and verb stem alternation associated with tense distinctions.

In the pages to follow, a specific problem in T-B will be examined, concerning the appearance in a minority of languages of a very complex verbal morphology. Two contrasting opinions will be probed, each purporting to account for the origin of this complexity. The dominant opinion, in keeping with the spirit of the preceding typological assessment of the family, proposes some non-native source from which T-B borrowed this structure. The other, much less advocated stance rejects this common stereotype of T-B, proposing instead that the verb morphology in question reverts to a feature of the proto-language.

The type of verb structure under consideration shows elaborate paradigms of person/number agreement with the subject, and often object, of the sentence. The details differ from language to language, but within this framework, most languages will show agreement for singular, dual, and plural numbers in all three persons, as well as for inclusive and exclusive 1st persons in the dual and plural. For the most part the affixes involved are suffixed either directly to the verb stem or to some type of tense/aspect auxiliary. In some languages prefixes are also used. The syntax of the verb with respect to these affixes varies widely, some languages prefixing some markers, suffixing others; some splitting subject from object affixes across a tense or aspect marker; some prefixing for certain semantic relations, suffixing for others; some allowing agreement only for certain tenses; etc. This phenomenon has following Hodgson's¹ (1856) usage been referred to as verb pronominalization or just simply as pronominalization. I will continue to use this term since it is solidly entrenched in over one hundred years of literature, even though it is potentially confusable with certain recently proposed transformational processes.

1.0. History of thought regarding pronominalization

The next section sets itself the task of tracing the history of the pronominalization problem in the literature. Bearing in mind the preceding statement of the overall simplicity in which T-B was and is conceived, most of the early explanations of pronominalization were allied to the first position of finding some outside source on which these languages modeled their verb morphology. Brian H. Hodgson, however, was exceptional in seeing the feature as native, although within a much wider network of relationship than can be sustained today.

1.1. Brian H. Hodgson

Hodgson's² post as British Resident at the Court of Nepal with the India Office for over 20 years (1821-1843) and his later unofficial residence at Darjeeling for about 10 years (1848-1857), provided him the opportunity of actively collecting materials dealing with the native languages and cultures. During this time, Hodgson collected many of the materials that, up until the last few years, constituted our only sources of information about several languages of the area. It was apparent then and remains true today that in most ways he was an accurate and thorough recorder of whatever he heard.³ His material consequently remains valuable. Hodgson's linguistic interests ranged very widely and consequently we have information on tribes extending from northern Tibet to Ceylon and southern Burma.

Some publications under his name, however, are materials submitted to him by other investigators of languages located in Burma and eastern Assam (Hodgson 1849a, 1850, 1853a) and in central and southern India (Hodgson 1848, 1849b, 1856). All other materials were personally gathered from native speakers of the languages. For some of these languages, namely Bodo and Dhimal (1847) and Hayu and Bahing (1857-1858) he supplied full grammatical sketches and

extensive lexical materials. For others only random grammatical notes and partial vocabularies are available.

1.11. Classification of Tibeto-Burman

Hodgson's primary purpose in amassing such copious data was to substantiate his contention that all of the aboriginal population of British India including Nepal, Burma, Indo-China, and China proper was ultimately related, though the web of relationship was somewhat diffuse even in his own mind. He conceived of three major "stocks" (1847, 1849c) into which this population was subdivided: a Tibetan stock which included many of the languages of the sub-Himalayas and northern Assam; a Chinese stock to the east of this region, excepting the languages of the Assam valley; and a Tamulian stock comprising all the native languages of India including those in the Assam valley and those of the forested Indian border areas of Nepal, Sikkim, and Bhutan. These stocks merge families now felt to be separate, such as Dravidian and Munda within Tamulian, and also transect now recognized families, specifically T-B and Austroasiatic. The T-B languages seen as Tamulian include many of the Barish⁴ languages of Assam as well as the East Himalayish group of Nepal; the Tibetan members comprise Tibetan and its dialects as well as the Gurung branch of central Nepal; and the Chinese stock includes Chinese and the many T-B languages of Burma and Thailand. Even though Hodgson does not state the reasons for assigning one language or another to different stocks, it would seem from the evidence available to him that he depended most heavily on the syllabic structure of the word. Tamulian, including the T-B languages considered as such, shows words susceptible of a polysyllabic analysis, while the root structure of Chinese type languages is decidedly monosyllabic.⁵ The Tibetan stock took in those languages which were predominantly monosyllabic in root structure, but which also evidenced more complicated morphological processes, such as verb stem alternation. Hodgson yields a clue to his reasoning in his opinion "that the Bodo and Dhimal languages belong pretty evidently to the aboriginal Indian tongues [i.e. Munda and Dravidian] and not to the Indo-Chinese or monosyllabic" (1847:157).⁶

Several years later, however, Hodgson (1850) had corrected his original groupings. Now he finds "one type of language prevailing from the Kali to the Koladan, and from Ladakh to Malacca, so as to bring the Himalayans, Indo-Chinese, and Tibetans into the same family" (1850:28). And, suggesting how he has arrived at this re-evaluation, he points to "syntactic poverty and crudity and etymological refinement and abundance [as] the characteristics of this vast group of tongues" (1850:33). He also presumes that "grammatical peculiarities" will not prove especially useful as diagnostics of relationship since they are "apt to be excessively vague or else palpably borrowed" (1850:33). His methods of linguistic comparison had now channeled into a heavy reliance on lexical, as opposed to morpho-syntactic evidence, and neither he nor his successors have ever swerved too far from this course.⁷ "A common stock of primitive roots and serviles . . . indicates unmistakably a common lineage and origin among the several races to which such stock belongs."

(Hodgson 1853:33). It should also be noted, in reinforcement of an earlier argument, that Hodgson had in effect negatively christened his neonate Tibeto-Burman as possessing no interesting syntax or morphology to whet a comparativist's appetite. This view also persisted under his powerful influence, until Conrady (1896) partially dispelled it by demonstrating the archaic nature of the prefixes of written Tibetan along with some of the morphological categories they probably represented.

1.12. *The Turanian hypothesis*

In spite of this hierarchical redistribution of languages and the postulation of T-B, Hodgson still firmly believed in the larger pattern which enclosed all of central and eastern Asia's languages, excepting those of Indo-European lineage. This hypothetical construct he called Turanian. "Tamulians, Tibetans, Indo-Chinese, Chinese, Tangus, Modgols, and Turks are so many branches of another single family, viz., the Turanian" (1849d:3). This quote demonstrates his early position; his consistency is maintained seven years later after he had rearranged his subgroups. "Turanian affinities are not to be circumscribed by the Deccan, nor by the Deccan and Central India, nor, I may here add, by the whole continent of India, but spread beyond it into Indo-China, Himalaya, and the northern regions beyond Himalaya" (1856:127). In an earlier paper Hodgson (1853b) also attempted the demonstration of a relation between the languages of the Caucasus and Mongolian (intending mostly Tibeto-Burman) and, even farther afield, Pelasgian (intending Malay and Tagalog); though properly speaking he excluded these other groups from Turanian.

It was by this Turanian category that Hodgson chose to explain many of the apparent similarities between widely separated members of the family. In the last and most complete statement of his position, Hodgson (1856) lists a series of facts, one of these being verb pronominalization, which, from his point of view, seem to offer evidence of genetic relation between his Turanian languages, specifically those now thought to be separate and unrelated. From an explanatory standpoint, this wide stance allows him to explain characteristics at variance with the overall typological picture of the language subgroup as merely remnants of a more archaic stage of the language, showing up in fuller or even unaltered form at some other point within Turanian.

1.121 GENERAL TURANIAN CHARACTERISTICS

Taking the position of T-B as central, rather than Nilgirian (Dravidian) as Hodgson does, the following points of resemblance with other language families within Turanian are made:

1. Proliferation of sibilants in T-B and in Dravidian (1856:131);
2. Numeral classifiers in T-B and also in Dravidian (131);
3. Nominalization of adjectives by suffixation in Tibetan, Himalayish, and Dravidian (135);

4. Proliferation of gerundial or participial verb forms in Tibetan and Himalayish, but especially in Mongolian and Manchurian (140);
5. A tendency toward double causative verbs in Himalayish and literary Dravidian⁸ (141);
6. General absence of a passive construction in T-B, Altaic, Hill Dravidian,⁹ and Munda (141);
7. Low reliance on morphological tense distinctions with a correspondingly greater reliance put on temporal adverbs to distinguish relative time—a feature common to all Turanian languages¹⁰ (141-2);
8. The presence of a transitive or intransitive sign following the verb root in Himalayish, Altaic, Finno-Ugric, and in remnant form in Dravidian¹¹ (137-8).

Besides these grammatical correspondences, and the others described below, which Hodgson submits as demonstrating his Turanian hypothesis, he also suggests that many lexical correspondences provide confirmation. Here, however, as is often the case when wide comparisons are attempted, the sound laws for individual languages had not been worked out for shallower time depths, which immediately makes any conclusions suspect. Even so, much of Hodgson's grammatical evidence remains intriguing, even that which submits to alternative explanation, such as (2) the numeral classifiers which probably diffused westward out of Sino-Tibetan and Tai (Emeneau 1956, 1965); (6) the absence of a passive which may be implicationally related to characteristics of ergative type languages; (3) adjective nominalization, an expectation in verb final languages; (5) double causatives which possibly originate in Indo-Aryan (cf note 8); and (7) the relative unimportance of tense distinctions which is possibly more typical of the world's languages (with the exception of Indo-European) than its opposite. I leave the significance of these interlinguistic parallels an open question, however, since other non-genetic explanations aside, the cumulation of all these factors certainly could inspire the view that there may have been historical connections between these families. We may be observing traces of an older, now deteriorating linguistic area, especially since most of Hodgson's resemblances between T-B and other families occur in the western border languages (most notably Himalayish). Additionally, there existed the trading and cultural area of northern Tibet and western China which included Indo-European Tocharians and Khotanese, Mongolians, Turkic Uigurs, Manchurians, and Sino-Tibetans, all presumably influencing and being influenced by their neighbors.¹²

1.122 PRONOMINAL CHARACTERISTICS OF TURANIAN

The remainder of Hodgson's evidence describes parallels between the pronominal systems of his Turanian languages, which overall are typified as "greatly developed."¹³ These are as follows:

9. Separate forms for personal (independent) and possessive forms of pronouns (1856:135);

10. Separate inclusive and exclusive forms for 1st person pronouns (135);
11. Different sets of possessive pronouns: one used disjunctively (i.e. as a free form) and the other conjunctively (i.e. as an affix) (135);
12. Distinction between dual and plural number categories (137);
13. Verb pronominalization¹⁴ (128, 135, 139, 143);
14. Prefixation of noun possessive forms and suffixation of verb pronominal affixes¹⁵ (136);
15. A prevailing verb structure consisting of root + transitive/intransitive marker + pronominal suffix¹⁶
16. The morphological conflation of 2nd and 3rd persons in T-B (Newari) and Dravidian in opposition to 1st person forms (140).

Most of these characteristics are associated with pronominalized languages, but many other languages with simpler verbs also show the categories. With regard to pronominalization itself Hodgson notes that the Himalayish languages and Munda show the feature in fullest form while the other Turanian languages either lack it entirely or show much more impoverished forms of it. Specifically intending Dravidian he says, "Whether from non-development or from decomposition, the pronominalization is very imperfect on the whole" (1856: 137); with reference to Altaic, "The Mantchuric and Mongolic groups of tongues were long alleged to show no sign of pronominalization. It is now known that that was a mistake" (1856:139).

I have emphasized this section in part to counter a possible interpretation that Hodgson regarded pronominalization as perhaps due to the unidirectional influence of one language on another. As we will see later the Munda group of languages has often been proposed as a diffusional or substratal source of the pronominalization which appears in Tibeto-Burman. However, Hodgson's only mention of both groups, with reference to their jointly possessing the feature, is the following: "Kiranti, Vayu, etc., of Himalaya show a wonderful agreement with what Müller calls the Munda class of languages in Central India. In all these tongues alike not only the agents (singular, dual, and plural, and inclusive and exclusive of the two latter), but the objects are welded into the verb, thus showing the maximum of pronominalization" (1856:135). Nowhere does he propose a directionality of influence from one to the other.

1.2. *The Linguistic Survey of India (LSI)*

The period stretching from the last of Hodgson's linguistic writings in 1857-1858 to the beginning of the LSI in 1894¹⁷ paralleled the development of more rigorous approaches to comparison and reconstruction. The general tenor of the times stressed scientific accuracy, and, as a consequence, Hodgson's elaborate Turanian edifice became neglected. Wide relations lacked the necessary materials for an adequate scientific demonstration. Work in eastern Asia became more descriptive,

and what comparative work there was, explored what would have been to Hodgson only subgroups.

1.21. *Konow's assessment of T-B*

It was in this climate of opinion that Sten Konow, who had the task of editing all of the T-B materials received by the Survey and assembling a coherent system of internal classification, inherited the problem of Hodgson's pronominalized languages. Also due to the efforts of the Survey the number of pronominalized languages themselves increased with the recognition that Kanauri and other languages in Almora and farther northwest also showed the feature.¹⁸ This created two main groups in the Himalayas exhibiting this complex verb morphology and the associated complexity in pronominal categories. The newly discovered group became known as the Western Pronominalized branch and Hodgson's original group in eastern and central Nepal as the Eastern Pronominalized branch of Himalayan. The only other recognized T-B language with similar morphology was Namsangia Naga (cf note 35), a geographically far distant member of the Eastern Naga subgroup of southeastern Assam. A short sketch grammar appeared in 1849 by Robinson and was therefore known to Hodgson, who did not hesitate to include it as pronominalized (Hodgson 1856:128). The LSI however makes no mention of how this language would directly relate to the Himalayan group if at all, or how it might best be accounted for historically. The silence on this issue could partly stem from the inability of the Survey to collect any additional information from this area.

In any event Konow operating with a vastly increased corpus of T-B materials became convinced of how best the ancestor language might have looked morphologically and syntactically. Contrary to the procedure of simply abstracting from the synchronic language, however, he did take account (following Conrady) of the probable course of development in the historically attested languages, especially literary Tibetan. This led him to put less reliance on the traditional view that T-B must have been monosyllabic since Written Tibetan, many of the Bodo-Garo languages, and Kachin showed evidence of an elaborate prefix system at an earlier stage of development. He also advocated the position that Chinese, Tibetan, and other tonal languages developed their tonal systems from loss of these prefixes.¹⁹ He therefore viewed the proto-language as agglutinative rather than isolating and partly subgrouped on the basis of how the daughter languages respected or rejected these agglutinative affixes. His other important criteria for subgrouping were based on tones, classifiers, and the syntax of the negative marker.

Besides the many general T-B characteristics listed earlier, Konow suggested several more such as a decimal numeral system, absence of a relative pronoun, and syntactic methods of adjective comparison, which were clearly justified from his data. However, several other suggestions were certainly contrived,

forced out of the common 19th century prejudice that tribal languages were not very capable of forming abstractions. "Most Tibeto-Burman languages further evince a difficulty in forming words for abstract ideas . . . It has been common to draw attention to the fact that languages such as Tibeto-Burman are unable to distinguish between form and substance, because they do not possess form words, i.e., words which do not denote any substance or any material conception but simply the different ways of forming and arranging them in the mind" (LSI 3(1):5). In less biased sounding terminology, this simply indicates that T-B lacked derivational morphology and relied instead on compounding type processes.

But taking an additional metatheoretical step from this platform, Konow emphasized that the class of nominal elements in T-B took precedence over verbal categories; in other words, verbs and adjectives were only 'surface' syntactic phenomena; at some underlying stage they were to be regarded as nouns.²⁰ This point will be of some importance, since Konow used it to explain away the phenomenon of verbal agreement for person and number by prefixation, as seen especially in Kuki-Chin. By treating the verb prefix as a possessive pronoun modifying an underlying noun, he restricts the term 'pronominalization' to only suffixal occurrences of such markers, and in effect disassociates these languages from other pronominalized groups. In a later part of this paper (cf sec. 4.324), this view of affixation type as a critical factor in comparison will be challenged.

1.22. *The Munda hypothesis*

Returning now to the more central problem of accounting for the appearance in certain T-B languages of pronominal verb morphology in the face of a parent language which did not exhibit it, Konow fell back on Hodgson's notice of the similarity between Munda verb morphology and T-B pronominalization and forged a causative link between the two by appealing to the very popular late 19th century notion of the substratum. To quote his own statement:

"In such characteristics [complexity of pronominal categories and pronominal related morphology] the dialects in question have struck out lines of their own, in entire disagreement with Tibeto-Burman, or even Tibeto-Chinese principles. They have accordingly become modified in their whole structure. It is difficult to help inferring that this state of affairs must be due to the existence of an old heterogeneous substratum of the population, which has exercised an influence on the language. That old population must then have spoken dialects belonging to a different linguistic family, and the general modification of the inner structure of the actual forms of speech must be due to the fact that the leading principles of those old dialects have been engrafted on the languages of the tribes in question. Now it will be observed that all these features in which

the Himalayan dialects differ from other Tibeto-Burman languages are in thorough agreement with the principles prevailing in the Munda forms of speech. It therefore seems probable that Mundas or tribes speaking a language connected with those now in use among the Mundas, have once lived in the Himalayas and have left their stamp on the dialects there spoken at the present day."

(LSI 3(1):179 and 1(1):56)

It is this contention of a Munda substratum in T-B to explain pronominalization, which has been sustained by a majority of researchers. Consequently it is also the hypothesis which will be given most comment, first by making a detailed comparison of Munda and T-B pronominal verb morphologies and second by reviewing current opinion within Austroasiatic concerning the evolution of these structures in Munda.

1.3. *Other hypotheses*

1.31. *Morphological borrowing from Indo-European*

Besides Hodgson's view of pronominalization as progressing without interruption back to a common Turanian ancestral language and Konow's espousal of a substratal influence from Munda, two additional hypotheses have been advanced. The first of these professes the policy of *Les Langues du Monde* (Meillet and Cohen 1952), built on the detailed examination provided by Henri Maspero (1946). On the argument that the underlying syntax of the verb differs significantly between Munda and Himalayish, Maspero rejected the Munda hypothesis. But, presumably not feeling the evidence strong enough to warrant an internally motivated explanation, he instead proposed an influence out of Indo-Aryan based on the analogy of that family's conjugational system.

Cet emploi des pronoms affixés au verbe diffère de celui des langues munda en ce que les pronoms sont toujours employés pour leur valeur propre, et non pour rappeler des notions précédemment exprimées dans la phrase par des noms. Plutôt qu'à l'influence d'un problème de substrat munda, c'est probablement à celle des parlers aryens environnants et de leur conjugaison qu'il faut attribuer ces faits qui éloignent fort ces dialectes de la norme des langues tibéto-birmanes.

(Maspero 1946: 175-176; Meillet and Cohen 1952:560)

This position has also been affirmed by Egerod (1973) who sees T-B pronominal verb morphology as "very reminiscent of adjacent Indo-European," and suggests that "the probability of an original close relationship of the two families must be taken into account" (1973:503).

1.32. *Hypothesis of native origin*

The fourth and final position to be elaborated was, to my knowledge, first suggested by Eugénie J. A. Henderson (1957) in a short paper whose immediate purpose was the demonstration that the term pronominalization, in the sense of a packet of features typically found together in certain languages, was appropriate to the colloquial (though not literary) standard of Tiddim Chin. The actual data and points of agreement with the Himalayan languages will be discussed later; for now, however, it seems only appropriate to stress that the feature had by this time been acknowledged in four different groups of T-B languages:²¹ Western Pronominalized Himalayish, Eastern Pronominalized Himalayish, Eastern Naga, and Kuki-Chin. The implication of such widespread occurrences is suggested by Henderson.

It appears not unlikely that improved knowledge of the Chin languages and of others equally remote geographically from the so-called pronominalized groups will bring further similarities to light. In this event linguists may be obliged to conclude that, contrary to what has often been supposed, pronominalization is after all a genuine Tibeto-Burman family trait."
(1957:327)

With this tentatively offered proposal that Proto-Tibeto-Burman may have exhibited complex verbal and pronominal morphology not usually attributed to it, all the bases are effectively covered. We have the competing ideas of nativeness within a network of very wide relationship, substratal influence, borrowing, and nativeness at the level of T-B. No other possibilities seem forthcoming, with the doubtful exception of independent innovation wherever the feature appears.

2.0. *The Munda substratum hypothesis*

In an attempt to establish a plausible connection between the Munda family and the T-B Himalayan languages, Kuiper (1962) indicates that "even now the distance between the most northern point where Santali [Munda] is spoken and the area of Limbu (a Himalayan language) is not greater than about 130 miles" (1962:42). Following the Indo-Aryan occupation of the Ganges valley which separates these two languages today, groups of Munda speakers in the northern hills of the valley became separated from their more southerly main contingent. Subsequently, Munda continued to be spoken there until its speakers finally "gave up their own language and adopted Tibeto-Burman dialects" (1962:42). Kuiper offers a set of potential cognates between Munda and T-B to substantiate his claim of earlier contact. However, since he employs a scatter approach to comparison, taking his items from very widely flung T-B languages, many of which are not Himalayish at all, no sound correspondences can be set up. His appeal to verb pronominalization

as another indication only reiterates Konow's subjective impression, since he also provides no detailed comparison.

2.1. *The Munda pronominal system*

In fact it seems that the only attempt at a non-superficial comparison of the two pronominalized families by Maspero (1946), led to the denial of any causative relation between them. Maspero's conclusion, quoted earlier, hinged on his finding that the Munda and T-B verb were syntactically dissimilar. In Munda, object pronouns are directly incorporated into the verb. In other words, object affixes are not agreement markers, they are the only surface manifestation of the underlying semantics, while subject affixes are simply agreement markers with an optionally deletable independent subject pronoun. The situation in those T-B languages with both subject and object affixes differs in that both are agreement markers, with the possibility of having the independent pronouns in preverbal position.

Perhaps to explain this difference, it might be relevant to mention the absence of a true morphological system of case marking in Munda (Bodding 1929) in contrast to its general presence in T-B. In other words, since nominative and accusative forms of the independent pronouns are not distinguishable in Munda, there would be potential confusion if both occurred in independent noun phrases (assuming too that the relative order of the noun phrases is more or less free); disambiguation of role status has to be made in the verb. In T-B, however, ambiguities (which indeed do arise in the verb) are resolvable by different case markings on the independent pronouns or noun phrases. The issue will be re-aired shortly in discussing the probability of word order changes in Munda. The difference between the two systems, however, does seem to be significant, especially if it does involve other deep-seated facts about the languages.

2.2. *Comparison of Bahing and Santali*

Even on other grounds, however, there exist indications of important differences between the pronominalized verbs of Munda and T-B. In drawing the comparison I will restrict the discussion to one language from each family—Santali for Munda²² and Bahing for T-B.²³ Neither of these languages would necessarily best represent the system of their respective proto-languages. Nevertheless, I feel that since they exhibit to the maximum the number of distinctions possible, any truly Munda influenced structures would very likely show up in both.

2.21. *Independent pronouns*

In Chart 1 on the following page, the independent pronouns of both languages are compared. One of the striking incongruities of these two systems, which the chart reveals, is the presence of an alternate stem for Bahing possessive pronouns,²⁴ which fits in with the typical presence in T-B of a morphological system of case

Chart 1 Independent pronouns of Santali and Bahing

		Santali	Bahing	
			Subj.	Poss.
1	sg	iñ	go	wa
1	dl incl	alaŋ	gosi	isi
1	dl excl	aliñ	gosuku	wasi
1	pl incl	abo(n)	go-i	ike
1	pl excl	ale	goku	wake
2	sg	am	ga	i
2	dl	aben	gasi	isi
2	pl	ape	gani	ini
3	sg anim	uni	harem	a
	inam	ona		
3	dl anim	unkin	harem dausi	asi
	inam	onakin		
3	pl anim	onko	harem dau	ani
	inam	onako		

marking. (Hodgson very early pointed out separate possessive stems as a Turanian characteristic, partly on T-B evidence. Cf sec. 1.122.) Munda, on the other hand, typically lacks case markings. Therefore, to form the possessives in Santali the independent pronoun simply precedes²⁵ the head noun. The fact of this alternation in Bahing would seem to argue, therefore, that the pronominal categories in T-B would be of some age, and not copied from a Munda template. No reason is obvious for why a language would add two forms of a pronoun when the prospective model language makes do with only a single form.

Besides this one major difference, there is also the lack of correspondence between the presence of animate/inanimate gender of Santali and its absence in Bahing; the obvious number affixes for Bahing²⁶ (cf -*si* 'dual'; -*ni* 'plural') while only the 3rd person of Santali uses number affixes; and the non-1st person morphemes analyzable in the inclusive and exclusive forms of Bahing (cf -*i* 'inclusive' = *i* '2nd person, poss. stem'; -*ku* with probable 3rd person significance, as in *go-su-ku* '1st dual excl', *go-ku* '1st pl excl'). It is possible also that *wa-* the possessive exclusive stem is equivalent to the 3rd possessive root *a*. Its use then as the normal possessive of the 1st singular would represent the regularization of the paradigm, especially since closely related languages show a different root (cf Vayu (Hodgson 1857-1858) *ang* '1st sg poss' and *wathi* '3rd person'). The principles of constructing these forms are thus distinct, Santali being relatively unanalyzable while Bahing still shows the probable derivational path from some no longer productively used morphemes. In addition there are no obvious phonological correspondences between any of the forms.

2.22. Intransitive verb affixes

Even more indicative of the historical independence of T-B from Munda are the verb affix systems themselves. The following chart, of the intransitive verb paradigm, will be presented first. In this chart a distinction is made between *neuter* and *intransitive* affixes for Bahing. (The terms are from Hodgson.) Neuter affixes are used with a small set of intransitive verbs which from their structure seem to be derived from old causatives. In any event it is a lexically determined contrast.

Chart 2 Intransitive verb affixes of Santali and Bahing

		Santali	Bahing		
			Pres/fut.	Preterite	
			Intr.	Neuter	
1	sg	-iñ	-gna	-u	-ti
1	dl incl	-laŋ	-sa	-isa	-tasa
1	dl excl	-liñ	-suku	-isuku	-tasuku
1	pl incl	-bon	-ya	-iya	-ntayo
1	pl excl	-le	-ka	-ika	-ktayo
2	sg	-em	-ye	-i	-te
2	dl	-ben	-si	-isi	-tasi
2	pl	-pe	-ni	-ini	-ntani
3	sg	-e	-Ø	-a	-ta
3	dl	-kin	-se	-ise	-tase
3	pl	-ko	-me	-ime	-mtame

Syntactically, the Santali affixes are applied most commonly to the word immediately preceding the verb or to the final position in the verb following the "finite marker" (Bodding 1929:49). These affixes are only used with animate subjects in the active voice (however, Bodding also remarks that the subject marker can appear if there is an *underlying* animate subject not appearing on the surface, as even in a passive sentence, for example). In Bahing a subject marker will appear in a fixed position for every sentence.

A comparison of this chart with the independent pronouns of both languages shows that the Santali affixes are all easily derived from the free forms, showing typically the loss of the initial vocalic element (or of the entire first syllable of 3rd person forms), while the Bahing forms are sometimes less obviously derived or even suppletive (cf 1st sg intr -*gna* [-ŋa] with 1st sg *go*; 2nd sg intr -*ye* with 2nd sg *ga*; the 3rd person affixes have no relation to 3rd person free pronouns, since these latter have probably only recently developed). In addition the Bahing forms show a great deal of internal diversity. For example the neuter set calls to

mind the possessive set of independent stems (cf *-u* '1st sg neuter' with *-wa* '1st sg possessive'; *-i* '2nd sg neuter' with *i* '2nd sg possessive'; *-a* '3rd sg neuter' with *a* '3rd sg possessive') and also duplicates the subject affixes of transitive verbs used with 3rd person objects²⁷ (cf sec. 2.23). Another complication is the presence of a preterite set of affixes sometimes not easily relatable to the present/future set, even allowing for the assuredly temporal value to be assigned to the *t-* or *ta-* of these forms (cf 1st sg preterite *-t-i* (< *ta* + *i*) with *-gna* [-ŋa] or *-u* 1st sg affixes; 1st pl excl preterite *-k-ta-yo* with *-ka* '1st sg intransitive' where there is a discontinuity around the temporal element). It is quite probable then that there was some interaction, presumably phonological, between tense/aspect and pronouns which resulted in a morphological syncretism for these affixes. The morphological details will be explored at greater length in following discussions (cf sec. 4.3131, 4.321).

2.23. Transitive verb affixes

The final comparison relates to the respective treatments of transitive propositions. The Santali situation includes the placement of an object affix, either direct or indirect but not both, after the "verbal suffix" and before an optional possessive affix.²⁸ These forms are essentially identical to the subject affixes (however, the 2nd sg object affix is *-me*, cf 2nd sg subject affix *-em*); it is their order with respect to the root which unambiguously defines them as objects. Subject affixes, it will be recalled, either precede the verb root or occur as the final element of the verb phrase. The possessive affix functions as a possessive pronoun, though its use is optional. Again, the forms are phonologically identical to the affixal form of the pronoun but with the addition of a prefixed element *ta-* (for example, *-taben* '2nd dl possessive', cf *-ben* '2nd dl affix'); morphophonemic changes are possible, however (cf *-tiñ* '1st sg possessive' < *-ta* + *iñ*).

The Bahing data is much more complex than this relatively simple situation. It is charted on the following page.

The most interesting aspects of this transitive conjugation are the identical forms for the 2nd and 3rd person subjects with 1st person objects (2 → 1, 3 → 1)²⁹ and the 2nd person subjects with 1st or 3rd person objects (2 → 1, 2 → 3); the appearance of forms without any correspondants in the set of intransitive affixes, such as *-na* in '1 → 2' or *-ka* '1 pl excl → 3'; in the preterite forms, one of several consonants preceding the preterite marker *-ta*; and the seemingly reversed syntax of some forms, with the order subject-object varying with object-subject in the affixes. It would appear that some affixes are capable of shuffling some of their semantic features in different occurrences; for example, the suffix *-ni* has the meaning 2nd person plural object or 2nd person plural subject, but it confusingly also appears in preterite 2 → 3 pl forms making for complicated homophony, such that 'we saw you (pl)', 'you (pl) saw them', and 'they saw you (pl)' would share identical verb structure.³⁰ There are many other instances.

It would appear also that some rule of semantic priority operates to mark 1st person whether it occurs as subject or object in preference to 2nd person, and,

Chart 3 Bahing transitive affixes
Top half of cell: present/future form
Bottom half of cell: preterite form

Person	Subject	Object	1st		2nd		3rd	
			SR	Incl	SR	Incl	SR	Incl
1st	SR	SR	-na	-na	-na	-na	-na	-na
			-na	-na	-na	-na	-na	-na
	DL	DL	-na	-na	-na	-na	-na	-na
			-na	-na	-na	-na	-na	-na
	PL	PL	-na	-na	-na	-na	-na	-na
			-na	-na	-na	-na	-na	-na
2nd	SR	SR	-ni	-ni	-ni	-ni	-ni	-ni
			-ni	-ni	-ni	-ni	-ni	-ni
	DL	DL	-ni	-ni	-ni	-ni	-ni	-ni
			-ni	-ni	-ni	-ni	-ni	-ni
	PL	PL	-ni	-ni	-ni	-ni	-ni	-ni
			-ni	-ni	-ni	-ni	-ni	-ni
3rd	SR	SR	-ni	-ni	-ni	-ni	-ni	-ni
			-ni	-ni	-ni	-ni	-ni	-ni
	DL	DL	-ni	-ni	-ni	-ni	-ni	-ni
			-ni	-ni	-ni	-ni	-ni	-ni
	PL	PL	-ni	-ni	-ni	-ni	-ni	-ni
			-ni	-ni	-ni	-ni	-ni	-ni

in turn, 2nd person takes priority over 3rd. There are many problems with this hypothesis, but whether it eventually holds up or not the very complexity of the conjugation sets it strongly apart from the relative straightforwardness of the Santali conjugation.

In evaluating all of the above data, from independent pronouns to affixes of transitive verbs it is apparent that the burden of accounting for the evolution of the Bahing system falls on the back of the Tibeto-Burmanist. In all points Bahing seems either equally or more complex than Munda, not only in the total number of morphological distinctions, but also in its highly involved and elaborate syntax. But to round out the arguments, we can also consider the impressive work by Pinnow in reconstructing Munda verbal morphology (1966) and the Austroasiatic pronoun system (1965).

2.3. *Munda and Austroasiatic*

It would seem that the contention of a Munda influence on T-B verb morphology would itself revert back to earlier stages of the language, most likely being itself a feature of the ancestral Proto-Austroasiatic. This presupposition is necessary because the time depth of the postulated contact with T-B must be fairly early, pre-dating the Aryan invasion and the split of early T-B dialects. However, on gross comparative evidence alone, it might be expected that the nearer we approach Proto-Austroasiatic the more we will have to accommodate the simpler morphological structures of the majority of the family. On the whole, Austroasiatic exhibits much the same overall pattern as T-B; a definite minority of its members show the complex pronominalization at issue, the majority are decidedly analytic in structure. Pinnow suggests the following explanation to account for this discrepancy in Austroasiatic between Munda on the one hand and Khmer-Nicobarese on the other.

This difference between the two branches . . . has its origin mainly in the fact that the two Austroasian groups belong to distinct linguistic leagues (Sprachbunde): The synthetic structure of Munda was strengthened by the proximity of Dravidian and Indo-Aryan languages, while the analytic structure of the Khmer-Nicobar languages was favored by the contiguity of the Thai, Kadai, Indonesian and also Burmese languages.

(1966:183)

2.31. *The proto-Austroasiatic pronominal system*

Pinnow then proceeds along regular lines of comparison to point out the probable archaic status of the three person categories, three number categories, and the inclusive/exclusive distinction for the independent series of pronouns, even successfully demonstrating the cognation of many of the phonological forms, thereby arriving at a set of probable reconstructions.

However, he feels the affixal forms along with the attendant morphological system, to be a secondary development within Munda. "In proto-Munda . . . the pronouns properly were independent, isolable free forms. The affix character of the pronouns, which were incorporated into the verb complex as subject or object respectively, is of more recent date" (1966:183). He also attempts a rationale for the syntax of the incorporated pronoun object of the verb, supposing an original SVO word order which is still mimicked by the order of affixes, the subjective pronoun immediately preceding the verb and the object pronoun following. At the stage of development where the word order changed to the present SOV pattern, the pronouns had already assumed affixal status and consequently did not participate in the general object phrase reorientation. Pinnow has found independent support for this hypothesis in a dialect of Kharia which maintains SVO word order in some circumstances. Going even further he expresses confidence in the assumption that the affixal realization of indirect objects and possessives as in Santali, which is very restricted over the entire Munda area, is not traceable to Proto-Munda.

In one last previously unmentioned particular, Pinnow records no instance of a special reflexive pronoun. In this respect again Bahing shows both a means of forming an independent set of reflexive pronouns (*wa-dwabo* 'I myself') as well as a verbal affix to express self-inflicted action (*-si-gna* 'I verb myself'). This verb suffix then is in addition to the regular pronominal terminations described earlier.

From this summary of Pinnow's analysis of Austroasiatic pronouns and verb morphology, Munda again seems to offer no promise of unraveling the problem of the T-B pronominalized verb. All of the arguments taken collectively, from the detailed typological comparison of the two families to the internal evidence for morphological innovation within Munda itself, seem to inescapably force some other explanation.

3.0. *Morphological borrowing and Indo-European influence*

The question of a morphological influence on T-B of the order necessary to produce the complexity of the Bahing verb is debatable from several lines of argument. For one reason, there has been, to my knowledge, no well documented example from any part of the world of such an influence. As is perhaps intuitively obvious, languages more often than not tend to simplify their morphological structures in contact situations. Examples to the contrary exist, of course, but the overall consensus holds that there is a resistance to borrowing at the more formally structured levels of the grammar (Whitney 1882, Haugen 1950). The adoption of a morphological mechanism, then, precedes generally by one of two routes.

In the first a word may be borrowed from one language into another as an unanalyzable whole. After a period of time and perhaps on analogy with other similarly constructed borrowed words, a secondary analysis is made by the borrowing

language, so that the word is now recognized to consist of morphemic elements. Then according to its own principles of word formation, one of the elements may generalize to other environments, thereby becoming grammatically productive. Meillet (1918) stresses that, "it does not necessarily follow that such a grammatical form is, properly speaking, borrowed" (1918:14).

The second pathway turns on the relative comparability of languages in contact, emphasizing that a certain degree of commonality in structure is necessary for one language to borrow from another. Even Schuchardt who generally approved of the notion of morphological borrowing, unconstrained by any qualification, held to the view that, "frequently the influence of a foreign language works together with a prevailing tendency (*herrschenden Tendenz*) in another language." (1884:11). Whitney states the principle unequivocally by denying the doctrine that a language can learn from another "a grammatical distinction, or a mode of expression, formerly unknown" (1882:19). In the same vein, Sandfeld (1938) speaks of "points of receptability" between a donor and a recipient language, and Jakobson (1938) of a "collective tendency" between languages, if a change in linguistic structure is to be copied from one to the other.

The implication of this wide consensus of opinion has important bearing on the origin of pronominalization, since it would direct us to look for such structures, or 'predispositions' to add such structures, first in T-B, before trying to match it with those of Indo-European or any other family which is a presumed model. What the preceding brief discussion makes clear is that complexities on the order of what we have seen in Bahing are not likely to have been totally borrowed, though the possibility cannot be ruled out that particular aspects of the system may have been borrowed, given a certain native framework on which to place them.

Since this line of argument would be impossible to carry through without having first assembled the comparative data and attempted to push it back internally as far as possible, the question of Indo-European, Munda, or other outside direction on T-B is best postponed to a later point. However, I would safely assume even now that Indo-European, like Munda, has not been an important influence for the reason that its contact with T-B has been of relatively recent date and that at the time of contact the family had probably already split off into branches which today still maintain pronominalization. A more compelling reason is that Indo-European, even less than Munda, has structures comparable to those seen in Bahing. In every case Indo-European is much less complex or organized according to different norms of complexity, as seen in its subject agreement affixes synthetic for person and number or in its use of gender distinctions.³¹

4.0. Hypothesis of native origin

4.1. T-B sources

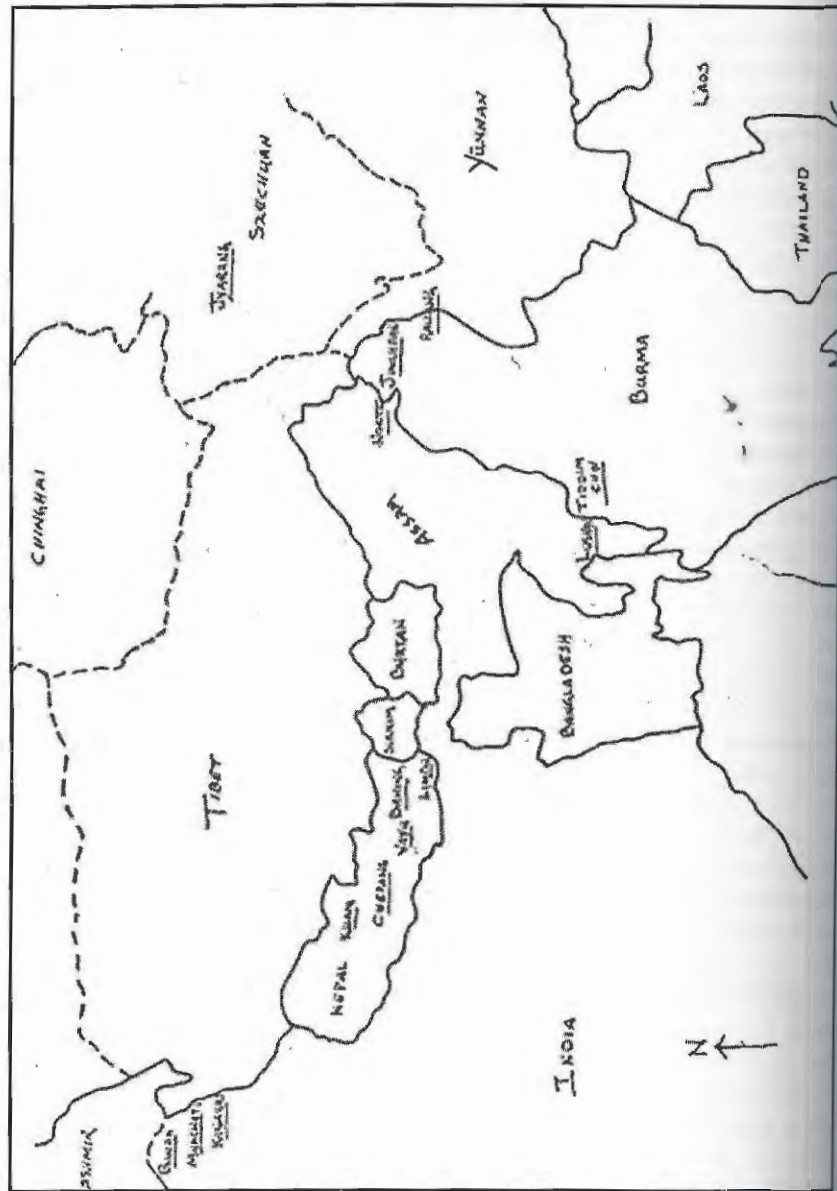
Since the writings of Hodgson and Konow when the problem of pronominal verb morphology in T-B was first described and an attempt was made to draw a

plausible picture of its origin, some additional languages have been recognized as exhibiting similar complexity. In a few cases the investigator attempted to place the new data within the framework of the earlier hypotheses. In some small subset of these languages the fit was facilitated by the geographic proximity of the language to others already recognized as pronominalized. For example, Chepang's (Cp) nearness to one center of pronominalization farther east in Nepal created no special problems for subgrouping it together with these languages. Parallel arguments could then easily be provided for the genesis of the complex verb structure in terms of a Munda substratum (Caughley 1971),³² without necessitating complex explanations for migration or diffusion of the structure. For languages in greater or lesser isolation from the two recognized nuclei of pronominalization (in Eastern Nepal [Eastern Pronominalized] and in Northwest India [Western Pronominalized]), two different courses were taken: 1. The verb morphology is simply described with no mention of its being "pronominalized", as with Jinghpaw (Jg) (Hanson 1896, Hertz 1935, Wolfenden 1929), Jyarung (Jy) (Chin 1949, 1957-1958),³³ Rawang (Ra) (Barnard 1934),³⁴ Nocte (No) (Das Gupta 1971),³⁵ and Lushai (Lu) (Shaha 1884, Lorrain and Savidge 1898); or 2. The language is recognized as pronominalized but explanations of outside influence are rejected, as for Kham (Kh) (Watters 1971) and Tiddim Chin (Td) (Henderson 1957, 1965; cf sec. 1. 32).

In this section these languages will be systematically compared with several languages of the two nuclear pronominalizing groups; from the Western branch: Kanauri (Ka) (Bailey 1909), Bunan (Bu) (Francke 1909), and Manchari (Mn) (Francke 1909) and from the Eastern branch: Bahing (Ba) (Hodgson 1857-1858), Vayu (Va) (Hodgson 1857-1858, Michaelovsky 1974), and Limbu (Lm) (LSI 1909). This list, of course, does not exhaust the possibilities (see Shafer 1950 and 1966 for fuller lists), but, very importantly it effectively covers most of the T-B linguistic area (see map next page) and includes most of the major recognized subgroups of T-B.³⁶

4.2. Method of comparison

In the sections to follow the pronominal systems from the languages mentioned above will be compared point by point with a view to demonstrating the integrity of the hypothesis that pronominalization was a trait native to T-B. Such a demonstration, I realize, raises questions of what happened to this complex pronominal verb morphology in languages which do not exhibit it synchronically—those, of course, being the great majority of the family. While it seems beyond the capabilities of our present data to successfully answer this question for all cases, it does appear that individual examples can be cited where remnants of pronominal verb morphology are still apparent in various non-pronominalized languages. One of the critical problems to be solved in effectively supporting this contention is the demonstration of cognation between these so-called remnants and the true pronominal roots of the proto-language. However, any



cursory glance at comparative pronoun data³⁷ points up the difficulty with identifying a single unequivocal set of roots for the original language, whether those be independent pronouns, in the ostensibly simpler case, or the touchier situation of pronominal verb affixes.

To compensate for this apparent lack of comparability, I have adopted the policy of viewing parts of a total pronominal system in abstraction from the narrower confines of a particular paradigm within that system. A pronominal system is here understood to encompass the entire person and spatial deictic apparatus of a language—formally apparent in the subsystems of independent personal pronouns; person/number verb affixes; demonstratives; relative, interrogative, and indefinite pronouns; numerals; and kinship and status terms. Even within one of these subsystems it may be possible to further characterize various component patterns or structures. For example, the independent pronouns may be looked at from the standpoint of the case functions they carry out; very often the genitive or possessive pronoun is formally distinct from the nominative/objective (ergative) pronoun, not just in the case marker, but also in the stem itself. Compare for Kanauri: 1 sg erg *gö* and 1 sg poss *an̄*.

This sort of complexity within subsystems naturally provides more information for comparative purposes, if the methodology that I have advocated is subscribed to. For Kanauri, therefore, I would factor out the person information from both of these 1 sg forms, ignoring for the time their different semantic/syntactic usages, and compare one or both with 1 sg forms in other T-B languages, in any subsystem that they may occur. Again, I hope by such procedures to demonstrate not that there is less than the usually conceived of diversity in the number of pronominal roots, but that the diversity is patternable and ultimately explicable within the framework of an original complex morphological system.

Since my ultimate goal is a morphological rather than a lexical reconstruction, I plan to take some liberties with the phonological comparison of the pronominal roots. Rather than provide exact phonological reconstructions of different roots (which necessarily presupposes that the historical phonologies of all the compared languages are sufficiently well understood, which they are not) I will, instead only require that a form realized by comparison *approximate* the original proto form.³⁸

The task of reconstructing a morphological system for Proto-Tibeto-Burman, which can account for the complexity we have seen in Bahing, can only proceed slowly over a long course of time, with very careful sifting of a multitude of data. This task thus necessarily lies beyond the foundation laid in this paper. Essentially what I am attempting to demonstrate here is only the plausibility of the nativeness hypothesis and the justification for a more detailed investigation.

In the immediately following sections, some of the factors that must eventually be considered are listed so as to constitute a typological assessment of the problem. What I intend by this survey of some dozen or so languages is to show how different pronominal complexities cross-cut lexically established subgroup

boundaries, to show that the solution must circumscribe all of T-B and not isolated minorities within the family.

In a few cases the actual verbal syntax of various languages will be described and compared, even though our poor knowledge of the developmental histories of the individual languages complicates the problem. In applying such comparisons it would seem dangerous to simply take the most elaborate synchronic morphology to serve as the model for the proto-language. Recall Pinnow's contention that the complexity of the Munda verb will not reconstruct to Proto-Austroasiatic (cf sec. 2.31). Pinnow proposes instead that it developed as an areal influence from surrounding Dravidian and Indo-Aryan languages. In the case of T-B many individual languages may have accrued complexities due to similar areal pressures. The transitive verb affix system is especially troublesome since it is manifested in more than one typological format (cf sec. 4.311), one of which is perhaps secondarily derivable from the components of the simpler intransitive affix system. The special problems to be met with in this area will, therefore, simply be acknowledged, without presenting any thorough treatment. In any event, though, the very existence of these complexities in the transitive verb assuredly points back to some type of historically retrievable morphological structures serving as a template. It will be primarily the intransitive verb paradigm which will be examined for direct evidence of this structure.

4.3. Typology of T-B pronominal systems

4.31. Verb affixes

It is the presence or absence of a verbal affix system for person-number agreement which is criterial for designating a language as pronominalized or not. However, within this broad assessment it is possible and desirable to particularize various parameters of this morphology, and rank individual languages as to their behavior. This procedure can be very useful in delineating language subgroups and these subgroups, in turn, can be valuable aids for tracking the chronology of development from earlier stages of the language.

4.311 TRANSITIVE AFFIXES

The primary distinction of pronominal affixation which suggests itself from the briefest look at the data is that between intransitive and transitive affixes.³⁹ Some languages have mechanisms for only subject agreement (intransitive) while others require agreement for both subject and object (transitive). Within the transitive category two subtypes can be recognized. One of these has a set of object agreement affixes phonologically and morphologically distinct from the subject agreement set (the *Discrete* subheading of Table 1), while the other has a set of

affixes which simultaneously indicate the subject and object roles in a "single" phonological form (the *Syncretic* subheading of Table 1). The latter is typified by the Bahing system presented earlier (cf sec. 2.23). Within the languages with separable object and subject affixes it is further possible to specify different syntactic arrangements of the affixes with respect to one another and to the verb. Compare, for example, the situation in Kham:

1 sg → 2 sg nga verb ni
3 sg → 1 sg verb na- -o
1 sg → 3 dl nga-ni verb

where prefixation and suffixation are differentially used to express the various possible role interrelationships. There are additionally several other characteristics of the transitive verb which will not be charted. These typically involve verb stem alternations and/or the insertion of epenthetic consonants at particular points of the paradigm. I have only been able to speculate about the possible functions these processes serve.

4.312 THE REFLEXIVE AFFIX CATEGORY

A distinct type of verb affix expressing a reflexive meaning occurs in some languages. This usage is absent in other languages, which use instead pronoun based reflexive constructions. Compare:

Kh nga-verb-si 'I verb myself'
Jg ngai-hkum 'I myself'

It is possible, though, for a language with a reflexive verb affix to also make use of a pronominal reflexive; for example, Kham can reduplicate the pronominal root to form a reflexive (although this can not occur with singular roots).

Kh gin gin 'we 2 ourselves'

Languages exhibiting a verbal reflexive affix are indicated in Table 1, subdivided according to affixation pattern.

4.313 AFFIXATION PATTERNS

As indicated above the affixation patterns of the language to be treated can be fairly complex. To simplify the chart somewhat, advantage will be taken of the fact that any prefixing language also exhibits suffixing mechanisms. Therefore, such a language will be indicated only once—in the prefixation row.

4.314 CONCORD RELATIONS

Table 1 also includes information relative to whether a particular language engages in one or both of two types of "concord" relations.

4.3141 *Tense/aspect-mood concord* The more important of the two concerns the phenomenon of pronominal affixes, transitive and intransitive, having different forms agreeing with the tense/aspect marker of the verb. In what seems to be a related phenomenon, a separate set of affixes is used for what are variously called "potential", "subjunctive", "conditional", or "subordinate" clauses. These contrast with the set(s) used in independent clauses. Both the tense/aspect and this modal concord are treated together under the former label. For instance, Hanson (1896) describes the following suffixes in Jinghpaw:⁴⁰

-nng	'I am <i>verbing</i> '
-ring ng	'I will <i>verb</i> '
-ni	'I have <i>verbed</i> '
-li	'may I <i>verb</i> '
-se	'I <i>verbed</i> '
-rē	'I will have <i>verbed</i> '

The comparative analysis of this type of system will form an important aspect of a later study, though for now only the number and general nature of the distinctions which each language makes will be considered.⁴¹

4.3142 *Negative concord* A second type of pronominal concord occurs in a few languages for the negative marker. The details differ from language to language. In a simple case, for example Cp, the negative set of affixes seems to be morphophonemically related to the positive set.

Cp	1st sg positive	-ng
	1st sg negative	-nga

However, in other languages, such as Nocte, the root itself can change.

No	1st sg positive	-ang
	1st sg negative	-mak [- <i>m</i> is the negative marker]

A further peculiarity of Nocte is that the separate negative forms occur only in "present" type tense/aspects. Unfortunately this phenomenon cannot be systematically examined at present since relevant data is missing in most languages. Table 1 will simply indicate the presence of some form of this negative concord for languages where it has been described. In languages with transitive affixes, the

Table 1

		Affixation type				
		Intransitive	Transitive		Reflexive	
			Discrete	Syncretic		
Affixation pattern	Prefixing	Kh	Kh	Lm	Jy	
		Lm	Lu (1 only)	Jy	Lu	
		Jy		Ra		
		Ra (2 only)				
		Lu				
		Td				
	Suffixing	Bu	Bu (1 only)	Cp	Ka	
		Mn	Jg	Ba	Kh	
		Ka		Va	Ba	
		Cp		No	Va	
		Ba			Ra	
		Va				
		No				
Jg						
Concord	Tense/aspect	Bu (pres, fut, imperf, perf)				
		Ka (pres/fut, past)				
		Ba (pres/fut, past)				
		Va (pres/fut, past)				
		Lm (pres, past)				
		Jy (only vestiges)				
		No (pres/fut, past/subord)				
		Ra (pres, imperf, fut/imperf, potential)				
		Jg (pres/fut, past, optative)				
		Lu (independent, subord)				
		Td (pres, fut, conditional)				
		Negative	Cp (morphophonemic)			
			No (separate stems)			

same concord distinctions are made as for intransitive affixes, so there is no need to separately indicate this on Table 1.

4.32. *Typological assessment of pronominal verb affixes*

4.321 OCCURRENCE OF TENSE/ASPECT CONCORD

Table 1 yields a few significant generalizations, probably the most striking of which is the statistically high occurrence of tense/aspect concord in the languages

sampled (11 out of 14). It has only *not* been reported in Kham, Chepang, and Manchati, although Manchati exhibits a system of verb stem alternation for tense aspect which may be historically related. There is further support in view of its most closely related sister languages—Kanauri and Bunan—exhibiting the concord; although Kanauri itself seems to have partially leveled out the complexity also. Chepang has as yet not been fully described and final judgment on its actual behavior in respect to tense/aspect concord should be withheld.

Kham seems to be a true exception at this point. An interesting feature of its verb morphology, however, is the inclusion of a tense marker following the verb which can interpose itself between the subject and object affixes. This marker, in line with all affixes generally, seems to maintain its phonological and semantic discreteness. Kham thus seems to approach more than any other language considered a true agglutinative structure. Perhaps, then, the morphophonemic processes which in earlier times may have led to the concord system were inoperative in Kham. On the other hand, if the system of tense/aspect concord was original to Proto-Tibeto-Burman (as the cross linguistic data would support), then Kham has probably innovated. This second hypothesis will eventually carry more weight in view of a great many other peculiarities in Kham's structure. It more than any other language seems to overstep the norms.

4.322 CO-OCCURRENCE OF TRANSITIVE WITH INTRANSITIVE PARADIGMS

Another significant finding is the high positive correlation between the presence of transitive with intransitive affixes. Again only three languages do not exhibit the correlation. Two of these, Kanauri and Manchati, are closely related in the Western Pronominalized group. Bunan, the third representative of this group, can almost be included as lacking transitive affixes, since only a single object suffix, *-ku* 'me, for me', is used, and this only in imperatives and in the imperfect with 3rd subject. These three languages would together constitute a particular subgroup which presumably lost object agreement at an earlier stage of development.

The other language without object agreement is Tiddim Chin which, however, on the evidence of closely related Lushai, may be supposed to have originally possessed a set of discrete object affixes. Lorrain and Savidge (1898) report that the object affixes of Lushai are not used obligatorily so we may suppose that forces are at work to eliminate the distinction entirely. Lushai would then pattern with Tiddim Chin.

4.3221 Parallels between Lushai and Jinghpaw If Bunan is eliminated from consideration of possessing object agreement for the reasons above and if Kham is eliminated by reason of its exceptional agglutinative approach to affixation, then only Lushai and Jinghpaw are left as representatives of the discrete type of object affix. An attempt to account for this coincidence, by comparing the object affixes in these two languages (which are usually not considered as especially close geographically or genetically) revealed an interesting association, with possible implications for subgrouping.

Chart 4 Lushai and Jinghpaw object affixes

	1 sg	1 pl	2 sg	2 pl
Lu	min ~ mi' (prefix)	min ~ mi' (prefix)	che ~ chi-a (suffix)	che-u ~ a-che-u (suffix)
Jg	mi	mi	de ~ di	ma-de-ga ~ ma-de

In addition Jg has two 3rd person object forms which have no correspondents in LU. It is, of course, fairly apparent that the 1st person forms in **mi* are cognate (in spite of their being prefixed in Lu). The 2nd sg forms are almost as easily related, the *ch-* of Lu simply being the palatalized variant of the dental stop of Jg. What makes this even more obvious is the occurrence of the same vocalic alternation, *-e ~ -i*, in both languages. The 2 pl forms keep the 2nd person root but make use of different plural markers: *ma* in Jg (cf *-we-ai* '3 sg obj'; *-ma-we* '3 pl obj (dial)') and *u* in Lu (cf *verb-imperative-u* 'imperative pl'; cf also Td *-u²-te²* '2 pl').

4.3222 Parallels between Tiddim Chin and Jinghpaw The object affixes of Jg taken together with their corresponding subject agreement members form a particular pattern within the total pronominal affixation system of the language. Hanson (1896) described this set as the "descriptive present" although he states that it may be used to convey any temporal notion. It simply does not vary with the tense/aspect markers of the sentence as does the other major set of affixes. What the determining variables are which select one set or the other is not made entirely clear, but it seems possible that it may be similar to a stylistic affixal variation found in Tiddim Chin. Td has a set of prefixed forms used only in the literary language and a contrasting set of forms used in colloquial speech. This second set shows variation for tense/aspect concord, while the literary set is invariable. It seems, therefore, that the "descriptive" set of Jg would functionally pattern with the literary set of Td.

4.3223 Morphological links between Jinghpaw and Kuki-Chin If now the Jg, Td, and Lu systems are viewed concurrently, a certain pattern of development

Chart 5 1st person agreement affixes of Lushai, Tiddim Chin, and Jinghpaw

	Pronominal agreement affixes			
	Colloquial		Literary	
	Present	"Subordinate"	Subject	Object
Jg	-nng	-li	-we	-mi
Td	-ij	-ley	kã-	
Lu		-ila	ka-	min-

suggests itself. The following chart provides forms for the 1st person agreement affixes only.

In clarification it should be mentioned that Lu has only a single set of affixes, making no distinction between 'literary' and 'colloquial', though it seems fair to surmise that it did possess this distinction earlier, as seen in its 'subordinate' reflex of the "old" colloquial set. (In Lu and Td this affix lends a conditional meaning to the clause; in Jg the meaning is "optative" 'may I . . .'.)

The major characteristic distinguishing the two Chin languages from Jg is their innovation of the subject agreement prefix *ka-*, which along with the respective 2nd and 3rd person forms constitute a diagnostic feature of the Kuki-Chin languages. The remaining parallels would seem to suggest some previous stage of common development.

4.3224 *Morphological links from Jinghpaw to other pronominalized languages* An additional idiosyncrasy of Jg provides a possible bridge to the languages with syncretic transitive affixes. Should this structure bear the weight of a phonological comparison, then the continuity of all the languages could be traced in regard to their handling of transitive affixes—all of them presumably initiating in a syncretic system.

The relevant data are found in certain of the descriptive subject agreement affixes. For instance, the 1 pl subject marker has two forms: *-ga* used with sg objects and *-gaw* used with pl objects. The 3rd pl object marker likewise has two forms *-nme* used with 1st sg subject and *-mu* used with 2nd or 3rd sg subjects. In other words Jg shows remnants of syncretic affixes within this particular subsystem.⁴²

The morphological complexity of the paradigm itself may lend further support. In the preceding discussion of the Bahing transitive paradigm (cf sec. 2.23), the phenomenon of homophonous affixes expressing different role relationships (for example, 2 → 1 = 3 → 1) may be recalled. The same homophony is found in Jg in what is ostensibly a discrete affix marking system. (Cf, for example, 3 sg descriptive subject *-wu* = 2nd sg descriptive subject *-wu* and 1 sg descriptive subject *-we* = 3 sg descriptive object *-we*.) This role homophony is certainly less understandable as deriving from a basically discrete system of agreement. For instance, no purely *intransitive* paradigm in any of these languages exhibits any similar homophony. Why there should be any syncretic affix homophony of this sort at all is still an unexplored area,⁴³ however, given its occurrence in a language, such as Jg, with discrete agreement markings, it would seem that referent ambiguity would be a persistent problem. In view of this, the system might prove unstable, and eventually be eliminated or leveled, as perhaps occurred in Td and Lu.

4.323 OCCURRENCE OF REFLEXIVE AFFIXES

The languages which have a suffixed reflexive marker (cf Table 1) provide an additional isolated bit of evidence toward the verification of the nativeness hypothesis of pronominalization. These five all show forms which are undoubtedly cognate

as seen in their verb internal syntax (verb-reflexive-subj affix) as well as their phonological form.

Ba	-si
Va	-chi
Ka	-shi
Kh	-si
Ra	-shi

Since our information regarding other languages is incomplete it might be expected that this reflexive affix is even more widespread than here indicated.

The two languages with prefixed reflexive markers also show correspondences in their internal syntax and phonological shape.

Jy	proun-i + nə + (prefix)-verb [-i = genitive case marker?]
Lu	subj prefix-in-verb

Again, the behavior of the other prefixing languages is not known. However, it appears that the Lu form may have arisen from some sort of periphrastic reflexive construction, as Jy points to.

4.324 PREFIXATION VS SUFFIXATION

The final point to be made from the configurations of Table 1 concerns the methodological value of maintaining the separateness of prefixing and suffixing languages for comparative purposes. I have reserved this discussion for last since I would appeal to the preceding arguments to further argue that the dichotomy should be ignored for investigating *deep* levels of relationship. In the first place, no prefixing language is exclusively prefixing. Of the languages listed, Lu and [d] have already been discussed with a view to demonstrating their innovative behavior in regard to prefixing. Of the others, Lm, Ra, and Jy show certain commonalities with Cp, a strictly suffixing language, which certainly suggest that they have rearranged their own internal verb syntax.

Chart 6 Intransitive verb affixes of Chepang, Rawang, Jyarung, and Limbu

	<i>Cp</i>	<i>Ra</i>	<i>Jy</i>	<i>Lm</i>
1 sg	-ng	-ng	-ŋ	-a
1 dl	-tayh-ca (incl)	-shi	-t	a-verb-chi (incl)
1 pl	-tayh-i (incl)	-i	-i	a-verb (incl)
2 sg	-te	è-	tə-verb-n	kʰ-
2 dl	-te—ja	è-verb-shi	tə-verb-ntʃ	kʰ-verb-chi
2 pl	-te—y	è-verb-ning	tə-verb-n _l	kʰ-verb-i

Although a detailed analysis of the roots is beyond the task at hand, it can be seen that the morphological patterns of affixations share much in common. Compare the palatal element in all dual forms, especially in 2nd person which is always separated from some overt marker of 2nd person status by some additional form—usually the verb, but in Cp, the tense marker. The *-i ~ -ni* marker of 2nd pl shows a similar pattern.

In considering data from other languages not presented here it would seem that the affixation pattern displayed by Cp was original and that the other three languages have innovated—Ra and Jy perhaps together, as can be seen in their overall similarity in roots, but both definitely in isolation from Lm. The relevant data will be considered in a follow-up study.

The one remaining prefixing language of Table 1 then is Kham which resists explanation on this as on other criteria.

The affixation patterns of a language are certainly not to be dismissed. There are undoubtedly historical reasons for why a language will undergo a shift from suffixing to prefixing behavior. To a certain extent we can say that each type of behavior is associated with or implied by other syntactic facts of the language (Greenberg 1961). It is, however, beyond the goals of this paper to examine these reasons, even assuming them to be retrievable from our generally impoverished data. The critical point at issue here is that these syntactic changes do not constitute a primary division of the proto-language. The various languages which have undergone such syntactic changes, in whatever direction this may have been, have done so independently or as members of recognized subgroups (such as Kuki-Chin). The pronominal categories and roots, then, can and should be studied in abstraction from the particular syntactic network in which they are embedded.

4.33. *Pronominal categories*

In this section, the analysis will continue by inspecting some variables which hopefully will bridge the gap between the pronominalized and non-pronominalized languages. It is essential that the continuity of the proto-system of verb morphology, suggested in the preceding pages, be traced to its loss in many members of the family. We must be sure that the geographical range of the pronominalized verb is still not the result of any complex process of diffusion from one T-B language to another from some original source outside of the family. The groundwork necessary to demonstrating this continuity of development will be presented here, by completing the broad characterization of the pronominal systems of the pronominalized languages.

Essentially all this will consist of is presenting in Table 2 a list of those languages which maintain an inclusive/exclusive distinction and/or a number distinction. Rather than simply providing a checklist, these distinctions will be made more apparent by providing the incl pl forms and the dl forms for both the free pronouns and intransitive agreement affixes. It can be taken for granted that all

Table 2 Pronominal categories

	<i>Pronominal categories</i>			
	<i>Inclusive</i>		<i>Dual</i>	
	<i>Pronoun</i>	<i>Affix</i>	<i>Pronoun</i>	<i>Affix</i>
Bu	erang+ji	—	+nyispi	—
Mn	ngena+re	—	+ku	-shi
Ka	kishōña'	-e'	+shi	-ic
Kh	—	—	+n~+ni	+n~+ni
Cp	ngi	-tayh-i	+ci	-ca
Va	go khata	-ke	+nakpu	-chhik
Ba	go-i	-ya	+si	-si~sa
Lm	ānī	ā-	+chi	-chi
Jy	jo [yo]	-i	+ndʒ	-tʃ
Ra	—	—	+ni	-shi
No	—	—	—	—
Jg	—	—	+n	—
Lu	—	—	—	—
Td	/ei	ī-(coll)	—	—

the languages distinguish three persons and have a pl form, although the details will not be presented here.

4.331. *Correlations between categories*

Certain overall conclusions may be drawn from Table 2. One of the most apparent of these is the high correlation between the presence of each distinction in both free pronoun and agreement affix forms, this in spite of the fact that the two forms are not necessarily closely related phonologically (cf Va, Mn, and Ra dual forms). The exceptions to this statement are Bunan and Manchatī which currently appear to be leveling out their entire affix system for instance, all Bu agreement markers in 1st person are -£, no distinction is made for number or incl/excl; Mn maintains no person distinction between 1st and 2nd dl and pl) and Jg which is also undergoing similar processes (cf note 42).

Another interesting association is the general presence of a dual distinction with the incl/excl. Two different interpretations might be given to this fact. In the first, the parallel might involve a semantic reinforcement between the two concepts, in that an incl notion in most cases will apply to the speaker and one hearer, i.e. two persons. The incl/excl distinction might then 'predispose' a language to also maintain a dual. There is some indication in the data presented that

the inclusive form is probably of longer standing in T-B than the dual form simply in the greater range of phonological shapes which it exhibits; in spite of the fact that it appears in fewer languages. The only language which goes contrary to the expectation that a dl will be present if there is an incl/excl opposition is Td, but this seems to be linked to its loss of the dl in conformity with the other languages of the area. The Td incl forms seem to be related to those in the other languages (cf Td *ĩ*-, Jy *-i*-, Cp *-tayh-i*, Ka *-e'*).

An alternate explanation for the dl-incl/excl parallel might contend that the majority of the languages which lack one or both of these distinctions are located in the southern end of the pronominalized verb range, i.e. in the general area of northern Burma (see map). As such, the drive to level out the distinctions might be part of a larger areal configuration, which includes Lolo-Burmese and Barish with their fewer oppositions and simpler verb morphology. The major exception to this interpretation is Kham in west-central Nepal. Its loss of the incl/excl would constitute an innovation.

4.332. Proto-categories

In judging the relative antiquity of both the dl and the incl/excl categories, notice can be taken of the degree of phonological resemblance between the forms. The dl marker can fairly easily be traced back to some sibilant plus high front vowel (*š̥i). Such an element is present in all of the affix forms (allowing for phonological alterations) and some of the free pronoun forms. The pronouns which use some dual indicator other than *š̥i generally have a form in *n* or *ni* (perhaps related to the numeral 'two' *g-nis). Kham has extended this form to the affix also.

An incl marker can, with slightly more effort, be recognized, again, in all the affix forms, but in only some of the pronouns. This root very likely will reconstruct to a simple high front vowel (*i).⁴⁴ The free pronouns which do not use this root, however, show no obvious similarity in the substituted form (cf Bu *erang*, Mn *ngena-*, Ka *kishōnā'*, Va *khata*).

This predominant pattern of the affixal forms showing a higher degree of retention than the free pronouns within a particular category is a feature which characterizes other forms also. It suggests first that a reliable picture of the early pronominal roots of the family may be achieved by looking at affixal forms, as these seem to be generally more conservative to change. Secondly it suggests that the free pronouns are themselves susceptible to more rapid changes, entailing problems for comparison.

A possible reason for the relative instability of the free pronouns might lie in their syntactic optionality. In the grammars which mention such details, it appears that the verb or the context itself is sufficient to carry the brunt of referent identification. This is also the case with non-pronominalized languages. Any agreement marker, however, appears to be obligatory, which perhaps accounts for the integrity of the roots in pronominalized languages through what must be very long spans of independent development. A later study will make clear that this instability of

the pronouns in conjunction with the collapse of the incl/excl and dl categories has led to certain roots changing categories, for example from incl to 2nd person significance (as one particular instance, cf *i 'incl'; Lu *i-*'2 sg'; Ba *-i* (~-ye) '2 sg').

Summary

Previous hypotheses advanced to explain the occurrence in some Tibeto-Burman (T-B) languages of very complex paradigms of pronominal agreement markers in the verb (pronominalization), have usually invoked some other language family as providing either a substratal base or a directing influence on T-B to account for it. The viewpoint of this work has been that the hypothesis of native origin, although generally dismissed due to the stereotype of T-B as a morphologically simple family, actually has the best chance of verification. The evidence involves comparisons of a pronominalized T-B language with a Munda language, the most frequently postulated contact influence, and then a typological assessment of the pronominal systems of fourteen pronominalized languages. These languages cover a very substantial range of the T-B geographic area and represent most of the major subgroups of the family. This work is considered both justification and preparation for a full scale reconstruction of the morphological system of the proto-language.

Notes

- 1 The dates for Hodgson's work will be given as for their original publication in the *Journal of the Asiatic Society of Bengal*. The page references, however, will be given from the reprinted and corrected versions of these works in either the *Miscellaneous Essays* (1880) or *Essays on the Languages, etc. of Nepal and Tibet* (1874), wherever this is applicable.
- 2 The biographical materials on Hodgson which are interspersed through this section were found in a short preface to Mitra (1882) and in a full, booklength portrayal by Hunter (1896).
- 3 The editors of *JASB* in a short preface to Hodgson's (1849c) "A brief note on Indian ethnology", suggest strongly that other workers in the area should submit themselves to following a single model in order to maintain a certain unity in the field, "and if we are to be guided in this matter by the experience and judgment of any one man in India, surely none are entitled to higher respect than those of Mr. Hodgson" (1849c:238).
- 4 This and other names for subgroups follow Shafer's (1966) terminology.
- 5 It will be recalled that Hodgson was only possessed of secondary information on these languages, entirely consisting, as far as the published information indicates of vocabulary lists. A true picture of the complexity of the Burmese verb would not then have been available to suggest a closer approximation to say the structure of the Bodo verb (initially classified by Hodgson as Tamulian) with which it does show many parallels.
- 6 In a footnote to a later paper, Hodgson (1853b:31) restates his position with regard to Bodo and Dhimal by repositioning them within the Tibetan and Himalayan stock, rather than the Tamulian.

- 7 Compare for example Hunter's (1868) *Comparative Dictionary of the Languages of India and High Asia*, which assembled Hodgson's lexical materials for about 200 roots from over 100 languages, and the vast *Linguistic Survey of India* which faithfully maintained many of Hodgson's subclassifications. Shafer (1966) and Benedict (1972) have similarly maintained an emphasis on lexical comparison.
- 8 Hodgson intends by this term the phenomenon of an intransitive verb undergoing a transitivizing or causativizing process with the possibility of the resultant verb undergoing an additional causativization. His example, from Vayu: *dun* 'become', *thun* 'to cause to become', *thum-ping-ko* 'to cause to cause to become'. He does not note that this process of double causativization is quite common in Indo-Aryan (cf Kellogg 1938:252ff) and that this family could have provided the model for what might be independent borrowing in Dravidian and Himalayish.
- 9 Hodgson remarks that the passive construction of literary Dravidian "is clearly factitious and suggested by contact with Arianism" (1856:142).
- 10 Hodgson does not approach the question of the distinction between tense and aspect markers in languages such as Tibetan, still a tricky problem. Therefore, he makes claims that, in some languages, where two "tenses" are distinguished, the present and future will be conflated. It might be better to discuss such a system as aspectual rather than temporal, especially since in the same languages the 'past tense' marker often equates to the transitive marker. This occurs in Himalayish, Dravidian, Turkic, and Finno-Ugric.
- 11 Hodgson professes to see in this transitive marker an association with 3rd person object markers, implied in the transitive imperative suffixes of strictly monosyllabic T-B languages such as Lepcha and Burmese. Many languages show a variety of forms for these affixes, a particular verb uniquely requiring one of them, thus setting up a system of implicit verb classification.
- 12 A wealth of literature exists dealing with these languages. One of general merit which I believe, largely succeeds in unraveling the tremendous complexity of the T-B languages of the area is Thomas (1948).
- 13 Hodgson reminds us that this pronominal complexity "when viewed in connection with the paucity of true conjugational forms [recalls] the fine remark that 'rude people think much more of the actors than of the action'" (1856:135).
- 14 As far as I know this paper contains the only reference to the term 'pronominalization' in all of Hodgson's linguistic corpus. From his causal use of the term, however, I would doubt that it was his own innovation.
- 15 There are exceptions to this generalization among the pronominalized languages which Hodgson dealt with, such as Limbu with verbal prefixes, though he does not discuss these. He does, however, mention that Altaic and Finno-Ugric have noun possessive suffixes.
- 16 Hodgson's examples for this construction, taken from many different languages, all show the transitivizer with some type of dental stop. However, in his Dravidian examples this morpheme is some sort of past/perfective marker. He implies thereby a historical development in Dravidian of this transitivizer into a tense/aspect marker.
- 17 Information on the history and procedures of the survey can be found in Grierson's preface to the completed work (LSI 1(1):17-24). The project was originally conceived in 1886, organized from 1894-1897 when requests for data were issued, and edited beginning in 1898. Volume 3 in three parts, dealing entirely with T-B was completed and published in 1909. The introductory volume 1(1) did not appear until 1927; it was the last to be issued.
- 18 Earlier published reports of Kanauri, some of which would have been accessible to Hodgson, apparently did not comment on its grammatical characteristics. Hodgson himself never seems to have discovered the fact, in spite of his probable earlier contact with speakers of the Almora languages, while he served as assistant to the Commissioner of Kumaon in 1819-1820.

- 19 The details of tonogenesis in T-B are certainly more complex than this (cf Matissoff 1973), but the overall picture of initial consonants affecting tone is certainly correct.
- 20 "The Tibeto-Burman verb is properly a noun" (LSI 3(1):8). Konow acknowledges Max Müller for the original formulation of this idea.
- 21 Neither Henderson or Maspero makes mention of Namsangia Naga as pronominalized. The information on this language, admittedly very poor for comparative purposes, seems to have been generally passed over.
- 22 Santali is spoken closest to the T-B area of eastern Nepal and Sikkim. It shows more pronominal complexity than other Munda languages and has been rather fully described by Bodding (1929).
- 23 While Bahing is not the nearest language to Munda geographically, it seems to show the eastern Nepal type of pronominalized verb structure at its most elaborate. It has also been generally better described (by Hodgson 1857-1858) than its sister languages. Finally it seems to have fewer morphophonemic alternations than a language like Vayu. I would caution though that these characteristics of Bahing are not necessarily being attributed to the original system.
- 24 An independent possessive pronoun equivalent to 'mine', etc. is formed with the possessive root with the suffix *-ke*; cf wake 'mine'.
- 25 There may be a gender suffix attached to the pronoun to concord with the animate or inanimate gender of the following noun.
- 26 I have adopted the convention of indicating affixal forms by means of a hyphen: *-affix* indicating a suffix and *affix-*, a prefix. Languages with discontinuous affixes are indicated as: *affix- -affix* for an intervening verb, *-affix- -affix* for two suffixes around another intervening suffix, or *affix- -affix-* for two prefixes around some intervening prefix (although this situation has never arisen). Independent pronouns do not use any special mark.
- 27 This chain of relationship seems to stem from the original distinction of a transitive subject affix distinct from an intransitive subject affix (an ergative distinction). The set which duplicates the possessive series is still used with transitive verbs. The neuter verbs, which seem to have been originally a set of causative verbs which became strictly intransitive syntactically at a later stage of Bahing development, also require them. This is indicated by the suffix *-t* an old causative morpheme present in their finite conjugation. This points to an earlier ergative distinction where the subject of an intransitive verb would be marked differently from the subject of a transitive or causative verb. It would appear then that the possessive stems of the independent pronouns derived from this set of transitive subject affixes or vice versa, but for what reason or by what semantic route is still not clear.
- 28 The verbal suffix is a syncretic affix including the semantic notions of time, transitivity, and intentionality of the action. Bodding summarizes the componentry of the verb as follows:

Base word + verbal suffix + object affix + (possessive infix) + finite marker *a* + subject pronoun

The object affix must be animate and in the active voice. Bodding uses the term 'infix' to describe a suffix which is interposed between other suffixes.
- 29 By convention, an arrow linking two pronoun forms indicates a transitive relation of subject acting on or for object (subject → object).
- 30 The sentences can be disambiguated in the noun phrases, if it is not possible to do so from the context.
- 31 Since the structure of Indo-European is more widely known than Munda, I will leave off any detailed examination of it.

- 32 Caughley draws a comparison between Chepang and Mundari concluding that the two show many parallels in their "pronominalising systems". It appears though that the comparison was not sufficiently detailed to uncover the fundamental differences in the syntactic structures of the verb between the two languages. On comparison with other far-removed T-B languages, moreover, Cp very clearly reveals a much neater structural (cf sec. 4.324).
- 33 I am indebted to Chang Kun for the information that Jyarung was indeed pronominalized.
- 34 Morse (1965) describes Rawang as pronominalized although this specific article does not provide detailed information.
- 35 Nocte is an Eastern Naga language (Benedict's Konyak Naga; Voegelin and Voegelin's Tangsa) which if not identical to is at least dialectally extremely similar to Namsangia Naga, originally described by Robinson (1849). Das Gupta gives no reference to this earlier work, however, and makes no attempt to subclassify Nocte within T-B. The actual name 'Nocte' appears nowhere else in the literature.
- 36 The early literature, including the LSI, makes no mention of this language of west-central Nepal. David Watters (personal communication) has suggested that the Kham tribes were formerly ethnically identified with the Magars and that their language, which differs considerably, was simply hypothesized to be Magari (non-pronominalized of Shafer's West Central Himalayish section). Watters, as yet, has not to his own satisfaction been able to subclassify Kham within T-B, partly because he is not convinced by the Munda substratum hypothesis.
- 37 Using Shafer's (1966) classification there are 1) in the Bodic division: Bunan (North-northwest branch of West Himalayish section), Manchati and Kanauri (Northwest branch of West Himalayish section), Vayu and Chepang (West Central Himalayish section), Bahing (Western branch of East Himalayish section), Limbu (Eastern branch of East Himalayish section), Jyarung (Rgyarung section) and Kham (unclassified, see note 36); 2) in the Burmic division: Rawang (Nungish section), Jinghpaw (Kachinish section), Lushai (Central branch of Kukish section) and Tiddim Chin (Northern branch of Kukish section); 3) in the Baric division: Nocte (Nagish section). Benedict's (1972) main divisions sometimes crosscut with Shafer's. For instance Shafer's Bodic division is separated into two groups: Tibeto-Kanauri and Bahing-Vayu. This would have the effect of splitting off the Western Pronominalized group from the Eastern, suggesting 1) that, if true, an outside influence would have to have been independently exerted in both groups or 2) that any commonalities in the verb structure between these two groups must revert to a common stage predating their separation from Proto-T-B, in which case non-pronominalized languages such as Tibetan and Gurung (Tibeto-Kanauri) would also have been pronominalized at earlier stages or 3) that both groups have innovated independently of one another. Voegelin and Voegelin (1973), in a different view, group together all of Shafer's pronominalized subgroups into a category called Gyarung-Mishmi which also takes in non-pronominalized languages (including the Abor-Miri-Dafla group) in a separate subgroup, but excludes Tibetan entirely. (Voegelin and Voegelin are in error in remarking that Jyarung is non-pronominalized and that it is spoken around the Darjeeling area of India (near Sikkim). They no doubt based these conclusions on Hodgson's (1848b) Jyarung data which were collected in Darjeeling from a traveler. Hodgson did not collect sufficient data to recognize it as pronominalized. Another error is the assertion that Monpa is equivalent to Limbu. The two are entirely distinct, Monpa, for example, being non-pronominalized; cf Das Gupta 1968.)
- 38 Hunter's (1868) compendium of lexical correspondences in some 140 Asian languages (about half being T-B) based on Hodgson's life work, is a good source for initial comparison, as it suggests appropriate ways to continue investigation.

- 39 In most, but not all, cases it will be the vocalic element of the proto-root which is in doubt. Consonants generally seem more conservative, though even here, very common phonological processes such as palatalization can operate to confuse the issue. I would stress that data from any language used to establish the root can be disallowed by showing that its phonological history would make the segments on which the comparison was based inappropriate to earlier stages of its development. Hopefully the relatively large number of languages compared will level out some of this uncertainty.
- 40 These terms are not as closed to controversy as might be hoped. In some languages such as Bahing a division is made within the so-called intransitive category between "true" intransitives and a set of verbs without objects which nevertheless require affixes more appropriate to "true" transitive verbs (cf sec. 2.22). The inclusion of a verb in one category or the other seems to be lexically determined.
- 41 The true situation is again oversimplified. For numbers other than singular it is sometimes possible to set off the subject from the object. Michaelovsky (1974) presents a detailed account of the semantic and morphological complexities involved in Hayu (Vayu) transitive verb agreement which puts the issue in sharper focus.
- 42 It seems to be mainly the southern dialect of Jinghpaw that Hanson is describing, although it is difficult to be certain of this. In any event the dialect described by Hertz (1935), which seems comparable to Hanson's Cowrie dialect on a comparison of certain pronominal affixes, does not appear to exhibit these distinctions.
- 43 Not considering the total system of this morphological type can perhaps lead to difficulties when examining pronominal roots across languages. Some seemingly arbitrary decision will have to be made to select one of the tense/aspect concord forms in languages which exhibit this peculiarity, to compare with the roots in a language lacking the distinction. The solution adopted has been to compare only the present(/future) set of roots, which in most situations seems to represent the "unmarked" category.
- 44 It is very difficult to establish unequivocal cognates in the transitive paradigm without having first performed the basic spadework on identifying the pronominal roots in simpler systems. However, a case can possibly be constructed for considering Vayu 3 pl → *_sg -gno-me* and 3 pl → 3 *sg -me* as resembling the two respective Jg 3 pl forms.
- 45 The phenomenon is not restricted to T-B however. It occurs in many North American languages, for example.
- 46 The basic phonological shape of this root indicates a distinction on an equal par with the person distinction and not subordinated to a 1st person category as the incl/excl is usually conceived. In other words the original situation would have had a person distinction consisting of 1st, 2nd, 3rd, incl, and excl, number distinctions not being possible in 1st person. The comparative evidence, which could not be considered here, supports this contention by showing no plural marker reconstructable for 1st person although such an affix can be set up for 2nd and possible even 3rd persons. The demonstration of this view is currently in progress.

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ON THE DATING AND NATURE OF VERB AGREEMENT IN TIBETO-BURMAN¹

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0. Introduction

This paper is part of an ongoing investigation into the nature of grammatical relations² in the Sino-Tibetan language family. The ultimate goal of this investigation is to develop a hypothesis on the typological nature of word order and grammatical relations in the mother language which gave rise to all of the many languages within the Sino-Tibetan language family.³ As the verb agreement (pronominalization) systems⁴ of Tibeto-Burman have been said to be a type of ergative marking, and to have been a part of Proto-Tibeto-Burman grammatical relations, the questions of the dating and nature of the agreement systems in Tibeto-Burman are relevant to the discussion of the nature of grammatical relations in Proto-Sino-Tibetan.

Since the mid-1970s, the question of whether or not a verb agreement system should be reconstructed for Proto-Tibeto-Burman has been a controversial topic, but because of the large amount of work published arguing in favour of reconstructing a verb agreement system for Proto-Tibeto-Burman, especially by James J. Bauman (1974, 1975*a*, 1975*b*, 1979), and Scott DeLancey (1980*a*, 1980*b*, 1983, 1988, 1989*a*, 1989*b*), and the lack of any strong opposition,⁵ many scholars have begun to accept the existence of a verb agreement system in Proto-Tibeto-Burman as received knowledge. DeLancey, in his overview of Sino-Tibetan linguistics (1987), acknowledges controversy concerning other aspects of Tibeto-Burman reconstruction, but presents his reconstructed Proto-Tibeto-Burman agreement system as an established fact. In another paper he states that 'There can no longer be any serious doubt that a system of verb agreement must be attributed to Proto-Tibeto-Burman' (DeLancey, 1988: 1). In the present paper, I will raise several serious doubts about the theoretical and methodological validity of reconstructing a verb agreement system for Proto-Tibeto-Burman, and at the same time argue in favour of the use of

functionally and typologically based theories of grammar, as exemplified by the head-marking/dependent-marking distinction developed in Nichols (1986 and forthcoming) to appear, in diachronic syntax and syntactic reconstruction.

Two separate but related systems of verb agreement have been proposed for Proto-Tibeto-Burman, one suffixal and one prefixal. The essential characteristics of the suffixal system are, according to DeLancey (1989*b*: 317), 'the personal suffixes 1st person *-*ŋa*, 2nd person *-*na*, and a split ergative agreement pattern in which agreement is always with a 1st or 2nd person argument in preference to 3rd person, regardless of which is subject or object.' It is this paradigm that has been discussed at greatest length and the one on which we will concentrate in our discussion. DeLancey (1989*b*) and van Driem (1990*b*) have argued for reconstructing a paradigm of pronominal prefixes for Proto-Tibeto-Burman as well, involving at least three prefixes, two consonantal (*t-*, *k-*) and one vocalic (*a-* or *e-*). We will only touch on this pattern at times, but many of the theoretical questions we will discuss are relevant to both systems. The two main questions I will deal with in this paper then are (a) is there sufficient evidence to allow us confidently to assert that the suffixal pattern is a case of shared retention in those languages that exhibit it, and that it was lost in those languages that do not exhibit it; and (b) is the pattern one of split ergativity; can these agreement systems be used as evidence for reconstructing ergativity to Proto-Tibeto-Burman?

1. Geographic/genetic distribution

An argument often made in favour of a Proto-Tibeto-Burman verb agreement system is that 'this pattern is manifested in at least one language in every recognized sub-branch of the family except for Lolo-Burmese and Karen' (DeLancey, 1988: 1). This is not as strong an argument as it may seem, for two reasons. First, as Thurgood (1984*b*: 3) points out, 'Tibeto-Burman subgrouping is in its infancy; not only does the composition of lower-level units still pose numerous questions, but the composition of higher-level units remains almost completely open.'⁶ With the large number of languages in Tibeto-Burman (Bauman, 1979 puts it at over 200), the small number of languages that have verb agreement systems are nowhere near a majority, and almost all of them are in the Rung (Thurgood, 1984*a*, 1984*b*), Kiranti, or Kuki-Chin-Naga branches of the family. The possibility that these languages form a higher-level grouping cannot be dismissed out of hand. For example, Ebert (1990) has argued for a Kiranti-Rung genetic grouping.⁷ Thurgood (1985) has also given evidence that the Kanauri-Almora group, usually considered a branch of Tibeto-Kanauri (which itself is a grouping within the Bodish branch and the only group within Bodish that has verb agreement systems) is actually genetically closer to the Kiranti and Kuki-Chin languages.⁸ DeLancey (1987) divides Tibeto-Burman into Karenic, Bodic (Bodish and East Himalayan), Baric (Kamarupan and (possibly) Kachin), Burmic (Naxi, Lolo-Burmese, and (possibly) Rung). DeLancey's placement of Jingpo (Kachin) with the Bodic languages, and not the Rung languages, as suggested by Thurgood (1984*a*, 1984*b*), is

questionable (he himself expresses doubt about it). Sun, 1985: 242–247, 1988 and LaPolla, 1987 also argue for seeing Jingpo and the Nungish languages (a branch of Rung) as part of a single branch. Given the possibility that Kanauri-Almora and Jingpo might be better grouped with the other pronominalized languages, then taking DeLancey's analysis as a base, Tibeto-Burman would have only six major sub-branches (the sub-branches being those in parentheses after each branch mentioned above), with three out of the six showing no agreement systems.

Second, the languages with verb agreement systems are almost all geographically contiguous, forming a ring around the edge of the Tibetan plateau from north-west China down along the southern edge of the plateau, including the Himalayan region, forming what Sun (1983*a*, 1985) refers to as an 'ethnic corridor', an area of large-scale language contact, multilingualism, and mutual influence, and a path along which many of the nationalities moved when they migrated south.⁹ Language contact, shared innovation within a subgroup (e.g. Kiranti), or a combination of the two then all are possibilities, yet Bauman (1974, 1975*a*) gives only the following possibilities for the development of the Tibeto-Burman verb agreement systems: native (i.e. Proto-Tibeto-Burman) development, borrowing from Munda (an Austroasiatic group), borrowing from Indo-Aryan, and the Turanian hypothesis (the idea that all of central and eastern Asia's languages except the Indo-European ones are related). He states that 'No other possibilities seem forthcoming, with the doubtful exception of independent innovation wherever the feature appears.'¹⁰ (1974: 118). Yet, first of all, independent innovation in two or more subgroups cannot be dismissed so lightly. As Thurgood (1985: p.378, n. 4) has argued, 'many similarities between closely-related languages are what Sapir [1921/1945, ch. viii] called "drift"; that is, the common starting point provided by a common origin often conspires with universal tendencies to provide parallel but historically quite independent paths of development among genetically related languages.'¹⁰ Second, the other logical possibility, that one or more languages in the family independently developed a verb agreement system and it spread geographically (possibly aided by similar features in local non-Tibeto-Burman languages), has not been explored in any of the literature arguing for a Proto-Tibeto-Burman verb agreement system. Given this possibility, whether a particular grouping of languages has one pronominalized language, especially if that one language is in contact with pronominalized languages in other groups, is not particularly relevant.

Throughout South and South-East Asia we see the spread of areal features (either through outright borrowing, by (morphological) calque, or combined innovation-areal influence) of all types, such as tone systems, phonetic inventories, noun classifier systems, double causativization, and word order patterns,¹¹ yet nowhere is the possibility of areal spread of verb agreement systems within Tibeto-Burman mentioned. Bauman (1974: 144) does mention areal (Lolo-Burmese and Barish) influence as a possible reason why some verb agreement systems *do not* have the complex number distinctions that other languages have; those without such distinctions would supposedly have 'levelled out' the distinctions because of contact with the morphologically simpler languages (see also below, §3.1).

We then have, aside from the Proto-Tibeto-Burman verb agreement system hypothesis, three other possibilities: (a) those languages with verb agreement systems are genetically related on a higher level; (b) a verb agreement system independently developed in one language and spread geographically; or (c) some combination of innovation within two or more subgroups and geographic spread or drift occurred. It is this last possibility that seems most likely given the fact that not all of the systems we find are of the same type (Thurgood, 1985: 337; Caughley, 1982: 206; DeLancey, 1989b: 315).

2. Time depth

Those languages that do not have verb agreement systems, the vast majority of all Tibeto-Burman languages, have *no trace whatsoever* of ever having had one.¹² These languages include four of the five languages which have writing systems more than four hundred years old: Tibetan (seventh century), Burmese (twelfth century), Newari (fourteenth century) and Yi (Lolo; sixteenth century). Tangut (twelfth century), on the other hand, has an optional, morphologically simple, etymologically transparent verb agreement system that shows no signs of age. It is highly unlikely that Tibetan, Burmese, Newari, and Yi would all have lost every trace of their verb agreement systems while Tangut's did not age at all. DeLancey (1989b: 316) discounts this argument because he says 'it rests on the demonstrably false premise that no contemporary language could, in any significant respect, be more conservative than a related language attested from a millennium ago.' Yet the situation is not that simple. For example, Written Tibetan preserves a very archaic set of prefixes and suffixes (unrelated to the set we are discussing here), which has uncontroversially been reconstructed for Proto-Tibeto-Burman, and might even go back to Proto-Sino-Tibetan.¹³ If we were to accept a Proto-Tibeto-Burman verb agreement system along the lines of what DeLancey is suggesting, then we would be in effect saying that Tibetan completely lost that agreement system while retaining remnants of the earlier system of prefixes and suffixes. This would be a hard stretch of the imagination. Van Driem (1991: 532) gives a similar argument to DeLancey's, and states that 'the loss of an inflectional system in one group of languages . . . and its retention in another genetically related group is a widely attested phenomenon', yet the point is that even with all the varying opinions about subgrouping in Tibeto-Burman, there is no controversy that aside from Burmese-Yi forming a branch within Tibeto-Burman, Tibetan, Burmese-Yi, and Newari do not form a group in any sense, so the 'loss' that van Driem speaks of would have to be explained in each individual case. Van Driem (1991: 532) also argues that 'developments in the phonology of many language groups, such as the Draconian restrictions on syllable structure and polysyllabicity, provide typological reasons which readily account for the widespread loss of a verb agreement or other inflectional system.' Yet having such constraints does not account for the 'loss', as those languages that have such systems are subject to the same

constraints, and Old Tibetan was much less affected by such constraints than some of the modern pronominalized languages.¹⁴

Another factor is the etymological transparency and optionality of the Tangut system, and its clear pragmatic function of marking that speech act participant (SAP, i.e. 1st or 2nd person) most affected by/involved in the action of the predication.¹⁵ Kepping (1975, 1979, 1981, 1982, 1989) was the first to discuss agreement in Tangut, and table 1 (below) is taken from her work. Her analysis of the agreement pattern is that (a) the verb agrees only with SAPs, (b) it is optional,¹⁶ and (c) agreement is not related to semantic role unless there are SAPs in both the A and the P roles, in which case agreement is with the SAP in the P role.

From her own study of the Tangut text *The grove of classifications*, Ahrens (1990) has concluded that (a) verb agreement only occurs in quoted speech,¹⁸ (b) agreement is usually with the A and S arguments, not with the P argument; (c) when there are two SAPs involved in a clause, agreement is not necessarily with the P argument. There does not then seem to be a regular correspondence between participant role and agreement marking. In fact, if there is only one SAP in the clause, agreement will be with that SAP even if it is an oblique argument or the possessor of one of the other arguments (Kepping, 1982).

Agreement then in Tangut is related to SAP affectedness ('viewpoint'—see §3.4 below), not grammatical or semantic function. This clear discourse function marking the most salient speech act participant¹⁹ (Ebert, 1987, DeLancey, 1981a, 1981b) and the etymological transparency of most of the Tibeto-Burman verb agreement systems (the independent pronouns become attached to the verb) show that these agreement systems are relatively recent grammaticalizations of discourse prominence.

A possible example of evidence within the history of one language²⁰ for the development of a verb agreement system is the Singpho dialect of Jingpo, mentioned by DeLancey (1989b: 323) as a case of how rapidly a language can completely lose an agreement system. This dialect is 'spoken well to the west of the other dialects', and 'the time of separation of Singpho from its eastern siblings can hardly be even as much as a millennium' (ibid.; see also Grierson (1990: 1, 71) for the dating of this split). It seems more likely that that dialect, out of range of the

Table 1 Tangut agreement patterns and free pronouns

A role ¹⁷	P role	Pronom. clitic	Intransitive	Free pronouns
1	2	-na ²	1sg. -ŋa ²	1sg. ŋa ²
1	3	-ŋa ²	2sg. -na ²	2sg. na ²
2	1	-ŋa ²	3sg. Ø	3sg. Ø
2	3	-na ²		
3	1	-ŋa ²		
3	2	-na ²		
3	3	Ø		

areal features to the east, never developed a verb agreement system at all. If this were the case, it would give us a time depth of less than one thousand years for the development of the Jingpo verb agreement system, just what we would expect judging from the Tangut data.

3. Theoretical/methodological considerations

3.1. Reconstruction methodology

The discussion of Tangut points up a difference in methodology between myself and most of those supporting a Proto-Tibeto-Burman verb agreement system: DeLancey, Bauman, van Driem, and others reconstruct the most complex system possible, attempting to combine all the attested forms and features, and consider those languages that have the most complex systems, such as Gyarung, as the most conservative (DeLancey, 1987: 807-8; 1989b: 318).²¹ For example, Bauman (1974: 134) suggests that a complex system such as that for Nocte, with a tense-aspect split, is closer to the original Proto-Tibeto-Burman verb agreement system than a simpler system such as that of Tangut, which would supposedly have 'levelled out' the tense-aspect system. As pointed out above, Bauman (1974: 144) also argues that the verb agreement systems that do not have the complex number distinctions that other languages have, have 'levelled out' the distinctions because of contact with the morphologically simpler languages.

It is important to note that in arguing that the 'original' Proto-Tibeto-Burman verb agreement paradigm was quite complex (such as in fig. 1, below), and that those languages that have simpler systems (or no systems at all) have lost the 'missing' forms due to phonological attrition or levelling, those scholars are saying that Tangut inherited a complex system, yet through the process of phonological attrition and levelling distilled out a perfectly regular (i.e. morphologically simple), transparent system where the markings on the verb correspond exactly to the free pronouns in phonological shape. This type of teleological development seems to me a very unlikely possibility.

ke-				-ā ~ -ŋ ~ -ŋā					
ni									
2				1s		-u			2p
						3P			
a-	me-	VERB	-nāi	-te	-na	si	-si	-i	
1	pA	STEM	REF	PT	2	dA	dP	12p	
							-a		
ta-/na-				-nya			3		-k
marked				1s>2					1p
scenario									

Figure 1 Proto-Tibeto-Burman agreement system as reconstructed by van Driem (1990b: 50-51). (A = agent, d = dual, p = plural, P = patient, PT = preterit, REF = reflexive, s = singular, > = direction of transitive relationship; 1, 2, 3 = 1st, 2nd, 3rd person)

It also seems necessary for us to consider the relationship between Tangut and (at least some of) the modern Qiang languages, all of which have complex agreement systems involving tense/aspect and portmanteau morphemes. One or more of the Qiang peoples, particularly the Muya, have been said to be descendants of the Tangut (Ran, Li and Zhou, 1984: 184-5; Li, 1989: 222; see also Sun, 1991 on the relationship between the Qiang languages and Tangut). If the Muya language (Huang, 1985) is descended from Tangut, then to accept DeLancey and van Driem's view we would have to say that there was originally a complex system, Tangut then distilled out a simple system, and then that language again developed a complex system (presumably identical to, or at least cognate to, the old one). Again we have a very unlikely scenario.

Rather than reconstructing a system that tries to incorporate all of the modern features, we should reconstruct only those features for which we can show no clear line of development, i.e. opaque = archaic; we should reconstruct only those shared patterns for which we can find no motivation.²² Morphology is built of grammaticalizations (cf. Hopper, 1987; Thompson, 1988), so we should strip back the layers of grammaticalization from the grammar until we can go no further. What is left is what we should 'reconstruct'.

3.2. Grammaticalization

The methodological difference just mentioned also highlights a difference in the understanding of the way grammaticalization works. I follow Lehmann (1985) in assuming that we can determine the degree of grammaticalization of a sign by reference to how autonomous it is. The parameters involved in the autonomy of a sign are its semantic and phonological weight (integrity and scope), the degree of cohesion it has with other signs (i.e., its paradigmaticity and bondedness), and its syntagmatic and paradigmatic variability (mobility vis-à-vis other signs). The parameters and processes of grammaticalization are then as in Fig. 2 (Lehmann, 1985: 309).

Grammaticalization involves the 'attrition' (loss of integrity) of a sign, so that as grammaticalization progresses, there is a lessening in the phonological and semantic weight (including demotivation) of a sign. Along with attrition there is the concomitant 'paradigmatization', 'obligatorification' (loss of paradigmatic variability), 'condensation' (reduced scope), 'coalescence' (increased bondedness), and 'fixation' (loss of syntagmatic variability) (Lehmann, 1985: 305-9).²³ We see advanced stages of all of these processes in the complex verb agreement system languages, such as the Kiranti languages,²⁴ but only the beginning stages of it in Tangut. This is part of the reason why among the verb agreement systems that do exist in Tibeto-Burman languages, Tangut should be considered the most archaic and least grammaticalized. Arguing against this view, Van Driem (1991: 531) states that 'Tangut looks prima facie just as much like a degenerated and simplified Kiranti [agreement] system as it does like a primitive and rudimentary Kiranti system', yet if the Tangut system had gone through thousands of years of

parameter	weak grammaticalization	—process	> strong grammaticalization
integrity	bundle of semantic features; possibly polysyllabic	—attrition	> few semantic features; oligo- or monosegmental
paradigmaticity	item participates loosely in semantic field	—paradigmaticization	> small, tightly integrated paradigm
paradigmatic variability	free choice of items according to communicative intentions	—obligatorification	> choice systematically constrained, use largely obligatory
scope	item relates to constituent of arbitrary complexity	—condensation	> item modifies word or stem
bondedness	item is independently juxtaposed	—coalescence	> item is affix or even phonological feature of carrier
syntagmatic variability	item can be shifted around freely	—fixation	> item occupies fixed slot

Figure 2 The parameters and processes of grammaticalization (from Lehmann, 1985: 309)

degeneration and simplification, being subject to the kinds of grammatical processes outlined above, why are the affixes identical in phonological shape to the free pronouns, and why was the system still optional at the time the texts were written?

3.3. Head-marking vs. dependent-marking

Based on a careful survey of sixty languages, Nichols, 1986 outlines the facts and implications of a typological distinction between languages where the morphological marking of grammatical relations, if there is any, appears on the head of a phrase or clause, such as in Hebrew and Hungarian, and those where it appears on the dependent of the head, as in English and Japanese. For example, in the Japanese sentence below (from Nichols, 1986: 61, cited from Kuno, 1973: 129), the dependents are all marked for case, while the head is unmarked (the markers are preceded by 'M', the head by 'H'):

- (1) *Boku*^M *ga* *tomodati*^M *ni* *hana* *hana*^M *o* *agaeta*^H.
 1sg. SUBJ friend DAT flowers OBJ gave
 'I gave flowers to my friend.'

In the next example, from Tzutujil (Mayan, from Nichols, 1986: 61, cited from Dayley, 1981: 216), the nouns are unmarked, while the head has markers that indicate the person, number, and syntactic function (by the order of the markers) of the nouns:

- (2) *x*^M *Ø*^M *kee*^H *tij* *tzyaq* *ch'ooyaa*⁷.
 ASP-3sg.-3pl.-ate clothes rats
 'Rats ate the clothes.'

The difference between head-marking and dependent-marking morphology provides a functional explanation for certain aspects of grammar and word order (see Nichols, 1986, forthcoming for details; see also Van Valin, 1985, 1987 for the implications this distinction holds for grammatical theory).

Nichols did not make reference to any languages in Tibeto-Burman, but all of the Tibeto-Burman languages that do not have verb agreement systems are solidly dependent-marking (i.e., they have marking on the nouns for case or pragmatic function); those languages with verb agreement systems, a type of head marking, also have many dependent-marking features (of the same types as the non-pronominalized languages). The question, then, is which is older, the dependent-marking type or the head-marking (actually mixed) type? Based on a separate survey of 86 languages in fifteen families, Nichols found that morphological marking type is 'a conservative, stable feature in languages' (p. 89), such that almost all of the changes she found in the groups she studied 'involved accommodation to areal patterns' (p. 98). The most common change she found was the development of head-marking (as in the clisis of pronouns in Romance). Nichols found that in several respects 'head-marking patterns appear to be favored and universally preferred' (p. 101). She suggests that based on her studies, '... in the event that we have two clearly related languages with clearly cognate morphology, one of them strongly head-marking and one strongly dependent-marking, we should reconstruct the dependent-marking type' (p. 89). As this is the situation we have in Tibeto-Burman, we then have a typological argument for not reconstructing a verb agreement system for Proto-Tibeto-Burman. Two further arguments, also based on typological data, support this view.

There is a continuum across the pronominalized Tibeto-Burman languages in terms of the strength of head-marking. We can see for example the beginnings of head-marking in Angami Naga (Giridhar, 1980), where only kinship and body-part terms are head-marked for possession (and only certain stative verbs have person agreement), and its full development in Gyarong (Qu, 1984), where all nouns (and verbs) can be head-marked. This is in concord with Nichols's observation that the development of head-marking of nouns for possession will begin with cases of inalienable possession. We see the same process of dependent- to head- or double-marking (and not the opposite) through cliticization of pronouns occurring in other language families, such as the Oregon Penutian groups (Silverstein, 1979), and the Pama-Nyungan languages of Australia. In the latter, just

as in Tibeto-Burman, there is 'cliticization of pronouns . . . and expansion of the head-marked treatment of inalienable possession' (Nichols, 1986: 99).²⁵

There are many ways for head-marking patterns to develop: 'they may arise as isolating languages become agglutinating, and pronouns are cliticized to verbs . . . or they may develop from dependent-marking languages, through migration and clisis' (Nichols, 1986: 88). It is just such cliticization of pronouns to verbs that we see in the Tibeto-Burman languages that have verb agreement systems. We can see the development of very similar verb agreement systems in other parts of Asia (e.g. in Turkic and Mongolian languages—Comrie, 1980*a*, and in eastern Siberian languages—Comrie, 1980*b*), and in North America and Australia, as mentioned above. Dependent-marking, on the other hand, evolves only 'through extensive use of boundary shifting . . . so that the adposition becomes an affix on its former dependent', as occurred in the western languages of the Uralic family (Nichols, 1986: 88). We see no evidence of this process in Tibeto-Burman morphology. The dependent-marking system, or at least a non-head-marking system, must then be the original pattern.

3.4. The question of ergativity

Every major work on ergativity (e.g. Silverstein, 1976; Comrie, 1978, 1981; Dixon, 1979; Kibrik, 1985) defines ergativity in terms of semantic roles (i.e. A, S, and P).²⁶ A generally accepted minimum definition of ergativity is a system in which the S and P arguments are consistently marked²⁷ one way while the A argument is marked differently. In a split-ergative system, this type of marking is restricted to a particular temporal or referential domain, but the marking of semantic role is consistent within the relevant domain. The definition of split ergativity given by DeLancey (e.g. 1989*b*: 317; see above, §0) as marking person regardless of semantic role or syntactic function does not seem to be in accord with the generally accepted view of ergativity defined in terms of semantic role.

DeLancey (1989*b*: 318) states that the Gyarong paradigm is a split-ergative system, 'in that agreement is sometimes with object, i.e. in an ergative pattern, and sometimes with subject, with the choice determined by the person of the two arguments'.²⁸ Yet this statement is deceptive, as agreement in Gyarong is with 1st person any time a 1st person is involved, regardless of its semantic or syntactic function.²⁹ It is not proper then to speak of, for example, the Gyarong or Tangut verb agreement systems as ergative or split ergative systems, as they are clearly not marking semantic role or syntactic function, but simply discourse prominence.³⁰ DeLancey himself (1989*a*: 52), in speaking of the supposed Proto-Tibeto-Burman verb agreement system, says, 'Note that there is no evidence suggesting the original existence of case distinctions in the agreement suffixes, which index simply the presence of a 1st or 2nd person argument of the verb. While some case distinctions can be found in some of the modern East Himalayan languages, they are clearly secondary developments.' Kepping, who also supports the idea of Proto-Tibeto-Burman ergativity, says that 'verbal agreement

too [as well as noun marking] gives us no grounds for assigning Tangut to either the nominative or the ergative type' (1979: 267). Kepping's (1979, 1989) solution to this is to call Tangut a 'mixed' ergative-accusative language. This is, I assume, due to a (mistaken) assumption that there can only be two types of language, ergative and accusative, and so if it isn't clearly one or the other, it must be a mixture of these two types (see Klimov, 1986: 107 on the 'dubiousness of the notion of "mixed" type'). If we compare the Tangut verb agreement system with that of for example Dyirbal, an Australian language known for having an ergative system split according to person, it becomes very clear that the Tangut system is one based on person, not on semantic role, and is quite different from anything normally referred to as 'ergative'. In Dyirbal, 1st and 2nd person pronouns take nominative/accusative marking, while all other types of NP take ergative marking (from Dixon, 1979: 87):

A	-Ø	-ŋgu	-ŋgu	-ŋgu
S	-Ø	-Ø	-Ø	-Ø
O	-na	-Ø	-Ø	-Ø
	1st and 2nd person pronouns	3rd person pronouns	proper names	common nouns

Compare Tangut, where, when it is manifested, agreement is always with the SAP pronoun regardless of semantic role:

A	-ŋa ²	-na ²	-Ø
S	-ŋa ²	-na ²	-Ø
O	-ŋa ²	-na ²	-Ø
other	-ŋa ²	-na ²	-Ø
	1st person pronouns	2nd person pronouns	3rd person nouns and pronouns

Van Driem (1990*a*: 40), in discussing the different Kiranti 1st person singular agreement suffixes, states that 'The only common semantic denominator between the first singular morphemes . . . is first singular involvement.' Again, no evidence of ergativity. Boyd Michailovsky (1988: 111-113) explicitly demonstrates that the verb agreement system in Hayu is also clearly not ergative (though the language has ergative marking on the nouns), as agreement is with whichever argument is highest on the person hierarchy 1st person > 2nd person > 3rd person, *regardless of case role*.

In terms of methodology there is also the problem that in most of the papers which attempt to reconstruct a Proto-Tibeto-Burman verb agreement system, comparisons are done on highly simplified and selected parts of total agreement systems,³¹ and little is said of how the affixes are really used.³² For example, Bauman (1979: 423) gives the paradigms in Table 2, below, for Vayu (Hayu) and

Table 2 The Vayu and Chepang agreement forms for intransitive verbs and transitive verbs with 3rd person subjects (from Bauman, 1979: 423)

	<i>Vayu</i>		<i>Chepang</i>	
	<i>Intr. subj.</i>	<i>Trans. obj.</i>	<i>Intr. subj.</i>	<i>Trans. obj.</i>
1sg.	-ŋo	-ŋo	-ŋ	-taŋ
dl. incl.	-chik	-chik	-tayhoa	-tayhoa
dl. excl.	-chok	-chok	-ŋoa	-taŋoa
pl. incl.	-ke	-ke	-tayhi	-tayhi
pl. excl.	-kok	-kok	-ŋi	-taŋi
2sg.	-ʌ	-ʌ	-te	-te
dl.	-chik	-chik	-te- ja	-te- ja
pl.	-ne	-ne	-te- y	-te- y

Chepang, to show the 'ergative patterns of intransitive-transitive alignments'. Bauman (*ibid.*) states that 'Ergative patterns of agreement . . . are most clearly seen in languages like Vayu and Chepang, where the set of affixes which marks the person of intransitive subjects is identical or nearly so to the set which marks transitive objects in corresponding persons (provided the subject is 3rd person)'.

It is this parenthetical aside at the end of Bauman's statement that is the key to the logical error in Bauman's argument. Just as we have seen in Tangut, in Vayu and Chepang the basic pattern of agreement is with any SAP in the sentence, regardless of role, if the other participants in the clause are non-SAPs, so of course his 'ergative' pattern will only work when the subject is a non-SAP, and the single SAP in the clause is the object. I could use the same type of chart, but based on the SAP as subject instead of object, as evidence that these languages are of the nominative type, as the marking then would be the same for the intransitive and transitive subjects. This type of paradigm comparison then is of no use in trying to prove ergativity.

The type of agreement system we are talking about here is very clearly one based on person rather than syntactic function or semantic role.³³ If we accept Du Bois' (1985, 1987) association of absolutive marking with the information status 'new' and nominative marking with discourse pressures to mark the topic, then this should be seen as closer to a nominative system rather than an ergative one, since the clitic pronouns of the verb agreement systems are typical of the most unmarked topics (Lambrecht, 1986). Dixon (1979: 92) points out that as cross-referencing systems are basically pronominal, 'We expect them to be on a nominative/accusative pattern, since this characterizes pronouns, at the extreme left of [Silverstein's (1976) person] hierarchy.' Nichols (1986: 114) has suggested that

Head-marked patterns contribute to a flat syntax which minimizes intra-clause and inter-clause structure, freeing a language to concentrate on the grammaticalization of discourse prominence and cohesion. In fact it

turns out that it is precisely for head-marking languages that a number of traditional grammatical questions prove to be somewhat moot, because pragmatic and discourse relations (rather than strictly syntactic relations) are being grammaticalized.

In fact, Tibeto-Burman verb agreement systems represent a coherent and stable kind of system, one where agreement is based on person rather than clause syntax or semantics, and there is no need to explain them as degenerate ergative systems (see §4, below).

This type of marking based on person-number-animacy categories rather than grammatical or semantic relations, is what Nichols (*forthcoming*) refers to as 'hierarchical'. We find the same type of system in some North American Indian languages (e.g. Algonquian—Bloomfield, 1946; Nootkan—Whistler, 1985). Whistler (1985: 244) points out that this type of marking 'makes sense if one considers that it constitutes giving the natural "thematicity" of a SAP formal priority over its semantic role in explicit coding on the predicate.' DeLancey himself, in his earlier work (1980*a*, 1980*b*, 1981*a*, 1981*b*), developed a concept of 'viewpoint' based on the inherent saliency of the SAPs (i.e., that the 'most natural viewpoint for the sentence is with the SAP' (1981*a*: 638)),³⁴ yet still insists that the Tibeto-Burman verb agreement systems are split-ergative systems. As the older agreement systems are clearly this type of pragmatically-based grammaticalization of the discourse prominence of SAPs, they are no justification for reconstructing an ergative morphological system for Proto-Tibeto-Burman.³⁵

4. Conclusions

Bauman (1979: 430) suggests that there is a drift away from what he has defined as ergativity, but not towards accusativity, rather towards 'non-ergativity', as there are no unequivocally accusative Tibeto-Burman languages. He sees this 'non-ergativity' as the endpoint of historical change in Tibeto-Burman. I propose the opposite: that Tibeto-Burman *began* as a morphologically simple 'role-dominated' (Foley and Van Valin, 1977) language, similar to Chinese (see LaPolla, 1988*a*, 1988*b*, 1990), with which we must eventually link it. The various daughter languages later developed various means of coding either pragmatics (Tangut), syntactic function (Kham, Kuki-Chin), or semantic role (Tibetan), or some combination of these three. On this view, the typical Lolo-Burmese role-dominated system (epitomized by Lahu—see Matisoff, 1973) is closest to the original Proto-Tibeto-Burman system of grammatical relations, rather than being the most degenerate, as assumed by those proposing a Proto-Tibeto-Burman verb agreement system.³⁶

I would like to emphasize that I am not attempting to discredit any of the work DeLancey, van Driem, and others have done in reconstructing proto-agreement systems for those language groups that have clearly cognate systems. My contentions are only (*a*) that we do not have sufficient evidence to allow us confidently to assert that the suffixal pattern is a case of shared retention in those languages that

exhibit it, and that it was lost in those languages that do not exhibit it, so the dating of those systems that can be reconstructed for certain subgroups must be later than the Proto-Tibeto-Burman stage, and (b) that most of the systems we find are not of an ergative nature, and do not reflect semantic or syntactic relations, but all seem to have grown out of pragmatic pressures to mark the salient participants involved in the speech act. I have also here argued, using the question of a Proto-Tibeto-Burman agreement system as an example, that in doing morphological reconstruction, we should not build up morphological systems, and often end up engaging in 'paradigm stuffing', but should strip back the layers of transparent grammaticalization to arrive at an opaque core. Typologically and functionally based theories which point out the direction of grammaticalization allow us to do exactly that.

Notes

- 1 A shorter version of this paper appeared as LaPolla (1989). I should like to thank again all those who helped in the production of that paper (Scott DeLancey, Gary Holland, James A. Matisoff, Martine Mazaudon, Boyd Michailovsky, Johanna Nichols, Graham Thurgood, and Robert D. Van Valin, Jr.), and also Kathleen Ahrens, Søren Egerod, Alice C. Harris, and my colleagues in the Linguistics Section, especially Chu-Ren Huang, Ren-kui Li, Jackson T-S. Sun, Chih-chen Jane Tang, and Pei-chuan Wei, for their valuable comments on an earlier draft of this paper. Any mistakes or errors of judgement are of course my own.
- 2 'Grammatical relations' is here meant to include syntactic relations (manifested as the syntactic functions 'subject', 'direct object', etc.), semantic relations ('agent', 'patient', etc.), and pragmatic relations ('topic', 'focus', etc.). It is assumed that semantic and pragmatic functions are inherent in all languages, whether or not they are marked, though not all languages grammaticalize syntactic functions.
- 3 An outline of this investigation and its first results are given in LaPolla (1990).
- 4 By 'verb agreement system' I am only referring to the marking of particular participants in the clause with clitic pronouns, what Bloomfield (1933: 191-4) referred to as 'cross-reference', not to evidential systems like that in, for example, Lhasa Tibetan. The term 'pronominalization' is used to refer to the emergence of this type of system through the cliticization of personal pronouns, and so the languages that have undergone that process are sometimes referred to as 'pronominalized'. As we will see, this type of marking is not always related to syntactic function or semantic role, so 'person marking' would be a more appropriate term for this type of system, but I will adhere to tradition and use 'agreement' and 'pronominalization' instead.
- 5 Benedict (1983: 96) mentions in a footnote that pronominalization in Tibeto-Burman should be interpreted as being a relatively late innovation, and other scholars (e.g. Caughley, Nagano) have discussed the verb agreement systems they are familiar with as innovations, but no one has systematically analysed and refuted the arguments presented by those who support reconstructing a Proto-Tibeto-Burman verb agreement system.
- 6 See Shafer (1955, 1966), Benedict (1972), DeLancey (1987), Sun (1988), and Dai, Liu and Fu (1989) for five very different analyses of genetic relations in Tibeto-Burman. See also Burling (1983: 1) on how some of the traditionally used groupings, such as 'Naga', 'North Assam', and 'Kachin' (and we could add the newer 'Kamarupan') 'seem to label little more than geographically contiguous groups for which no genuine linguistic reality has been demonstrated.'
- 7 She shows, for example, that there is a particular direction marking system in common among some Kiranti and Rung languages, and, in talking about the relationship

- between Gyarong and the Eastern Kiranti languages, says 'there is no evidence for direction marking of the Kiranti-Rung type anywhere outside those groups ... The direction system, together with the distribution of the *t/-k-* prefixes, makes it seem likely that the ancestors of the Kiranti and the Gyarong once were at least neighbors participating in the *u/-u* direction marking and the prefixing wave' (p. 16).
- 8 See also Grierson (1909, vol. III), for particular characteristics shared between the eastern (e.g. Kanauri) and western (e.g. Kiranti and Kuki-Chin) Himalayan pronominalized languages not shared by the Tibetan languages, and Watters (1975) for discussion of the 'remarkable similarities' (p. 50) between the pronominals and subject marking systems of the eastern and western (now including Kham) Himalayan pronominalized languages.
 - 9 The area covered by these languages is relatively compact, and not large. For example, all of the Kiranti languages are spoken in an area of eastern Nepal only about 140 kilometers wide (see Michailovsky, 1975: 184 for map).
 - 10 Later in the same work, in a bracketed note, Thurgood's tone is a bit stronger: '[Note: it is already clear that at least some of the innovation patterns here are due at least in part to parallel but independent development.]' (p. 399). See also the discussion of Australian languages in footnote 25 below.
 - 11 See Emenau (1956) for evidence from India that 'linguistic features, especially those of morphology and syntax, can diffuse across genetic boundaries' (p. 16). See also Gong (1989) on the possibility that the system of postpositions reconstructable for parts of Tibeto-Burman is borrowed from the Altaic languages.
 - 12 By 'trace' here, I mean some remnant of an originally full system which no longer has any agreement functions, possibly some phonological alternation in the verb stems, or unexplained verbal suffixes, or a system that has degenerated into simple verb agreement (Bloomfield's 'congruence') rather than person marking, as in the change from the Latin person markings to the French verb agreement forms.
 - 13 The original function of many of these fossilized affixes is not yet clear. See Wolfenden (1929) and Benedict (1972) for two different analyses.
 - 14 As van Driem himself (1991: 527) says, 'In view of the complex morphologies of a great number of Sino-Tibetan languages, the total or near total lack of morphology in a large number of Sino-Tibetan languages, such as Chinese, requires an explanation.'
 - 15 Van Driem (1991: 528-9), argues that agreement cannot be with the most affected 'actant', and gives two Tangut sentences as proof. In each sentence the patient of the verb meaning 'to kill' is a third person ('wife'/'wives' respectively) and agreement is with a second or first person possessor (i.e. the husband/husbands) of the patient. Van Driem feels that the wives in these sentences are the most affected 'actants', and as agreement is not with them, 'It would be inaccurate, if not misogynous, to argue that the patients indexed by the verbal agreement endings are the most affected actants' in those sentences. The reason for van Driem's argument is unclear, as no one has argued that agreement is with the most affected 'actant'. Agreement is only with SAPs, and in each of the sentences van Driem cites there is only one SAP, so agreement is with that SAP.
 - 16 Van Driem (1991: 525) misrepresents the Tangut system by stating that 'involvement of a third person actant is marked by zero in all Tangut verb forms'. Third person actants are unmarked, but this is not the same as saying they are marked by zero; as the agreement affixes do not obligatorily appear on each verb, or even on the majority of verbs in the Tangut texts, and only one SAP participant is marked, even when there are two in the sentence, it is wrong to assume that Tangut non-marking is equivalent to marking by a morpheme with a zero phonetic realization. Van Driem's statement (1991: 525) that 'A transitive verb agrees with its patient unless the patient is marked by zero' is also a misrepresentation of the facts, and is in fact nonsensical. It is equivalent to saying that 'agreement is with the patient except when it is not with the patient'.
 - 17 Kepping uses the terms 'subject' and 'direct object', yet as we have no evidence that these syntactic functions existed for Tangut speakers, I will use A, S, and P instead. These

- symbols refer to the three major types of argument: S, the single argument of an intransitive verb; A, the argument which prototypically would be the agent of a transitive verb; and P, the argument which prototypically would be the patient of a transitive verb (Comrie, 1978). Kepping also posits a 1st and 2nd person plural agreement marker, *ni*², but Nishida (1987: 20) considers this to be a subjunctive particle. If Kepping is correct, then if a single clause had both 1st and 2nd person plural referents, this morpheme would be ambiguous. This fact would seem to preclude any analysis crucially involving semantic role or syntactic function.
- 18 Supporting Ahrens's view is the fact that this system does not seem to have been used in anything like the majority of clauses in the Tangut texts that Kepping studied, and Kwanten (1982) did not find any trace of it in two Tangut texts he studied. Possibly because of the scarcity of this pattern, two other Tangut scholars, Nishida (1964-66) and Sofronov (1968), earlier analysed Tangut as a non-pronominalized language (both cited in Kepping 1975 and Kwanten 1982). (Nishida has since (1987) changed his view and accepted the concept of agreement in Tangut, though he disagrees with Kepping on some of the particulars.) Ahrens's conclusion on this point might also simply be a reflection of the lower frequency of SAP referents in non-conversational discourse.
 - 19 The coding of speaker-hearer involvement is marked in various ways aside from this particular agreement pattern in many Tibeto-Burman languages; see for example Toba (1980), and Watters (1980) for two other systems within Nepalese Tibeto-Burman languages. See Silverstein (1976, 1981) on the cross-linguistic implications of the person saliency hierarchy, and the common grammaticalization of 'the perspective from which a state of affairs is predicated of referents, the most "natural" being that which grows out of the configuration of the ongoing speech event', the 'maximally supposable entities' of which are the SAPs (Silverstein 1981: 243).
 - 20 There is one other case, that of Tiddim Chin (Henderson 1957), but I am not sure what to make of it. In Literary Tiddim Chin there is no trace of the proposed Proto-Tibeto-Burman suffixal agreement system, though there are pronominal prefixes for both nouns and verbs. Colloquial Chin, on the other hand, prefixes nouns, but suffixes verbs, as in Kiranti. (Cf. the closely related Sizang (Siyin) dialect (Stern, 1963), which has the same prefixing system, but no suffixing system, and the evidence (Ahrens, 1990; see above) that in Tangut pronominalization only occurs in quoted discourse.) The problem is we do not know for certain which of the two styles is the more conservative.
 - 21 See for example DeLancey's comment in discussing the prefixal paradigm: 'If the modern languages do retain their prefixes from an older paradigm, then that paradigm must have been more complex than any of its attested reflexes' (1989b: 331).
 - 22 Such as with the reconstruction of second-position pronouns in Indo-European. Cf. the following quote from Meillet (Watkins, 1969: 17) (pointed out to me by Gary Holland):

La grammaire comparée doit se faire en utilisant les anomalies — c'est à dire les survivances — bien plus que les formes régulières . . . Les traités de grammaire comparée ont souffert de ce que, pour la restitution de l'état initiale, l'importance attribuée aux formes normales des états de langue historiques est trop grande.

- 23 Cowgill (1963) also argues (based on Indo-European evidence) that there is a direct relationship between the morphological complexity of a set of affixes and its antiquity.
- 24 Kiranti languages will often have as many as eight suffixal slots, as well as two or more prefixal slots, many portmanteau morphemes, tense or aspect distinctions, and complex morphophonemic rules (see Ebert, 1990, van Driem, 1990a).
- 25 The similarities between the Australian and the Tibeto-Burman situation are striking: in the following discussion of Australian pronominalization, Dixon (1980: 363) could just as easily have been discussing the situation in Tibeto-Burman:

It is clear that the bound-form pronouns have developed from free forms ... relatively recently, and that this process of evolution must have taken place

independently in several different regions. Having begun in some language within a certain area this development then diffused to neighboring tongues.

- Just as in Tibeto-Burman, Australian languages have 'a propensity towards developing bound pronominal forms, but ... this is further advanced in some languages than others' (ibid.). Cf. also Dixon's map of the spread of pronominalization in Australia (p. 364). The Australian facts are also clear evidence that van Driem is simply wrong in stating that this type of contact induced spread is 'unattested' (1991: 532).
- 26 See also Dryer's statement (1986: 841) that 'The ergative/absolute and Subject/Object distinctions differ in that the former is linked to semantic roles, the latter to discourse/pragmatic function'. See Givón (1980) and Klimov (1984) on seeing ergative morphology as being semantically based on the contrast of agent vs. non-agent.
 - 27 We are speaking here only of morphological ergativity; syntactic ergativity has no necessary correlation with morphological ergativity (Comrie, 1981: 65ff.). We are also not talking about the ergative nominal morphology ('case marking') found in many Tibeto-Burman languages, a type of dependent-marking; I am dealing here only with marking on the verb, a type of head-marking. The two are quite different. (See §3.3 above for definitions of marking types. See also LaPolla (1991) for discussion of nominal morphology in Tibeto-Burman.)
 - 28 Another problem with DeLancey's analysis is that while in some languages agreement may be regularly with the P (or other non-A) role NP when there are two SAPs in the clause, in some other languages, such as Qiang and Deng (Kaman), agreement in that situation is consistently with the A role NP (Sun, 1983b).
 - 29 This is generally true also for Nocte (Das Gupta, 1971—cited in DeLancey, 1981a), Muya (Huang, 1985) and Dulong (Sun, 1983b).
 - 30 Nagano (1984, 1987) discusses the possibility of seeing the Gyarong *u-* prefix as a type of ergative marker, as its distribution is the same as the nominal ergative marker, but he does not see the person markers as ergative marking.
 - 31 In doing cross-linguistic comparisons, DeLancey generally gives only the singular paradigms, but if we look at the complete paradigms we often see that the paradigm is very language specific in that it transparently reflects the independent pronouns. Compare for example the Gyarong independent pronouns and the intransitive verbal affixes (ICog-rtse dialect—Nagano, 1983: 106):

person	affix	pronoun	person	affix	pronoun
1sg.	-ng	nga	2sg.	-n	no
1dual	-ch	chi-gyo	2dual	-Nch	ji-gyo
1pl.	-y	yo	2pl.	-ny	nyo

The affixes we find in the verbal person-marking systems are in most cases also clearly related to the nominal possessive affixes. Compare the nominal and verbal affixes from the Suomo dialect of Gyarong (Jin et al. 1958):

person	noun affix	verb affix	person	noun affix	verb affix
1	ŋə/ŋa	ŋ	1pl.	ji/ja	i
2	nə/na	n	2pl.	ni/na	n _L
3	wə/wa	u	3pl.	ndʒə/ndʒa	wu/u

We then have three possibilities: (a) the entire verbal paradigm, plus the nominal paradigm, of each language is descended from Proto-Tibeto-Burman; (b) both paradigms reflect the same innovation of pronominalization within each language or language group; (c) each language just inherited the first and second singular forms of the verbal paradigm, then fleshed out the rest of the forms (possibly one hundred forms, see Ebert 1990 for the Chamling paradigm) based on its own free pronouns. Only comparative research on full paradigms will allow us to decide which of these possibilities is the most likely one.

- 32 Van Driem (1991: 531) claims that in my earlier paper (LaPolla, 1989) I provided only a portion of the Tangut agreement system, while in fact my explication of the system is more complete than his, as he leaves out the crucial fact that the system is not only not obligatory, but is in fact rare in the Tangut texts (see n. 18 above).
- 33 See Hale and Watters 1973: 209-17 for a discussion of person markers on the verb as 'focus' (topic) markers. The type of topicality we are talking about here is not a simple one, as it is an intersection of discourse or sentence topic with the inherent topicality/saliency of SAPs. That is, the marking of discourse topic is constrained by the person of the arguments involved.
- 34 See also the quote from Silverstein in n. 19 above. Delancey's 'viewpoint' is similar to Kuno's (1976, 1987) 'empathy' hierarchies, which Van Valin (1990) reduces to a single principle 'E(more topical NP) > E(less topical NP)', i.e., empathy is with the more topical NP.
- 35 In some languages in the Tibeto-Burman area and in North America there is a secondary marking of the direction of the transitive action, but this is almost always etymologically separate from the person marking, and in some cases even this direction marking is sensitive to discourse thematic factors rather than purely reflecting semantic role (Whistler, 1985: 245).
- 36 There are a number of other facts about the Tibeto-Burman languages that also lead to this conclusion, including commonalities with Old Chinese, but they are outside the scope of the present paper. (See LaPolla, 1990, ch. v, for a brief discussion of some of them.)

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PARALLEL GRAMMATICALIZATIONS IN TIBETO-BURMAN LANGUAGES

Evidence of Sapir's 'drift'

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1. Introduction

In chapters seven and eight of his book *Language*, Sapir talked about what he called 'drift', the changes that a language undergoes through time. He characterized it this way:

... [L]anguage is not merely something that is spread out in space, as it were—a series of reflections in individual minds of one and the same timeless picture. Language moves down time in a current of its own making. It has a drift . . . The linguistic drift has direction. In other words, only those individual variations embody it or carry it which move in a certain direction, just as only certain wave movements in the bay outline the tide. The drift of a language is constituted by the unconscious selection on the part of its speakers of those individual variations that are cumulative in some special direction. This direction may be inferred, in the main, from the past history of the language.

(1921:150/155)

Dialects of a language are formed when that language is broken into different segments that no longer move along the same exact drift. Even so, the general drift of a language has its deep and its shallow currents; those features that distinguish closely related dialects will be of the rapid, shallow currents, while the deeper, slower currents may remain consistent between the dialects for millennia. It is this latter type that Sapir felt is 'fundamental to the genius of the language' (p. 172), and he said that 'The momentum of the more fundamental, the pre-dialectal, drift is often such that languages long disconnected will pass through the same or strikingly similar phases' (p. 172). One example of such a situation that Sapir

discusses is the development of plurals of the type *mouse* : *mice*, *foot* : *feet* in both English and German (*Maus* : *Mäuse*, *Fuss* : *Füße*), even though there is no evidence of this type of plural in the common parent of these two languages (see p. 172ff. for details).¹

In the Tibeto-Burman family of the Sino-Tibetan language stock we also have examples of this type of parallel drift. We often find that a specific type of grammaticalization appears in different sub-groups of the family, even sometimes using the (etymologically) same morpheme(s), though there is evidence that that particular grammaticalization arose independently in each of the languages (or language groups). In this paper I will give examples of six such types of grammaticalization ('anti-ergative' marking, ergative marking, direction marking, causative marking, person marking, and existential verbs), and argue that the fact that so many languages in the family often grammaticalize the same types of grammatical categories, and often use the same morphemes to do it, is a result of the influence of the drift that is 'fundamental to the genius of the language', the common core or nature that these languages share as a result of them having a common origin. That is, certain characteristics of the common starting point of these languages influenced the path of development of each language, and this caused the parallel developments. I will go one step further than Sapir and suggest that just as the direction of the drift 'may be inferred . . . from the past history of the language', we can trace back along that direction to infer from the drift the nature of that common starting point.

2. Anti-ergative and ergative marking

From a survey of 'object' marking in one-hundred-twenty-six reliable grammars or descriptions of languages and dialects in the Tibeto-Burman family,² it was found that twenty-two languages had no nominal object marking, twenty languages had nominal morphology consistently marking the patient as object, regardless of whether the clause included another non-agent argument (i.e. was either transitive or ditransitive), and eighty-four languages had a type of marking where the patient in monotransitive clauses is often or always marked with the same postposition as the goal, beneficiary, or other non-actor argument in ditransitive clauses. Following are examples of this type of marking from three Tibeto-Burman languages:³

(1) Lahu (Northern Thailand; Matisoff 1973:156-7)

- a. nə thà? tâ dɔʔ.
1sg OBJ NEG.IMP hit
Don't hit me.
- b. li? chi nə thà? piʔ.
book that 1sg OBJ give
Give me that book.

(2) Kokborok (Bangladesh; Karapurkar 1976:54-5)

- a. buuruy-čhikla-rəg-nə rəhór-di.
girl-young-many-OBJ send-IMP
Send the young girls.
- b. bə-ta-nə may ča-ru-di.
pron.pref.-elder.brother-OBJ rice eat-give-IMP
Give food to your elder brother.

(3) Kham (Nepal; Watters 1973:44, 46, 54)⁴

- a. nga: zihm nga-jxy-ke.
1sg house 1sg-build-PAST
I built a house.
- b. no-e ka:h-lay poh-ke-o.
3sg-ERG dog-OBJ beat-PAST-3sg
He beat the dog.
- c. no-e nga-lay cyu:-na-ke-o.
3sg-ERG 1sg-OBJ watch-1sg-PAST-3sg
He watched me.
- d. no-e nga-lay bxhtanji ya-na-ke-o.
3sg-erg 1sg-OBJ potato give-1sg-past-3sg
He gave a potato to me.

To discuss just one of these examples in depth, we can see that in (3a) the marker *lay* is not used, and this is because the relevant referent ('house') is not animate; in (3b) *lay* marks an animate patient; in (3c) it marks a human patient; and in (3d) it marks a human recipient. I will refer to this type of marking as 'anti-ergative' marking, as the crucial function of this type of marking is to mark an animate argument that might otherwise be interpreted as an actor as being something other than an actor. In this way it is the opposite of the type of ergative marking we find in some of these same languages, which marks an argument as being an actor.⁵ In those languages that have both types of marking, it is often optional whether to use one or the other or both, but the marking is often not systemic, as it is used only to disambiguate two arguments when that becomes necessary due to the semantics of the referents, the actions involved, or the pragmatic viewpoint (see for example Matisoff 1973:155-8 on Lahu *thà?*, Wheatley 1982 on Burmese *kou*). It is especially common for overt marking (either ergative or anti-ergative) to be necessary when the most natural (unmarked) topic, the agent, is not the topic, and instead appears in the preverbal focus position.

We find this type of postpositional anti-ergative marking in the following languages and dialects:⁶ Achang, Longchuan (*te*⁵⁵); Achang, Xiandao (*te*⁵⁵); Adi, Milang (*m/um*); Adi, Padam (*əm~m*); Akha, Lampang (*əŋ*); Anong, Muguja (*kha*³¹); Apatani, Reru/Mudan Tage (*mi*); Bai, Jianchuan (*no*³³); Baima, Baima

Commune (*tša*⁵³); Balti, Baltistan (*la*); Bengni, Na (*ñi:/m*); Bokar, Smin-gling (*m~ham/me*); Bola, Kongjia village (*ʒe*³¹); Bunan, Bhaga Rwer (*rog/dog/tog/kog/zhog*); Burmese, Rangoon (*kou*); Central Monpa, Dirang Ke (*ga*); Chamling (*lai*); Chang, Tuensang (*to/cha*); Chaudangsi-Byangsi (*ja*); Chepang, Eastern (*kay*); Daofu, Chengguan (*gi*); Darang, Xiachayu (*we*⁵⁵~*we*³¹); Dhimal, Darjeeling Terai (*ēng*); Dulong, Dulonghe (*le*³¹); Ersu, Zeluo Commune (*va*⁵⁵); Galong, Kombong (*ém~m*); Geman, Xiachayu (*ji*³⁵~*wi*³⁵); Gurung, Ghacok (*lai*); Hill Miri, Tamen/Raga (*m/em/ém*); Idu, Chayu (*go*³¹); Jingpo, Enkun (*hpe*⁵⁵); Jinuo, Manka/Mandou (*a*³³); Jirel, Jiri-yarsa (*la*); Johari (*cəbəŋ~cubəŋ*); Kaman (Miju), Parsuran Kund (*wi*); Kham, Taka (*lay*); Khoirao, Thanga (*yō*); Kinnauri, Lower Kinnaur (*pəñ~u~nu*); Kokborok, Debbarma (*no*); Ladakhi, Lower (*la*); Lahu, Black (*thà?*); Langsu, Yunqian (*ʒe*³¹); Lhomi, Chepuwa (*lag*); Lisu, Bijiang (*te*⁵⁵); Lyusu, Muli (*wə*⁵³); Menba, Cuona (*le*³¹); Menba, Motuo (*ga~ŋa~ea*); Miji, (Dhimmai) Nafra (*ru*); Mikir, Hills-Karbi (*phan*); Miri, Shaiyang (*em*); Muya, Shade district (*le*³³); Namuzi, Muli (*də*⁵⁵); Naxi, Western (*to*⁵⁵); Newari, Dolakha (*ta*); Newari, Kathmandu (*(ya)to*); Nishi (Dafla), Leli (*ŋam~am*); Nishi (Dafla), Yano (*em~ne*); Nocte, Hawa-jap (*nang*); Nusu, Middle Bijiang (*na*³⁵); Pattani, Shansha (*bi/ting*); Pumi, Jinghua (*tei*⁵⁵/*bie*⁵⁵); Pumi, Taoba (*pe*³⁵); Qiang, Taoping (*zie*³³/*zō*³³); Queyu, Xiazhān (*ku/ʒa*); Rawang (*hka*); Sangkong, Xiaojie (*la*³³); Sharchhokpa-lo (Tsangla), Kanglung (*ga*); Sherpa, Chunakpu (*laa*); Shixing, Lanman (*si*^{55,33} /*ʒō*⁵³); Singpho, Bordumsa (*phe/ang*); Tagin, Taliha (*a~am/nga~ngam*); Tamang, Bagmati Anchāl (*ta*); Tamang, Murmi (*dā/tā*); Tangsa, Jogli (*ma*); Tangsa, Kimsing (*ma*); Tangsa, Longchang (*mo/ma*); Tangsa, Moklum (*ma*); Tangut (?In); Tankhur Naga, Ukhrul (*ri*); Thulung, Mukli (*lāi*); Tibetan, Classical (*la*); Tibetan, Lhasa (*la*~vowel lowering, tone change); Zaiwa, Xishan Zaiwa (*le*⁵⁵/*ʒe*⁵⁵). These languages represent the Burmish, Loloish, Jingpo, Nungish, Tibetan, West Himalayan, Tani, Mishmi, Qiangic, East Himalayan, Barish, and Naga branches of Tibeto-Burman, and cover almost the entire Tibeto-Burman geographic area.

In a number of these languages the patient argument is generally unmarked, but the dative or dative/locative marker can sometimes be, or is often, used for human patient arguments, as in Balti, Bodo (Standard Plains Kachari), Bunan, Dhimal, Gurung, Magari, and Tamang. In those languages with anti-ergative marking, that marking is most often (27 of the 84 languages with this type of marking) isomorphic with the locative or allative marker, which undergoes metaphorical extension to human patient or goal arguments, or the marking is derived from some sort of locative noun through grammaticalization (e.g. Lahu *thà?*, derived from the locative noun *thà?* 'upper side; top surface'—Matisoff 1988:676). From the total survey of 126 reliable grammars or language descriptions, 84 languages showed some evidence of the anti-ergative pattern, 20 languages with nominal morphology (postpositions) did not show the anti-ergative marking pattern,⁷ and 22 had no postpositional 'object' marking.⁸ Out of the 104 languages that have some type of 'object' marking, then, fully eighty percent show the anti-ergative pattern of marking.

From the fact that most of these latter languages have grammaticalized different morphemes to mark the anti-ergative arguments, we can assume that this marking (at least as we find it synchronically attested in these languages) is not of great time depth. That the marking is very recent can be seen in the fact that while it is possible to reconstruct forms for some low-level groupings such as Tani or Tibetan, in other branches even closely related languages have different anti-ergative markers (e.g. Lahu (tháʔ), Akha (áŋ)), or differ in terms of having anti-ergative marking or not (e.g. Akha, which has anti-ergative marking, and Hani, which does not). On the other hand, the fact that so many languages grammaticalized the same type of function suggests that either anti-ergative marking was a fact of an earlier stage of this family and all or most of the original markers have been lost or renewed, or there was something about the proto-language that caused the daughter languages to grammaticalize the same type of function. A third possibility is that this feature is an areal trait, and is not constrained by genetic boundaries. We have no evidence that there was anti-ergative marking at some earlier stage that was lost, and I have not found evidence of non-Tibeto-Burman influence in terms of this marking on Tibeto-Burman languages inside the People's Republic of China,⁹ therefore I believe this is a case best explained in terms of the second possibility, that is, it is a prime example of Sapir's 'drift'.

A separate survey of 145 languages and dialects (LaPolla 1993a) turned up 106 with agentive (ergative) marking. A comparison of the forms used for this marking gave results similar to that for anti-ergative marking. That is, though this type of marking could be reconstructed to some branch level units (e.g. Proto-Bodish), there was no form that could be reconstructed to Proto-Tibeto-Burman or even to the higher level units within Tibeto-Burman such as Baric or Bodic. The use of agentive marking in many of the languages is also similar to anti-ergative marking in being non-paradigmatic. That is, its use depends on the speaker's determination of the need for emphasis or clarity, and is not part of an obligatory paradigm. For example, Li & Wang (1986:78) give the following choices of word order and marking for expressing the meaning 'You(pl.) teach us' in Hani, the differences being purely pragmatic:¹⁰

- (4) a. no⁵⁵ja³³ ŋa⁵⁵ja³³ jo⁵⁵ me³¹.
2pl 1pl OBJ teach
b. ŋa⁵⁵ja³³ jo⁵⁵ no⁵⁵ja³³ me³¹.
1pl OBJ 2pl teach
c. no⁵⁵ja³³ ne³³ ŋa⁵⁵ja³³ jo⁵⁵ me³¹.
2pl ERG 1pl OBJ teach
d. ŋa⁵⁵ja³³ jo⁵⁵ no⁵⁵ja³³ ne³³ me³¹.
1pl OBJ 2pl ERG teach
e. no⁵⁵ja³³ ne³³ ŋa⁵⁵ja³³ me³¹.
2pl ERG 1pl teach
f. ŋa⁵⁵ja³³ no⁵⁵ja³³ ne³³ me³¹.
1pl 2pl ERG teach

In cases where there is no likelihood of confusion, the agentive marker need not be used (Li & Wang 1986:98). This pattern of use is quite common in Tibeto-Burman.

As in many Tibeto-Burman languages, the agentive marker used in Hani is isomorphic with the ablative, or source, marker, and this is its probable origin, which by metaphorical extension comes to be used for marking agents, the 'source' of the action (cf. DeLancey 1981, LaPolla, to appear). Another common pattern of isomorphy related to agentive marking is that of the instrumental and agentive markers.¹¹ In terms of the anti-ergative marking, the most common pattern of isomorphy is that between locative/allative and anti-ergative (LaPolla, to appear). What we have then in many Tibeto-Burman languages are parallel extensions leading to the use of locative or allative markers for marking non-agents, and the use of ablatives or instrumentals for marking agents.

The development of anti-ergative and ergative marking in so many Tibeto-Burman languages then is evidence for a particular type of common starting point or motivation in Proto-Tibeto-Burman. Something about Tibeto-Burman languages or the people that use them led to these parallel developments. The question then is, how do we characterize this common starting point? If we are to reconstruct it for Proto-Tibeto-Burman, what exactly is it are we to reconstruct? I have suggested (LaPolla 1992a, 1993a) that, at least in these Tibeto-Burman languages, ergative and anti-ergative marking systems are not so independent, in the sense that both follow from a single motivation: the disambiguation of semantic role. In many of these languages the actor marking and the anti-ergative marking have the same type of use and distribution; in transitive sentences either ergative or anti-ergative marking, or both, can be used. The marking is simply for semantic disambiguation.

Those languages that have postpositions, but do not have the anti-ergative marking pattern (e.g. Tujia, Hani) generally mark NP's by strictly semantic principles. That is, a locative/goal (when marked) will always be marked the same way, and a patient/theme (when marked) will always be marked the same way, and there are no relation changing (or 'promotion') rules (e.g. passive, dative, antidative). We then have two types of marking in Tibeto-Burman. Both are semantically based, but one (ergative and patient marking) is based on what semantic role a referent has,¹² and the other (anti-ergative marking) on what semantic role a referent does not have. The development of both types of marking can be said to be related to the importance of semantic role, pragmatic viewpoint, and animacy to the users of these languages.

3. Direction marking

Wolfenden (1929) first pointed out how common what he referred to as 'directive' systems are across Tibeto-Burman. This verbal category involves the morphological or syntactic marking of the motional component of the action represented by

the verb, usually also including deictic specification of direction. In an insightful paper on the cycle of analysis-synthesis-relexification that we often find in the grammaticalization process, Scott DeLancey (1985) gives evidence that though direction marking is quite common in Tibeto-Burman, and so would appear to be reconstructable to Proto-Tibeto-Burman, no attested system can actually be traced back to the Proto-Tibeto-Burman stage. A separate survey of 145 languages and dialects of Tibeto-Burman done by the present author showed DeLancey's conclusion to be correct. What we find is independent grammaticalization of the same type of direction marking, often using the (etymologically) same morphemes, in related languages.

One example that DeLancey gives is in the Kuki-Naga branch of the family. DeLancey shows that at the stage of Proto-Kuki-Naga the motion verbs (*ra 'come', *wa 'go', *g-wang 'come, ascend') did not constitute a syntacticized class; they concatenated freely with other verbs, either following or preceding those verbs. After the split to Proto-Naga and Proto-Kuki, in Proto-Naga these verbs developed into a grammaticalized class of auxiliary verbs that followed the main verb, and in Proto-Kuki they grammaticalized into preverbal position. Thus DeLancey (1985:373) states that 'it is clear that the syntacticized directive construction developed independently in Proto-Naga and Proto-Kuki, and some languages in each branch have proceeded, again independently, to the stage of complete morphologization'.

We find in Jingpo (a language not closely related to the Kuki-Naga languages) the grammaticalization of the reflex of *ra into a direction marker as well. Jingpo has a general motion verb sa wa, which can take (as can other motion verbs) the deictic postverbal particles r- 'hither' (< *ra) and s- 'hence' (Example from DeLancey 1985:370):¹³

- (5) a. McGam gat de? sa wa s-ai
 market to go hence-PART
 MaGam went off to market.
 b. MaGam gat de? sa wa r-a? ai.
 market to go hither-3rd PART
 MaGam came to market.

Another example given by DeLancey is the independent grammaticalization of the reflexes of the Proto-Lolo-Burmese verb *ay 'movement hence' into a directive marker in various Loloish languages, as in Lahu qay 'go' and in Nujiang Lisu ge 'go', both from *ga + *ay.

Here I have given only used DeLancey's examples, yet this phenomenon is very widespread in Tibeto-Burman (see for example Sun 1981 on direction marking in the Qiangic languages). Though this phenomenon is common cross-linguistically, it is not obligatorily developed by every language, so it is interesting that so many Tibeto-Burman languages have developed this type of direction marking.

4. Causative marking

In a large number of Tibeto-Burman languages we find two types of causative, one marked by a prefix on the verb, a difference in the voicing and/or aspiration of the initial consonant, a change in tone, or a combination of two or three of these types of marking. This type of causative is seen as the remnants of a Proto-Tibeto-Burman *s- causative prefix and/or a voicing contrast in the proto-language, and is not productive in most of the modern Tibeto-Burman languages. The second type of causative marking is what these languages resorted to after the common prefixing strategy was no longer productive.¹⁴ This is to take a verb meaning 'send on an errand, entrust with a commission', 'make', or 'give' and use it in construction with a main verb to create a causative construction. Following are examples from Lahu (7a -ci-) and Burmese (7b -se¹¹-) (from Matisoff 1976:418):

- (7) a. Johnny thà? qay-ci-ve.
 OBJ go-CAUSE-PART
 Make Johnny run.
 b. Johnny ko¹¹ θwa⁵⁵-se¹¹-tə¹¹.
 OBJ go-CAUS-PART
 Make Johnny run.

Though the forms used in these two languages for this construction are cognate, the pattern cannot be reconstructed to the Proto-Lolo-Burmese level (though the morphological causative can), so it must have been independently grammaticalized in each of the languages. We find this same structure in many other languages as well, both inside and outside Lolo-Burmese. Here are the forms used for this type of causative in 73 other languages and dialects within Tibeto-Burman (the dialect name, if available, follows the language name): Achang, Longchuan (xu⁵⁵); Achang, Xiandao (ʃaŋ³¹); Apatani (kenəŋ); Bai, Jianchuan (sɛ̃³³); Baima, Baima Commune (nbe¹³); Balti, Purki (cuk); Bokar, Smingling (mo:); Bola, Kongjia village (nə̃⁵⁵); Chang, Tuensang (ti); Chaudangsi-Byangsi (phin/phun); Chepang, Eastern (Maiserang Village) (tak); Chin, Cho (Hko) (hlak/pui/nak/si); Chin, Sizang (Siyin) (sa:k); Chiru, Manipur (masak); Cuona Menba, Mama Commune (tho⁵³); Daofu, Chengguan (və/nə vi/sphrə); Darang, Xiachayu district (koŋ³⁵); Darmiya (phun); Dulong, Dulonghe (su³¹dzu¹⁵³); Ergong, Dasang (pu); Ersu, Zelu Com-mune (ʃu⁵⁵); Garo, Garo Hills-Chisak/Awe (at); Geman, Xiachayu district (ka⁵⁵); Guiqiong, Maiben Commune (ku³³); Gurung, Ghacok (laba); Hani, Haya (bi³³); Hayu, Murajor (piŋ); Idu, Chayu (tia⁵⁵); Jingpo, Enkun (sha³¹ ngun⁵⁵); Jirel, Jiri-yarsa ('cyutq); Kachari (Bara), Darrang (hũnũ); Kaman (Miju), Parsuran Kund (halak); Khaling, Solu-Khumbu (mu); Kham, Taka ((pxrin./jxy)nya); Khambu, Darjeeling (so/su/mit); Kinnauri, Lower Kinnaur (šennig); Kokborok, Debbarma (ru); Ladakhi, Central (Leh) (čug); Ladakhi, Lower (chhukches); Langsu, Yunqian (lɔ²⁵⁵); Leqi, Zhongxin (lɔ²⁵⁵); Lhomi, Chepuwa (čhun); Lisu, Bijiang (tsɿ⁴⁴); Lisu, Thailand (tyɛ); Lotha, Wokha District (tök); Lyusu, Muli (su⁵³); Magari,

Nepal Darbar (-k-); Manipuri (hən); Mizo (Lushai), Dulien (tii 'do' + Stem I Stem II + tiir 'to send on an errand'); Muya, Shade district (te' ə³³); Namuzi, Mulli (ngæ³³/ngæ³³ŋ³¹/ŋ³¹); Nasu, Hetaojing (tsi³³); Newari, Classical (kal); Newari, Kathmandu (kəl/k); Nocte, Hawajap (thuk); Nusu, Middle Bijiang (tei³⁵); Pumi, Jinghua (skie⁵⁵); Qiang, Taoping (zɿ³¹); Rangkhol, North Cachar (pek); Rawang (la~lwa); Rong (Lepcha) (kón/mát/tho); Sangkong, Xiaojie (pi³¹); Sgaw Karen, Delugong (ma³³); Sherpa, Chunakpu (ji(t)/ci(t)); Shixing, Lanman (xi⁵³); Sunwari, Sabra ('paysh); Tagin, Taliha (mu); Tamang, Bagmati Anchal (la); Taron (Digaru) (gō/kwō/masei); Thado, Yongba Langkhong (pā/pi/sā); Yi, Xide (ŋu⁴⁴); Zaiwa, Xishan (lɔ⁵⁵); Zhaba, Tuanjie township (dzy³⁵); Zhaba, Zatuo (tʂ' u³³).

As with the anti-ergative and ergative marking we can see that though a few forms may be cognate, the vast majority are not, and no form is reconstructable to Proto-Tibeto-Burman. Even among the very closely related languages and dialects of Northern Burmish we find radically different forms used for causative marking: Longchuan Achang xu⁵⁵, Xiandao Achang ʂaŋ³¹, Bola nō⁵⁵, and Leqi Langsu lɔ⁵⁵. In each case we have the independent grammaticalization of a free verb into a post-verbal causative marker. This then is another case of parallel innovation.

5. Person marking

In three or four of the major branches of Tibeto-Burman we find a type of person marking on the verb complex that developed as a result of a copy of the independent pronouns becoming affixed to the verb complex (see LaPolla 1992b).¹⁵ The etymological transparency of most of the Tibeto-Burman verb agreement systems shows that these agreement systems are relatively recent grammaticalizations, and the evidence points to independent grammaticalization in several different branches of the family. Here we will present a few examples where the etymological transparency is particularly clear in order to make this point.

The earliest example we have of person marking is in Tangut, a dead language which dates back to the eleventh century. In Tangut the verbal suffixes have the same phonetic form, including the tone, as the free pronouns (adapted from Keping 1979; third person is not marked).¹⁶

Table 1 Tangut person markers and free pronouns

	Free pronouns	Verb suffixes
1sg	ŋa ²	-ŋa ²
2sg	na ²	-na ²

In the Kuki-Chin branch of Tibeto-Burman we find a person-marking system very similar to that in Tangut. In this system we find the Proto-Kuki-Chin pronouns *kai '1sg', *naŋ '2sg', and *a-ma '3sg' grammaticalized into the person marking prefixes *ka-, *na-, and *a- respectively. Yet from the fact that the system

is prefixal, and the fact that the pronouns that were the source of the prefixes are not the same as the Tangut forms (at least the 1sg and 3sg forms), and from the fact that the languages are remote from each other genetically (i.e., are remote sub-branches within Tibeto-Burman) and geographically, we can say that this system clearly developed independently of the Tangut system.

A middle case is the Kanauri-Almora branch, which has person marking that is suffixal, like the Tangut system, but has a first person suffix derived from an innovative pronoun somewhat similar to that in Kuki-Chin. The forms are *-ga (< *gai), *-na (< *naŋ) (there is no third person agreement suffix). We can still be confident of the independent origin of this system, though, because the source of the first person affix is different from that of Tangut, and though it may be similar to that of the Kuki-Chin system, it is a suffixal system. These points make it sufficiently different from both of the systems presented above to allow us to state confidently that it is an independent innovation (see also Thurgood 1985).

A fourth case of clear independent development is the person marking system of Angami Naga (Giridhar 1980). In Angami, only 'stative verbs expressive of emotional or mental states, processes, [and] attributes' are marked for person (p. 59). The person marking involves prefixes clearly derived from the independent pronouns. The verbal prefixes are also isomorphic (except for the tone on the 1st person prefix) with the pronominal genitive noun prefixes (p. 22ff):¹⁷

Table 2 Angami Naga person markers and free pronouns

	Free pronouns	Verb prefixes	Noun prefixes
1sg	ā	ā-	ā-
2sg	nō	ñ-	ñ-
3sg	puô	puô-	puô-

Following are examples of the use of the verb prefixes:

(8)	ā	ā-ní	bá	puô	puô-ní	bá
	1sg	1sg-happy	part	3sg	3sg-happy	part
	I am happy.			He is happy.		
	nhîcûnyô	puô-dôvi	nō	ñ-dôvi		
	boy	3sg-clever	2sg	2sg-clever		
	(The) boy is clever.			You are clever.		

Again we see that not only is this a prefixing system, unlike the Tangut system, but it also derives from a set of free pronouns unique to Angami.

A fifth case is the person marking prefixes of Mikir (Hills Karbi; Jeyapaul 1987). Again we have a prefixing system, but one quite different from those discussed above:

Table 3 Mikir (Hills Karbi) person markers and free pronouns

	<i>Free pronouns</i>	<i>Verb prefixes</i>
1sg	ne	ne-
1pl excl.	netum	ne-
1pl incl.	itum~etum	i~-e-
2sg	naŋ	naŋ-
3sg	alaŋ	a-

That this system is a recent development can be seen not only from the fact that the free pronouns and the prefixes are so similar in form, but also from the fact that the verb prefixes retain the inclusive/exclusive distinction of the free pronouns.

One last example is from the Delugong dialect of Sgaw Karen (Dai et al. 1991:400; third person is unmarked):

Table 4 Sgaw Karen person markers and free pronouns

	<i>Free pronouns</i>	<i>Verb prefixes</i>
1sg	ja ³³	jä ³³ -
1pl	pu ³³ we ⁵⁵ θe ³¹	pü ³³ kä ³¹ -
2sg	na ³³	nä ³³ -
2pl	θu ⁵⁵ we ⁵⁵ θe ³¹	θü ⁵⁵ kä ³¹ -

This system of verbal prefixes is very clearly of recent origin, being in the singular simply unstressed copies of the free pronouns, and unique to this dialect of Karen.

These are just a few examples of this phenomenon, but they suffice to make the point that Tibeto-Burman languages seem prone to this particular kind of grammaticalization.

While some languages have developed person marking on both verbs and nouns, there are a few languages that have developed person marking only on nouns, and here again we find independent parallel developments. Consider the following two paradigms:

Table 5 Meitei person markers and free pronouns (Yabu 1992:2)

	<i>Free pronouns</i>	<i>Noun prefixes</i>
1sg	'äi	'i-
2sg	näŋ	na-
3sg	ma	mä-

Table 6 Rouruo person markers and free pronouns (Sun 1985:70)

	<i>Free pronouns</i>	<i>Noun prefixes</i>
1sg	ŋo ⁵⁵	ŋu ⁵⁵ -
2sg	ŋau ³¹	ŋu ³¹ -
3sg	tu ³⁵	tu ³⁵ -

It can be seen from these paradigms that the prefixes in the two languages do not reflect a common source, as in each language the noun prefixes very clearly developed from the free pronouns of that particular language. Person marking, either on the verb, the noun, or both, can then be said to be yet another example of Sapir's 'drift'.

6. Existential verbs

One type of parallel innovation we see within Tibeto-Burman which is not a type of marking per se, is the development of an animate/inanimate distinction in the system of existential verbs. A large number of Tibeto-Burman languages have more than one existential or locative verb, with the difference being (if there are only two, as in Idu—Sun 1983:72) a difference between animate (Idu i⁵⁵) and inanimate (Idu kha⁵⁵). In other languages there may be as many as seven different verbs, for animate vs. inanimate, abstract vs. concrete, location within a container vs. location on a plane, etc. For example, Hani has a general existential dza³³, an existential for people and animals dzo⁵⁵, an existential bo³³ for people and their organs, do³¹ for liquids, de³¹ for general animates, ky³¹ for existence within a group, and one existential verb, so⁵⁵, which is used only in the poetic language (Li & Wang 1986:54). In Queyu there are seven existential verbs (Wang 1991:61): tji⁵⁵, for animals; tøy¹³, for location in a vessel or certain area; ko³¹, for non-movable objects; ei¹³, for movable objects; lo¹³, for an object mixed up in another object; nu¹³, for abstract objects; and tje¹³, for possession by a person. In Zaiwa (Xu & Xu 1984:80-81) there are six existential verbs, two of which are specialized for animate beings and can be causativized: nji⁵¹, which seems to mark the existence or long term location of animate beings and has the causative form nji⁵¹; luŋ⁵⁵, for short term location of animate beings and has the causative form luŋ⁵⁵; vo⁵⁵, for possession by a person; tjo²¹, for inanimates; po⁵¹, for containment within a vessel; and toŋ⁵¹, for roads and footprints. While some of the categories of existential verbs correspond among the languages, particularly within Lolo-Burmese, such as 'containment in a vessel or area' (Hani tøy¹³, Zaiwa po⁵¹), 'possession by a person' (Hani tje¹³, Zaiwa vo⁵⁵), the forms used in these languages are clearly not cognate.

These are just a couple of examples picked at random, but the phenomenon is very widespread in Tibeto-Burman. While it may be possible within a particular lower level grouping to reconstruct one or two of these verbs, it is not possible to reconstruct a single one of these distinctions or the verbs that represent them to Proto-Tibeto-Burman. We then must conclude that this too is a case of parallel innovation, and a clear indication of the importance of animacy/mobility in the minds of Tibeto-Burman speakers.

7. Conclusions

Each of these types of grammaticalization is common in a number of language families. Person marking of a very similar type to that in Tibeto-Burman is seen

for example in Australia, even with independent origins in different areas (see Dixon 1980:363), and in North America (see Mithun 1991); many Indo-European languages (e.g. French) grammaticalized a similar type of causative to the one we have discussed here (though preverbal); having semantic differences among existential verbs is also not rare (e.g. Japanese); and ergative and anti-ergative (see Dryer 1986) marking is seen in many areas around the world as well. What is significant here is that so many of the languages of a single family all grammaticalized these same types of marking, and independently of each other.¹⁸ It might be argued that the basic typology of these languages is the same, and so leads to these types of grammaticalization (e.g., the development of locative postpositions from pronominal genitive constructions), but the basic typological features of these languages are after all part of the heritage of the parent language, and so part of what has influenced the 'drift' that these languages have followed. Even so, there are many languages with similar typological features that do not have these same tendencies. For example Japanese is very similar typologically, and does have an animate/inanimate distinction in existential verbs, but has not grammaticalized ergative, anti-ergative, or pronominal marking.¹⁹

A second point is that generally features of a language that we know to have developed independently of related languages after the breakup of their common ancestor are not considered useful in understanding the nature of the proto-language,²⁰ but I am arguing here that by studying parallel drifts we can infer something about the proto-language, in this case Proto-Tibeto-Burman, and its speakers. One characteristic we can infer from these common grammaticalizations is that the semantic distinction between agentivity and non-agentivity, and the associated features of animacy and saliency of the speech act participants, were fundamental to the organization of the proto-language speakers' world view. While it appears from the available evidence that the proto-language itself did not have any relational morphology,²¹ the speakers of the different languages created after the break up of Proto-Tibeto-Burman seem to have retained the same world view, leading to parallel grammaticalizations and metaphorical extensions of existing morphology.

What we need to reconstruct in Proto-Tibeto-Burman then as the common starting point which led to the development of all the types of marking we find in Tibeto-Burman is a simple semantically based concept of grammatical relations. By this is meant a language where the organization of discourse involves only semantic and pragmatic relations, and there has been no grammaticalization of syntactic functions such as 'subject' and 'direct object'.²²

Notes

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- Malkiel (1981) argues that the concept of drift should be separated from the concept of parallel independent development. He suggests the use of 'slope' to refer to the latter. He bases this view on his interpretation of the relationship between Sapir's discussions of drift in Chapter 7 and in Chapter 8. Malkiel argues that the discussion of the depth of drift and the relationship of this depth to parallel independent developments in Chapter 8 'reads almost like an afterthought' (p. 550) to Chapter 7, saying 'Sapir impressionistically tosses off a few supplementary ideas ...' (p. 550) in discussing the depth of drift, and that the remarks about depth and parallel development are 'tangential' (p. 551) to the main idea of drift. His main evidence of this is the fact that Sapir did not mention this aspect of drift in his 1933 article 'Language'. My own view of this is that while it is possible to talk about drift in a single language without reference to parallel developments, it is not possible to talk about parallel developments in related languages without reference to something like the concept of drift (assuming parallel independent developments in related languages is of a different nature than that in unrelated languages). For this reason I feel Sapir's discussions of drift and its depth are two aspects of a single cohesive argument. That the depth concept was not mentioned in the 1933 article is insignificant, as the one short mention of drift in the article was not in a context where the mention of parallel developments would have been relevant.
 - LaPolla 1992a presents an earlier study of the same type based on a somewhat smaller database. See that paper for more extensive discussion.
 - These examples are also presented in Dryer 1986, where this phenomenon is discussed as 'primary object marking'.
 - In those Tibeto-Burman languages that have person marking (verb agreement) systems there may be some overlap where the person marking system and the nominal marking seem to both be marking the anti-ergative argument (as in this example, which led Dryer (1986) to claim that the person marking system also marks anti-ergative arguments—his 'primary objects'), but the person marking systems in many Tibeto-Burman languages are based on person hierarchies (1p > 2p > 3p, or 1p/2p > 3), not on semantics or grammatical relations (see LaPolla 1992b).
 - The term 'anti-ergative' may be somewhat infelicitous, as, like the term 'ergative' itself, it may lead the reader to credit these particles with more of a paradigmatic nature than they actually have, but I will continue to use 'anti-ergative' in this paper, as this term is already somewhat established in the literature (e.g. Comrie 1975, 1978, LaPolla 1992a), and clearer than Blansitt's (1984) term for this phenomenon, 'dechticaetative'. I also do not use the term 'primary object' because Dryer (1986) defines 'primary object' as a grammatical function. The use of this type of marking in most of the Tibeto-Burman languages that have it is not of the nature of a grammatical function, and in some languages it is also not limited to marking 'objects'.
 - Following is the language name followed by the dialect, if available, and the postposition used to mark an anti-ergative argument.
 - The languages in my database with nominal morphology not showing the anti-ergative marking pattern are (language, dialect) Angami, Kohima; Ao, Chungli; Balti, Purki; Chin, Cho (Hko); Garo, Garo Hills-Chisak/Awe; Hani, Haya; Kabui, Langthabal; Kachari, Darrang; Kachari, Hajo, Kamrup; Khami, Chittagong Hill Tracts; Manipuri; Nasu, Hetaojing; Newari, Classical; Rangkhoh, North Cachar; Rong (Lepcha); Sunwari, Sabra; Tujia, Northern dialect; Yakha, Darjeeling District; Yi, Xide; and Zhaba, Zatu.
 - The languages in my database showing no postpositional 'object' marking are (language, dialect) Anal, Anal-Namfau; Bantawa, Middle Kirant; Chin, Sizang (Siyin);

- Thado, Yongba Langkhong; Chiru, Manipur; Darmiya; Dumi, Khotang; Gazhuo, Baige; Hayu, Murajor; Idu, Ceta; Karen, Kayah, Eastern; Karen, Sgaw, Moulmein; Khambu, Darjeeling; Ladakhi, Central (Leh); Limbu, Phedappe; Lotha, Wokha District; Mizo (Lushai), Dulien; Rengma, Unza; Rouruo, Tu'e township; Sema, Zunheboto; Tاراon; and Zhaba, Tuanjie township.
- 9 There is some evidence that a few of the languages in Nepal may have been influenced by Nepali. For example, Allen (1975:92) says that the Thulung patient/dative form is a loan from Nepali, and says 'There can be no doubt at all that traditionally both the direct and indirect objects have been unmarked.'
- 10 In Hani $j\sigma^{55}$ is used to mark an animate patient argument. Goal and locative arguments are marked with a^{33} .
- 11 The instrumental marker itself is sometimes an extended use of the ablative marker (40 languages in my database show ablative/instrumental isomorphism). Out of 106 languages and dialects with agentive marking surveyed for the study reported in LaPolla 1993a, 49 have agentive-instrumental isomorphism, 18 have agentive-ablative isomorphism, and 10 have agentive-genitive isomorphism. Agentive-genitive isomorphism is somewhat different from the other patterns, though, in that it is sometimes (e.g. in Lhasa Tibetan) the result of a genitive-ablative form losing the ablative marker through phonological attrition. See LaPolla, to appear, for discussion.
- 12 See Givón 1984 and Klimov 1984 on seeing ergative morphology as being semantically based on the contrast of agent vs. non-agent.
- 13 These particles follow the main verb, but are prefixed to person marking or auxiliary particles.
- 14 Loss of productivity of the older form of causative marking was not a necessary factor in the development of the newer form of causative; even in some languages where the older form is productive an analytical form has developed, though in those cases the two forms usually differ somewhat in meaning, with the analytical form being used for indirect causatives.
- 15 Here I will only discuss the type of person marking which is often known as 'pronominalization', where the person markers derive from the free pronouns. Within Tibeto-Burman there are several other types of person marking, usually involving different copular verbs or post-verbal particles, as in Zaiwa, Akha, Sangkong, and some Tibetan dialects. While these systems also show interesting parallel developments, such as having marking that contrasts 1st person/2nd person question vs. 2nd person statement/3rd person, they are not as common as the pronominalized systems.
- 16 There is also a 1st and 2nd person plural marker ni^2 .
- 17 A full paradigm including person marking for dual and plural actants is not given by Giridhar, though as other examples from the grammar include prefixes for the first person dual exclusive and the third plural (given in [i] below), there probably is a full paradigm. If so, then there is even more reason to believe this system was an independent development.

(i)	hiēkō	hiēkō-ñiē	bá	ūkō	ū-númēyiē	bá
	1du.excl.	1du.ex-tired	part	3pl	3pl-angry	part
	We(dual exclusive) are tired.			They(pl.) are angry.		

- 18 Except for person marking and having semantic differences among existential verbs, all of these types of grammaticalization can also be found in Mandarin Chinese: in terms of direction marking we have the use of $lái$ (55) (< Old Chinese $*ra$, cognate to TB $*ra$) and $qù$ (55) after the verb to show deictic direction. (Chinese does have a verb $wáng$ (55) 'motion towards' < Old Chinese $*gwjan$, cognate to TB $*g-wan$, though it has not grammaticalized into a direction marker.) In terms of anti-ergative marking we have the $bā$ ($β$), and $bèi$ ($≥Q$) constructions (the former marking a non-topical

- anti-ergative argument, the latter a topical anti-ergative argument). In terms of agentive marking we have $yóu$ (55), which, just as in many Tibeto-Burman languages, is also a marker of 'cause' or 'source'. And in terms of causative marking we have the grammaticalization of $shǐ$ (55) 'to send (on a mission)' into a causative auxiliary.
- 19 See also Meillet 1918, particularly pp. 107-110, for more on the causes of independent parallel developments.
- 20 Though of course the types of innovations we have discussed here can be used for subgrouping if enough languages share that innovation. See for example the use of a particular paradigm of direction marking prefixes for the subgrouping of the Qiangic languages in Thurgood 1984.
- 21 While I have not found any evidence of Proto-Tibeto-Burman relational morphology, there is evidence that certain types of derivational morphology, such as the $*s$ - causative prefix and possibly a $*-t/-n$ suffix, are reconstructable not only to Proto-Tibeto-Burman, but to Proto-Sino-Tibetan. It seems likely the pa/ma gender/nominalizing suffixes are also reconstructable to PTB, as are the negative prefixes $*ma$ and $*ta$ (the former to PST). (See LaPolla 1994 for discussion of suffixal variation and a list of Sino-Tibetan cognates.)
- 22 For detailed arguments against the existence of syntactic functions in particular Sino-Tibetan languages, see Andersen 1987 (Classical Tibetan), Bhat 1988 (Manipuri), and LaPolla 1990, 1993b (Chinese). See also the discussions of Lisu in Hope 1974 and Mallison & Blake 1981.

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VERB AGREEMENT IN CLASSICAL NEWAR AND MODERN NEWAR DIALECTS

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1. Classical Newar and Kathmandu Newar verbal morphology

The Newar language is now well known as a Tibeto-Burman language of the Kathmandu Valley, and a number of native and foreign linguists and scholars have contributed to our knowledge of the structural, historical and socio-cultural aspects of the language through research and publications. However, there has not been any in-depth study on the diachronic phonology or morphology of Newar nor any consistent research on the large number of old Newar texts that are available in archives and private collections. The Danish scholar Hans Jørgensen's pioneer studies of the lexicon and grammar of Classical Newar, namely Jørgensen (1936, 1941), are based primarily on the late 17th and 18th century narrative texts. The earliest written text is a palm-leaf document which dates back to the early 12th century (Malla 1990:15-26), and the other scholars who have shed light on some of the vexing problems in the diachronic study of Classical Newar verb system include Kölver and Kölver (1978), Genetti (1990), Tamot (1990), Hargreaves and Shakya (1991), Van Driem (1993a) and Kansakar (1992, 1996).

Based on what is known of the Classical Newar verbal morphology, Van Driem (1993a:33) argues that although Classical Newar retains some traces of the old agreement system presently reflected in the Dolakha Newar dialect of eastern Nepal, "the rudiments of a conjunct-disjunct system characteristic of modern Kathmandu Newar were fully in place in Classical Newar". He also hypothesizes that the Dolakha Newar, which is more similar to Kiranti than to the current system in Kathmandu, is reconstructable for Proto-Newar. Genetti (1990:128-29) however argues against any firm hypothesis "since more extensive data on other Newar dialects and more historical materials are really necessary to decide conclusively

between hypotheses". She also points out that although "Kiranti morphology is much more complex than the simple system of subject agreement in Dolakha ... the presence of any agreement in Newari still suggests a possible old genetic link to this family." DeLancey (1992) also views the conjunct-disjunct system as a secondary development within the context of its historical changes in the Bodic branch of Tibeto-Burman. This issue is one of the most important single questions in Newar linguistic studies today and yet has remained controversial and unsolved.

If this problem were to be settled to the satisfaction of all linguists working in the field, we would have taken a significant step towards resolving another related problem of determining a less ambiguous place for Newar within the genetic classification of Tibeto-Burman. Newar has traditionally occupied a tentative position between the Bodish and East Himalayan sections of the Bodic Division. In an earlier paper (Kansakar 1981) I had pointed out that Newar separated from the "Tibetan" group and the basically pronominalized Himalayan languages at an early period of its history, and it is difficult or at least arbitrary to reconstruct a Proto-system of verb agreement for Newar without adequate evidence. Shakya (1990) also advocates further research on the Newar dialects to allow us to locate the language firmly in its historical and geographical context.

In this article, I discuss materials from Classical Newar in relation to Dolakha and modern Newar dialects to show their historical connections. I also refer to the findings of Genetti, the contribution of Van Driem and native Newar scholars to determine whether there has been a certain trend in development from Dolakha through the earlier and later phases of Classical Newar to the present system in Kathmandu. There is historical evidence to show that Dolakha Newar dates back to over a thousand years, but we have no evidence whatsoever of how the language may have evolved over this long period of isolation from Kathmandu. Genetti (1990:185-93) provides several arguments in favour of reconstructing a Dolakha-type of verbal agreement for Proto-Newar. Her first argument is the presence of a complex agreement system in Dolakha to include not only the indicative, but also the imperative and optative forms. Her second argument is that Classical Newar data as presented by Jørgensen (1941) retain traces of an old agreement system, e.g. the finite past marker <-o> was used with the first and second person; <-am> is normally used with the third person; and <-a> with any person following the quotative speech marker *dhakam*. Her third argument rules out any pronominal source for flexional affixes used in Dolakha.

In Table 1 the finite agreement system as found in the Classical Newar texts dated between 1114 AD to ca 1450 AD provides more complete historical evidence on the development of the older verbal morphology. The texts examined are all authentically dated and therefore form a part of attested data in a historical perspective. Table 1 represents data organized in terms of the conjunct-disjunct (c/d) pattern and verb class distinctions as originally formulated by Jørgensen (1941). According to his classification, the various verb classes are defined by their stem-final consonants, while the variations in the flexional suffixes indicate the evolution in the c/d system of verb marking.

Table 1 Finite verb agreement morphemes in Classical Newar (1114 – 1450 AD)

Verb class	Non-past conjunct (NPC)		Non-past disjunct (NPD)	
I	j > ñ > ny > n	-a	j > y	-u > -a
II	c > y	-a > -e	y	-u
III	y	-a > -e ~ -au	l > y	-u > -au
IV	c > l > y	-e > -a	p > b	-u
	Past conjunct (PC)		Past disjunct (PD)	
I	ñ	-a	w > gw > n	-u > -o > -a
II	tān > y	-a	t > w > k	-u > -a > -a
III	rān > y	-a	kw ~ w > r > l	-o > -a > -u
IV	l > y	-a	lw ~ l > tw	-a ~ > -u

We notice that both the stem-final consonants and the suffixes have undergone radical changes over a period of some 350 years. The c/d marking for the various verb classes under NPC show a clear development from <-a> to <-e> with <-au> as a variation for Class three verbs. The NPD verbs have <-a> and <-u> markings where the latter is found more frequently in the earlier manuscripts. The PC paradigm is the most consistent in the conjunct marking <-a> that is still reflected in present-day Kathmandu. The PD paradigm represents a rather different development in the marking system from <-u> to <-o> or <-a> and in later texts to <-ā> with variations in nasal vowels. A further point of interest in the PD column is the presence of labial glide <-w> as part of the final consonant which reflects the on-going controversy in modern Kathmandu on the status of <-gw-a> vs <-gw-o>. It has for example been claimed that the Devanagari spellings with <-wa> best reflect both the pronunciation and spelling convention in the language: I have however taken the view that sequences such as <-kwa-, gwa-, nwa-, lwa-> etc do not have phonemic status but are phonetic realizations of /ko-, go-, no-, lo-/. If we then accept <-o> as the underlying vowel, it is logical to assign it a historically earlier status. We can thus safely reject <-a> as a finite marker when preceded by a labial glide. The PD opposition <-a, -o, -u> is quite similar to Jørgensen's A I forms <-a, -am, -o> but their grammatical functions are not identical as can be seen in Table 2. When we compare this system with the finite markings observed by Jørgensen (1941) in his study of the 17th and 18th century Classical Newar texts, we obtain the following situation (Table 2):

Table 2 Earlier and later Classical Newar finite morphemes

Classical Newar (12-15th century)		Jørgensen (1941:47-56)
<-u, -o, -a, -ā>	Finite PD	<-am, -a, -o>
<-a, -e, -au>	NPC	<-i, -iwo, -ino>
<-u, -a, -au>	NPD	<-i, -i:>
<-ā>	PC	<-ā>

The development of flexional morphemes is syntactically significant specially in the finite verb. As discussed above, Jørgensen recognized the morph <-am> as a third person marker, the morph <-o> was associated with the first and second, while <-a> was used with any person in direct speech. The attestation of <-u> as a finite marker in the earliest texts between the 12th and 15th centuries is significant as this has been identified by DeLancey (1989:381) as a direction marker at the Proto-TB level, and as a third person patient marker at the Proto-TB and Proto-Kiranti levels by Van Driem (1991, 1993). The earlier data however indicate that the use of the subject as agent or patient overrode the person agreement as attested in the following examples:

- (1) *bhvanta Jayasingharam Mahatha-sa thava kiāja-to tāṇa*
Banepa Jayasinghram officer-GEN his brother-DAT die-3PD
The younger brother of officer Jayasinghram from Banepa died.
- (2) *Sri Anantamalla-deva-sa doya haw-o*
Sri Anantamalla-HON-AGT doyas bring-3PD
Sri Anantamalla brought the doyas (to attack).
- (3) *tipura manigalahatha-ra thakula-to tel-o*
Tripura Manigalaattack-by Thakura-AGT suppress-3PD
Thakura attacked and suppressed both Tripura and Manigala (lit = by attacking).

In example (1) the subject is a third person patient which normally takes <-a> as a finite past verb such as *tāṇ-a* 'died'. It may be noted that the patient *kiāja-to* is a dative subject with the literal meaning of 'death came to the brother' rather than 'the brother died'. It is also possible that the suffix <-to> or <-tva> is commonly used in Classical Newar texts as a honorific marker for deities or high ranking persons. In the examples (2) and (3) the subjects are third person agentives followed by control verbs *haw-o* and *tel-o*. The finite past marker <-o> is clearly not associated with the first and second person as suggested by Jørgensen (1941:60) where he pointed out that "<-o> which on the whole is infrequently found, mostly occurs after the first and second persons in the older MSS, in the younger MSS its use with the third person becomes more frequent". This remark seems to indicate possibilities of historical change based on frequency of attestation in earlier and later manuscripts. This however should not be concluded as evidence that there might have been an early distinction at least between the first and second person as opposed to the third, and this distinction was later lost. If this is so, one would expect to find clearer person marking differentiation in the manuscripts that are much earlier than those analysed by Jørgensen. This has not been the case with the data I have examined and thus far I have not found enough evidence to substantiate Jørgensen's claim. There are however substantial data in the earlier manuscripts to show the correctness of his observation that the morph <-am> is a sentence-final suffix usually associated with the third person, and the finite ending <-a> can be used for both the second and third persons, especially when followed

by the quotative marker *-dhakam* in direct speech. The following examples however show that *<-am>* may not be a finite past morpheme in all cases as it can also be attached to non-finite participial forms.

- (4) *liva liva bvān-am van-āva*
follow follow run-PTP go-PTP
Following (him) by running.

- (5) *rāja bāla-khas babu-nam vān-am tāth-u*
king child-time father-AGT abandon-PTP leave-PD
The king was abandoned by his father while still a child.

In example (4) the expected perfective marker *<-am>* does not occur in a sentence-final position and instead is attached to a non-finite verb *bvān-* with a participial meaning. In example (5) the verb *van-am* is also nonfinite as it does not express perfective action but rather denotes what Jørgensen (62) refers to as “a relative participle used predicatively with a past meaning”. Jørgensen did not make a clear distinction between past tense and perfective action, and hence the suffix *<-am>* is ambiguous as it does not function purely as a perfective marker in earlier texts similar to *-juo* or *-juom* attested very frequently in later manuscripts.

We thus need to view the comparative data given above as development in morphological categories and new grammatical functions. The earlier and later Classical Newar data do not provide convincing evidence of first, second and third person agreement within the *c/d* system that existed during these periods. Given our present knowledge of Classical Newar materials it seems more likely that the system is based more on volitionality of the subject in terms of agent/patient relation, and the transitivity (i.e. the control/non-control) of verbs are the underlying roots of the morphological distinctions in Kathmandu Newar. In an earlier paper (Kansakar, forthcoming) I had referred to a lack of clear distinctions between Newar nouns/noun phrases and verb/verb phrases which result in a wide-spread use of so-called ‘verbal nouns’ in the language. The verb system itself is governed by aspect rather than tense distinctions in past, present and future time. The crucial aspect of a Newar verb is related more to perfective or imperfective action/event rather than its placement at a point in time, inception of action or duration in time like the grammatical functions of the preterite verb in Limbu. The simplicity of the *c/d* pattern as an evidential system seems to be clearly reflected in the texts so far examined although it has been suggested that traces of a verb agreement system can be discovered in the 17th and 18th century manuscripts studied by Jørgensen. The morphological behaviour of some finite Classical Newar verbs within this framework can be illustrated as follows:

- (6) *ji-na thava kinja-to dhāl-a dhun-o*
1s-AGT own brother-DAT say-PST have-PD
I have told my younger brother.

- (7) *ji-panis-ta chisapola-sā bila-o / om*
1s-PLU-DAT 2s(HON)-AGT give-PD
You gave it to us.

- (8) *khadga-n pār-avā moca-kar-am*
sword-INST cut-PTP kill-CAUS-PD
(The king) smote him with his sword and killed him.

- (9) *ji-n thathi-pani chot-a chāe*
1s-AGT such-people send-PD why
Why did I send such people away?

- (10) *chiskar-pani-sen chu kha hlān-ao di-yā*
2 (HON)-PLU-AGT what matter speak-PTPbe(HON)-PC
What matter do you speak / are you speaking?

Example (6) is a conjunct construction with the finite past suffix *<-o>* in the final auxiliary, while (7) has a second person subject-actor which has the verb marked with *<-o / -om>*. This confirms Jørgensen’s observation referred to earlier that the suffix *<-o / -om>* is associated with the first or second person in the earlier manuscripts but later became more frequent with the third person. This view clearly indicates a development from *<-o / -om>* to *<-a / -am>* which most probably functioned as allomorphs in the earlier Classical Newar period (see Table 1). The third person actor-subject in (8) is marked with the PD *<-am>* in the sentence-final verb which expresses perfective action, but as pointed out in example (4) and (5) this suffix may also be used as a participial marker in non-final positions. Commenting on the frequency in the use of *<-am>*, Jørgensen wrote that “*-am* is the usual form at the end of a sentence; it is but rarely found after the 1st and 2nd persons”. Examples (9) and (10) are direct quote question forms where the first person actor in (9) is marked with a PD suffix *<-a>* and in example (10) the second person actor is optionally marked with a participial suffix *<ai>* followed by a honorific PC auxiliary *di-yā*.

Two points are worth noting with regard to examples (6-10). Firstly, the *c/d* verb marking system seems to have been well established from the time of the earliest historical and religious manuscripts to the technical and popular narrative texts of the later period. Jørgensen’s observations may hint at the possible existence of a verb agreement system in Classical Newar but these are based rather loosely on tendencies and shifting frequency of usage in the later 17th and 18th century texts. The earlier materials from the early 12th century onwards do not seem to contain any recognizable verb agreement. The person and number agreement as it presently exists in Dolakha therefore is hardly reflected in the Classical Newar verbal morphology. Secondly, does the ergative case marking of the volitional actor or agent relate to the transitivity of verbs in Classical Newar? In Newar, like in Tibetan, the distribution of ergative case apply to simple and complex clauses with volitional actors. Examples (6-10) all have ergative marking on the first, second and third

person subjects. The verbs show *c/d* distinction but do not differ in transitivity. In modern Newar and Tibetan, however, the verb encodes a contrast in volition and non-volition for first person but not for non-first persons, as can be seen in (11) for Lhasa Tibetan (DeLancey 1987:57) and (12) for Kathmandu Newar.

- (11) a. *na-a dkaryol bcag-pa-yin*
1s-ERG cup break-PERF/VOL
I broke the cup. (deliberately).
- b. *na-s dkaryol bcag-soñ*
1s-ERG cup break-PERF/NONVOL
I broke the cup. (inadvertently)
- c. *kho-s dkaryol bcag-soñ*
3s-ERG cup break-PC
He broke the cup.
- (12) a. *ji-n kayo tachyā-nā.*
1s-ERG cup break-PC
I broke the cup. (deliberately)
- b. *ji-n kayo tachyā-ta*
1s-ERG cup break-PD
I broke the cup. (accidentally)
- c. *wa-n kayo tachyā-ta*
3s-ERG cup break-PD
He broke the cup.

The Tibetan verb further reflects differences in transitivity in relation to the volitionality of the subject, as can be seen in the following examples (DeLancey 1987:64):

- (13) a. *na-s deb der bzag-pa-yin*
1s-ERG book there put-PERF/VOL
I put the book there.
- b. *na-s deb brlags-soñ*
1s-ERG book lose-PERF
I lost the book.
- c. *kho-s deb der bzag-soñ*
3s-ERG book there put-PERF
He put the book there.

The first person subjects in (13a) and (13b) are both volitional but the markings on the two verbs differ in transitivity. Since this distinction is not applicable

to Newar, we must thereby conclude that ergativity in Classical Newar is not syntactically significant as it relates simply to the volitionality of the subject which is not adequately reflected in the verb marking. Modern Newar however developed other discourse strategies such as intentional and involuntary initiation of action illustrated in (12) which are not attested in the Classical Newar texts so far examined. Other syntactic devices such as verb serialization and complex clause chaining may also be of recent origin as such constructions are quite rare in the Classical Newar corpus of the earlier period. The central fact in Newar syntax is based on what many scholars (Hale and Watters 1973; Kölver and Kölver 1975; Malla 1985; Nagano 1986) have characterized Newar as an 'actor-undergoer' language rather than a 'subject-object' language where verb agreement is with the actor or agent and not the subject. The actor or agent occupies a dominant role in the hierarchy of animacy, viewpoint and attention flow which DeLancey (1980) refers to as 'deictic reference' in the organization of the Tibeto-Burman verb.

2. Dolakha Newar and modern Newar dialects

There is extensive lexical similarity in root morphemes among all Newar dialects, including Kathmandu and Dolakha. The similarity is very high among the Kathmandu Valley and the outlying dialects which share the *c/d* system. The major differences between Kathmandu and Dolakha are in the area of morpho-syntactic features, especially in the person and number agreement morphology of Dolakha. When dialect boundaries are distinguished by grammatical differences, we expect to obtain problems of intelligibility. A Kathmandu speaker who encounters Dolakha speech for the first time will find that he can comprehend less than 40 % of what is said. This is remarkably low in intelligibility level – a situation that arises primarily from a very different morphological and syntactic arrangements in Dolakha. Watters (1993:94) in analysing the dialect differences between Takale and Gamale Kham, made this interesting observation:

“Each dialect, from the time of its separation from the parent stock, has been free to develop, innovate, and branch off in its own unique way, but always within the bounds of its genetic makeup – a predefined set of common mega-traits inherited from the parent language.”

This view implies that although there are 'points of divergence' and 'points of compatibility' across dialects, some points of 'fundamental identity' are bound to exist in historically related dialects. The nature of relationship between dialects and the processes of change that may have taken place in individual dialects, however, are subject to debate and controversies. Van Driem (1993a:25) for example hypothesises that “the conjunct/disjunct conjugation of Kathmandu Newar apparently derives from the Classical Newar system, whereas the Classical Newar system derives from a more complete verbal agreement system more faithfully

reflected in the Dolakha verb". This view assumes that Dolakha is a conservative dialect that has retained the old agreement system now lost completely in Kathmandu and most other modern dialects of the language. It has also been claimed that the Classical Newar materials discussed by Jørgensen (1941) retain traces of an agreement system presumably derived from Dolakha with possible corelations in pronominal morphology as well (e.g. Kathmandu first person singular pronoun *ji* is comparable to first person singular suffix *-gi* in Dolakha; Kathmandu third person plural pronoun *i-(pī:)* and the third person plural suffix *-hin* in Dolakha). Van Driem (1993) has therefore argued in favour of reconstructing the verbal agreement of Dolakha for Proto-Newar. This conclusion seems to presuppose that Dolakha has retained the earliest form of the language since the Lichhavi period (ca 300 – 879 AD) when the Newars of Kathmandu Valley were reported to have first migrated to the Dolakha district.

We do not however have any evidence of historical changes that Dolakha Newar may have undergone during the past millennium and what was the original form of the Newar verb. If we are to assume that the Dolakha type of agreement evolved into a c/d system in Kathmandu and related dialects, we would first need to explain the development in terms of diachronic data following the separation of the two groups of speakers, and secondly, what time depth can be deduced for the loss of the agreement system in Kathmandu. On the first question, it is fairly certain that Dolakha has been an island surrounded by Kiranti speakers for over a thousand years and we cannot therefore rule out completely the area pressures arising over centuries of close proximity. This raises the question of whether its existing verb agreement system is a remnant of genetic inheritance or the outcome of language contact situation. Van Driem (1993c:50) had however stated that "the wholesale borrowing of an elaborate flexional system such as verbal conjugation is unattested ... and conjugational systems do not spread by diffusion". This of course implies that a language tends to retain aspects of its grammar such as the conjugational system while the phonological and lexical components can be borrowed. This view does not however explain why and how the Dolakha verb remained fossilized over the centuries while Kathmandu underwent drastic changes to the extent of losing its original conjugational morphology.

The evolution from a Dolakha type of agreement to a c/d system of Kathmandu has been recognized as a later development which DeLancey (1992:49) has characterized as "an areal phenomenon arising from the linguistic and cultural influences of Tibetan". The matter of Tibetan influence also is not a straightforward phenomenon as Newar does not duplicate the very complex sets of prefixes and suffixes of written Tibetan although the tradition of writing in Newar dates back to the 8th or 10th century AD. DeLancey goes on to point out that "while the Tibetan and Newari systems are strikingly similar in structure, the morphological exponents do not appear to be cognate". This fact has led him to the conclusion that the c/d system "apparently does not reconstruct for Proto-Tibetan or Proto-Newar". This view on the reconstruction hypothesis apparently recognizes the

original verbal agreement to be a complex system reflected more convincingly in the Kiranti languages and Dolakha Newar than in the highly simplified c/d marking system in Kathmandu. Benedict (1972) had also identified Newar as belonging possibly to the Kiranti nucleus from which it has diverged to a considerable extent.

LaPolla (1993:301) on the other hand argues against the view that the Proto-Tibeto-Burman verb agreement system has degenerated to simpler systems in those languages that have come in contact with morphologically simpler languages. He contends that "those languages that do not have verb agreement systems, the vast majority of all Tibeto-Burman languages, have no trace whatsoever of ever having had one", and goes on to point out "it is highly unlikely that Tibetan, Burmese, Newari, and Yi would all have lost every trace of their agreement systems while Tangut's did not age at all". I drew a parallel case of the clear contrast between Kathmandu and Dolakha Newar which, in the absence of adequate historical evidence especially in the Dolakha dialect, may well turn out that both the systems are outcomes of areal influences.

The question of the conservative vs innovative distinction usually made to refer to Dolakha and Kathmandu may have also to be redefined in terms of the nature of contact with other speakers and discourse use. The Dolakha speakers have obviously been in close localized contact with Kiranti speakers living in a relatively compact area of eastern Nepal, and their pragmatic needs of discourse are also much more pervasive and frequent than the contact of their Kathmandu counterparts with Tibetan, Tamang or the Gurung group of languages. This of course does not mean that there has been a high degree of linguistic and cultural integration between Dolakha and Kiranti, nor did the trade relations of the Kathmandu Newars with Tibetan produce any profound impact on their language and culture. While the scenario epitomised by Benedict's Newar – Kiranti link has been accepted by most western linguists working in the field, the native Newar scholars like Mali (1979/80), R. Shakya (1981), Tamrakar (1981/82), Sayami (1986), Shrestha (1988/89, 1989, 1996) and D. Shakya (1992) who have investigated Dolakha Newar and the outlying dialects intuitively feel that Newar and

Table 3 Conjugation of <yat-> 'to do'. Mali (1979, Shrestha (1989), and Genetti (1990)

	<i>Pr.H</i>	<i>PH</i>	<i>PST</i>	<i>PRES</i>	<i>FUT</i>
1s	yat-a-gi	ya-ku/gu-ī-īu	yat-ki~gi	yat-a-gi	yer-gi~i
1p	yat-a-gu	ya-ku-pe	yat-ku~gu	yat-a-gu	yer-gu~i
2s	yat-a-n	ya-ku/gu-n	yat-mun	yat-a-n~i-na	yer-i-na~mun
2p	yat-a-min	ya-ku/gu-min	yat-min	yat-a-min	yer-i-nan~min
2h		ya-ku-pe	yat-ku	yat-a-gu	yer-i-ta
3s	yat-a-i	ya-ku-ju	yat-cu-ju~u	yat-a-i	yer-e-u~gy-N
3p	yat-a-hin	ya-ku-tan	yat-hin	hyat-a-hn	yer-e-in~u

Kirat are not related by race, culture or language, and the Newars in general have refused to recognize Kiranti as their parent language.

In Table 3 the conjugation of the Dolakha indicative verb <yat-> 'to do' is given, showing the variation provided by Mali (1979/80), Shrestha (1989) and Genetti (1990). The Dolakha verbs have the stem finals /-n/, /-t/, /-r/ or /-l/ which we said earlier are regular for all verb classes in this dialect as compared to their inconsistent occurrences in Kathmandu. The tense morphemes occupy the first suffixal slot after the stem, and this is followed by the flexional suffixes. The main points of difference among the three scholars who have analysed the Dolakha verb system include the following: while Mali presents a simple paradigm of past, present and future, Genetti recognizes habitual past as a distinct category and presents a more complete set of future tense morphemes and second person honorific suffixes which are missing in Mali. Shrestha, on the other hand, makes a two-way distinction between present-habitual present, and past-habitual past stative. She has also argued that variations in suffixal morphemes need to be recognized for transitive-intransitive verbs as well as the distinct sets of honorific and non-honorific imperative forms. Shrestha (1989:41) also stated that "in their finite forms the verbs inflect for tense (past and nonpast), mood (imperative), person (first, second, third), number (singular, plural) and aspect (present habitual, past habitual or stative)".

The Dolakha verb is characterised by two slots, the tense suffixes followed by the person and number morphemes. The stem-final consonant <-t> does not appear in the PH column and <-t> is changed to <-r> in the future column. The present-habitual and past-habitual distinguished by Shrestha (1989) are significantly different in form. Firstly, the stem <-t> is maintained in the present-habitual but not in the past-habitual. Secondly, the present-habitual suffix <-gu> is not devoiced to <-ku> after stem-final <-t> as in the past-habitual paradigm. Thirdly, Shrestha (43) notes that the flexional suffix <-u> in its stative form occurs only with impersonal past-habitual verbs and is not attested in the present-habitual. All her past-habitual examples for the third person singular category such as *ta-u*, *ya-u*, *yak-u*, *kal-gu*, *pyenk-ye-u* 'used to keep, take away, do, scramble (eggs) and kick' are marked with <-u> while Genetti has the allomorph <-ju>. The first person singular is marked as <-gt> in the past by Genetti (and devoiced to <-k> after the stem-final <-t>), and recognizes the number distinction <-gt> and <-gu> for the present but not for the future where the form *yer-i* with zero tense suffix is not marked for number. Genetti's representation of the first person plural and second honorific forms are identical and hence ambiguous for the past-habitual, past and present paradigm, but the second person honorific suffix <-ta> in the future is quite distinct from the rest. Van Driem (1993a:26) has also observed the widespread use of second person honorifics in a number of Kiranti languages such as Limbu and Dumi.

Shrestha and Genetti have both recognized the need to distinguish between transitive and intransitive imperatives and their relation to honorific and non-honorific verb forms (see Table 4). This paradigm is interesting for the clear

Table 4 Dolakha imperative verb forms, expanded from Genetti (1990:163)

	<i>Singular</i>	<i>Plural</i>		<i>Honorific</i>
<i>n</i> -stems				
Trans.	to- <i>ŋ</i>	to- <i>n</i>	'drink!'	tō- <i>sin-isin</i>
Intrans.	ō	o- <i>n</i>	'go!'	ō- <i>sin</i>
<i>t</i> -stems				
Trans.	s̄yat	s̄yat-un	'kill!'	s̄yar- <i>sin-isin</i>
Intrans.	sit	sit- <i>un</i>	'die!'	sir- <i>sin</i>
<i>r</i> -stems				
Trans.	na- <i>u</i>	na- <i>n</i>	'eat!'	nar- <i>sin</i>
Intrans.	yā	yā- <i>n</i>	'come!'	yār- <i>sin</i>
<i>l</i> -stems				
Trans.	pul	pul- <i>dun</i>	'pay!'	pul- <i>di-sin</i>
Intrans.	tul	tul- <i>dun</i>	'fall!'	tul- <i>di-sin</i>

distinctions in transitive-intransitive and singular-plural forms which occur in non-finite imperatives. Genetti also goes on to discuss the historical status of the prefixal morphology of prohibitives and optatives in Dolakha, but of these we shall not elaborate here.

The central question that concerns us here is the distribution of verb agreement systems in other modern Newar dialects. The comparisons that can be made with the available data from Dolakha and numerous Newar dialects spoken in and around Kathmandu Valley may provide insight into the various stages of evolution in the verb agreement morphology of the language. Shakya (1992) has classified the Newar dialects into six groups: (1) Kathmandu and Patan, (2) Bhaktapur, (3) Pyangau, (4) Bandipur, (5) Dolakha, and (6) Pahari (Badikhel). The subject-verb agreement with some variations is evident only in Dolakha and Pahari, while the remaining dialects that are associated closely to Kathmandu/Patan or Bhaktapur have the volitional-evidential c/d system. In a previous paper, Shakya (1990) suggested two major sub-groupings, Kathmandu-Patan, Bhaktapur forming the first group, and Dolakha, Pahari and Citlang as the second group. The first group has c/d and the second group has subject agreement system inflecting for person and number. A subsequent study however has revealed that the Citlang dialect is quite similar to Kathmandu and cannot be grouped with Dolakha and Pahari. Shakya also collected data from the eastern, central and western hill dialects of Newar, but all of them seem to testify to the wide areal spread of the c/d system. It thus turns out that Dolakha and Pahari are the only two dialects to date that have acquired analogous systems in agreement morphology. The flexional morphemes in the two dialects however are not identical, as can be seen in Table 5.

It is clear even with these limited data that Dolakha and Pahari represent different stages in the development of verb agreement. If Dolakha is recognized as the earliest form of the language, Pahari may be a link between Dolakha and Kathmandu.

Table 5 Dolakha and Pahari finite past agreement morphemes, adapted from Shakya (1990:3)

	Dolakha	Pahari	
	Past	Past	Nonpast
1s	nar-gi	nia:-ni	-i
1p	-gu	-rau	-i
2s	-mun	-na	-iu
2p	-min	-rau	-au
3s	-ju	-ri	-ai
3p	-hin	-ri	-ai

But I am taking the view that Dolakha and Pahari may represent innovative systems which have been subjected to intense areal influences over the centuries. The morphological data in Table 5 however reveal different degrees of divergence in the two dialects. Firstly, the Dolakha four-way tense system is reduced in Pahari to a two-way past/nonpast distinction like in Kathmandu. The question of which system is earlier and reconstructable for Proto-Newar is debatable as we do need more historical evidence before definite conclusions can be made. Secondly, Pahari has also lost the stemfinal consonants in some of its verbs, resulting in final long vowels similar to Kathmandu noun and verb stems. Thirdly, the person and number distinctions in the two dialects also differ in vowel and consonant segments, some of which like <-g> (D) / <-ni> (P); <-mun>/<-na>; <-ju>/<-ri> are significant for two reasons: (1) the change from <-u> to <-a> or <-i> on the one hand and the emergence of the conjunct <-a> and disjunct <-a> distinction on the other are also evident in the Pahari data; (2) the nonpast column in Pahari provides further evidence of simplification in the flexional morphemes which are deprived of all the consonants. The vowels too show a marked change from Dolakha <-u> to <-i> and <-i> to <-o> which are diphthongized and nasalized in Pahari. The Pahari morphology therefore seems to represent not a degenerate stage of Dolakha agreement but rather an example of what Watters (1993:109) has referred to as "just another innovative spin-off from an earlier but identical core".

Shakya (1990:5) divides the Newar language spoken outside the Kathmandu Valley into eastern, central and western groups, and relates the eastern dialects to Kathmandu/Patan and the western dialects to Bhaktapur. He established these relationships on the basis of linguistic and cultural links. Among the verb paradigms available in the three groups, the dialects spoken in Bandipur (of the western group) seems the most interesting in terms of speaker-participant (SAP) relationship.

These data reveal three points of interest: (1) the full set of stem-final consonants are retained in the five classes of verbs, and these are more obvious in the perceptive hearer forms than in the speaker paradigm; (2) the suffix <-tāŋ> in the nonpast verbs is consistent in the speaker column which corresponds to <-a - ā>

Table 6 Past/nonpast SAP's verb forms in Bandipur and Bhaktapur Newar dialects

Bandipur				
Past		Non-past		
Speaker	Hearer	'go'	Speaker	Hearer
1 wān<-ā>	wānn<-a>	'go'	wān<-tāŋ>	wānn<-a>
2 by<-a>	bil<-a>	'give'	bi<-tāŋ>	biyenn<-ā>
3 Lwā<-ye>	lwott<-a>	'quarrel'	lwae<-tāŋ>	larayenn<-ā>
4 nhilā<-ye>	nhill<-a>	'laugh'	hnila<-tāŋ>	nhilenn<-ā>
5 dik<-e>	dikull<-a>	'stop'	dikke<-tāŋ>	dikenn<-ā>
Bandipur		Past	Bhaktapur	
Speaker	Hearer		Speaker	Hearer
<-i>	<-a>		<-āe>	<-a>
<-āe>	<-ā>		<-ā>	<-ā>
<-e>	<-a>		<-ā>	<-ā>
		Non-past		
<-tāŋ>	<-a>		<-e>	<-i>

in the hearer column; and (3) the direct influence of Bhaktapur can be seen in the paradigms of Bandipur where the vowel alternations between <-a> and <-ā> are quite prominent. In other words, the <-a>/<-ā> alternations apply to both the verb stems and the suffixes: /wāŋ-ā/ in Bhaktapur is /wānn-a/ in Bandipur and vice-versa. The nonpast suffixes in Bandipur seem to indicate a major departure from Bhaktapur, i.e. <-e> and <-i> in Bhaktapur appear as <-tāŋ> and <-a> in Bandipur. The suffix <-tāŋ> in particular is not native to the dialects of Kathmandu Valley nor to the Dumre, Ridi and Pokhara dialects of the western group. It may well be a contact-induced form from the Tibetan group or the Gurung-Tamang-Thakali group of languages since we note that /-tan/ or /-tāŋ/ indicates a causative or perfective action in the Tibeto-Burman languages of western Nepal.

3. Conclusion

The following are some of the tentative conclusions arrived at on the basis of available evidence from the historical materials of Classical Newar and modern Newar dialects still spoken in different parts of the kingdom.

- (1) Jørgensen (1941) does not correctly reflect the verb morphology of earlier Classical Newar. The references to person distinctions are not consistent and finds no support in the earlier materials.
- (2) Jørgensen's remarks on the meaning and use of the verbal forms in Classical Newar are based on attested frequency of usage which do not represent absolute distinctions in grammatical functions. His interpretation of the finite

markers <-am, -a, -o>, for example, suggests a historical change rather than a case of synchronic alternation.

- (3) Newar Verb marking system reflects a semantic role of 'agent' and patient' and not a grammatical role of 'subject' and 'direct object'. Agent and patient in Newar are not marked for person or number, and this may well be the situation in the earliest form of the language.
- (4) The vast corpus of Classical Newar literature dating back to the earliest sources testify that the Newars of Kathmandu Valley have made creative use of their language within the framework of a simple evidential system that characterized the languages of the Bodish sub-division of Tibeto-Burman, with the sole exception of the Tibeto-Kanauri group which has verb agreement systems. Thurgood (1985, cited by LaPolla 1992:299) "has also given evidence that the Kanauri-Almora group, usually considered a branch of Tibeto-Kanauri, is actually genetically closer to the Kiranti and Kuki-Chin languages". This shows that verb agreement languages within the Bodish branch constitute only a small minority and it is unlikely that Newar ever belonged to this group.
- (5) Finally, the placement of Newar within the Bodic Division has been ambiguous and controversial since the classification of Tibeto-Burman family by Grierson (1909, Vol III). Van Driem (1993b:294) has attempted to resolve this problem by placing Newar firmly under the East-Himalayan branch along with Kiranti and Kham-Magar. DeLancey (1987:802) on the other hand regards Newar as probably belonging to Bodish among the middle-level relationships within Tibeto-Burman. While Van Driem has argued for a closer genetic relationship of the Dolakha Newar verb with the Kiranti languages, Delancey's view links Newar to the Tibetan dialects both of which have 'aspectually split ergative or active/stative patterns'. The crucial question therefore is whether the c/d system in Kathmandu Newar is a secondary innovation parallel with the other Tibeto-Burman languages of the area and whether we are to regard Dolakha as the only surviving reflex of the parent language. The current work on the morphological structures of the two systems suggests that Kathmandu c/d agreement is a result of 'wholesale borrowing', while Dolakha represents the 'ancient trait' in the form of fossilized verbal conjugation. It is not at all clear at this point why and when a conservative system such as the suffixal morphology was lost in Kathmandu and whether a prefixal system ever existed in Kathmandu and Dolakha. We can argue for a suffixal and/or prefixal agreement system for Proto-Newar. The enclitics attached to modern Newar verbs such as *wone-ki*, *khay-ta* or the causative-noncausative distinctions in *dun-e* 'to collapse' and *thun-e* 'cause to collapse' are often cited as evidence of a previous prefixal paradigm in the language. Assuming that Newar had a prefixal morphology in the remote past, we do not know why Dolakha has not retained it despite its close proximity to the Kiranti languages, some of which have prefixes associated with person and number agreement. Our present knowledge of the diachronic

phonology and morphosyntax of Newar however is neither exhaustive nor deep enough to arrive at definite conclusions, but I am inclined to believe that Dolakha, Pahari and Bandipur represent a continuum in the development of the language exposed to varying degrees of external influences over the centuries and not isolated relics of genetic inheritance. Hale (1982:55-59) in discussing the theory of genetic classification highlights the basic problem of making a clear distinction between the inherited status of shared features or characteristics and those that result from either universal tendencies or areal pressures. For Newar and most cognate T-B languages of the area, the reconstruction methodology may not yet be explicit or adequate enough to establish a definite relationship between the forms in a proto-language and the forms in the daughter languages. What is definitely reconstructable for Proto-Newar is the verb root with its stemfinal consonants. Many scholars working in the field are not yet convinced that proto-Newar has a verb agreement system based on complex morphological and syntactic relations.

Abbreviations

1	first person	NEG	negative
2	second person	NPC	non-past conjunct
2h	second person honorific	NPD	non-past disjunct
3	third person	p	plural
ca	about (circa)	PAST	past
AGT	agent	PAT	patient
c/d	conjunct-disjunct	PC	past conjunct
CAUS	causative	PD	past disjunct
DAT	dative	PH	past habitual
DIR	directional	Pr H	present habitual
FUT	future	PRES	present
GEN	genitive	PTP	participle
HON	honorific	s	singular
IMP	imperative	STAT	stative
INST	instrumental		

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THE HISTORICAL STATUS OF THE CONJUNCT/DISJUNCT PATTERN IN TIBETO-BURMAN

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Abstract

Several Tibeto-Burman languages show a peculiar pattern of distribution of copulas and/or finite verb forms, in which one set occurs with first person subjects in statements, second person subjects in questions, and in complement clauses of *verba dicendi* when the complement and main clause subjects are coreferential, and another set in all other contexts. When the evidence for and against reconstructing the system at the branch or family level is assessed, it appears that this “conjunct/disjunct” pattern is a recent secondary innovation in all of the languages in which it is found. It probably developed independently at least twice, in Tibetan and Akha; its occurrence in other languages may represent Tibetan influence.

In the distribution of the copular verbs and finite verb forms in a number of languages of the Bodic branch of the Tibeto-Burman (TB) family, as well as Akha, which belongs to another branch of TB, we find a distinction among clauses which Hale (1980) has labelled “conjunct” vs. “disjunct”.¹ This morphosyntactic opposition is intertwined with the marking of evidentiality and of a related category, sometimes called mirativity (DeLancey 1989), which indicates whether or not the proposition being related is information which is new to the speaker. While both evidentiality and mirativity are widespread semantic categories, explicitly marked in the morphosyntax of languages from all over the world, the conjunct/disjunct pattern appears to be unique to Tibeto-Burman. My purpose in this paper is to describe the pattern in those TB languages in which it is attested, and to offer some preliminary discussion concerning its origin and age.

The languages which will be discussed in this paper are Tibetan, Monpa, Newari and Akha. Monpa, which appears to be a close relative of Tibetan, is spoken to the east of Bhutan on both sides of the current *de facto* China-India border. Newari, spoken primarily in the Kathmandu Valley of Nepal, belongs to the same Bodic branch of Tibeto-Burman as Tibetan and Monpa; although its place within Bodic remains to be established, it is probably not particularly closely related to Tibetan within this branch. Akha (also called Hani,

spoken in southern Yunnan and northern Thailand, is only distantly related to the Bodic languages; it belongs to the Lolo-Burmese branch of TB, which has no common ancestor with Bodic below the level of Proto-Tibeto-Burman.

Conjunct/disjunct patterns

Kathmandu Newari

The conjunct/disjunct system was first described for Kathmandu Newari in Sresthacharya et. al. 1971:99-100; more complete and systematic discussions are found in Hale 1980, Genetti 1988, Hargreaves 1990, 1991. In Kathmandu there are two verb forms for the past/perfective and non-past tenses. In main clause statements one form, the “conjunct”, occurs with first person subjects, and the other, the “disjunct”, with second and third persons (exx. from Hargreaves 1989ms. Kathmandu examples are given in the transcription used in Malla 1985):

- (1) *ji wan-ā*
I go-PAST/CONJUNCT
'I went.'
- (2) *cha wan-a*
You go-PAST/DISJUNCT
'You went.'
- (3) *wo wan-a*
s/he go-PAST/DISJUNCT
'S/he went.'

The conjunct forms can be used only with predicates whose meanings normally entail volitional control. In Kathmandu, whether or not a given verb allows a conjunct form is for the most part lexically determined, but minimal pairs can be found:

- (4) *ji dun-ā*
I submerge-PAST/CONJUNCT
'I submerged myself.'
- (5) *ji dun-a*
I submerge-PAST/DISJUNCT
'I sank.'

Such data as these appear to represent a simple system of verb agreement, distinguishing first from non-first person (and they are so analyzed in, for example, Korolev 1989:65). But this analysis fails to account for a considerable number of

other data. Under certain circumstances in environments other than main clause statements clauses with non-first person subjects will have conjunct forms with volitional predicates, while questions with first person subject always have disjunct verb forms. Hale's »conjunct/disjunct« terminology is inspired by the use of the endings in complement clauses of *verba dicendi*, where the »conjunct« forms are used with volitional predicates when the speaker and the subject of the complement are coreferential, and the »disjunct« forms when they are not, regardless of person (exx. from Hargreaves 1991):²

- (6) wō: lā na-e dhakā: dhāl-a
 he+ERG meat eat-CONJ COMP say-Pst/DISJ
 'He_i said that he_i will eat meat.
- (7) wō: lā na-i dhakā: dhāl-a
 he+ERG meat eat-DISJ COMP say-Pst/DISJ
 'He_i said that he_j will eat meat.

Lhasa Tibetan

The most elaborate versions of the system for which I have data are found in modern Tibetan dialects; I will describe here the system in Lhasa Tibetan. The principal difference between the Tibetan and Kathmandu systems is that in modern Tibetan the system is located in a set of lexical distinctions in the set of copulas; in all modern Tibetan dialects the finite verb endings are based upon the copulas, and inherit their conjunct or disjunct values. (For a fuller discussion of the Lhasa system and its semantics see DeLancey 1985, 1986, and especially 1990b).

Lhasa has a four-term basic copular system (two other verbs which arguably belong to the same synchronic syntactic category are not relevant here). There are distinct conjunct and disjunct equational and existential copulas:

	Conjunct	Disjunct
Equational	yin	red
Existential	yod	'dug

The question of volitional control is irrelevant to the distribution of the copulas, but otherwise they follow the same pattern as conjunct and disjunct forms in Kathmandu: *yin* and *yod* are used with first person in statements,³ with second person in questions, and in complements of verbs of speaking or cognition when the lower and higher subject are coreferential. (All Lhasa examples are given in transliteration):

- (8) nga bod=pa yin
 I Tibetan(person) be/CONJ
 'I am a Tibetan.'

- (9) kho bod=pa red
 he Tibetan be/DISJ
 'He is a Tibetan.'

Even on first glance these data seem problematic as an example of verb agreement, since we are dealing with suppletive copular stems rather than alternating inflectional affixes. Further data show that the patterning of the two equational copulas is identical to that of the conjunct and disjunct verb forms in Kathmandu. In questions *yin* occurs with second rather than first person subject:

- (10) khyed=rang bod=pa yin pas
 you Tibetan be INTERR
 'Are you a Tibetan?'
- (11) nga rgya=mi red pas
 I Chinese person be INTERR
 'Am I a Chinese?'

And in the complements of verbs of cognition and speech *yin* occurs when the higher and lower subjects are coreferential:

- (12) khos kho bod=pa yin zer=gyis
 he+ERG he Tibetan be say-IMPF
 'He_i says that he_i is Tibetan.'
- (13) khos kho bod=pa red zer=gyis
 he+ERG he Tibetan be say-IMPF
 'He_i says that he_j is Tibetan.'
- (14) khos nga bod=pa red zer=gyis
 he+ERG I Tibetan be say-IMPF
 'He says that I am a Tibetan.'

The existentials follow essentially the same pattern, but with one important variation. An additional semantic parameter, related to evidentially, is involved in their use. (15) and (16) exemplify the same conjunct disjunct pattern as is found with *yin* and *red*:

- (15) ngar dngul tog=tsam yod
 I+DAT money some exist
 'I have some money.'
- (16) khor dngul tog=tsam 'dug
 he+DAT money some exist
 'He has some money.'

However, (17) is also a perfectly good sentence, in the context in which the speaker has just reached into his pocket and discovered some money that he had not known he had:

- (17) ngar dngul tog=tsam 'dug
I+DAT money some exist
'I have some money.'

The essential condition for the use of disjunct 'dug in statements with first person subject is that the statement report a fact which the speaker has only just discovered. (Thus such utterances are relatively rare).

This use of 'dug is not strictly evidential, but is an instance of a related semantic category sometimes called mirativity (DeLancey 1989). (Although it is analyzed as evidential in Goldstein and Nornang 1970, the later analysis in Goldstein 1973 is much closer to that presented here). The non-mirative disjunct existential is a composite form, *yod-pa red*:

- (18) khor dngul tog=tsam yod-pa red
he+DAT money some exist-NOM be
'He has some money.'

(There is also a composite equational, *yin-pa red*, which occurs in disjunct contexts and indicates hearsay or inference). The contrast between (16) and (18) is one of mirativity; (16) represent knowledge newly-acquired, typically by direct visual perception, while (18) represents established knowledge, which is not new to the speaker at the time of utterance.

As in many other Tibeto-Burman languages, in Lhasa much of the finite verb morphology represents grammaticalizations of what begin as constructions of a copula with a nominalized clause argument. The verbal endings which include one of the copulas have the same conjunct/disjunct value as the copula:

- (19) ngas byas-pa yin / *red
I+ERG did-PERF/CONJUNCT / *DISJUNCT
'I did it.'
- (20) khyed=rang-gis/khos byas-pa red / *yin
you-ERG/he+ERG did-PERF/DISJUNCT / *CONJUNCT
'You/he did it.'
- (21) nga(s) byed-kyi yin / *red
I(ERG) do-IMP/CONJUNCT /*DISJUNCT
'I will do it.'
- (22) khyed=rang(-gis)/kho(s) byed-kyi red / *yin
you(-ERG)/he+(ERG) do-IMP/DISJUNCT /*CONJUNCT
'You/he will do it.'

In the system of verbal endings the volitionality parameter, irrelevant in the copular system, is manifested as in Kathmandu:

- (23) ngas stag bsad-pa yin
I+ERG tiger killed-PERF/CONJUNCT
'I killed a tiger.'
- (24) ngas stag mthong-song
I+ERG tiger see-PERF/DISJUNCT
'I saw a tiger.'

In the imperfective, built on the existential copulas, the system of the copulas has been imported wholesale into the verb system. The three-way evidential opposition among the existentials, with conjunct *yod*, disjunct *yod-pa red*, and mirative 'dug, is carried over into the imperfective endings, conjunct =*kyi yod*, disjunct =*kyi yod-pa red*, and mirative =*kyis('dug)*. (In negative and interrogative sentences the imperfective disjunct form retains the 'dug which is normally dropped in the affirmative in colloquial speech):

- (25) ngas thang=ka 'gel-gyi yod
I+ERG tangka hang-IMP/CONJUNCT
'I am hanging up tangkas.'
- (26) khos thang=ka 'gel-gyis⁴
I+ERG tangka hang-IMP/DISJUNCT
'S/he is hanging up tangkas.' [based on the speaker's direct perception]
- (27) kho(s) thang=ka 'gel-gyi yod-pa red
S/he(ERG) tangka hang-IMP INDIRECT
'S/he is hanging up tangkas.' [based on report or inference]

In the perfective, the copular forms contrast with several others. The ordinary perfective is formed with the perfective stem of the verb and the suffix *-song*, and marks the clause as reporting something directly witnessed by the speaker, in contrast to the *-pa red* perfective, which indicates a report based on general knowledge. The *-song* category is thus one which has no equivalent in the copular system, which makes no tense/aspect distinction, but the semantics of *-pa red* are roughly equatable with those of the equational *red*, given the different systems within which each functions.

Monpa

In Lu Shaozhun's description of the Cuona Monpa dialect (1986:69-70), we find something very like the Lhasa system. Lu describes two equational copulas: /jin³/, used with first person, and /jin³ te⁴/, used with third; with second person either can

occur, but /jin³ te⁴/ is commoner. There are four existentials: /nem³/, /ne²³/, /de²³/, and /ne²³ kho² de²³/. All are existential/locational. With first person /nem³/ is used with second or third person /ne²³/ or /de²³/ (but /de²³/ is less common). /ne²³ kho² de²³/ is used with third person, where it contrasts with /ne²³/ in degree of certainty: /ne²³/ represents certain knowledge, /ne²³ kho² de²³/ less certain knowledge, not based on direct perception. Thus:

- (28) ne³ le⁴ pu³sA² nAi³ nem³
I PART child two exist
'I have two children.'
- (29) i² le⁴ je³ pu³sA² nAi³ ne²³
You PART also child two exist
'You have two children.'
- (30) pe³ le⁴ pu³sA² sum² ne²³
s/he PART child three exist
's/he has three children.'
- (31) tʂAçi² le⁴ pu³sA² sum² ne²³kho²de²³
Tashi PART child three exist
'Tashi maybe has three children.'

The Monpa tense/aspect paradigm is also based on the copulas. Note that the copular verb endings, like the copulas, show some restrictions as to person:

	Past	Present	Future
1st/2nd person:	-wo ² jin ³	-ri ² nem ³ kho ² nem ³	-cu ² jin ³
3rd person:	-wo ² ne ²³	-ri ² ne ²³ kho ² ne ²³	-cu ² ne ²³

The distribution described for the tense/aspect endings does not precisely parallel that of the independent copulas, but without a more detailed comparison of the Cuona and Lhasa systems than is possible with the available data the significance of this difference is not clear. In any case, we are dealing here with very similar systems.

Other parallels with Tibetan are worth noting. Cuona /jin³/ is obviously both cognate and functionally equivalent to Tibetan *jin*. The second element of /jin³ te⁴/ is harder to identify; its similarity to the existential /de²³/ is obvious, but not of great interest until we can explain the dissimilarities. In any case, it is striking to find the equational /jin³/ in the conjunct past and future verb forms, contrasting with existentials in the present, exactly as in modern Central Tibetan. (It is so striking as to suggest the possibility of structural borrowing).

Lu's report on the Er and Motuo dialects of Monpa (Sun et. al. 1980:98-100) describes a three-term system, with one equational, /gi/, and two existentials: /tʂ'o/, used to report matters which the speaker has known for a long time, and /la/, used to report things which the speaker did not know before, but has just learned. The same distinction is made in two tense/aspect forms which are built on the existentials; the present, which is simply the verb stem followed by /la/ or /tʂ'olo/, and the perfect, which is the verb with past tense suffix followed by /la/ or /tʂ'olo/. In both tenses, /tʂ'olo/ represents information which the participants in the discourse already had, /la/ information that has just become available.

Thus these dialects also show the mirative distinction marked in Lhasa by the distinction between *'dug* and the other existentials. However, this report does not mention any person-based restrictions on the use of either the copulas or the tense/aspect forms. It may be that in Cuona, but not the other dialects, the evidential/mirative system has developed into a conjunct/disjunct system under Tibetan influence; on the other hand without more complete data we cannot be certain that Er and Motuo are not more similar to Cuona than is indicated in the available reports.

Akha

The only clear example that I know of of the conjunct/disjunct pattern outside of the Bodic branch is found in the Loloish language Akha. The parallelism between the Akha system as described by Egerod and Hansson (1974) and that of Tibetan is striking, so much so as to suggest the possibility that the roots of the system may go deeper than Bodic. Etymological investigation of the system (Thurgood 1986) shows that at most of the modern system represents local development rather than inheritance from what, if the system were cognate with one in Tibetan, would have to be PTB. But there remains a core of the system which appears to have a deeper etymology, and which we may speculatively compare with Tibetan facts which we have already discussed.

The Akha system is encoded in a system of sentence-final particles. These are not directly identifiable with synchronic Akha copulas. Akha shows the conjunct/disjunct opposition in pristine form, with one set of particles used in first person statements, second person questions, and third person "indirect reference". The system also distinguishes three other semantic parameters, which Egerod and Hansson label "expected" vs. "non-expected" (often interpretable as "no surprise" vs. "surprise"), "visual" vs. "non-visual", and past vs. non-past, which is sometimes interpreted as "indirect" (i.e. inferential) vs. "direct" (i.e. evidential). Although the "visual"/"non-visual" opposition has no precise parallel in Tibetan, the Lhasa mirative category marked by *'dug* is strongly associated with the notion of direct visual evidence, so much so that Goldstein and Nornang (1970) suggest this as the primary content of the contrast between *'dug* and *yod-pa red* (see Goldstein 1973 for an analysis closer to that presented here). Thus it is not hard

to imagine such a distinction developing out of something like the Lhasa system. The other two parameters of the system match very nicely with Lhasa.

Historical status of the conjunct/disjunct systems

Although it has interesting points of similarity to active/stative case marking (in the formal marking of volitionality) and logophoricity (see Sells 1987), the conjunct/disjunct opposition *per se* is a very peculiar phenomenon, which so far as I know occurs only in Tibeto-Burman. We should therefore be reluctant to suppose too readily that its occurrence in several different closely-related languages is a result of chance independent development, or attributable to general typological tendencies. The immediate hypothesis which needs to be examined is that the attested systems are cognate, i.e. that this apparently unique phenomenon originated only once, and has persisted since in various daughter languages.

However, examination of the available data suggests that this hypothesis cannot be maintained. Three independent lines of evidence combine to suggest that the conjunct/disjunct opposition is a secondary development at least in all of the Bodic languages where it is found. First, while we cannot present a definitive account of the history of conjunct/disjunct marking in any of the languages in which it occurs, the evidence which we can bring to bear on the question strongly suggests that the system is a recent innovation in each of the languages where it is most clearly attested, i.e. it apparently does not reconstruct for Proto-Tibetan or Proto-Newari, and may be internally reconstructible as a development within Akha. Second, while the Tibetan and Newari systems are strikingly similar in structure, the morphological exponents do not appear to be cognate. Finally, in some other Bodic languages we can find certain elements of the conjunct/disjunct pattern without the entire system, and can identify these as likely precursors of the conjunct/disjunct pattern.

The distribution of the conjunct/disjunct pattern

All of the languages discussed here except for Akha belong to the Bodic branch of the TB family. This large and diverse branch consists of three clearly identifiable units: East Himalayan (the Kiranti languages and Chepang), West Himalayan (Kinnauri-Almora), and a unit consisting of Tibetan, the Tamang-Gurung-Thakali languages of Nepal, and Monpa. Newari and Kham are both Bodic, but their affiliations within the branch are not firmly established.⁵

Within this branch, the true conjunct/disjunct system has so far been reported only for the languages discussed here, i.e. several modern Tibetan dialects (but not Classical Tibetan; see below), Kathmandu (but not Pahari or Dolakha) Newari, and Cuona Monpa. A number of other languages are sufficiently well-documented that we can state with assurance that they do not have the pattern; these include Kinnauri and Pattani (Manchati) in West Himalayan, Kham, Gurung and Tamang, Chepang, and several Kiranti languages. (The closest analogue which has been reported for any Kiranti language is discussed below).

In some West Himalayan languages, as in Cuona Monpa, we find a person-based alternation in the copulas and copula-based aspect/evidential forms, with one copula used with 1st and 2nd person and another with 3rd person subjects. Where we have sufficient data to say,⁶ however, these languages do not show the true conjunct/disjunct pattern; i.e. all 1st and 2nd person subject clauses have the same form, regardless of whether the clause is a statement or a question, or the verb volitional or not. I have also not seen any evidence of the shift from one form to another in complement clauses which characterizes the Tibetan and Newari systems. While it is possible that this pattern represents either a precursor of or a secondary simplification of the more complex conjunct/disjunct pattern, I have no comparative grounds at present for deciding which if either of these is the correct interpretation.

Thus, while the comparative data are not sufficient to compel the conclusion that the conjunct/disjunct distinction cannot be reconstructed to the Bodic level, there is at best only a fairly weak comparative case for such a reconstruction. If a hypothesis of Proto-Bodic or any deeper provenience for the conjunct/disjunct pattern were to be maintained, it would require at least a robust case for the antiquity of the feature in the languages where it is found. In the following sections we will see that no such case can be made.

The historical status of the pattern in Tibetan

With the sole exception of Balti, to be discussed below, all modern Tibetan dialects for which I have adequate data appear to have some sort of conjunct/disjunct system. In Shigatse, a Central dialect very closely related to Lhasa, we find the identical set of distinctions in a four-term copula system. One striking difference, however, is in the disjunct equational morpheme; while the other three members of the system are cognate to their Lhasa equivalents, the equivalent of Lhasa red is a distinct etymon, /pie/, which would reflect Proto-Tibetan **C-bas*⁷ (i.e. a root **bas* with some consonantal prefix; Jin 1958 gives the orthographic form *shas*). The rather sketchy data available for other Tibetan languages, e.g. Sherpa (Schoettelndreyer 1980, Woodbury 1986), Lhomi (Vesalainen and Vesalainen 1980), and Ladakhi (Koshal 1979), are sufficient to show that structurally similar systems are widespread, though the semantic details appear to differ even across fairly closely-related dialects.

However, Read (1934) describes a very simple system in Balti, consisting only of existential/locative *yod* and equational *yin*. A cognate to '*dug*, *duk-pa*', does occur in Read's grammar, but only in the glossary under the English heading 'sit'; Read cites as an example *tsoqtsod-la dukpa* 'sit on the heels'. In modern Lhasa '*dug*' is completely replaced in this function by *sdod* 'sit'. The Balti system described by Read is strikingly simpler than the Ladakhi system described by Koshal (1979); while it is quite conceivable that Balti could have a significantly different system from Ladakhi, one would like the opportunity for more detailed investigation. Nevertheless, since Read was aware of the lexeme *duk*, he can hardly have missed its copular function if it had one.

As with the larger Bodic grouping, so in Tibetan the widespread attestation of the various features of the *c/d* complex in the modern Tibetan dialects would suggest the preliminary conclusion that it represents common inheritance at least from Proto-Tibetan. Alongside the dissenting voice of Balti, however, we can cite philological evidence which argues against this conclusion. Nothing suggestive of a conjunct/disjunct system is reported for the Classical language. Chang and Chang (1984) suggest, on the basis of the fact that only the conjunct forms occur in non-finite contexts in Lhasa, that these are original, and the disjunct forms a later development. A strong case can be made that the distinction between the conjunct and disjunct equationals is an innovation. The modern disjunct *red*, unlike *'dug*, does not occur in all modern Tibetan dialects, and appears to be a recent development in the Central dialects where it does occur. It is not attested at all in early literature, and has become acceptable in written Tibetan only in this century (cf. Bacot's characterization of it as "usite seulement dans le langage parlé" (1948:113)). Recall that, although Shigatse does have a disjunct equational, it is not cognate to *red*. One interpretation of these comparative data is that the semantic opposition shared by Lhasa and Shigatse developed after the differentiation of Proto-Central-Tibetan, and that while this semantic development was shared, it was lexicalized independently in the two dialects.

For the existentials the question is somewhat problematic. Comparative Bodic evidence would appear to suggest the antiquity of the disjunct *'dug* form. Lhasa *'dug* represents an etymon widely attested in Bodic in existential function (e.g. Newari *du*, Kinnauri *du(g)*), which suggests some antiquity for both the etymon and the function. But dialectal and philological evidence within Tibetan suggest the opposite. We have seen that *'dug* appears to lack the existential function in Balti, where it is reported only as a lexical verb. In the normal course of semantic change we would expect this lexical sense to be earlier than the more abstract sense found in Lhasa, so the absence of the more abstract sense in Balti is *prima facie* evidence that it never developed there. We can thus take Read's description of Balti as evidence suggesting that the grammaticalization of *duk* postdates the period of common Tibetan.

The implied conclusion that *'dug* was a lexical verb 'sit' until well after the differentiation of Proto-Tibetan is also supported by philological evidence. Classical Tibetan *'dug* retains in earlier texts the sense of 'sit, dwell, reside, stay', which on the basis of this and the Balti data can be identified as the etymological sense of the morpheme, and Jäschke (1881) gives this as the primary sense of the verb. Just as with the equationals, there does not appear to be any evidence for an opposition between *yod* and *'dug* in the earlier texts. The most likely conclusion is that this etymon was a lexical verb in Proto-Bodic; as the 'sit' verb it would be the prime candidate for development into an existential, and it is not implausible to imagine *'dug* having evolved in that direction independently in several of the daughter languages.

Another possibility is that the semantic opposition predates the split of Lhasa and Shigatse, but was independently relexicalized later in both dialects. Classical

Tibetan does have two distinct equational constructions: we find equational clauses both with the copula *yin* and with only two NP's and the final particle *'o*, with no verb, as:

- (32) *dpul='pongs=pa bza=ba dang bgo=ba med=pa zhid go*
 pauper food and clothing not=exist-NOM a
 '[He was] a pauper, without food or clothes.'

Before we can speak with any confidence about the antiquity and origin of the epistemological opposition in Tibetan it will be necessary to determine the functions of these two constructions. While the system as it exists in most of the modern dialects is demonstrably secondary, it remains possible that this represents relexicalization of a previously existing pattern. It is worth noting Francke's (1900) observation that a Ladakhi particle *og*, identified by educated Ladakhis with Classical *'o*, "is only used with the auxiliary *in*, to be, and almost only in the third person." This suggests some version of the conjunct/disjunct opposition. A possible hypothesis is that here, as in other respects, Ladakhi is conservative, and that the *'o* originally was involved in a conjunct/disjunct system. That this is not obvious in the Classical language would then suggest that this system of marking is already breaking down in that stage of the language, presumably being replaced by the nascent copular system. If this should be true it should certainly be possible to find traces of the older system in some older texts.

The historical status of the pattern in Newari

While Kathmandu has an unmistakable conjunct/disjunct system, the generally more conservative Dolakha dialect does not, and available data (Shakya 1990ms) show no evidence of conjunct/disjunct marking in the Pahari dialect. Thus we are faced with the comparative problem of whether to reconstruct the system for Proto-Newari, or to consider it a Kathmandu innovation. In principle the historical attestation of Newari, which includes texts dating to the fourteenth century, should permit a philological solution to the question; at present, however, the only systematic investigation of Classical Newari grammar available (Jørgensen 1941) is based entirely on later, primarily 18th and 19th century, texts.

In Jørgensen's materials we find essentially the Kathmandu system in independent clauses. In relative clauses, however, the morphology reflects a straightforward subject/object system rather than the more subtle conjunct/disjunct system (Hargreaves 1989); in modern Kathmandu, in contrast, the conjunct/disjunct system operates in all finite clauses. While a conclusive evaluation of the Classical Newari evidence must await detailed analysis of earlier materials, the simplest inference from these facts is that not long ago conjunct/disjunct marking in Kathmandu was restricted to independent clauses, and has only recently been extended to embedded clauses. Since the system in embedded clauses is more similar to that

of Dolakha than to that of modern Kathmandu, there is suggestive evidence here that the Dolakha system may be more conservative.

The comparability of the Bodic systems

Another argument against hypothesizing a common ancestor for the Tibetan and Newari systems is that, while the peculiar semantic and syntactic aspects of the system are quite comparable across several languages, the actual forms are not. The two most isomorphic systems that we have seen are those of Lhasa and Cuona Monpa, but just as the comparison of Lhasa and Shigatse shows that at least one aspect of the morphology of the modern systems is secondary, so a comparison of Tibetan and Monpa shows that one or both languages must have innovated most of the marking of the system—the only element common to the two systems is the conjunct *yin* etymon. The Newari system is even less comparable with any of the others. The morphology of the system is of a completely different nature from that in Tibetan and Monpa. There is no evidence that we are dealing here with grammaticalized copulas, and no involvement at all of the copulas in the system—even though one of the copulas, the existential *du*, appears to be cognate to the Tibetan existential *'dug*.

In Kathmandu, as we have seen, the conjunct/disjunct opposition occurs in the tense forms of conjugated verbs, but it is not lexicalized in the copular system, where we find only a two-way opposition between equational *kho* and existential *du*. The morphological opposition is made in the vowel quality of the finite endings, and with some classes in the stem consonant, e.g. *syata* (past disjunct), *syana* (past conjunct) 'killed'. It is, of course, perfectly conceivable that these forms represent eroded reflexes of forms that do have their ultimate origin in grammaticalized copulas, but there is no evidence for this. Since the distinction is not encoded in the contemporary Kathmandu copulas, the hypothesis that the opposition in the verb endings originated in a copular distinction would entail that the contemporary copular system is a later development, with the earlier copulas now preserved only in the verb endings.

In Dolakha, the conjunct/disjunct opposition is not found in either the copulas or in the finite verb (Genetti 1988, 1990). Since Dolakha has the same two copulas as Kathmandu, these copulas presumably date back to Proto-Newari. If we accept Genetti's conclusion that the Kathmandu system is secondary, then it cannot trace back to a distinction in the copular system, for the contemporary Kathmandu copulas are then older than the *c/d* opposition in the verb. This would make the Kathmandu system unique among those systems currently attested.

The ultimate validation of any hypothesis that a form or structure is reconstructible to some earlier level is a successful reconstruction. Given the available data it is difficult to be optimistic about the possibility of any such reconstruction for conjunct/disjunct marking even at the level of Proto-Tibetan, much less at any deeper level.

The historical status of the pattern in Akha

Documentation for the majority of Lolo-Burmese languages is not yet sufficient for us to state definitively whether Akha is unique within this branch in its possession of a conjunct/disjunct system. However, no similar pattern has been described from this branch, and in those languages which are well-enough documented that we can make a confident determination (particularly Burmese and Lahu) there is no trace of it. Moreover, Thurgood (1986) suggests Akha-internal etymologies for most of the exponents of the Akha conjunct/disjunct system, suggesting that in Akha as in Tibetan the system as we see it synchronically attested is a secondary and relatively recent development.

The Akha forms are as follows:

	Non-past		Past	
	exp	non-exp	exp	non-exp
conjunct	má	é	mà	è
disjunct	mé	á	mè	à
visual	ɲáa	ɲá	ɲàá	ɲà
non-visual	mía	nja	miá	njà

Thurgood has identified sources within Akha for most of the elements of the system. The 'visual' forms in /ɲ-/ Thurgood interprets as a grammaticalization of the 1st person pronoun, originally connected with a higher predicate of perception or cognition. These forms are also reminiscent of, though not identical to, the equational copula *ɲá*, which is in turn related to a widely-attested copular etymon (cp. Jinghpaw locational *nga*, the archaic Tibetan existential *mnga*, etc.). Thurgood's etymology is plausible, but should not be accepted without reservation until we understand more fully the semantics, distribution, and origin of the locative copular etymon represented by Akha *ɲá*. The non-visual forms *nja* and *njà* Thurgood connects with the modal morphemes *nja* 'able to' and *njà* 'will'. He suggests equating the other non-visual forms with the concessive particle *mi^a* in the closely-related Lisu, although the semantics of the equation are less compelling than for his other etymologies.

For the other elements Thurgood proposes PTB-level etymologies. The expected disjunct /*mɛ/* he identifies as an old copula. The non-expected conjunct/disjunct opposition between /*e/* and /*a/*, according to Thurgood's analysis, contains the oldest morphological material in the system. The /*a/* appears to reflect the original unmarked sentence particle (whether or not it ultimately traces to a 3rd person form, as Thurgood suggests), while Thurgood identifies the /*e/* with Tibetan *yin*.

Conjunct/disjunct systems as an areal phenomenon

Thus we have several reasons for rejecting the hypothesis that the attested manifestations of the conjunct/disjunct pattern represent common inheritance. Given that the mirative category is not particularly unusual cross-linguistically, and that

there is reason to believe that the conjunct/disjunct opposition has its origins in this category, the hypothesis of completely independent parallel evolution cannot be rejected out of hand. But the peculiarity of the phenomenon and its geographic localization suggest an areal development; and the Bodic data which we have examined would suggest that it is one of fairly recent date. The system is found in Tibetan and in Monpa, which is both closely related to and under considerable cultural influence from Tibetan (and most strikingly in the northern Cuona dialect, which in other respects shows the greatest degree of Tibetan influence). But the evidence from Tibetan textual data, and from the comparative dialect data, all suggest that the system has developed in Tibetan within the last thousand years.

In Newari, the distinction has apparently never existed in developed form in the Dolakha dialect. Here again, if we interpret the Dolakha evidence as arguing against the attribution of the c/d system to Proto-Newari, then we are dealing with a phenomenon less than a millennium old. The system in Kathmandu may well be interpreted as a borrowing, since it does not appear to be rooted in a preexisting evidential distinction. Again here an areal explanation is plausible, for there was considerable commercial and cultural intercourse between Lhasa and Kathmandu from the earliest historical times until very recently. Thus we find the system in those Bodic languages-Monpa and Newari-where we have independent evidence of Tibetan influence, while it is not attested in those-particularly the East Himalayish languages-where there is little evidence for an extensive history of Tibetan influence.

It seems unlikely that an areal explanation can be extended to Akha, since it has no very prominent geographical or cultural connections to Tibetan or the other languages discussed here. Any final conclusion on the question is premature at present, however, since many of the languages spoken in between Akha and Tibetan and Monpa are as yet too poorly documented to allow us to definitively establish the geographical distribution of conjunct/disjunct patterns or other novel grammatical features.

The roots of the conjunct/disjunct system

The Lhasa conjunct/disjunct/evidentiality system is the most elaborate that I know of at present. I take several characteristics of the Lhasa system to define the true conjunct/disjunct system. First, there is an evidential system including a "mirative" distinction between sentences which relate information which is part of the speaker's established representation of the world and those which relate information which the speaker has not yet assimilated. The peculiar development which constitutes the conjunct/disjunct system per se is a grammaticalization of the interaction between this mirative distinction and person, such that the non-mirative forms occur in conjunct contexts, and the mirative forms elsewhere. Conjunct contexts are: with 1st person actors in statements and 2nd person in questions; and in complements of *verba dicendi*, when the actors of the higher

and lower verbs are coreferential. Finally, in a full-fledged system such as that of Lhasa the same formal devices are used in the verbal system to distinguish volitional from non-volitional predicates.

I have argued elsewhere (DeLancey 1985, 1986, 1990b) that these three phenomena are not strictly independent. We can show both in Lhasa (DeLancey 1985, 1990b) and in Kathmandu (Hargreaves 1991) that the restriction of the indication of volitionality by the choice of conjunct forms to 1st person reflects the fact that the conjunct/disjunct opposition is fundamentally evidential. It is clear that the conjunct/disjunct pattern in the copulas is a grammaticalization of what would be the natural tendency, once the mirativity contrast has come to be explicitly marked, for statements about 1st person to represent old, and about non-1st persons to represent new, knowledge. We can infer from this a path of development in which the distinction begins as a mirativity opposition in the copula system. The crystallization of a conjunct/disjunct pattern represents the grammaticalization of a pragmatic association between mirativity and person, and this in turn is the natural source for the opposition in the finite verb.

Logophoric verb agreement in Dolakha and Sunwar

Both the conservative Dolakha dialect of Newari and Sunwar, a language of the Kiranti subbranch of Bodic, show another point of contact with the c/d complex. *Verba dicendi* in these languages take finite complement clauses, and in such clauses the verb may show 1st person agreement when the subject is coreferential with the higher subject (i.e. where Lhasa or Newari would have a conjunct form) and 3rd person agreement otherwise (i.e. in disjunct contexts). Genetti (1990:153) gives the following Dolakha examples:

- (33) rekā-n ji-n rājā-ta nāplat-ki haŋ-an hat-cu
 Reka-ERG I-ERG king-DAT meet-1sPst say-PART say-3sPst
 'Reka_i said "I_i met the king".
- (34) rekā-n ji-n rājā-ta nāplat-cu haŋ-an hat-cu
 Reka-ERG I-ERG king-DAT meet-3sPst say-PART say-3sPst
 'Reka_i said that I_j met the King.

Compare the parallel Sunwar examples:⁸

- (35) mere-m go-m kyarš 'saŋ-tu de 'tuŋ-šo tsha
 s/he-ERG I-ERG goat kill-P3s/3s COMP know-NOM exist
 'S/he knows that I killed a goat.'
- (36) mere-m mere-m kyarš 'saŋ-tu de 'tuŋ-šo tsha
 s/he-ERG s/he-ERG goat kill-P3s/3s COMP know-NOM exist
 'S/he_i knows that s/he_j killed a goat.'

- (37) mere-m mere-m kyarš 'saŋ-ta de 'tuŋ-šo tsha
s/he-ERG s/he-ERG goat kill-P1s/3s COMP know-NOM exist
'S/he_i knows that s/he_i killed a goat.'

We cannot simply interpret examples like (35) and (37) as direct quotation, for the verbs of the complement clauses do not agree with the subjects. However, this pattern differs from the true conjunct/disjunct opposition in two major respects. First, at least in Sunwar, this pattern is not obligatory; in my elicited data it is equally possible for the verb to agree with its subject without reference to the higher clause. More importantly, in main clauses the Dolakha and Sunwar verb suffixes function as straightforward agreement, i.e. main clauses with 2nd person subject, whether statements or questions, have 2nd person agreement.

While verb agreement is not ordinarily sensitive to volitionality in Dolakha (and never in our Sunwar data to date), Genetti reports occasional text examples which show an additional adumbration of the conjunct/disjunct system. A particularly clear example is (Genetti 1990:151):

- (38) ji-ŋ sir-eu ji chana nāpa tuŋ sir-i
I-EMPH die-3FUT I you (GEN) with TOP die-1FUT
'I will die. I will die with you.'

The heroine of the story here is commenting on her hopeless position, and the 3rd person agreement in the first clause appears to emphasize her complete lack of control.

Speculations on the origin of conjunct/disjunct systems

The attested distribution of the system is as follows: what I take to be the primary pattern, with the distinction lexicalized in the copulas and secondarily found in verb endings based on copular constructions, is described for all attested modern Tibetan dialects except Balti, and for Cuona Monpa. A secondary pattern, with the distinction marked in finite verb forms but not in the copula system, is found in Kathmandu and in Akha. No trace of a c/d distinction is found in Tamang or Gurung, nor is it reported for most of the other languages of Nepal, although Dolakha Newari shows hints and shadows which might or might not be traces of an earlier system, and Sunwar shows a set of semantic distinctions which look as though they might develop into a conjunct/disjunct system. Some West Himalayan languages show a pattern which might possibly be interpreted as evidence of an earlier conjunct/disjunct pattern, but no strong case can be made for this interpretation.

Tibetan data suggest that the pattern is a later development there. It is clear that the modern Tibetan exponents of the conjunct/disjunct distinction represent developments since Old Tibetan. The Lhasa disjunct equational *red* does not occur in the oldest texts, and even in recent centuries was considered a colloquialism by

prescriptive grammarians. Moreover, in the closely-related Central dialect of Shigatse, which has a c/d system very similar to that of Lhasa, *red* does not occur; the disjunct equational is *sbas*, which does not occur in the standard dictionaries and has no evident etymology. Both of these facts show that *red* is a recent introduction to the Lhasa copular system, which allows the inference that the distinction coded by the *yin/red* opposition is likewise an innovation.

The most elaborate development of the system so far attested is that of Central Tibetan. This may indicate that the Dbu-Gtsang speech community is the original home of the c/d distinction. If our current understanding of the distribution of the feature is correct, we can hypothesize an origin in some variety of Tibetan, certainly postdating the breakup of Proto-Tibetan, and very likely within the last millennium. We could then interpret the development of the system in Kathmandu Newari and Cuona Monpa as secondary developments facilitated by Tibetan influence.

As we have noted, however, it is difficult to extend this line of explanation to Akha. If we accept Thurgood's etymology for the Akha /e/ vs. /a/ opposition, then it may be that the core of the Akha system traces back to a very old opposition between an unmarked sentence type and a copular construction with **yin*. This would appear parallel to the Old Tibetan opposition between *yin* and the sentence final particle 'o. In that case we begin to have a case for attributing the seeds of the conjunct/disjunct opposition to PTB. Firm conclusions about the nature of this original opposition must be deferred pending further data from other languages and from the investigation of early Tibetan texts, but the evidence we have suggests an evidential or mirative rather than a fully-grammaticalized conjunct/disjunct opposition. Then we apparently must accept the conclusion that the grammatical conjunct/disjunct pattern, peculiar as it may be, did indeed develop independently from an original evidential or mirative opposition at least twice, in Bodic and in Akha.

Notes

1. An earlier version of this paper was presented at the 22nd International Conference on Sino-Tibetan Languages and Linguistics at the University of Hawaii, October 7, 1989. The preparation of this paper, and much of the informant work on Newari, Sunwar, and Lhasa and Shigatse Tibetan referred to here, were supported in part by the U.S. National Science Foundation under grants BNS-8711370 and BNS-8910221. I am grateful to my language consultants, Yungdrung Manang and Ngawangthondup Narkyid (for Lhasa Tibetan), Yangzom (for Shigatse), and Tangka Raj Sunuwar (for Sunwar).
2. The use of the "conjunct/disjunct" terminology for the system as a whole originates in Hale's attempt to unify the various conditioning environments by treating statements and questions as complements of abstract performative verbs, so that for these too we can speak of the lower subject being coreferential or not with the higher.
3. But see Chang and Chang 1984 for examples from text with *red* used with first person. I have not been able to elicit any such examples for detailed study.
4. The disjunct imperfective is generally written with **dug*, which is present in negative and imperative constructions, but in spoken Lhasa the copula is omitted in the affirmative.

5. Newari appears to be most closely related to East Himalayan. Watters (1975) suggests a particular relationship between Kham and West Himalayan, though the significance of some of his evidence is debatable (see DeLancey 1988).
6. I am grateful to Anju Saxena for valuable data on Kinnauri and Pattani.
7. I make here the standard simplifying assumption that the rules for relating Shigatse pronunciation to orthographic forms represent a summary of the phonological changes from Proto-Tibetan to the modern dialect.
8. The Sunwar data were elicited from Mr. Tangka Raj Sunuwar, a student at the University of Oregon.

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LAHU NOMINALIZATION, RELATIVIZATION, AND GENITIVIZATION

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Introduction

James McCawley is reputed to have said a while ago that if one were to penetrate deeply enough into the workings of English grammar one could come up with the answers to “all questions of interest for linguistic theory” without bothering to look at any other languages. Presumably, McCawley meant that to plumb the depths of any single language—whether English, Yiddish, or Lahu—would provide us with all the answers. Yet even this modified claim is false, as this paper is partly intended to demonstrate. In fact, we would like to lodge a counterclaim: Any language, if studied deeply enough, will supply us with new insights into questions of general theoretical interest; and some of these, at least, will be questions that could not possibly have been raised from the study of other languages.

Lahu is a language of southeast Asia belonging to the Lolo-Burmese family of the Tibeto-Burman branch of Sino-Tibetan. I have been working on Lahu and related languages since 1965, with fieldtrips to Thailand in 1965–1966 and 1970. The most intriguing and exasperating word in Lahu is the particle *ve*, which serves not only as the marker of genitive constructions and relative clauses, but also as a clause nominalizer. These are construction types that may not at first seem to be particularly closely related in languages like English. However, once the connection has been pointed out for a language in which it is obvious and overt, parallel phenomena can be discovered in other languages [see pp. 254–256], and we are challenged to find some theoretical basis for the relationship. We shall observe that in other languages where there is an overt connection between *nominalization* and relative–genitive constructions, there is a strong tendency to treat whole sentences as nounlike objects.

Lahu nominalization by means other than *ve*

Lahu has a rich array of devices for converting clauses into nounlike structures that can then be embedded into larger sentences. These devices are nominalizing particles that are postposed to the clause. All of them except *ve* have clear-cut meanings, and present no particular problems of analysis.

A Lahu clause is defined as a VP plus any (perhaps zero) preceding NPs that are associated with it [LG 2.1].¹ A structure is functioning as a noun if it may be followed by a member of the class of noun-particles (P_n s), crucially the accusative P_n *thàʔ* [LG 3.8].

Agentive nominalizations [LG 6.13]: *pā, ma; šē-phā, šē-ma*

A clause may be turned into a noun of agent (“the clauser; the one who clauses”) by one of several particles, most productively by *pā*. Thus:

- (1) *qhɔ-qhɔ-lə-qhɔ | mǎ tǎʔ e gǎ*
‘(They) don’t want to climb up into the hills.’²
- (2) $\{ \{ qhɔ-qhɔ-lə-qhɔ | mǎ tǎʔ e gǎ pā \} | qòʔ e phèʔ ve \} yò$
‘Those who don’t want to climb up into the hills may go home.’

Sentence (2) as a whole is nominalized by the *ve* at the end (see p. 246). Despite the relative clause in the English gloss, the embedded clause is clearly functioning as a unitary derived noun: ‘the not-wanting-to-climb-up-into-the-hill-ers.’ This is obvious when the clause is of simpler structure, so that the English translation tends to be a single noun: *šā | bɔʔ* ‘shoot animals’ / $\{ šā | bɔʔ pā \}$ ‘hunter’; *lə lèʔ* ‘ask to eat’ / $\{ lə lèʔ pā \}$ ‘beggar’, etc.

Locative nominalizations [LG 6.14]: *kǎ*

The particle *kǎ* has the power to convert a clause into a noun of location (“the place where one clauses”):

- (3) *yɔ | yù tǎ*
‘He has taken (it).’
- (4) *khǎʔ thǎʔ | { yɔ | yù tǎ kǎ } ɔ̄ | qòʔ te ò*
‘(He) has already put the crossbow back where he had taken it from.’

In (4), the nominalized clause is followed by the locative P_n *ɔ̄*. When the *kǎ* clause is of simple enough structure, a single noun usually serves for an English

- (14) [vâ²=ó-qō thà² | cō tā ve] yā-mī=ma lē | qhā²-šē=ma yō
 ‘The woman **who boiled the pig’s head** is the headman’s wife.’
- (15) [qhā²-šē=ma | cō tā ve] vâ²=ó-qō | mē jā
 ‘The pig’s head **the headman’s wife boiled** is yummy.’

The noun in the higher sentence that is modified by the RC is the relative head or N_{rh} (*a-pi=qu* ‘old lady,’ *Pichō=pā* ‘Shan man,’ *yā-mī=ma* ‘woman,’ *vâ²=ó-qō* ‘pig’s-head’). In general, when the verb of the RC is an intransitive action verb—like *jū qay* ‘walk’ in (12)—or an adjective—like *chu* ‘be fat’ in (13)—the N_{rh} is its underlying subject. When the verb of the RC is transitive—like *cō* ‘boil’ in (14–15)—the N_{rh} is either its underlying subject (14) or object (15). Sometimes there is ambiguity, when it makes sense to interpret the N_{rh} either as the subject or as the object of the RC: [*šī ve*] *chō thà² | tā qō² pī* (a) ‘Don’t tell (it) to the people who know (it)’ [N_{rh} is subject]; (b) ‘Don’t tell (it) to the people (we) know’ [N_{rh} is object]. In any case, no RC may contain a noun that is coreferential with the N_{rh}; that is, the underlying subject or object in the RC that is equivalent to the N_{rh} is obligatorily deleted on the surface.

So far, there is nothing very remarkable about the role of *ve* in these constructions. There is an obvious analogy between the possessor nuclei of genitive expressions and relative clauses. Both are structures that are semantically subordinate to a nounhead (v_h or N_{rh}), and in fact, there are other languages where the same particle is used to mark both relationships. A notable case is the Mandarin *.de*, used both in genitives (*woo .de kuay.tz* ‘my chopsticks’; *feiji .de chyan.tour* ‘the front of the airplane’) and in relative clauses ([*may | shu .de*] *ren_{Nrh}* ‘the person who sells books’; [*tsornq Meei.gwo | lai .de*] *feiji* ‘airplanes that come from America’).

Nominalizing *ve* in nonfinal clauses

Clauses in Lahu are either final or nonfinal. A final clause (Cl_f) is the last clause of its sentence. Simple sentences comprise a single (therefore final) clause. Nonsimple sentences contain at least one nonfinal clause (Cl_{nf}). A sentence is complex if it contains a Cl_{nf} embedded within the Cl_f, and compound if it has a Cl_{nf} conjoined to the Cl_f [LG 2.1]. The various types of Cl_{nf}s differ from one another and from Cl_fs with respect to the kinds of unrestricted particles that may follow them [LG 4.72, 5.43 et passim]. These details need not concern us here. However, it is convenient to begin our discussion of nominalizing *ve* with those cases where the *ve* clause is nonfinal, since it is here that its nounlike nature is most apparent to our alien eyes.

Embedded ve clause followed by a noun particle [LG 6.115]

The clearest cases are those where the *ve* clause is followed by a P_n—morphemes that otherwise occur only after natural nouns (or clauses nominalized by one

of the particles discussed above, pp. 238–240). The P_ns that may occur after *ve* clauses are *pa-to* ‘causal’ and (more importantly) *thā²* ‘accusative.’ Thus, analogously to (16)–(18), where natural nouns are marked by these P_ns, we have (19)–(21):

- (16) qhā²-šē pa-to | he | tú mā phē² šē
 N P_n
 ‘**Because of the headman**, (he) can’t fire (his) fields yet.’
- (17) ð-šī thā² | nò | mā ġa mò lá
 N P_n
 ‘Didn’t you see **the blood**?’
- (18) ð-mī=ma thā² | nò | mā šī šē lá
 N P_n
 ‘Don’t you know **(his) wife** yet?’
- (19) {yō | he | mā ġa phō pò šē ve} pa-to | he | tú mā phē² šē
 ‘**Due to the fact that he still hasn’t finished clearing his fields**, he can’t fire them yet.’
- (20) {ð-šī | tō² la ve} thā² | nò | mā ġa mò lá
 ‘Didn’t you see **that blood was coming out**?’
- (21) {yō ð-yā=pā | ð-mī=ma | bà tù ve} thā² | nò | mā šī šē lá
 ‘Don’t you know yet **that his son is going to divorce his wife**?’

As the glosses indicate, the meaning of nominalizing *ve* is much more abstract than those of the other nominalizing particles (pp. 238–240 above). *Ve* adds nothing to the meaning of its clause other than the gift of nounhood itself, and is in fact as semantically colorless as the English complementizer *that*. For want of a better term, we may call *ve* an indicative nominalizer, understanding by this nothing more than the semantically unmarked nominalizer.

Ve clause not followed by any particle [LG 5.21, 6.11].

Most of the time, the syntactic–semantic relationship of the nonfinal *ve* clause to the rest of its sentence is not signalled overtly by any particle, as in (22)–(27):

- (22) {{nò-pa ve ð-khō | mā na ve} | dā² ve} lá
 ‘Is it good **not to listen to your father’s advice**?’
- (23) {ñà-hi thā² | Kālā-phu=khō | mā lá chē ve} | cī-kā | cō jā
 ‘**(Your) continuing to teach us English** is very important to us.’
- (24) {ñá nālī | mā gà ve} | nī chi mini² | cō šš

'It's twenty minutes to five' ('As for not reaching 5:00, there are still twenty minutes').

(25) {nò kà² | là ve} | ηà | ha-lè já
'I'm very happy that you came too.'

(26) {nò | i-ká² | ló pí ve} | ηà | mā sī
'I didn't know that you could swim.'

(27) {yó ve khi-še thà² | pí | chè² lá ve} | yó | bà² já cé
'He got very angry at the mosquitoes' biting him on the feet.'

In all sentences of this type, it is possible to insert a topicalizing unrestricted particle after the *ve* clause. Furthermore, in sentences like (25)–(27), where the *ve* clause may alternatively be considered the object of the higher verb, the P_n *thà* may be inserted after it.

Where semantically appropriate, as in (23) or (27), the causal P_n *pa-to* may also freely be inserted ('Because of your continuing to teach us English, [you are] very important to us'). The point is, there is still no doubt that these clauses are functioning as nouns, even when a P_n is not overtly present.

Ve clause followed by a P_{unf} [LG 6.110]

An unrestricted particle (P_u) is a morpheme of abstract meaning that may occur either after nouns or verbs. P_u s are thus more powerful than noun particles, which occur only after nouns, or verb-particles (P_{vs}), which come only after verbs. A subclass of these are the nonfinal unrestricted particles (P_{unfs}), which occur only in nonfinal position, either after the verb of a nonfinal clause or after a noun that does not come last in its sentence. Sentences whose last structure is a NP (rather than a VP) are minor sentences. See, for example, sentence (14). The presence of a P_{unf} in the middle of a sentence, therefore, is not a criterion for deciding whether a preceding structure is nominal or verbal. Nevertheless, since we find P_{unfs} after natural nouns, naked verbs, and *ve* clauses, and since the meaning of $V + P_{unf}$ is indistinguishable from that of $V + ve + P_{unfs}$, it is clear that the only difference between these two is that provided by the nominalizing power of the *ve*. In other words, $V + ve + P_{unf}$ is more like $N + P_{unf}$ than like $V + P_{unf}$. Consider (28)–(30).

(28) with the conditional P_{unf} *qo*

a. Lāhū-yá qo | i-mū | mā ġa cí qay hé
N P_{unf}

'If (he's) a Lahu, he probably won't be able to go on horseback.'

b. mū-cha | cha qo || i-mū | mā ġa cí qay hé
V P_{unf}

'If the sun is hot, (he) probably won't be able to go on horseback.'

c. {mū-cha | cha ve} qo | i-mū | mā ġa cí qay hé

'If the sun is hot, (he) probably won't be able to go on horseback.' ('If it is a sun-being-hot . . .')

(29) with the concessive P_{unf} *thō*

a. yá-é thō | ó-qō | dà² já

N P_{unf}

'Although (he's) a child, he's got a good head' ('the head is very good').

b. yó | mō já thō || ó-qō | dà² já

V P_{unf}

'Although he's very old, he's got a good head.'

c. {yó | mō já ve} thō | ó-qō | dà² já

'Although he's very old, he's got a good head.' ('Although it is a his-being-very-old . . .')

(30) with the topicalizing P_u sequence *tí qo lè*

a. ηà tí qo lè | yà²-to pí à

N P_u P_u P_u

'As for me, I'd be awfully embarrassed!'

b. ηà | á-thā | mō² tí qo lè || yà²-to pí à

V P_u P_u P_u

'As for me playing the jewsharp, I'd be awfully embarrassed!'

c. {ηà | á-thā | mō² ve} tí qo lè | yà²-to pí à

'As for me playing the jewsharp, I'd be awfully embarrassed.'

Note that the difference in structure between (30b) and (30c) cannot be captured in English translation, since English *as for* requires us to nominalize the following clause anyway. In general, we regard utterances like (28b), (29b), (30b) as ordinary compound sentences, where the Cl_{nr} is merely conjoined to the Cl_s , not embedded within it as in (28c), (29c), (30c).

Ve deleted from the nominalized clause [LG 5.11]

Sometimes, especially when the *ve* clause is quite short and the sentence as a whole is not very complicated in structure, the *ve* itself may be deleted:

(31) {{là² | tha (ve)} | ší è qay ve}

'The hand-clapping was boisterous.'

(32) {qhā²-še | te (ve)} | dà² à mē

'The way the headman does it is really fine!' ('The headman's doing it . . .')

(33) é || {a-pi | qhé | tē² (ve)} | nù à

'Whew! Grandma's farting sure stinks!'

It is hopeless to try to formulate precise conditions for the deletability of this *ve*, just as it would be to try to specify exactly when English *that* may be omitted from relative clauses (*the man [that] I know*).

**Ve in final clauses—nonembedded
nominalizations [LG 4.711, 6.118]**

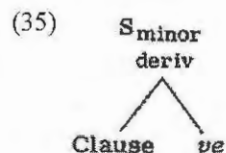
We come now to a phenomenon that is quite alien from the point of view of standard average European languages but surprisingly widespread elsewhere—the nominalization of entire sentences that are embedded in nothing larger than themselves.

Ve appears in the final clauses of Lahu sentences with enormous frequency. [For additional examples, see sentences (2), (5), (7), (22), and (31) above.]

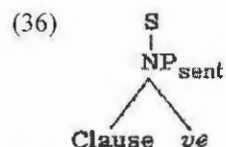
- (34) {yɔ̌ | vên qhɔ̌ | mɔ̌ | ca hɔ̌ qay ve}
'He went/goes/will go to town to sell some things.'

As the gloss of (34) shows, *ve* has nothing to do with tense. So what is it doing in sentences like this? It is tempting to take refuge in such empty labels as indicative, general, neutral, or actualizable. The situation is actually more straightforward. The verbal event is being objectified, reified, viewed as an independent fact, endowed with a reality like that inhering in physical objects—in short, *nominalized*. It is standing on its own, and is not a constituent of any sentence higher than the one to which it belongs itself.

In formalizing this interpretation, it is important to avoid setting up an overly complex underlying structure when a simpler one would do just as well. Perhaps the most comfortable solution would be to recognize two types of minor sentences—natural and derivative. A natural minor sentence [e.g., sentences (12), (13), (14)] has a natural noun phrase as its final constituent. A derivative minor sentence is one that has been nominalized by a *ve* in its final clause:



Alternatively, one could recognize sentential noun phrases:



In any event, it is necessary to guard against being misled by attempts at English translation of these structures. It may help us to understand a sentence like:

- (37) {yɔ̌ | là tù ve}
'He will come.'

by glossing it with painful literality as 'It is the case that he will come' or 'It is a he-will-come case.' But this does not mean that we have to assume that there is some higher verb floating around with the meaning "be the case."

***Ve*-clauses plus *P_{uf}*s**

Final *ve*-clauses may be followed by final unrestricted particles (*P_{uf}*s), morphemes of abstract meaning which come at the end of sentences, supplying information about the speaker's propositional attitude toward the sentence as a whole [LG 4.72]. The *P_{uf}*s may be roughly subdivided semantically into several categories—declarative, dubitative, interrogative, persuasive, quotative, and interjectory. They occur equally well after naked verbs and after the final NP in natural minor sentences. However, analogous to the situation described above (p. 244) with respect to *P_{unr}*s, sequences of *V* + *ve* + *P_{uf}* are more like *N* + *P_{uf}* than like *V* + *P_{uf}*:

- (38) with the declarative *P_{uf}* *yò*
- a. yɔ̌ | qhâ²-sɛ yò
 N *P_{uf}*
 'He (is) the headman.'
- b. yɔ̌ | qay yò
 V *P_{uf}*
 'He's going!'
- c. {yɔ̌ | qay ve}yò
 'He's going' ('It is a his-going').³
- (39) with the dubitative *P_{uf}* *hé*
- a. yɔ̌ | qhâ²-sɛ hé
 N *P_{uf}*
 'He('s) probably the headman.'
- b. yɔ̌ | qay gâ hé
 V *P_v* *P_{uf}*
 'He probably wants to go.'
- c. {yɔ̌ | qay gâ ve}hé
 'He probably wants to go.' ('It's probably a his-wanting-to-go').
- (40) with the interrogative *P_{uf}* *lâ*
- a. yɔ̌ | qhâ²-sɛ lâ
 N *P_{uf}*
 '(Is) he the headman?'
- b. yɔ̌ | qay lâ
 V *P_{uf}*
 'Is he going?'
- c. {yɔ̌ | qay ve}lâ
 'Is he going?' ('Is it that he's going?').

Citation forms of verbs

Perhaps the clearest situation where a verb is treated as a nounlike object is when it is cited in isolation—metalinguistically, as it were. Just as we cite verbs with the nominalizer *to*, so the Lahu invariably cite them with *ve*: *qay ve* 'to go'; *chu ve* 'to be fat'; *sí ve* 'to twist.' Consider the following:

(41) {{ *qay ve* } | *Kâlâ-phu=khô* | *qhâ-qhe qo' ve* } *le*
'How do you say "to go" in English?'

(42) { << { *qô' dâ' ve* } >> *qô' qo* || << { *dê dâ' ve* } >> *qô' ve* }⁴
'"To have words with each other" means "to quarrel with each other."'

As a general rule of thumb applicable throughout the Tibeto-Burman family, whenever one discovers the particle used in verb citation, one can be sure of having discovered the most important nominalizer of the language (see pp. 250–251).

Ve and negation

After a non-negated verb, *ve* is actually more conspicuous by its absence than by its presence [LG 4.711]. It is as if the Lahu verb were so brimming with potency that it must be gelded by nominalization in order to avoid giving the sentence a special mark of emphasis:

- (43) a. { *hâ-hi* | *tê ge* | *qay ve* }
'We go/went/will go together.'
b. *hâ-hi* | *tê ge* | *qay*
'Let's go together!'; 'We go together!'; or 'We'll go together!'

However, the situation is reversed when the verb is negated by preposing the adverb *mâ* 'not' to it:

- (44) a. *yô* | *mâ hâ*
'He's not tired.'
b. { *yô* | *mâ hâ ve* }
'He's not tired!'

Here, the power of the naked verb is sufficiently attenuated by the negative adverb, so that nominalization by *ve* is no longer necessary to avoid special emphasis. It is now the presence of *ve* that is semantically marked. To negate the verbal event and reify it at the same time is to give extra force to the negation.

Natural nouns are negatable in Lahu by preposing them to the VP *mâ hê'* 'is not the case' [LG 6.111]:⁵

- (45) *yô* | *Lâhū-yâ* | *mâ hê'*
'He is not a Lahu.'

Since they are nounlike entities, *ve* clauses may be negated the same way:

- (46) { *yô* | *hâ ve* } | *mâ hê'*
'He's not tired'; 'His being tired is not the case.'

Note that both (46) and (44b) are more emphatic than (44a). In the case of (44b), one is nominalizing a negation; in the case of (46), one is negating a nominalization.

Citation forms and nominalizers elsewhere
in Tibeto-Burman

As hinted above, Lahu is by no means alone in its penchant for nominalizing whole sentences. This is in fact a pervasive tendency throughout the Tibeto-Burman family.

Burmese

In modern Burmese, verbs are cited with the particle *te*: *hpya' te* 'to cut'; *thwà te* 'to go'; *pein te* 'to be thin.' This same particle appears with great frequency in clause final position, where the standard grammars misinterpret its true function and characterize it by such vacuous labels as nonfuture or general: (e.g., Okell, 1969, p. 119).

- (47) { *côu* | *mâ-hpyei nain lóu* || *dâ né* | *hpya' te* }
'Because he couldn't undo the rope, he cut it with a knife'
('It is a case of his-cutting-it-with-a-knife-because-he-couldn't-undo-the-rope').

The proof that *te* is really a nominalizer is that *te* clauses may be followed by the accusative particle *kou*, which otherwise occurs only after natural nouns:

- (48) { *hkinbyà* | *hvi te* || *mâ-hyi te* } *kou* | *be hne* | *thi mālè*
'How will I know whether you're there or not?'

Jinghpaw [Kachin]

In Jinghpaw (an important Tibeto-Burman language spoken in northern Burma), verbs are cited with the particle *'ai*: *lú 'ai* 'to have'; *hkráp 'ai* 'to weep'; *lagú 'ai* 'to steal.' This particle occurs with tremendous frequency in clause final position:

- (49) { *Jinghpô' 'á' māsà* | *myüt* | *kabà 'ai* }
'Jinghpaw people are proud at heart.'

Appositional *ve* clauses [LG 6.31].

There does exist one situation where a *ve* in a final clause affects only that clause and not what comes before. This happens when two *ve* clauses stand in apposition to one another:

- (56) {yó | qó² ve} | {šó-pō | qay ve}
 'What he said was, he'd go tomorrow.'

Such sentences are analogous to appositions involving natural NPs:

- (57) khá²-pà-mē-cí-cá-kwì | ñá² tē cā yò
 'The racket-tailed drongo (is) a kind of bird.'

Nominalizing *ve* versus relativizing *ve* [LG 6.47]

When a *ve* clause is followed directly by a noun, there is often ambiguity according to whether the clause is interpreted as modifying that noun or not. Consider the following sentence:

- (58) a. {tē-qhâ²-tê-lò | šī ve} | {a-pì=qu | šī e ve}yò
 'What the whole village knows is, the old lady has died.'
 b. {[tē-qhâ²-tê-lò | šī ve] a-pì=qu | šī e ve}yò
 N_{th}
 'The old lady whom the whole village knew has died.'

In (58a), the sentence is understood as consisting of two appositional *ve* clauses, such that the noun *a-pì=qu* 'old lady' has no connection with the preceding nominalized clause *tē-qhâ²-tê-lò | šī ve* 'that which the whole village knows'. In (58b), on the other hand, *a-pì=qu* is taken as the nounhead of what precedes, so that the *ve* clause is not a nominalization at all, but rather a relative clause. In actual speech, there would be no problem in keeping the interpretations apart; a pause before *a-pì=qu* is sufficient to remove the ambiguity of the sentence in favor of the first reading.

Nominalizing *ve* versus *ve* in right relative clauses [LG 6.497].

Under certain conditions, it is possible to shift a relative clause (*ve* and all) to the right of its N_{th}, with little or no change in meaning [LG 6.49]:

- (59) a. {[cō tā ve]vâ²=ó-qō thâ² | qhō | te tā ve}le
 N_{th}
 'Where have you put the boiled pig's head?'
 b. {vâ²=ó-qō [cō tā ve] thâ² | qhō | te tā ve}le
 N_{th}
 'Where have you put the boiled pig's head?'

Sometimes it happens to make sense to interpret a given noun either as the head of a right-shifted relative clause or as being included within a nominalized *ve* clause:

- (60) a. šī²-cē [mā mu ve] kâ² | thu bà phē² ɔ
 N_{th} RRC P_{unf}
 'You may chop down even the trees that are not high.'
 b. {šī²-cē | mā mu ve}kâ² | thu bà phē² ɔ
 'Despite the fact that the trees are not high, you may chop them down.'

Under interpretation (60a), the P_{unf} *kâ²* 'even' is in constituency with the natural noun *šī²-cē* 'trees,' which is in turn modified by the switched relative clause. In (60b), *kâ²* 'even though, despite' is in constituency with the entire predicative clause *šī²-cē | mā mu ve* '(It is the case that) the trees are not high.' See pp. 244–245 for similar examples of P_{unf}s in constituency with preceding *ve* clauses.

Subordination and nominalization

The question we now face is whether there is any plausible way we can relate the nominalizing power of *ve* to its function as a subordinator (pp. 240–242). It might be claimed at this point that this is a pseudo-issue. Maybe *ve* represents the conflation of two separate particles that now happen to be pronounced the same way through historical accident? In the first place, there is no evidence for such a claim. But more importantly, there are many other languages, including some that do not even belong to the Sino-Tibetan superstock, where the same morpheme is used for both functions. This cannot be accidental. At the same time, it is not easy to explain. We are in no position to offer a definitive solution here, but we will content ourselves with presenting some evidence from other languages.

**Particles in other languages having dual subordination/
nominalization function***Japanese*

The behavior of the Japanese particle *no* is strikingly similar to that of *ve*. It is, first of all, the marker of genitive subordination: *ki no eda* 'branch of a tree'; *azi no moto* 'the wellspring of taste' (monosodium glutamate); *hi no kuruma* 'chariot of fire'; *zaibatu no zitoryoku* 'the real power of the corporations.' Unlike *ve*, however, *no* is not used to connect relative clauses to their heads; the verb of a RC is attached to its N_{th} by simple juxtaposition ([*kinoo tabeta*,_v] *ninjin*_{N_{th}} 'the carrots (we) ate yesterday').

The other role of *no* in Japanese grammar is that of a nominalizer:

- (61) {*issyookanmei ni | hataraku no*} wa | *karada ni | doku | desu*
 P_n
 'Working with all one's might is poison for the body.'

- (62) {*haha ga | kaette kuru no*}_o | *matte orimasu*
P_n

'I'm waiting for **my mother to come back.**'

In these sentences, the *no* clause is nonfinal. But colloquial Japanese, like Lahu, has a strong tendency to nominalize whole sentences by using *no* in the final clause:

- (63) {*kimi mo | iku no*}_{ka}
P_{uf}

'Are you going too?' ('Is it a you-going-too thing?')

- (64) {*atasi mo | asobitai no*}_{yo}
P_{uf}

'I want to play too!' [women's speech]

- (65) {*mada aru no*}

'Are there still some left?'

Sentences like (63)–(65) are certainly to be derived from fuller, less colloquial structures where the *no* clause is followed by the copula *da/desu* (the so-called *no desu* construction of standard grammars of Japanese), so that {*iku no*} | *desu ka* 'Are (you) going?' ('Is it a your-going?') is analogous to natural-noun sentences like *mookoo-syuuheki | desu ka* 'Is it an epicanthal fold?' Nevertheless, the propensity for copula deletion here does make Japanese look a great deal like Lahu.

Mandarin

As discussed above (p. 242), the particle *.de* is used as a subordinator both in genitive constructions and in relative clauses. In conjunction with the copula *sh* (the so-called *sh . . . de* construction), it also serves to nominalize clauses:

- (66) *ta sh*{*leang dean jong | daw .de*}

'He arrived at two o'clock' ('He is a two-o'clock-arrive thing'),

analogous to natural-noun sentences of the form N₁ *sh* N₂:

- (67) *ta sh yanggoei.tz*

'He is a foreign devil.'

According to Benjamin Ts'ou (private communication), it is often possible to omit the copula *sh* from this construction in colloquial speech. It seems likely that the ancestor-particle to *.de* in classical Chinese, *iy*, also had a dual subordinating nominalizing function.

Jinghpaw

As discussed above, the Jinghpaw particle *'ai* is used as a nominalizer in verb citations, nonfinal clauses, and final clauses. Exactly as in Lahu, this particle is also used as a subordinator in relative clauses: [*ʔai hpéʔ | kərum 'ai*] *məšə*_{N_{rh}} 'the person who helps me'; [*nta šhätaw kalaw ai*] *hpün* 'the wood (we) use for houseposts' [Hertz (1935) p. 51]; [*kəbà 'ai*] *hpün* 'a tree that is big.'

It seems certain that the Jinghpaw particle used in genitive subordination, *'áʔ* (*Jinghpòʔ 'áʔ məšə* 'a person of the Jinghpaw'), is historically connected to *'ai*, with the final -ʔ analogous to the creaky tone acquired by the Burmese particle *te* in attributive position (next section).

BURMESE

We have seen above how the Burmese particle *te* is used in verb citations and nominalizations. But it is also used to connect relative clauses to their heads, in which position it assumes the creaky tone (*té*): [*thutóu | mə-yauʔ hpù thei té*] *əyaʔ*_{N_{rh}} 'a place they have never been to.'

Summary

The above remarks are admittedly very sketchy. Here are some even sketchier ones. Alan Stevens (personal communication) reminds me that the Indonesian affix *-nja* may have either possessive or nominalizing force. Margaret Langdon (personal communication) has pointed out some fascinating parallels between my findings and phenomena she has discovered in the Yuman languages of southern California and Arizona. The details of the relationship between nominalization and subordination vary from language to language, and a much more thorough study is needed. In any event, this is a topic worthy of the attention of anyone who is truly interested in putting speculations about universal grammar on an empirical basis.

Notes

- 1 Bracketed references are to the author's "Lahu Grammar," to appear in the series University of California Publications in Linguistics.
- 2 To obviate somewhat the need for tedious interlinear glosses, the following diagrammatic conventions are used: a solid vertical line (X | Y) separates a NP from a VP; a broken vertical line separates two NPs belonging to the same clause (X | Y); a double vertical line separates two clauses conjoined in the same sentence (X || Y). Nominalized clauses are enclosed in braces, and relative clauses in square brackets. The diacritics over Lahu vowels are tone marks [LG 1.6].
- 3 As the glosses of (38) indicate, it is more usual (and semantically colorless) to have the *ve* than not. When *ve* is absent, the verb retains an 'untrammelled verbality' which manifests itself as an additional nuance of emphasis. See the discussion of *ve* and negation, p. 249 below.

- 4 We diagram embedded clauses governed by verbs of utterance like *qô?* 'say' by enclosing them in angular brackets [LG 6.3].
- 5 *hê?* is a defective verb that always occurs negated (except in disjunctive questions). It is probably related to the noun *hê?* 'omen; true harbinger,' and is certainly cognate to the functionally parallel Burmese verb *hou?* (< Old Bs. *hut*). In positive identity statements Lahu (like many other languages) requires no verb at all: *yô | Lâhū-yâ yô* 'He is a Lahu.' To say there is an underlying copula here would be to destroy the analogy between *ve* clauses and natural minor sentences.
- 6 This example is taken from H. F. Hertz (1935, p. 58), and is left in his orthography.

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A LINGUISTIC IMAGE OF NATURE

The Burmese numerative classifier system*

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1. Two Burmese classificatory systems

When I left Burma in 1961, after three years of study, my Burmese language teacher gave me a small paper-bound copy book, carefully written in his fine hand, in which all classes of things are listed, abstract as well as concrete, in this world and out of it.¹ The book was to be my guide for continuing my study of Burmese, a syllabus of future studies. The small encyclopedia begins with sets of two and grows, as if paralleling the growing complexity of one's experience, to larger and larger sets. The initial sets are sometimes obvious, like the two parents or the two strengths (strength of arm and strength of heart), sometimes more esoteric pairs, like the two worlds (the zero world - in which buddhas, monks, supernatural beings, etc. do not appear, exist or flourish, and the non-zero world - in which the above appear, exist, and flourish). The sets in my book continue to sets of eighteen, though other lists go on to larger sets. To understand the sets, my teacher said, is to understand the world, both inner and outer, seen and unseen. They represent, taken together, a taxonomy of the phenomenological universe of the Burmese.

Furthermore, each set in itself is a structure - a kind of plot from a universal plot: book - around which to build a discourse. That is, a sermon is built around, say, the four cardinal virtues (love, attention, happiness, indifference), a political speech around, for instance, the three kinds of mistakes (those resulting from lack of memory, from lack of planning ahead, or from misguided beliefs), and a play around some other appropriate set, perhaps the four false hopes (hoping to get rich by reading treasure maps, hoping to get healthy by reading medical literature, hoping for wisdom by following a learned man, and hoping for a girlfriend by dressing up). These sets are assumed *a priori* to any discourse as impersonal

structures to which nature, both human and non-human, properly and appropriately corresponds. A true sermon, a wise foreign policy, or a well-constructed drama will be rooted in one or more of them. One can contemplate these sets with continual fascination and increasing insight, as one learns to see things in a Burmese way.

Within the language in which these sets are expressed, however, is a second kind of classification, a second phenomenological universe, rather more obscure than the first. The title of each set includes three linguistic constituents: a noun phrase, a numeral, and a classifier or numerative expression. For example, *mi' ba hnə 'pa*, "parents 2 'pa". Here 'pa is one of a set of words, commonly called classifiers or numeratives, by which nouns are specified and counted, somewhat like a *tin* of sardines, a *brace* of partridges, or thirty *head* of cattle in English.² Like the encyclopedic sets, Burmese linguistic classifiers are part of a system for organizing experience. In each, certain semantic polarities appear over and over again: inner versus outer, round versus straight, for instance.³ What is striking is that the same semantic polarities do not appear in both systems. Encyclopedia sets, for instance, do not classify things on the basis of shape or size. Numerative classifiers, on the other hand, do distinguish shape and relative size, but they do not give particular relevance to sex or color, which are important in the semantics of the sets. Thus, the two systems of classification – encyclopedic sets and numerative classifiers – are to some extent complementary in the structures they establish.⁴

The two systems differ in other ways, as well. One system, the sets, appears to represent overt knowledge; they are easy to discuss – indeed, their primary value is that they are good to talk about. The other, the classifiers, represent covert knowledge; they are hard to talk about and the meanings of the individual classifiers – as independent words – are often obscure, just as *head* in "head of cattle" and *brace* in "brace of partridges" are obscure in English. It is often difficult for a non-specialist to say why a noun takes one classifier rather than another. Why not a head of partridge and a brace of cattle? There are historical reasons, but none available to the average man, who just accepts such things as facts.

2. Taxonomy and paradigm

The major difference between the two systems, however, is that they are different *kinds* of systems, taxonomic and paradigmatic. In the past both have been approached as taxonomies. In the case of numerative classifiers, the investigator lists words classified under a single classifier, searches for the common semantic element in the list and then posits that element as the meaning of the classifier. Thus, one classifier in Burmese is used with the sun, airplanes, the ocean, and needles, among other things. One may contrive a common meaning here, either for the whole class, or for part of the class, in which case there are some irregular or exceptional members of that class. This approach is backwards, both heuristically and phenomenologically: it leads to awkward results and people who use classifiers don't appear to think that way. The point here is that each numerative classifier is not independent of the others, nor is it derived inductively. Numerative

classifiers are, rather, polarities in a structure one learns to apply to experience – a cultural artifact, not a crude natural science.

The numerative classifier system, then, is not a folk taxonomy, in which items are classified on the basis of objective features, but rather a system much more like a paradigm, in which items are located relationally. Library cataloguing systems or botanical keys are instances of taxonomic systems: each book or plant has a unique place within the hierarchical system. A paradigmatic system, on the other hand, is not inherently hierarchical, nor does each item have a unique place. Examples of paradigmatic systems are sets of pronouns or kinship systems, in which a given individual does not fit in just one place in the system, but is, rather, part of a shifting set of relationships, depending on who is speaking to whom, about what. A taxonomy is constructed on the principle of genus and differentia, a paradigm on the principle of reciprocal relationships, or, to use poetic terms, one might say taxonomies are metonymic, paradigms metaphoric.

Classifiers do not subclassify word classes in any syntactically relevant way.⁵ They do not operate like, for instance, noun subclassifications in English, which are syntactically relevant. In English, nouns are subclassified as singular, mass, or plural. In other Indo-European languages nouns are masculine, feminine, or neuter. These are two very different subclassification systems (number and gender) but they are all essentially taxonomic and syntactically relevant: they are overtly marked and serve to classify words. Thus the noun *rivers* in English is plural. *Rivières* in French is plural and feminine, while *Flüsse* in German is plural and masculine. Covert English gender, on the other hand, is paradigmatic and, hence, metaphoric. A river can be referred to as he, she, or it, depending on who is speaking to whom about what. A particular river can be considered as masculine, feminine, or neuter on different occasions, by different speakers. In a technical discussion, the river will probably be referred to as *it*; in a more personal description as *he* or *she*. The same water changes gender in Pittsburg, where the feminine Allegheny River (*she*) merges with the neuter (sometimes feminine) Monongahela (*it*) and becomes the masculine Ohio River (*he*).⁶ One might write context sensitive syntactic rules specifying choice of gender in these contexts, but these rules would suggest that the choice is more determined than it actually is. It would be better to present the contextual constraints which describe how the speaker may relate to the river (and the hearer) in different contexts.

Covert gender, rather than number or overt gender, is typologically close to Burmese numerative classification. Both have to do with the universe of discourse in which a word is being mentioned. In Burmese, a given noun may be included appropriately in several different places in the classifier system. Furthermore, original classifications are possible in poetry and in other contexts in which linguistic invention is expected.⁷ The use of classifiers in Burmese – like the use of covert gender in English – is in part an art and not just a grammatical convention. People have varying degrees of skill in using them. There is, for instance, no

single classification for river (myi?) in Burmese. The choice depends upon the universe of discourse. One might speak of a river in at least eight contexts:

myi? tə ya?	'river one place' (e.g., destination for a picnic)
myi? tə tan	'river one line' (e.g., on a map)
myi? tə hmwa	'river one section' (e.g., a fishing area)
myi? tə 'sin	'river one distant arc' (e.g., a path to the sea)
myi? tə θwə	'river one connection (e.g., tying two villages)
myi? tə 'pa	'river one sacred object' (e.g., in mythology)
myi? tə khu'	'river one conceptual unit' (e.g., in a discussion of rivers in general)
myi? tə myi?	'river one river' (the unmarked case)

The choice of classifier, then, is dependant on the speech act one is performing.⁸ The classifier is, in part, an indication of the context in which one is speaking about something. The goal of the rest of this discussion will be to describe one of the paradigms in which these choices are made.

3. Elementary semantic dimensions of the Burmese classifier system

As stated briefly above, Burmese linguistic classifiers are most commonly found in numerative phrases, such as:

lu 'le yau?
person four (classifier)

Classifiers can also be used in compounds (e.g., *yau?* 'ca 'male') and in a few other syntactic patterns which will not be discussed here.⁹

Classifiers are usually distinguished from quantifiers, which measure a more or less precise quantity of the thing being referred to, as in

lu 'le 'tan
person four rows (e.g., rows of soldiers)
lu 'le souŋ
person four sets (e.g., four couples)

Probably the assumed distinction between classifiers proper and quantifiers is really best considered a continuum, for, while there are forms which are clearly classifiers and clearly quantifiers, there are some forms which are intermediary and not clearly one or the other, such as

ke' – an amount removed surreptitiously from a pile or a collection
phouŋ – a round heap

Professor Hla Pe lists *ke'* as a quantifier, *phouŋ* as a classifier, though the basis for this distinction is not clearly stated in his article. The fact probably is that *quantity* and *quality* are not discrete semantic classes but rather polarities in a semantic continuum. However, there is structural evidence – to be presented below – that classifiers are semantically different in some respects at least, from quantifiers.¹⁰

In analyzing a phrase like that cited above,

lu 'le yau?
person four (clf)

it should be stressed that here, even more than is usually the case, translation is a distortion. We can discuss the classifier *yau?* in English, but we cannot translate it, for there are no syntactic or semantic equivalents in English. *Lu* 'person, man' has rough equivalents in English, *'le* 'four' a quite precise equivalent. The classifier *yau?*, however, can only be explained as part of a conceptual structure which is non-English.

First of all, *yau?* is not the name of a class to which men belong. It is not a genus, all members of which have some attribute, but rather a locus on a conceptual map. Animate beings are ordered according to distance from Buddhahood – which is not necessarily the same as social status. If we conceive of a Buddha (and his words, relics, and images) as the center, then all animate beings can be located in the network radiating out from the center. Furthest away are animals, ghosts, and base, depraved people. Closer are ordinary humans. Then come people with some spiritual status, and closest of all saints, monks, precious things, and members of the royalty. Spiritual progression is movement from animality to Buddhahood. People have no *fixed* position in this network. If one considered a king to be depraved, he might classify him in private as an animal, though it might be wise and safe to classify him in public as a saint.¹¹

It is interesting to consider the words used for these loci on the conceptual map. The meanings of these words gives us the key to the semantics of the classifier system, the basic dimensions of classification. Those closest to the center (Buddhahood) are classified as *'pa* – a word which also means, even in modern Burmese, 'close'. The meaning of this term suggests that one basic semantic dimension of classification deictic. As we shall see, *all* classifiers (as opposed to quantifiers) have deictic implications. All things range out in relation to a conceptual center, which is Buddhahood in the classification of animate beings, and which is the self in the classification of most inanimate things. People (and holy things) which are closest to that center are classed simply as *'pa* 'close'.

People not yet close but considered to have status are classified as *'u*, which also means 'head' and also 'beginning', 'origin', 'top'. This term *'u* is in contrast semantically with the term used for animals, ghosts, and depraved people – those furthest from the center, who are classified as *kaŋ* which also means 'body'. This opposition between head and body in the second basic semantic dimension of the classification system (and much of Burmese spiritualism, as well). In addition, all classifiers for inanimate things (as opposed to quantifiers) are related to this head-body opposition.

Between people of status ('head') and creatures of no status ('body') are ordinary people, those classified as *yau?*, as in

lu 'le *yau?*
person four (clf).

The term *yau?* apparently refers only to people in this position: unlike some of the other classifiers, it does not refer to anything else.

The classifier for the center, used for a Buddha, his relics, images, and his words – the Buddhist Law, is *shu*, a term of unclear origin. It may be related to the Kachin term *tsu*, meaning ghost or spirit (hence suggesting a pre-Buddhist origin) or it may be a loanword. It is important to note that this term *shu* can apply to the whole system itself (the field of human existence or the Law, the Dharma) and by metaphoric extension to items conceptually similar to the system with its center and measured distances, e.g., concentric networks like mosquito-nets and fishnets (both of which in traditional Burma were conical in shape), gardens (which were laid-out as a wheel), and staircases.

The conceptual world of animate beings implied by the classifier system (and mirrored in other Burmese symbolic systems) can be diagrammed as follows:

System of animate beings

Center	1st orbit	2nd orbit	3rd orbit	4th orbit
<i>shu</i>	'pa (close)	'u (head)	<i>yau?</i>	<i>kaun</i>
Buddhas	deities	people of status	ordinary humans	animals
relics	saints	teachers		ghosts
images	monks	scholars		dead bodies
The Law	royalty			depraved people
(secondarily, nets	(gems)			children
staircases gardens)				

The classifier *yau?* in the phrase,

lu 'le *yau?*
person four (clf)

is thus a local in a conceptual map, to be understood not as a genus, but as part of a paradigmatic system.

Now let us explore this system of classification in the inanimate world. The roots of the system have already been exposed in the system of animate classification. The process for extending the system is metaphoric, and the two basic dimensions on which the metaphor can be described are deixis or proximity (both physical and psychological) and person (the head and the body).

System of inanimate objects

Center	1st orbit	2nd orbit	3rd orbit	4th orbit
Self	Part of self (inalienable)	On self (alienable)	Nearby self	Far from self
Head	<i>ywe?</i> hair on head leaf	<i>paig</i> head dress	' <i>louŋ</i> round, upper things: posts furniture cup script	' <i>siŋ</i> upper things which have circular orbit: sun rivers, sea arrows needles
Body	' <i>chaun</i> hair on body digits teeth <i>piŋ</i> sticks & twigs twigs pens	<i>kwig</i> body dress body ornaments <i>the</i> folded clothes	<i>cha?</i> flat, lower things: boards mats saucer palmleaf for writing <i>le?</i> instruments used in the hand swords musical instruments puppets	' <i>si</i> lower things which move in straight lines: vehicles hunted animals horses dupes <i>θwe</i> rivers roads

4. A linguistic map of the world

Linguistic classifiers relate people to the world – not in a vague sense but quite literally, if we examine the way the Burmese language classifies inanimate objects. The structure underlying classification starts with the self at the center, divides the self into head and body, and then ranges objects at four distances from the self, associating them either with the head (metaphorically top, round) or with the body (metaphorically bottom, straight).

I would like to make several observations on the system of inanimate objects outlined in the chart above. First of all, it is not particularly neat and logical, and conceptual change over history has left some items obscure. For instance, unless one knows that the traditional Burmese pictorial map of the cosmos has man located on an island, from the center of which flows a river in a spiral course to the sea, one may question why rivers and oceans are classified here along with arrows and needles, which move in circular orbits.¹²

Secondly, the system depicted above is not an inductively derived taxonomy but an applied metaphor. Thus items located customarily at the same point in the system (e.g., fruit, cups, letters of the alphabet, wooden posts, furniture, machines, houses, stars, and electric lights, which are all *louŋ*) do not necessarily have any shared attribute – no common shape, size, or function – but are all relationally upper and not on the self but within view. In the relational logic of the metaphor:

Head is to Body

as: cup „ „ saucer
 letter „ „ page
 chair „ „ mat
 post „ „ floor

Thirdly, it is interesting that several of the classifiers are words for parts of a tree, so that one might say that the tree is the metaphor for the person, not vice-versa. As Adams and Conklin have pointed out,¹³ recurring shapes (and their names) in a great many classifier systems in Southeast Asia are round (often using the word for fruit), rod (stick), and flat (leaf). Here, however, the tree seems more an included metaphor which structures part of the classifier system (1st Orbit, inalienable objects) than a metaphor which underlies the entire system.

Fourthly, the reader will note that several of the categories are subdivided. There seem to be two basic principles used in subclassification. One of these focuses on function, distinguishing the active use of a thing from the static thing not in use. Thus, in the 2nd Orbit a sarong folded and not worn is classified as *the* ‘substance’, while a sarong wrapped around the body, enclosing something, is a *kwiŋ*, ‘encircling’. In the 3rd Orbit, an object held or manipulated in the hand is classed as a *le?* ‘hand’. In the 4th Orbit, vehicles and moving things (*si*) are distinguished from static things (*θwe*). Besides this active-static subclassification, though perhaps related to it, is the subclassification based upon pliable versus stiff, which appears in the 1st Orbit. Parts of the body can be conceived of as *pa* (plants) or *chaŋ* (sticks):

<i>piŋ</i>	<i>chaŋ</i>
feathers	legs
animal fur	digits
(thread, rope)	tusks
	tails
	(pins, pens)

Once again, however, these terms ‘pliable’ and ‘stiff’ are not to be seen as attributes of objects themselves, but as universes of discourse in which the objects may be discussed. To list words under a classifier – as I have done above – is only to note where they are classified most of the time: in the more creative uses of language, objects and people can be conceived of – and hence classified – in

original ways. Hla Pe writes of one instance of this original use of classifiers in which a poet uses a classifier to fit his imagery, referring to the five causes of a woman’s insolent behavior toward her husband as “five rings of insolence” (*ng - kwiŋ*, 2nd Orbit). This was apparently an original use of *kwiŋ*. A grammar can describe constraints on the system, but not produce rules or predict actual language behavior.

5. Classification of concepts

A third system of classifiers structures the realm of concepts, although, as observed above, concepts may be concretized as animate or inanimate (e.g., *rings* of insolence). Once again the system is basically spatial and deictic. It shares with the system of animate classifiers the term *pa* “close” for sacred concepts associated with the Buddha. Secular concepts which are considered beyond the ordinary (concepts in arts and sciences) are classified as *ya?*, a term which means literally “place”, further evidence that the system underlying classifiers is basically spatial or deictic.

The unmarked class is *khu'*, meaning a unit. This is the class into which one puts concepts and things which one does not know where else to put – a kind of conceptual limbo. In translating Buddhist works from Pali, which has no classifiers, Burmese traditionally used *khu'* for ideas and objects which had no clear Burmese counterpart. This use of *khu'* continues to the present. Wanting to test the analysis presented here in a way that might convince behaviorists, I made a list of objects which are not part of Burmese culture and asked Burmese what classifiers they would use. Without exception, stereo-headphones, contraceptives, aerosol throatsprays and the like were classified as *khu'*. They knew what these things were, but they did not know where to put them in the Burmese system (a further indication that things are not classified according to superficial attributes). Linguistic classification thus is a potential indication of the depth of the enculturation of borrowed objects and concepts. Change in the system of classification must represent deep conceptual change in the epistemology of a people. The first step has been to reveal the system, however, we must next study variation and change.

6. Conclusion

What I have attempted is to reveal a spatial metaphor, or rather some interrelated spatial metaphors. Revealing metaphors is an act of interpretation, of supplying information necessary for seeing the coherence and purpose of a phenomenon, in this case a particular set of Burmese words. The Burmese classifier system is coherent because it is based upon a single, elementary semantic dimension: deixis. On that dimension, four distances are distinguished, distances which metaphorically substitute for other conceptual relations between people and other living beings, people and things, and people and concepts.¹⁴ These distances are further

subdivided by another spatial dimension: higher and lower, expressed concretely as head and body. Further subdivisions are in part obscure (i.e., remain incoherent to me) but can be explained in part as difference along another spatial dimension, static versus active (e.g., the sarong not being worn or the stick not being used, versus the sarong or stick in use).

The Burmese classifier system has purpose because it maps nature and expresses just where one is placing himself and what he is talking about. It establishes in the surface structure of the language the universe of discourse (i.e., the sense in which someone is speaking of something) of a speech act, within a culturally shared image of nature. As Emerson has succinctly put it, "The whole of nature is a metaphor of the human mind."

Notes

- * I wish to acknowledge the aid and encouragement of the following: U San Htwe, U Thein Swe, Michael Aung Thwin, Robbins Burling, Karen Adams, Nancy Conklin, James Matisoff, Norma Ware, Benjamin K. T'sou and Judith Becker.
- 1 There are several versions of this work. Most accessible of published versions is Obhāsabhivamsa, *Thu-te-thana Thayoukpya Abhiddan* (A Dictionary of Established Sets of Forms) (Rangoon, 1955).
 - 2 The Burmese classifier system is discussed in Robbins Burling, "How to Choose a Burmese Numeral Classifier" in Melford Spiro, ed., *Context and Meaning in Cultural Anthropology* (New York, The Free Press, 1965) and also in Hla Pe, "A Re-examination of Burmese Classifiers", *Lingua* 15 (1965) (also published, with additional examples in *Journal of the Burma Research Society*, 50 [1967]). Both these works include lists of Burmese Numeral Classifiers. Burling's very insightful study closes with a challenge to which this article is a partial response. Burling writes, "Seeing the problems which arise in the attempt to bring order into the set of classifiers, one may feel that the best 'analysis' so far is simply the list of classifiers with their definitions. If there is such a thing as 'semantic structure' in a language, then this list ought to be reducible to some more orderly arrangement . . ."
 - 3 For a discussion of recurring semantic polarities in another linguistic system, see A. L. Becker, "Person in Kawi: Exploration of an Elementary Semantic Dimension," to appear in *Proceedings of The First International Conference on Comparative Austronesian Linguistics* (January 2-7, 1974) in Honolulu, Hawaii.
 - 4 The kinds of semantic distinctions made in numerative classifier systems are discussed in Karen L. Adams and Nancy F. Conklin, "Toward a Theory of Natural Classification" in *Papers from the Ninth Regional Meeting of the Chicago Linguistic Society* (1973). See also Burling, op cit., pp. 259-63.
 - 5 This point is made clearly and well in Burling, op cit. Burling writes, ". . . problems present themselves if we insist that the choice of classifier depends strictly upon the noun class of the noun with which it is used. Perhaps the most evident problem is that a single noun can, on different occasions, be accompanied by different classifiers . . ."
 - 6 This example was given me by Nancy Conklin. The best discussion of covert gender in English remains that in Benjamin Lee Whorf, "Grammatical Categories", in *Language, Thought, and Reality* (Cambridge, M.I.T. Press, 1956).
 - 7 For examples of the poetic use of classifiers, see Hla Pe, op. cit., p. 185.

- 8 The speech act intended by the speaker is overtly marked by sentence final particles, as well as by classifiers. A few of these sentence final particles, and the speech acts they identify are:

te	statement
'la	yes/no question
'le	content question
'saj	plea
tə'	permission
lai?	demand

- 9 The syntax of classifiers is being explored in detail for a large number of languages by Adams and Conklin, op. cit., footnote 5.
- 10 Insight into the overlap between classifiers and quantifiers stems from an unpublished study by Norma Ware, "Numeral Classifiers in Minangkabau" and a paper by Benjamin K. T'sou, "The Structure of Nominal Classifier Systems" to be published along with the other papers presented at the First International Conference on Austronesian Linguistic, Honolulu, Hawaii, January, 1973. T'sou describes classifiers and quantifiers on the basis of two features EXACT and ENTITY, a very different approach from that to be developed here, i.e., a good deal more abstract.
- 11 There is a well-known Burmese tale which establishes this epistemology: it is called The Five Brothers. A version is included in William S. Cornyn, *Burmese Chrestomathy* (Washington, 1957) pp. 27-29. The five brothers are the fingers and thumb, who quarrel about who is best. Each gives his argument based on his own uniqueness: special position, usefulness, height, beauty - excluding the little finger, who tries to make peace, but, failing that, establishes his own place in a hierarchy of distances from the Buddha. When the hands come together in prayer, it is the little finger who is closest to Buddha.
- 12 Depictions of Burmese cosmology are available in English in Sir R. C. Temple, *The Thirty-Seven Mats*, a phase of spirit-worship prevailing in Burma, (London, W. Griggs, 1906).
- 13 See Adams and Conklin, op. cit., p. 5.
- 14 The structural parallels between this analysis of Burmese classifiers and Leach's analysis of animal categories in English and Kachin are not coincidental. It was after reading Leach's work that I knew the right questions to ask about classification, and also some of the answers. See Edmund Leach, "Anthropological Aspects of Language: Animal Categories and Verbal Abuse" in *New Directions in the Study of Language*, ed. by Eric H. Lenneberg (Cambridge, M.I.T. Press, 1964).

TONOGENESIS IN SOUTHEAST ASIA

James A. Matisoff

Source: Larry M. Hyman (ed.), *Consonant Types and Tone* (Southern California Occasional Papers in Linguistics, No. 1) (Los Angeles, CA: UCLA, 1973), pp. 72-95.

In the Beginning was the Sino-Tibetan monosyllable, arrayed in its full consonantal and vocalic splendor. And the syllable was without tone and devoid of pitch. And monotony was on the face of the mora. And the Spirit of Change hovered over the segments flanking the syllabic nucleus.

And Change said, "Let the consonants guarding the vowel to the left and the right contribute some of their phonetic features to the vowel in the name of selfless intersegmental love, even if the consonants thereby be themselves diminished and lose some of their own substance. For their decay or loss will be the sacrifice through which Tone will be brought into the world, that linguists in some future time may rejoice."

And it was so. And the Language saw that it was good, and gradually began to exploit tonal differences for distinguishing utterances - yea, even bending them to morphological ends. And the tones were fruitful and multiplied, and diffused from tongue to tongue in the Babel of Southeast Asia.

1.0. Introduction

The languages of Southeast Asia, some of which are fully tonal, others of which are only marginally or incipiently tonal, and some of which are not tonal at all, constitute an ideal terrain for the investigation of the mechanism of "tonogenesis".¹

This paper is organized as follows. First come some introductory remarks on the role of laryngeal final consonants and syllable-initial voicing vs. voicelessness in the generation of tonal phenomena (1.1); then a discussion of the interrelationship among monosyllabicity, intersegmental feature-sharing, and compensatory tone (1.2). In the next section we give a brief overview of the present state of our knowledge about the tonal situation at the Proto-Sino-Tibetan (PST) and Proto-Tibeto-Burman (PTB) levels (2.1),

followed by some thoughts on the areal diffusion of tones in SE Asia and the utility of tone-systems for the establishment of genetic relationship among languages (2.2).

1.1. Laryngeal states and tonal effects

Twenty years ago the French botanist and Orientalist André Haudricourt wrote a classic article² which addressed itself to the problem of how standard Hanoi Vietnamese acquired its six tones. This question had a vital bearing on the genetic affiliation of Vietnamese - previous scholars had held that Vietnamese belonged in the Tai family rather than in the Mon-Khmer (M-K) group,³ largely because the Tai languages are tonal while the Mon-Khmer languages are not.⁴ Haudricourt succeeded in demonstrating that the tones of Vietnamese were secondary developments arising from a breakdown of the system of consonantal oppositions at the beginning and the end of the Mon-Khmer syllable. The proto-language had syllables with final segments of three significant types: those ending in an open vowel or nasal (i.e. with no laryngeal final segment); those ending in voiceless spirants, *s or *ʃ, which had reduced to -h by pre-Vietnamese times; and those ending in some sort of stop⁵ which had reduced to glottal stop by the pre-Vietnamese period. In addition the language had a voiced/voiceless distinction for its syllable-initial consonants. See Figure 1.

By the sixth century, final -h and -ʔ had disappeared, leaving in their wake a compensatory falling and rising effect (respectively) on the pitch of the preceding vowel. See Figure 2. At this point the language had a three-tone system, which

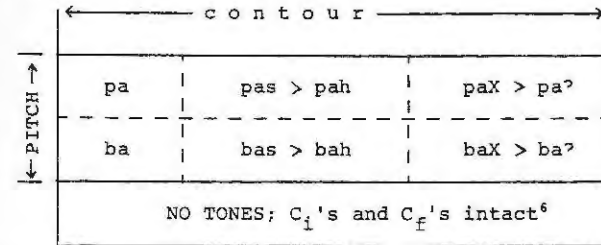


Figure 1 Vietnamese A (beginning of Christian era)

MID	FALLING	RISING
pa	pà	pá
ba	bà	bá
THREE TONES: exeunt laryngeal C _f 's/enter "contours"		

Figure 2 Vietnamese B (sixth century)

HIGHER	pa "ngang" ⁷	pả "hỏi"	pá "sắc"
LOWER	pà "huyền"	pã "ngã"	pạ "nặng"
SIX TONES: exeunt voiced C _i 's/enter "registers"			

Figure 3 Vietnamese C (twelfth century)

apparently remained stable as long as the voiced/voiceless opposition for initial consonants remained in force. But by the 12th century, the old voiced series had merged with the voiceless series. The language responded to this threat to its contrastive power by doubling the number of tones from three to six; the three tones descending from syllables with *voiced initials were then distinctively *lower* in pitch than the three which derived from syllables with *voiceless C_i's. See Figure 3.

This explanation – which has gone unchallenged by subsequent scholars – presupposes the existence of certain universal phonetic mechanisms which interrelate articulatory gestures of the larynx with the production of audible tonal effects. (a) Laryngeal C_i's affect the *contour*⁸ of the preceding vowel's pitch, with -h acting as a pitch depressor (i.e. leading to falling tones) and final -ʔ having the opposite effect (leading to rising tones). The exact physiological causes of these effects are being worked out in detail by experimental phoneticians (see elsewhere in this volume), but Haudricourt's impressionistic explanation still seems generally valid: the pitch-drop before -h is due to a "relâchement brusque du larynx", while the pitch-rise before -ʔ is caused by an "augmentation de la tension des cordes vocales". (b) Syllable-initial consonants merely affect the *register*⁹ of the following vowel, with voiced C_i's provoking *lower* pitch and voiceless C_i's provoking *higher* pitch. Again the physiological explanation for this fact involves a complex interplay of aerodynamic and articulatory factors¹⁰, but one thing seems clear: this is a universal phenomenon which obtains even in languages like English¹¹ which would never dream of exploiting such redundant pitch-differences for contrastive purposes.

In a 1968 talk¹² I roughly characterized the two basic contrasting "laryngeal attitudes" as shown in Figure 4.

More recently La Raw Maran (1971) has persuasively proposed a small set of binary distinctive features which are intended to capture simultaneously not only the role of the larynx in the production of voiced obstruents, *h*, and glottal stop, but also the concomitant tonal effects on adjacent vowels. Similarly motivated features (spread vs. constricted glottis and slack vs. stiff cords) have been adopted by Halle and Stevens (1971), and are now being widely discussed by generative phonologists.

TENSE-LARYNX SYNDROME	LAX-LARYNX SYNDROME
higher pitch/rising contour	lower pitch/falling contour
association with -ʔ	association with -h
voicelessness	voicedness, breathiness
retracted tongue-root ¹³	advanced tongue root ¹³
"creaky" laryngeal turbulence	"rasping" laryngeal turbulence
larynx tense and/or raised= reduced supraglottal cavity	larynx lax and/or lowered= distended supraglottal cavity

Figure 4 Laryngeal attitudes

Despite the complexity of the simultaneous bundles of articulatory activities which go to make up the "tense" vs. "lax" syndromes, it seems clear that the syndromes as a whole do stand in a binary opposition to each other. Otherwise how are we to understand the oft-noted diachronic phenomenon of tonal "flip-flops"¹⁴ whereby a high tone and a low tone abruptly switch places, so that the *high becomes low, and the *low becomes high? Some sort of "alpha-reversal" of laryngeal gesture must be assumed.

Maran (1971) has noted that in Jinghpaw, a Tibeto-Burman language which he speaks natively, syllable-final stops (-p, -t, -k, -ʔ) are voiceless under the high tone, but voiced (-b, -d, -g, -ʔ) under the low tone, inferring from this that it is the voicing contrast which is distinctive here, with the tonal difference being redundant. For several reasons¹⁵ I prefer to interpret the situation in the opposite sense. It seems to me that voicing/voicelessness has a causal effect on the tone of the adjacent vowel only in syllable-*initial* position. In syllable-*final* position the voicing or voicelessness of a consonant (at least in Tibeto-Burman) is rather the automatic, redundant *consequence* of a pre-existent tonal opposition, not its cause. For both -h and -ʔ are voiceless (though in rather different ways) – yet they have opposite tonal effects in syllable-final position.

1.2. Monosyllabicity, intersegmental feature-sharing, and compensatory tone

If the laryngeal mechanisms we have been considering are really universal, why haven't all human languages been tonal at some point in their history, like Chinese, Burmese, or Jinghpaw? Some language families seem more hospitable to the development of tones than others, and the same goes for geographic areas of the world. It is as if the seeds of tone potential required a particularly fertile soil of a certain structural type in order to take root and flourish. In particular, it appears that to become truly tonal a language must have a basically *monosyllabic* structure (i.e. the morphemes must be only one syllable long). Polysyllabic languages like

Japanese, Swedish, or Serbo-Croatian may develop "pitch-accent" systems, but these differ from true tone-systems in many important respects.^{16, 17}

There is something about the tightly structured nature of the syllable in mono-syllabic languages which favors the shift in contrastive function from one phonological feature of the syllable to another. The Tibeto-Burman (TB) languages have always been monosyllabic. The proto-monosyllable was quite complex in structure: the initial consonant could be preceded by a variety of prefixes (or even by a sequence of two prefixes) and followed by one of four glides (-w-, -y-, -r-, -l-). The vowel could be followed by any of a number of final nasals, stops, liquids, or -s, or even by a nasal or stop plus -s. Written Tibetan (WT) may be taken to preserve the proto-syllable canon faithfully, with maximally complex forms like *brgyad* 'eight', *brnyabs* 'diligence', *bsnyigs* 'sediment'. Written Burmese (WB) syllables may have initial consonant clusters of up to three members, but no more than a single consonant in final position: *mrwe* 'snake', *krwat* 'leech', *krwak* 'rat'. We may symbolize the proto-syllable canon as follows:

(P₁) (P₂) C_i (G) V (') (C_f) (S),

where P = prefix, C_i = initial consonant, G = glide, V = vowel, ' = vowel length, C_f = final consonant, and S = suffixial -s.

When we look at the phonological changes which these richly complex syllables have undergone through time (e.g. from WT to modern colloquial Lhasa Tibetan, or from WB to modern Rangoon Burmese, or from Proto Lolo-Burmese to Lahu), we find that the different parts of the syllable have constantly been influencing each other: the prefixes affect the root-initial consonant, as do the glides; the glides also affect the vowel, as do the final consonants; the vowel itself affects the preceding and following consonants, etc. It thus makes little sense to ask questions like "What happens to the Proto-Tibeto-Burman (PTB) vowel *a in language X?" Rather we must specify the syllabic environment more precisely: "What is the PTB reflex of *-am, or *-ak, or *-wa, or *-ya, or *-yaŋ in language X?" Thus, Proto-Lolo-Burmese (PLB) *-a develops into Lahu -a in syllables without a G or a C_f; but *-ya becomes -ε, and *-wa becomes -ɔ. A nasal or stop following the PLB nuclear vowel *a- determined different Lahu reflexes for each point of articulation. Thus PLB *-am > Lh. -o, but *-an > -e, and *aŋ > -ɔ; *-ak > a[?], but *-at > -e[?] and *-ap > -o[?]. It is for this reason that Sino-Tibetanists traditionally lump the vocalic nucleus together with any post-vocalic consonants the syllable may have, and refer to this complex, well-integrated entity as the "rhyme" of the syllable.

So tightly interdependent are these neighboring vowels and consonants, that certain phonetic features seem to have bounced back and forth from vowel to consonant and back again through the history of the TB languages. The fate of the PTB rhyme *-ik in Burmese is a good case in point. By the time Burmese was committed to writing in the 12th century, older *-ik had become -ac (e.g. PTB *tsik 'joint', WT *tshigs*, WB *chac*); that is, the palatality of the vowel had

been transferred to the C_f, so that the latter changed from a velar stop to a palatal affricate, thereby depalatalizing the vowel from *i to a. What is remarkable is that this development was then completely reversed between the Old Burmese period and the modern standard Rangoon dialect, so that words written with -ac are now pronounced with the rhyme -l' (Mod.Bs. *hsI'* 'joint'). That is, the palatality has been shifted back again from the C_f to its "original" vocalic home!

This leads us to the key question: did this complex proto-monosyllable already carry a lexically distinctive tone? The answer is far from clear at the moment.¹⁸ What does seem certain is that, given the intimate relationship between consonantal and vocalic features of the TB syllable, there must have been phonetic perturbations of the pitch of vowels due to the influence of neighboring consonants throughout the history of the family. However, as long as the consonants maintained themselves in a good state of preservation, such pitch-differences as existed were likely to have remained subphonemic – predictable, automatic, redundant. It was only when the old consonantal system had decayed through cluster simplification, losses, mergers that the daughter languages were forced to exploit those pitch-differences for contrastive purposes.

Initial consonants "decay" rather differently from final ones.¹⁹ At the beginning of the syllable, the prefixes generally found themselves in a weak position, sometimes fusing with the root-initial and often dropping entirely (see Matisoff 1972c). Before their departure, however, they were likely to have affected the voicing or voicelessness of the root-initial consonant. Thus the glottal prefix *ʔ- or *ʔə- typically devoiced a following sonant, while the nasal prefix *N- often voiced a following surd. Yet it is noteworthy that the basic TB *voiced/*voiceless opposition in root-initial position was everywhere preserved systematically, even though the phonetic nature of the contrast changed in many languages (like Burmese and Lahu) from voiced/voiceless to voiceless unaspirated/voiceless aspirated.

In syllable-final position there is a whole continuum of consonantal decay²⁰ for final nasals and stops. The three-way contrast among *-m, *-n, and *-ŋ was sometimes reduced to a two-way one, but without the remaining nasals losing their point of occlusion. (This is what happened in Mandarin Chinese, where *-m and *-n merged to -n.) At more advanced stages of decay, one or more of the nasals could lose their point of articulation, so that the feature of nasality shifted back onto the vowel, yielding a new type of oral/nasal contrast for vowels. At the ultimate stage, the nasal feature disappears altogether from the syllable; but in this case the vowel quality itself has usually already been altered differentially by the particular nasal which had followed it, so that the language does not necessarily suffer a loss of contrast.²¹

Final stops may undergo even more finely graded degrees of attrition than the nasals. The three-way proto-contrast among *-p, *-t, and *-k could be reduced to a two-way contrast without the remaining stops losing their buccal occlusion. More radically, one or more of the stops could be reduced to -ʔ – a glottal stop might be termed the "minimal stop" from this point of view. At more advanced stages the final consonant may disappear entirely, after transferring its occlusion

back onto the vowel, so that the vowel has "laryngeal constriction" or "creakiness". At a still further stage even this constriction may disappear, and the only trace of the former C_r may be a tenseness in the vowel, or some other alteration in the vowel quality.²² The smile of the Cheshire cat, fading away imperceptibly.

Looking at the TB family as a whole, we find that the details of consonantal decay differ considerably from subgroup to subgroup and from language to language, but one important generalization holds: the better-preserved the consonantal system, the fewer the vowels and the fewer the tones; the more vestigial the consonant system, the more proliferation of vowels and tones.

2.1. Redundant and contrastive tone in PST and PTB

Paul K. Benedict (1972a, 1972b, 1973a) has argued persuasively that even back at the remote Proto-Sino-Tibetan period the proto-language had a "phonemic" two-way tone-contrast in *non-stopped* syllables (though syllables whose C_r was a stop had no distinctive tone). Benedict bases his argument mainly on evidence from Chinese on the one hand, and from certain subgroups of TB on the other: Lolo-Burmese, Karen, and Nungish. Karen is extremely aberrant from the other TB languages from the grammatical point of view (for one thing, the Karen object comes after the verb instead of before it); so much so that one is tempted to set up a higher-level taxonomic group "Tibeto-Karen" comprising Karen on the one hand and "Tibeto-Burman proper" on the other. Yet as Benedict has shown, the four tones of Karen correspond systematically to the two main non-stopped tones of Lolo-Burmese, in a simple, straightforward way. Two explanations are therefore possible: either the two-way tone-contrast must be placed at least as far back as the remote Tibeto-Karen period (and thus a fortiori at the PTB period), or else the tone-system of Lolo-Burmese somehow "diffused" into the Karen languages (see next section). Benedict rejects the diffusion hypothesis (see note 40), and goes on to show that the Lolo-Burmese/Karen/Nungish²³ two-tone system can be systematically related to the two principal non-stopped tones of Chinese, the level tone (*p'ing sheng*) and the rising tone (*shang sheng*).²⁴ He therefore projects the two-way tone-system back to the PST period itself.

A serious objection to Benedict's theory is the fact that the oldest attested TB language, Written Tibetan, shows no evidence of tonal distinctions at all. In fact some modern dialects of Tibetan, like Balti²⁵, don't have tone either, or at any rate do not have fully developed tone-systems like Lolo-Burmese. (Significantly it is those dialects, like Balti and Purik, which preserve the WT syllable-initial consonants the best that have non-existent or rudimentary tones, while those dialects, like that of Lhasa, which have a degenerate consonantism, have developed relatively complex tone-systems that are of demonstrably recent origin.²⁶) Are we then to suppose that the original PTB two-way tonal contrast was lost in Tibetan before the language was committed to writing (around the 7th century), so that the language got along without phonemic tones for centuries, only to reacquire it in

certain dialects in quite recent times? Given the cyclical nature of TB phonological developments²⁷ this is not as far-fetched as it might sound.

Many other modern TB languages lack well-developed tonal systems, including most members of the huge and ramified Kuki-Chin-Naga family,²⁸ as well as the Barish or Bodo-Garo group. Significantly these languages are spoken at the Western extremity of the TB family, in Assam and Western Burma. Here Benedict is willing to use areal diffusion as an explanation, accounting for the lack of tones as being due to the influence of the non-tonal languages (Indo-European and other) with which these Westerners came in contact.

A particular problem is posed by the extremely important Jinghpaw language (Kachinic group of TB). Although Jinghpaw (Jg.) is quite close to Lolo-Burmese as far as the number of shared cognates is concerned, it is very hard to relate the Jg. tones systematically to those of LB – except, paradoxically, in stopped syllables.²⁹

From the foregoing it should be obvious that we are still far from being able to give a clearcut answer to the question "Did the PST or PTB proto-syllable carry a contrastive tone?" Indeed, I personally believe that the question is rather meaningless when posed in these terms. For I view the whole process of tone-birth and tone-decay as a cyclical one, that has no beginning and has no end. A language or language-family that has a predisposition (in the sense of 2.1 above) to develop tones will indulge this predisposition at certain points in its history, but not in others, depending on the total vowel-consonant dynamics of the syllable at a given point in time. Thus we may imagine a hypothetical language at Stage A: it is monosyllabic, but the number of possible syllables is very large, since there is a rich system of syllable-initial and -final consonants. Grammatical information is carried by a number of non-syllabic affixes attached to both ends of the syllable. Different syllables have different pitches, but the language can afford to ignore this fact, since it is having no trouble keeping its utterances apart.

Time passes, and the language enters a new phase, Stage B: its initial- and final-consonantal systems are breaking down. Affixes are dropping or being absorbed into their root-morphemes. Homophony rears its ugly head. In desperation the language casts about for ways to protect its contrasts. Although each *morpheme* is still monosyllabic, the language now creates bisyllabic or even trisyllabic *compounds* in order to disambiguate homophones or near-homophones,³⁰ so that the *word* is no longer monosyllabic. At the same time, "analytical" ways of signaling grammatical relationships are found. Instead of, e.g., a causative prefix *s-*, the language might use a separate auxiliary verb meaning "make" or "send on an errand" to convey the concept of causation. Meanwhile the number of vowels has increased and lexically contrastive tones have arisen, exploiting the previously redundant pitch-differences among syllables.

More time passes, and the language enters Stage C. Human laziness being what it is, some of the syllables in compounds are tending more and more to be pronounced laxly, slurred over. Vowels are losing their stress all over the place, and being reduced to shwa. These unstressed syllables also lose their tone, and tend increasingly to hitch themselves onto the adjacent syllable in the compound. The

compounds are becoming "opaque", unanalyzable by the native speaker (cf. Eng. *housewife* > *hussy*). The same sort of thing is happening to grammatical morphemes like particles and auxiliary verbs; instead of maintaining their identity as separate words, they are fusing themselves with root-morphemes (cf. English *gonna*, *wanna*, *oughta*, etc.). The language is becoming synthetic again, and developing all kinds of new consonant clusters due to the fusion of once-separate syllables. Most of the old affixes left over from Stage A have long since disappeared, making way for a new crop, though enough of the old crop still remain to confuse the picture. The *nouveau riche* consonantism of the syllable is making it less and less necessary to use the tones for contrastive purposes. Vowel-contrasts are weakening in certain areas. The language is becoming monosyllabic again.

And so it goes. *Plus ça change, plus c'est la même chose*.

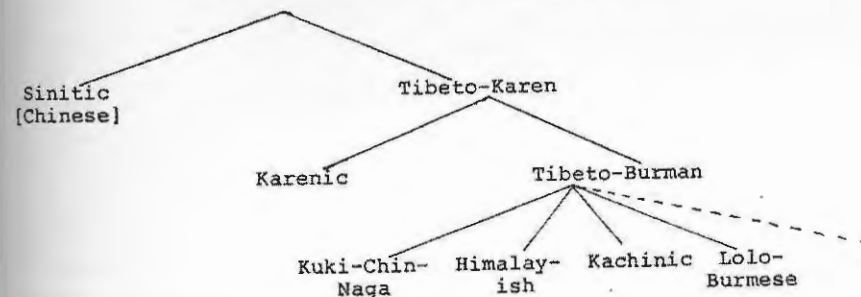
2.2. The areal diffusability of tones and the "Southeast Asian Tonbund"

Generations of scholars have puzzled over the genetic interrelationships of the hundreds of languages spoken in mainland and insular Southeast Asia. This is not the place to attempt to recapitulate the various arguments that have been advanced to justify one or another classificatory scheme. Let us rather accept as a basis for discussion the classification worked out by Benedict during the thirty years he has been studying the languages of the area (see especially Benedict 1972a and 1973c). According to his scheme there are only three great linguistic superstocks in the area³¹: Sino-Tibetan (ST), Austro-Thai (AT), and Austro-Asiatic (AA). See Figure 5.

The indigenous inhabitants of mainland SEA are thought to have been the AA peoples. At a very early date the Austronesian branch of the AT peoples pushed southward, eventually leaving the mainland and settling on the island chains of the South Pacific.³² Later came the Tai peoples, whose southward invasion split the Mon-Khmer speech community in two. Some Tai communities remained behind in China, as have the Miao-Yao peoples until very recent times. The last intruders were the Tibeto-Karen peoples, who fanned out southward into Assam and Burma, and in very recent times as far as Thailand and Laos.

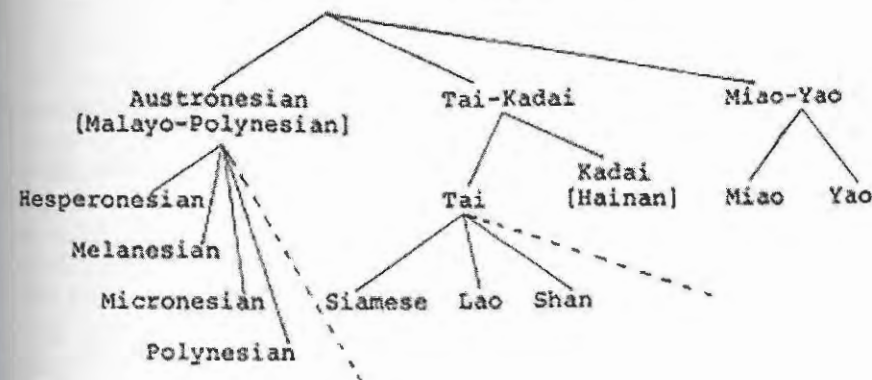
Of these three linguistic stocks, only Sino-Tibetan is thought to have been "intrinsically tonal" (with the qualifications expressed above in section 2.1). Proto-AT, as reconstructed by Benedict (1973c) was devoid of tone, and had polysyllabic (often trisyllabic) root-morphemes. This polysyllabic structure is still characteristic of the Austronesian (AN) branch,³³ and AN has remained without true tones to the present day. The Tai and Miao-Yao (M-Y) branches, however, have become monosyllabic,³⁴ and have developed complex tonal systems of the Sino-Tibetan type. Proto-AA had what one might call a "sesquisyllabic" structure, with morphemes that were "a syllable and a half" in length. That is, the prevocalic consonant was often preceded by a "pre-initial" consonant, as in the modern Cambodian words *psaa* 'market', *tkiam* 'jaw', *ckae* 'dog', *khaok* 'peacock'.

(a) SINO-TIBETAN [monosyllabic; tonal]



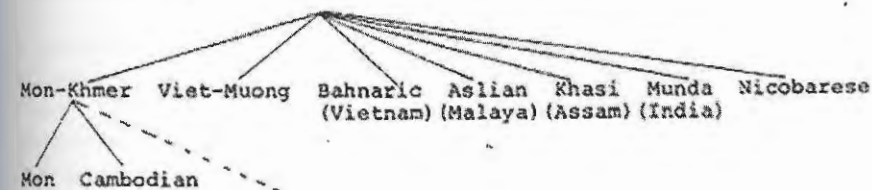
Homeland: eastern Tibet/western Szechwan, Yunnan; headwaters of the Yangtze, Brahmaputra, Irrawaddy, and Mekong Rivers

(b) AUSTRO-THAI [polysyllabic; atonal]



Homeland: very close geographically to the Sino-Tibetan Urheimat

(c) AUSTRO-ASIATIC [sesquisyllabic; registral]



Homeland: mainland southeast Asia

Figure 5 The three superstocks

Unlike the ST prefixes, which tended to be unstable and easily lost, these pre-initials are well-preserved in Mon-Khmer. The Mon-Khmer languages have not quite developed true tone-systems in the ST sense, but rather an intermediate sort of two-way articulatory opposition in which pitch-difference plays a role but is not the only distinguishing factor. This phenomenon has been termed “register” (Henderson 1952). Syllables in the “high” or “head” register have a creaky pharyngealized quality, are pronounced with a tense larynx and retracted tongue-root, and are relatively high in pitch. Syllables in the “low” or “chest” register have a breathy laryngealized, “sepulchral” quality, are pronounced with a lax larynx and an advanced tongue-root, and are relatively low in pitch. See Figure 4 above. Other differences in vowel quality (i.e. tongue-higher vs. tongue-lower, tongue-fronter vs. -backer, or monophthongal vs. diphthongal) also accompany the register difference. In fact, the perturbations in vowel quality have been so great, and the number of distinct vocalic nuclei has multiplied to such an extent in these languages³⁵ that the simplest “phonemic solution” is to recognize these latter phonetic differences as *the* distinctive features distinguishing the high vs. low registers. The pitch difference is secondary – the languages are not truly tonal in the ST sense. Perhaps we could say that the Mon-Khmer languages escaped the fate of becoming tone languages by the expedient of multiplying their vocalic nuclei.³⁶ It is perhaps no accident that these “halfway tonal” languages also have a syllabic structure intermediate between the truly monosyllabic ST and the truly polysyllabic AA types.

If the genetic picture outlined above is at all accurate, we must still offer an explanation for the acquisition of true tonal systems by the Tai and Miao-Yao languages (which derive from the atonal Austro-Thai parent stock), as well as by Vietnamese (from the only semi-tonal Austro-Asiatic stock). (While we’re at it, we should also account for the fact that many western Austronesian languages (like Javanese) have acquired register systems.) The only reasonable explanation, given our genetic framework, is to assume that the acquisition of true tone systems by these originally atonal languages was activated or catalyzed by intimate cultural contact with languages which already had true tone systems: the “areal diffusion” hypothesis.

Given the complicated migrations and meanderings of these many peoples crisscrossing back and forth across Southeast Asia, we may be sure that all three logically possible contact situations occurred abundantly over the centuries: (a) AA / AT; (b) AA / ST; (c) AT / ST.³⁷

As the language of the people who have been culturally dominant in East Asia for millennia, Chinese has exerted a powerful effect on the lexicon and phonology of the languages with which it has come in contact. Haudricourt (1954a), drawing on the work of earlier scholars like Henri Maspero, showed that in lexical items which Chinese has in common with Tai and Vietnamese (through borrowing in one direction or another), the tones systematically correspond: where Chinese has level tone (*p’ing sheng*), Vietnamese has tones *ngang* or *huyền*,³⁸ and Tai has tone “A” (unmarked in the writing system); where Chinese has

CHINESE	平 <i>p’ing</i> [level]	去 <i>ch’ü</i> [falling]	上 <i>shang</i> [rising]
VIETNAMESE	<i>ngang/huyền</i>	<i>hỏi/ngã</i>	<i>sắc/nặng</i>
TAI	A (unmarked)	B ⁽¹⁾ 𑜀𑜂𑜆𑜇 𑜀𑜂𑜆𑜈	C ⁽²⁾ 𑜀𑜂𑜆𑜉 𑜀𑜂𑜆𑜊

Figure 6 Sino-Xenic tone correspondences

departing (=falling) tone (*ch’ü sheng*), Vietnamese has tones *hỏi* or *ngã*, and Tai has tone “B” (marked with the first tonal marker in the writing system); where Chinese has rising tone (*shang sheng*), Vietnamese has tones *sắc* or *nặng*, and Tai has tone “C” (marked with the second tonal marker in the writing system). See Figure 6.

In order for Tai, Miao-Yao, and Vietnamese to have become susceptible to tonal influence from Chinese, something must have happened to their internal structure to make them more “tone-prone”.³⁹ We must assume that phonological interinfluencing on the “segmental” level (i.e. involving consonants and vowels) must have preceded the tonal influence. First of all, these non-ST languages had to become truly monosyllabic (through the loss of affixes, reduction of unstressed syllables in compounds, etc.). Then, they had to suffer disastrous mergers in their consonantal systems in order to motivate their recourse to tones to maintain lexical contrastiveness. Haudricourt (1946a, 1961) has shown how widespread disruptions of the voiced/voiceless opposition in syllable-initial position must have swept through all the language families of SEA in the early centuries of the present millennium. Two main tendencies were at work: the devoicing of previously voiced stop initials, and the voicing of previously voiceless nasals and other sonorants. Standard Thai is a typical example, with the old *voiced series becoming voiceless aspirated (merging with the old *voiceless aspirated series) and the old *voiceless sonorants becoming voiced (merging with the old *voiced sonorants).

It seems likely that the development of true tones in Vietnamese was precipitated not only by influence from Chinese, but also from Siamese as well. This indicates that Tai (and Miao-Yao) acquired their tone systems from Chinese before Vietnamese did; that is, the ST > AT influence preceded the ST-cum-AT > AA influence.

The development of register systems in some Austronesian languages may be viewed as due to AA > AT substratal influence (the “Austro-linkage”) at the geographical fringes of the true-tone diffusional area.

It should by now be apparent that tonal similarities – even regular tonal correspondences – are not to be taken uncritically as evidence for genetic relationship among languages.⁴⁰ Indeed, tonal criteria are not even sufficient to establish genetic subgroupings for languages which are already known to be genetically

related. A striking proof of this is the fact that some modern dialects of Tibetan are truly tonal while others are not. Yet these are dialects of one and the same language, more closely related to each other than to any other language. Not only may tones be readily *acquired* by diffusion (provided that the acquiring language has been made sensitized or “tone-prone”); they may also be *lost* through contact with non-tonal languages (as in the case of some western subgroups of TB [cf. 2.1 above]).⁴¹

For truly it is said, “The Language gave, and the Language hath taken away – blessed be the name of the Language” [Job 1.21].

Notes

- 1 This paper may be viewed as an introduction to the several articles and reviews on Tibeto-Burman tones that I have written over the past five years (see References). Despite the fact that this material is easily accessible, non-specialists might find it useful to have the main motivations of this line of research presented here in one place in relatively non-technical fashion.
- 2 The term “tonogenesis” was first used, to my knowledge, in my 1970 article “Glotta dissimilation and the Lahu high-rising tone: a tonogenetic case-study”.
- 3 “De l’origine des tons en vietnamien”, *Journal Asiatique* 242. 69-82 (1954).
- 4 See 2.2 below.
- 5 Most M-K languages have “register” systems rather than “true” tonal distinctions. See below, loc. cit.
- 6 Haudricourt does not commit himself as to the exact nature of these stops, symbolizing them by *-X.
- 7 Throughout the rest of this paper we use the symbols “C_i” and “C_f” for “syllable-initial consonants” and “syllable-final consonants”, respectively.
- 8 The diacritics over the vowels are those used to indicate the six tones in modern Vietnamese orthography. The words *ngang*, *huyền*, etc. are the native names for the tones.
- 9 Haudricourt’s term is “inflection”.
- 10 Haudricourt uses the words “hauteur” or “registre” for this concept. The word “register” has a different, technical sense when used to describe the two-way tonality opposition characteristic of Cambodian and the other Mon-Khmer languages. See 2.2 below.
- 11 Which my colleague John Ohala has tried to make me understand on several occasions.
- 12 William Ewan has carried out experiments which confirm this for English (personal communication); see also Lea (1973).
- 13 Implications of Tibeto-Burman phonological developments for distinctive feature theory”, Yale University Linguistics Club, Dec. 1968.
- 14 For a fascinating treatment of the relationship of the tongue-root to laryngeal activity in the production of tonal effects see Gregerson (1973).
- 15 See Matisoff (1972b).
- 16 See my review of Maran (1971) (Matisoff 1973c).
- 17 The number of contrasts in a pitch-accent system is minimal (usually simply high-pitch vs. low-pitch), with no more than one syllable of each morpheme being specified for high pitch in the underlying structure. The pitches of the other syllables are typically predictable from their position in the word, or indeed from the whole grammatical construction that the word participates in. That is, the pitch contrast has a “low functional load” in distinguishing individual syllables paradigmatically.
- 18 This seems to hold for African languages as well. Those languages which have developed the most elaborate tone systems (e.g. Bamileke) are also monosyllabic (personal

- communications, March 1973).
- 19 Benedict wants to set up a two-way tone contrast in non-stopped syllables way back at the Proto-Sino-Tibetan period. For a brief discussion and some references, see 2.1 below.
- 20 I cannot resist observing that dental decay is no more prevalent than velar or labial decay in our family.
- 21 What Maran (1971) calls “depletion of final consonants”.
- 22 This is what happened in Lahu, as we indicated above (*am > o, *an > e, *aŋ > o).
- 23 All of these stages are attested in one or another Loloish language. See Matisoff (1972b).
- 24 Nungish is a minor TB group that shows special affinities both for LB and for Kachinic.
- 25 The third Chinese non-stopped tone, the “going tone” (*ch’ü-sheng*) has been demonstrated to be of relatively recent origin. See Haudricourt (1954b) and Downer (1959).
- 26 See Sprigg (1966).
- 27 See Sedláček (1960).
- 28 See the discussion of the Burmese reflexes of the PTB *-ik rhyme, 1.2 above, and the remarks on the “tonal cycle” later in this section.
- 29 It is possible that more Kuki-Chin languages will be found to have real tone systems once they have been better recorded by modern linguists. Those Kuki-Chin languages which do have several tones (see e.g. Henderson 1968) exploit them extensively in productive morphological processes, which makes them look suspiciously recent in origin.
- 30 See Matisoff (1973d).
- 31 Instances of this process abound in the world’s languages. In some American English dialects where *pin* and *pen* are homophonous, the words are replaced by the compound forms “stick-pin” /stɪkˌpɪn/ and “ink-pen” /ɪŋkˌpɪn/, respectively.
As a more exotic example, we may take the Galitsianer dialect of Yiddish, where the vowels *u* and *i* have merged, along with the spirants *s* and *š*. The words for *foot* and *fish* (standard Yiddish *fus* and *fiš*) are both pronounced /fis/. Speakers of this dialect responded by creating jocular compounds whose second members were the Russian words for ‘foot’ and ‘fish’: *fis-noge* (< Russ. *nogá* ‘foot’) vs. *fis-ribe* (< Russ. *ryba*)!
- 32 Leaving out the fantastically complex and archaic linguistic area of New Guinea, which is now under intensive investigation by Professor Stephan Wurm and his associates at Australian National University.
- 33 An interesting Austronesian people are the Chams, who remigrated back to the mainland (Vietnam) after having lived for centuries in the islands near Malaya.
- 34 Though AN morphemes now typically have only two syllables, not three.
- 35 The reduction of the trisyllabic proto-root occurred differently in Tai and M-Y. Tai usually dropped the beginning of the root (cf. Siamese *taa*, Malay *mata* ‘eye’), while M-Y dropped the end.
- 36 According to Huffman (1970), standard Cambodian has no fewer than 31 vocalic nuclei.
- 37 Not unlike those physically weak animal species, like gerbils, whose chosen evolutionary defense against extinction is the ability to proliferate their kind rapidly.
- 38 Benedict has discussed the AA/AT contact relationship, which he calls the “Austro-linkage”, in Benedict (1973b). In the AA/ST area, Shorto (1973) has assembled an impressive number of Mon-Khmer etymologies for widespread ST roots. In Matisoff (1973a) I discussed the probable M-K source for the velar “animal prefix” in Lolo-Burmese. The AT/ST interaction has been intensively studied by Benedict (1967, part 3; 1972a; 1973). Many ST words for items of material culture and technology (including objects related to writing and the calendrical signs of the zodiac) can now be shown to have an AT source. Recent archaeological findings (Chang 1963, Gorman 1971) confirm a high level of material culture in the non-Chinese neolithic denizens of northern Southeast Asia.

- 38 See 1.1 above.
- 39 It is noteworthy that Japanese, despite centuries of massive lexical borrowing from Chinese, has never shown any signs of preserving lexical tone contrasts in these borrowed items. The intrinsic polysyllabicity of Japanese has resisted any such development. (Also the geographic isolation of the Japanese islands from the mainland must have been an inhibitory factor.)
- 40 Benedict's rejection of the diffusional explanation for the close correspondence between the tones of the distantly related Karenic and Lolo-Burmese languages (2.1 above) is therefore open to debate.
- 41 We might refer to this process as "tonoexodus" (Lea 1973).

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