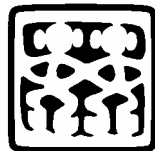




PACIFIC LINGUISTICS

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Pacific Linguistics

Research School of Pacific and Asian Studies

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PACIFIC LINGUISTICS

Series C – No. 87

**LINGUISTICS OF THE
SINO-TIBETAN AREA:
THE STATE OF THE ART
PAPERS PRESENTED TO PAUL K. BENEDICT
FOR HIS 71st BIRTHDAY**

edited by
**Graham Thurgood
James A. Matisoff
David Bradley**

with the assistance of
Grace Shiang-Juin Lin and Keith Record



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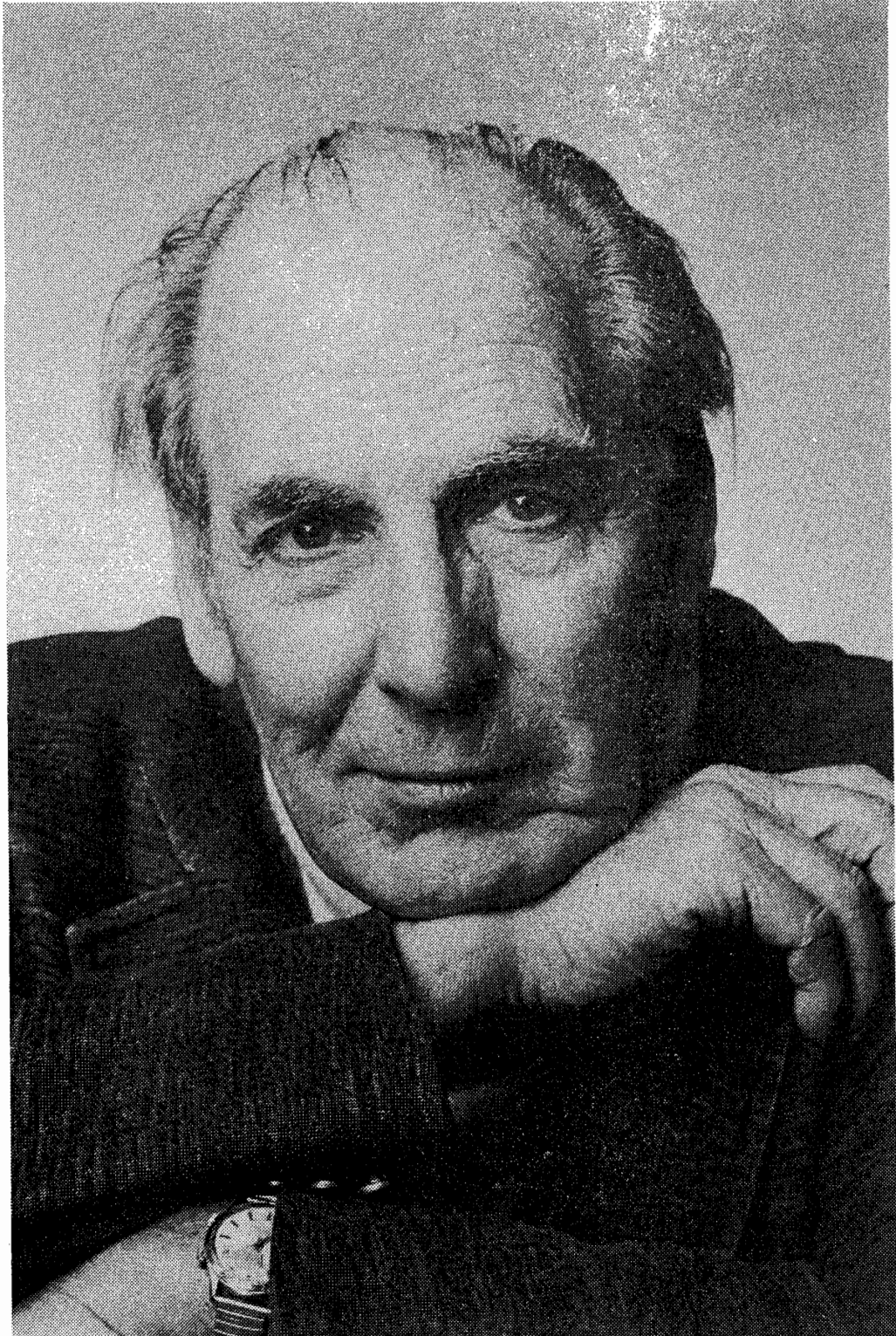
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PACIFIC LINGUISTICS INTRODUCTION

This special number to honour Paul K. Benedict was prepared and set by colleagues in the United States. In many ways it is inconsistent with the usual Pacific Linguistics format, but the importance of the contents and the desire to speed its issue far outweigh this consideration.

The biographical introductions use the style so familiar to Paul's colleagues and friends from his letters; for each of the other contributions, the author has selected romanisations, abbreviations, and bibliographical conventions, and the editors have followed these. The non-roman elements were inserted in Fresno under the supervision of the first editor, who also compiled the collected bibliography from individual bibliographies supplied by each author.

Pacific Linguistics apologises for the appearance of parts of the text.



BENEDICT'S WORK: PAST AND PRESENT

Graham Thurgood¹

A generation only produces a handful of scholars who set themselves apart through the brilliance of their intellect and the breadth and scope of their imagination. This collection honors one such man: Paul K. Benedict---anthropologist, Orientalist, linguist extraordinaire. Although the editors' first thought was to assemble a volume with contributions on psychiatry, ethnopsychiatry, anthropology, and linguistics--the fields Paul has worked in, this plan was quickly dismissed; not only would the editing of such a diverse volume be a Herculean task but finding a publisher would also be difficult. The actual volume, instead of being characterized by diversity, has an underlying unity provided, in part, by its focus on the languages of the three great superstocks of Southeast Asia and, in part, by the unifying thread of Paul's own work.

Of the generations of scholars who have worked on and puzzled over the relationships of the hundreds of mainland and insular languages and dialects of Southeast Asia no one has had more influence on our linguistic picture than Paul Benedict. Now we are in the midst of a period of feverish scholarly activity and creativity, a period in which no scholar is in complete agreement with any other scholar. Under these circumstances, the strongest indicator of the highly influential nature of Benedict's thought is that, whether or not it is being expanded, modified, or attacked, it is his conceptual framework and general overview that by and large we are working in. This framework, developed over the last forty years, divides the languages of mainland and insular Southeast Asia into three great superstocks: Austro-Tai, Sino-Tibetan, and Austro-asiatic. Scholars neither agree on the composition of the superstocks themselves, nor agree on the details of the lower-level subgrouping. Nonetheless, our understanding is growing---a clearer picture of the genetic relationships coupled with a broader acceptance of certain groupings is beginning to emerge.

Austro-Tai

Austro-Tai studies are the sphere in which Paul's influence has been to date most prominent. This is hardly surprising since, in a significant sense, Benedict 'invented' Austro-Tai. In his massive work Austro-Thai, Benedict shows

¹ I shall be astonished if all my errors should prove minor, and I will be grateful to readers for their corrections. This introduction has benefited significantly from the comments of Julian Wheatley. This material is based upon work supported by the National Science Foundation under Grant No. BNS-8203882.

more than just his training and skill as an anthropologist and Orientalist; indeed, he demonstrates a range of interests that extend far beyond the narrow, strictly linguistic aspects of subgrouping. In particular, Austro-Thai does more than just outline an Austro-Tai superstock consisting of Austronesian, Kadai, and Miao-Yao; in this work, Benedict goes further suggesting that contrary to previous thought, the strongest cultural influence in the earliest contacts was that of the Southeast Asians on the Chinese, not the converse.

Austro-Tai is the one of the two great linguistic superstocks posited for Southeast Asia by Benedict. It was first suggested in 1942 in his "Thai, Kadai, and Indonesian: a new alignment in Southeastern Asia," an article which presented evidence for taking the Tai languages out of the Sino-Tibetan phylum, placing them with what Benedict then called the Kadai languages, and then relating these to the Indonesian languages. Surprisingly, other scholars added little to his suggestions and they remained essentially unaltered until some twenty-five years later when Benedict himself returned to the topic with a series of articles originally published in Behavioral Science Notes (BSN) (1966-7), in which he brought forth a greatly-expanded body of evidence in support of his Austro-Tai superstock. Then, almost another decade later, this series of three Notes formed the core of Benedict's Austro-Thai (1975), a (ATLC) volume reprinting the original 1942 article (Appendix I), the three BSN articles, and a revised version of "Austro-Thai and Austroasiatic" (1973), a paper expressing Benedict's view that the correlations found between Austro-Tai and Austroasiatic are the result of an earlier substratal influence of Austroasiatic and Austro-Tai (Appendix II). In addition, the Austro-Thai volume contains a "Glossary" of Austro-Tai 'roots,' and an important "Introduction to the Glossary," in which Benedict's original bifurcation of Austro-Tai into Austronesian and Kadai becomes, with the addition of Miao-Yao to the superstock, a tripartite division. Finally, with the recent addition of Japanese-Ryukyuan, Austro-Tai has become a four-part superstock.

Evaluations of something as complex as Austro-Tai is at best difficult and, given the provisional nature of much of the evidence, it is not surprising that marked differences of opinion exist. However, the very amount of evidence that Benedict brings forth in Austro-Thai led Goodenough to write in the "Foreword" (p. ix):

That so much more evidence could be produced is itself an important fact in support of Benedict's earlier thesis. There can be no question that the Malayo-Polynesian or Austronesian phylum (including Indonesian) is itself part of a larger phylum, Benedict's Austro-Thai, which includes the Thai and Kadai languages and apparently, as Benedict now suggests, the Miao and Yao languages as well. There is room for all kinds of argument about the details, but not about the fact of relationship. [underline added].

Others have been more conservative in their judgements, expressing views much like the one expressed by Jerry Norman in this volume where, although he cautions that "not everyone agrees entirely with Benedict's formulation of the Austro-Thai theory," he goes on to note that Benedict has opened up "the whole question of early Southeast Asian influence on Chinese." Certainly, recent archaeological finds, especially in Thailand, support Benedict's basic hypothesis about the direction of early cultural influences (e.g. cf. Solheim 1971).

The heart of Benedict's contribution is found in the first part of his

Austro-Tai family tree (see Figure 1B below) in which he relates the four main branches of Austro-Tai: Miao-Yao, Kadai (Tai, etc.), Austronesian, and Japanese-Ryukyuan. It is in the recognition of a genetic relationship between these language groups that his contribution has been greatest.

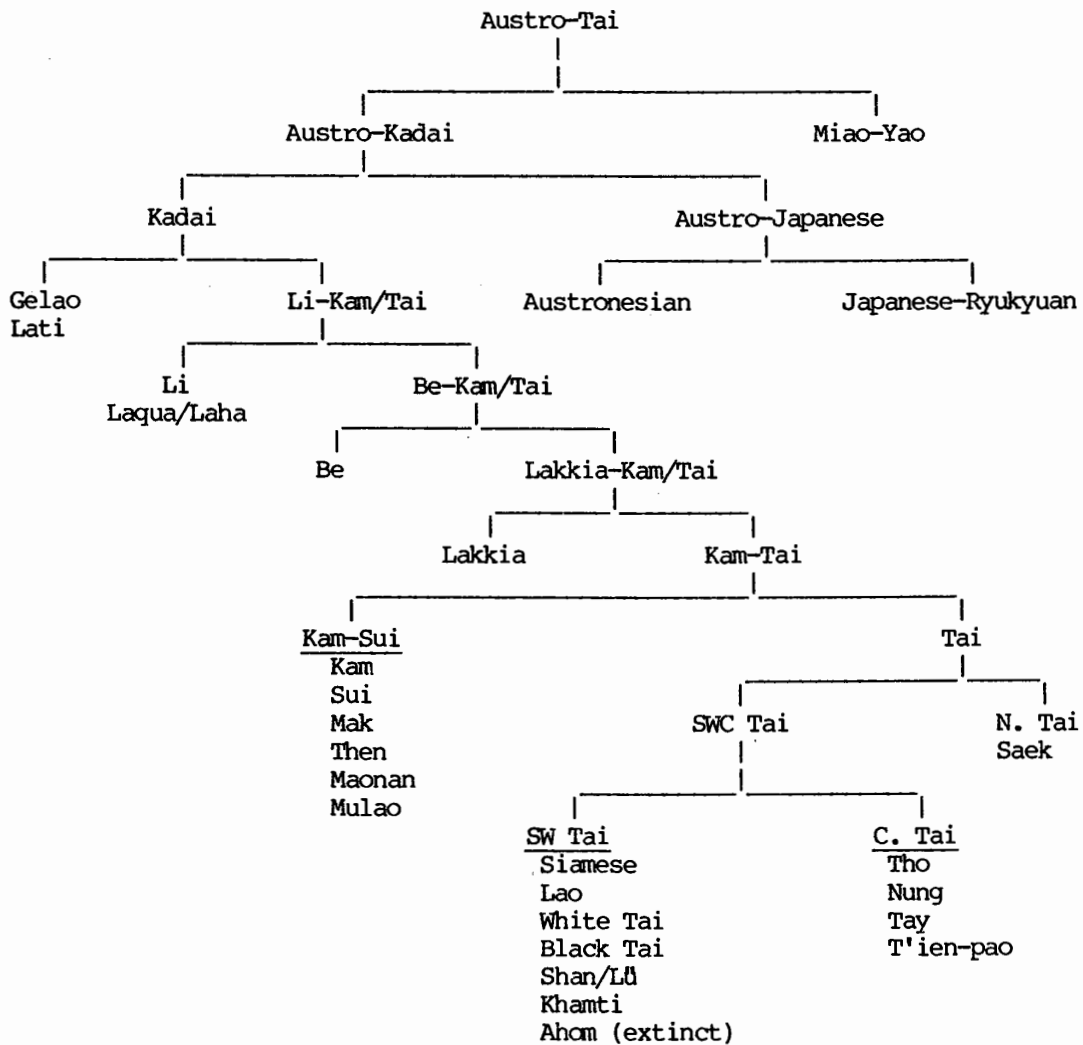


Figure 1: The Austro-Tai Languages.

Notes: The essential classification above is that found in *ATLC* (see page 135 and chart there). Benedict accepted Haudricourt's idea of using Kadai for the larger group, with Tai under it. In a more recent Mulao paper in *CAAAL*, he gives a further classification within Kadai, but it is admittedly impressionistic and subject to revision. And, of course, he has now added Japanese (JR = Japanese-Ryukyuan).

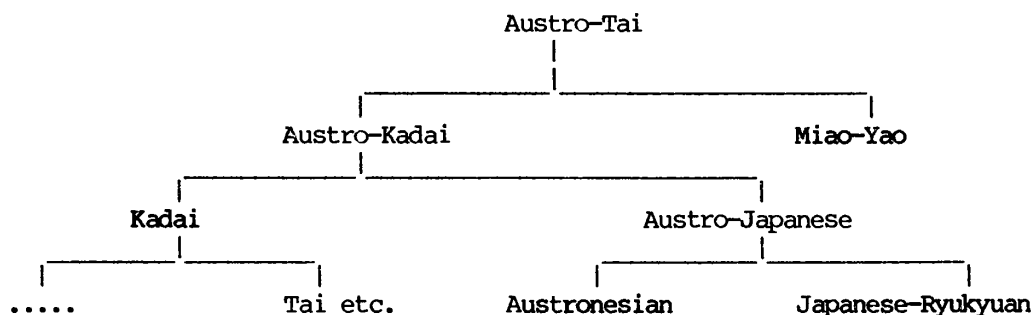


Figure 1B: The four main branches of Austro-Tai.

Linguistic evidence also continues to emerge supporting the existence of a basic genetic relationship between the four basic components of Benedict's Austro-Tai. The large number of cognate words found in each of the major branches establishes that we are dealing with historical rather than chance resemblances; the distribution of the cognates throughout every semantic area of the lexicon as well as throughout the whole of the core vocabulary argues that these forms are the result of a genetic relationship rather than the result of massive borrowing. It is unlikely for two language groups to have that kind (as well as amount) of lexical items in common without being genetically related. Even in the case of Japanese and Austronesian—the most recent addition to Austro-Tai and thus presumably the least widely accepted—the number of clearly cognate words common to Proto-Austronesian and Japanese-Ryukyuan (cf. Benedict's Japanese/Austro-Tai) dwarfs the number common to Japanese and Korean (cf. Martin 1966; Miller 1967, 1968, 1970, 1980; Street 1973; also compare Chart 1, which shows only some of the bilabial stop correspondences) and their distribution throughout all parts of the lexicon argues against borrowing as an origin, a finding that strongly suggests that the Japanese-Korean forms represent borrowings either from each other or from a

	<u>Austro-Tai</u>	<u>Japanese</u>
(1)	<u>Initials</u>	
	PAT *p-	Japanese h-
'god/sun'	*(m)pili (PAK)	hi < Fi 'sun; day' < '(sun-)god'
'cheek'	*pipi (PAT)	hi- < Fi- in hige < Figē 'beard'
'one; one of a pair'	*pitrong (PAJ)	hito < Fitō
'two; pair'	*putša (PAJ)	huta- < Futa
'leaf'	*paGpaG (PAK)	ha < Fa < *FaFa also. (Mod. Jp.) happa < *paGpaG
'beat; wing; feather'	*ka(m)pak(m)pak (PAT)	ha < Fa 'feather'
'leg; stalk'	*paqi (PAT)	hagi < Fagi 'shank (=lower leg)'
'mother'	*papa (PAK)	haha < FaFa
'navel'	*putsxj (PAJ)	hozo < Foso; also heso < Feso (DS)
'open'	*pilak (PAJ)	hirak-i
'field (dry); plain; clearing'	*pa(n)dang (PAJ)	hata < Fata '(dry) field'

'squirt; eject'	*piRpiR, (PAJ) *(m)biR(m)biR	hir-i 'evacuate, eject, void (fart, excrement)'
'wood (chips)'	*pa(ny)cang (PAJ)	hota < Fota 'chips, piece of wood; firewood'
'tooth'	*(N)Gi(m)pan (PAK)	ha < Fa
'wide; level; shore'	*(m)pang(m)pang (PAK)	hama < Fama 'beach; shore'
	PAT *b-	Japanese h-
'board, beam'	*bali[ɣ,R] (PAJ)	hari < Fari 'beam; girder'
'wide'	*bangbang (PAK)	haba < Faba 'width; breadth' cf. 'wide' above
'belly'	*ba/r/ang (PAT)	hara < Fara
'body'	*ba(n)trang (PAK)	hada < Fada 'body, skin'
'flower'	*bangal (PAT)	hana < Fana
'fast (blow)'	*baɣat (PAJ)	haya- 'fast'
'earth; mud; field'	*buna > *bxna (PAK)	hena < Fena 'earth, mud' (DS)
'penis; vagina'	*botoq (PAJ)	hoto 'vagina'
'room; stall'	*baɣa (PAJ)	heya < Feya 'room'
'star'	*buxis (PAJ)	hosi < Fosi (RS)
'stem; trunk'	*ba(n)tang (PAK)	heta < *Feta 'calyx, stem'
'spread'		
'spread; flat'	*(m)bilaj (PAK)	hira < Fira
'strip; rip; split'	*bak(bak) (PAK)	hag-i < Fag-i
	PAT *-p-	Proto-Japanese-Ryukyuan *p- > h-
'fire'	*śa(m)puy (PAK)	hi < Fī < *Fui
'side; border'	*txpi (PAJ)	-he < -Fe < *-Fi-a 'side; shore'

Medials and finals

(2)	PAT *-p-	Japanese -b-
'steep; slope'	*sipal (PAJ)	soba (DS)
'break, tear'	*rapuq (PAJ)	yabuk-i, yabu-ri
	PAT *-b-	Japanese -b-
'beat; fly'	*txb(txb) (PAT) 'beat, strike, flap (wings)'	tob-i < *tohtob < *txbtxb 'fly, spring, jump'
'bind, bundle'	*ta(m)bat (PAK)	taba 'bundle; bunch; sheaf'
'bush; shoot'	*rabung (PAJ)	yabu 'bush, thicket'
'opening; anus, vagina'	*tu(m)bung (PAK)	tubi < tubī < *tubui < *tubun < *tubung
'swell(ing)'	*kx(m)bung, (PAT) *kx(m)pung	kobu 'swelling, tumor, wen, lump'
'wide'	*bangbang (PAK)	haba < Faba 'width; breadth'
'ribs'	*qa-bara (PAJ)	abara
'wide open'	*labak (PAK)	abak-i 'open (grave)' haka < Faka 'grave'

'clan; fellowship'	*kabal (PAJ)	kabane 'family (clan) name' < kaba- + -ne 'name'
(3)	PAT *-b-	> OJ -F- > Mod. Japanese -w- /a__a
'skin'	*kaba (PAJ)	kawa < kaFa
'swamp; field (wet)'	*tsabaq (PAJ)	sawa < saFa 'swamp'
'millet'	*(n)/ts,s/abak (PAJ)	awa < aFa
(4)	PAT *-p-, -b-	OJ -F- > Mod. Japanese -β- /v__i
'wash'	*ʔaRap (PAK)	ara-i < araF-i
'small/thin'	*tipits (PAJ)	tiisa < tiFisa < *tiFis-a 'small'
'shell'	*kapi/ts,tʂ/ (PAJ)	kai < kaFi
'speak'	*qibu (PAJ)	i-i < iF-i < *iFu-i
'night'	*/ʃ,R/abiʔi (PAJ)	yoi < yōFi
(5)	PAT *p-, -p-, -b-	OJ w /__o > Mod. Japanese β-
'ten'	*poloxo/t,c/ (PAK)	o < -wo
'tail/hind-part'	*(m)po(ng)kor (PAK)	o < wo
'hill; summit'	*po(ng)krak (AJ)	oka < woka (OJ o < wo reduced form)
'reed; sugarcane'	*txbos (PAK)	ogi < wogi < *[tx]bos + -ki 'tree'
'hair'	*(n)tsa(m)bo/t,C/ (PAT)	sao < sawo

Chart 1: Austro-Tai/Japanese bilabial correspondences.

Notes: Correspondence patterns: In the first group of initial correspondences Austro-Tai bilabial stops regardless of voicing become F- in Old Japanese and h- in Modern Japanese. The next four groups of medial correspondences are more complicated with both voiced and voiceless PAT medials corresponding to several Old Japanese and Mod. Japanese reflexes depending on conditioning factors. In the second group, both voiceless and voiced PAT medials correspond to Japanese -b-. In the third group, the PAT medial *-b- and in the fourth group, both the medials *-p- and *-b- correspond to Old Japanese -F-; subsequently, this OJ medial -F- went to Mod. Japanese -w- between /a/ and /a/ but disappeared before /i/. In the fifth and final group, PAT initial *p- and the medials *-p- and *-b- went to OJ w before /o/; subsequently, this w disappeared in Mod. Japanese.

Minor problems: In light of the time depth involved in the separation of Japanese, most of these correspondences are remarkably straightforward; nonetheless, certain minor problems do exist. Not only do some instances of intervocalic *-p- go to OJ -b- while others go to -F-, but, in a parallel way, some instances of *-b- between /a/ and /a/ correspond to OJ -b- while others correspond to OJ -F-. The data examined suggests that the solution lies in the variable position of Pre-Japanese penultimate stress with respect to these

medial segments: when penultimate stress fell on the vowel immediately before the medial, both the medial and the stressed vowel were in different syllables and the reflex was OJ -F-, but when penultimate stress fell on the vowel immediately after the medial, both the medial and the stressed vowel were in the same syllable and the reflex was OJ -b-. Without additional data and further examination, this solution must remain speculative.

Transcription conventions: PAT = Proto-Austro-Tai, PAK = Proto-Austro-Kadai, PAJ = Proto-Austro-Japanese (see Figure 1 above). Corresponding to the tree branching of Figure 1, reconstructions lacking an identified Miao-Yao reflex are labelled PAK, and those also lacking an identified Kadai reflex are labelled PAJ; thus far, however, these distinctions appear to be of little import. OJ is an abbreviation for Old Japanese. F is used to transliterate the bilabial fricative found in Old Japanese. x between two consonants indicates a shwa; however, x adjacent to a vowel indicates the expected voiceless velar fricative. /C₁,C₂/ indicates it is unclear which of these two consonants should be reconstructed for the form in question. () indicate the appearance of the consonant in question varies within AT. C indicates any consonant; v indicates any vowel; C- indicates an initial consonant; -C- indicates a medial consonant. /a__a should be read as 'between two /a/ vowels, the first of which at some point carried stress'; /v__i should be read as 'after any vowel and preceding /i/'; /__o should be read as 'preceding /o/'. (DS) as used in the above list indicates that the initial vowel in the form gives evidence of being unstressed or 'destressed' at some earlier stage; that is, at some stage, the stress was on the second syllable.

Sources: All the material and most of the analysis---with some minor modifications---is directly from from Benedict's forthcoming Japanese/Austro-Tai.

common source. Comparisons of the Austronesian and the Tai lexicons reveal similar albeit not quite so transparent lexical similarities, which require a similar hypothesis of genetic relatedness to explain them.²

On the other hand, it is far easier and requires far less understanding to establish the fact of genetic relationship than it does to establish anything definite about the precise nature of the genetic relationship. In Indo-European, for example, the membership of the family is fairly well agreed upon, but even after a hundred and fifty years of scholarly work, the details of subgrouping are still far more controversial. From a historical perspective an examination of the data in Benedict's Austro-Thai and in his Austro-Japanese papers suggests a similar situation. Once the crucial data had been assembled by Benedict the genetic relationship became essentially undeniable; indeed, it seems clear that all the languages under the Austro-Kadai node of Figure 1 are genetically related.³ However, it is far from clear that the tree diagram of

² This evaluation is mine and mine alone. Elsewhere in this volume (pp. 19-20), Matisoff is far more cautious and skeptical questioning whether we yet have a sufficient data base for such conclusions.

³ As an outsider with an extensive background in historical work but with an areal interest in Tibeto-Burman not Austro-Tai, only the membership of Miao-Yao was not obvious to me at first; even here, however, a less cursory and more detailed look at the evidence made its Austro-Tai affiliation clear.

Figure 1 accurately represents the phylogenetic relationships between the various related languages; in fact, given the state of our knowledge it would be most surprising if it did so.

While the very existence of Austro-Tai remains a question for some, it is unquestionably true that Benedict's Austro-Tai hypothesis has significantly changed our view of the history of the languages and the cultures of Southeast Asia.

Sino-Tibetan

Sino-Tibetan studies are another sphere in which Paul's influence has been extremely pervasive. Under the impetus of the annual Sino-Tibetan conferences, which have been held each year since 1968, new life and new direction has been brought into the field through the resurrection of Sino-Tibetan: A Conspectus (1972), a manuscript originally written by Benedict in 1942-3 and brought up to date by Benedict and the contributing editor James A. Matisoff. The amount of interest generated is indicated by the existence of eleven different reviews of the Conspectus.

The Conspectus does provide a diagram of the relationships among the various language subgroups (see Figure 2 below), but Benedict's diagram represents not so much an attempt at schematically specifying the precise nature of genetic relationship as an attempt at avoiding the premature and thus arbitrary choices that a tree diagram and its higher-level subgroupings would require. Shafer in contrast to Benedict did set up higher-level subgroupings for Tibeto-Burman viz., Bodish [=Tibetan-Kanauri, Bahing-Vayu, and Abor-Miri-Dafla], Burmish [=Kachin, Burmese-Lolo, and Kuki-Chin-Naga], and Barish [=Bodo-Garo]. Of these, the grouping of Kuki-Chin-Naga together with Kachin and Burmese-Lolo to form a Burmish subgroup can safely be discarded and Shafer's basis for the other subgroups remains unknown. Benedict in the Conspectus (p. 11) takes a more conservative and more realistic position:

Supergroups within Tibeto-Burman cannot safely be set up at the present level of investigation.

He continues, "For the present, then, we must operate with nuclear or sub-nuclear divisions and with independent units," recognizing the following seven basic 'nuclei':

1. Tibetan-Kanauri (=Bodish-Himalayish); perhaps also Dzorgai, Lepcha, and Magari.
2. Bahing-Vayu (=Kiranti); perhaps also Newari.
3. Abor-Miri-Dafla (=Mirish); perhaps also Aka, Digaro, Miju, and Dhimal.
4. Kachin; perhaps also Kadu-Andro-Sengmai (=Luish) and Taman.
5. Burmese-Lolo (=Burmish); perhaps also Nung.
6. Kuki-Naga (=Kukish); perhaps also Mikir, Meithei, and Mru.
7. Bodo-Garo (=Barish); perhaps also Konyak and Chairel.

The understanding of subgrouping relationships, however, is frequently a much more sophisticated and difficult problem than the recognition of family membership, and the understanding of higher-level subgrouping relationships is even more difficult. Consequently, there is nothing in Benedict's lack of higher-order subgroupings that causes us to question the integrity of the

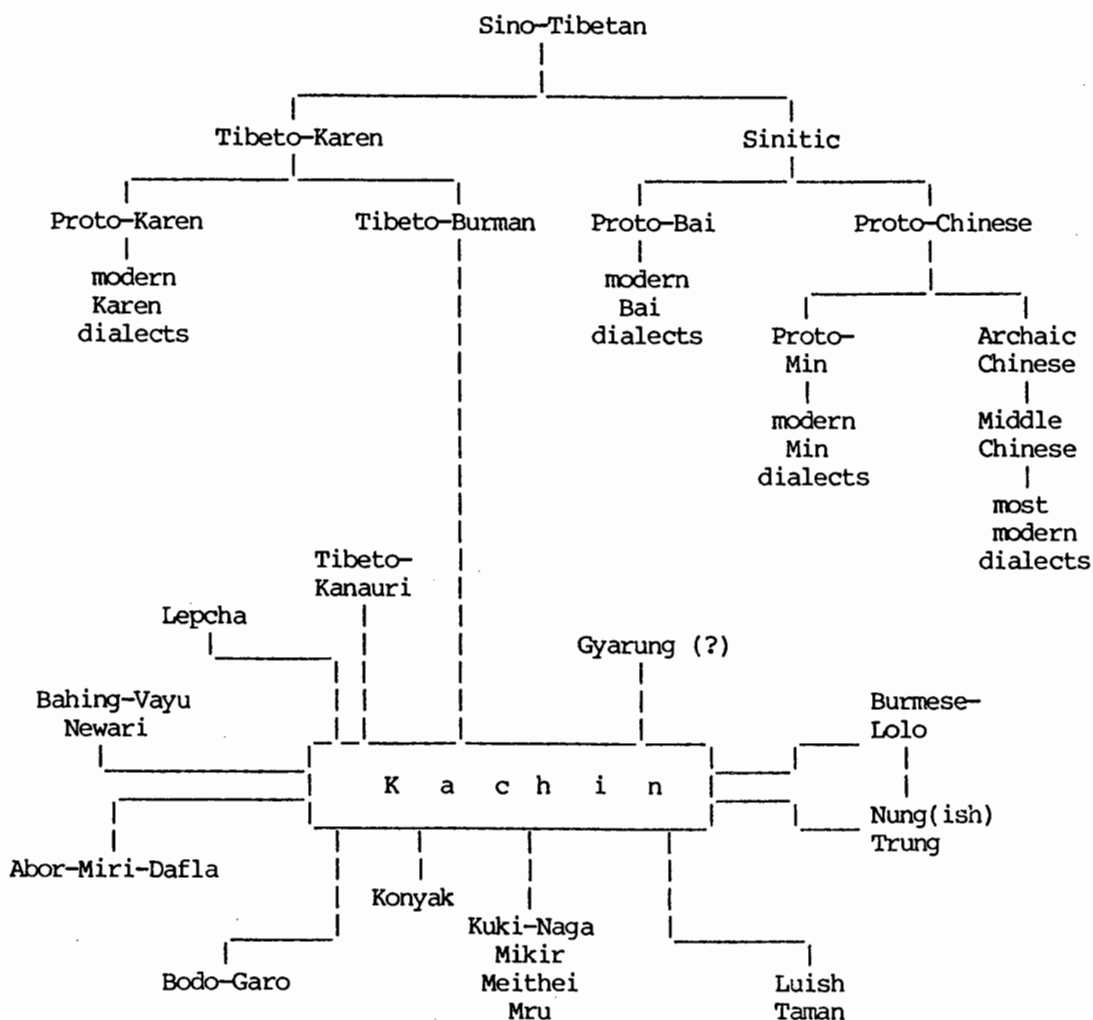


Figure 2: Schematic representation of Sino-Tibetan groups.

Notes: The *Conspectus* provided the following subgrouping schema for Sino-Tibetan (1972:6ff.). The modifications of Sinitic are from the 1982 paper on Bai given by Benedict in Peking.

family as a whole, cf. the many still-remaining questions about Indo-European subgrouping.

Sino-Tibetan itself is now a well-established language family. The relationship of Tibeto-Burman and Chinese is largely accepted and most of the argument involves the affiliation of other languages and language subgroups within this core. Thus, for example, Miao-Yao despite a heavy layer of early loans from either Chinese or related languages must be excluded from membership (Benedict 1976). And, of course, although well-established and widely-accepted as a whole, the higher order subgroupings within Sino-Tibetan, including

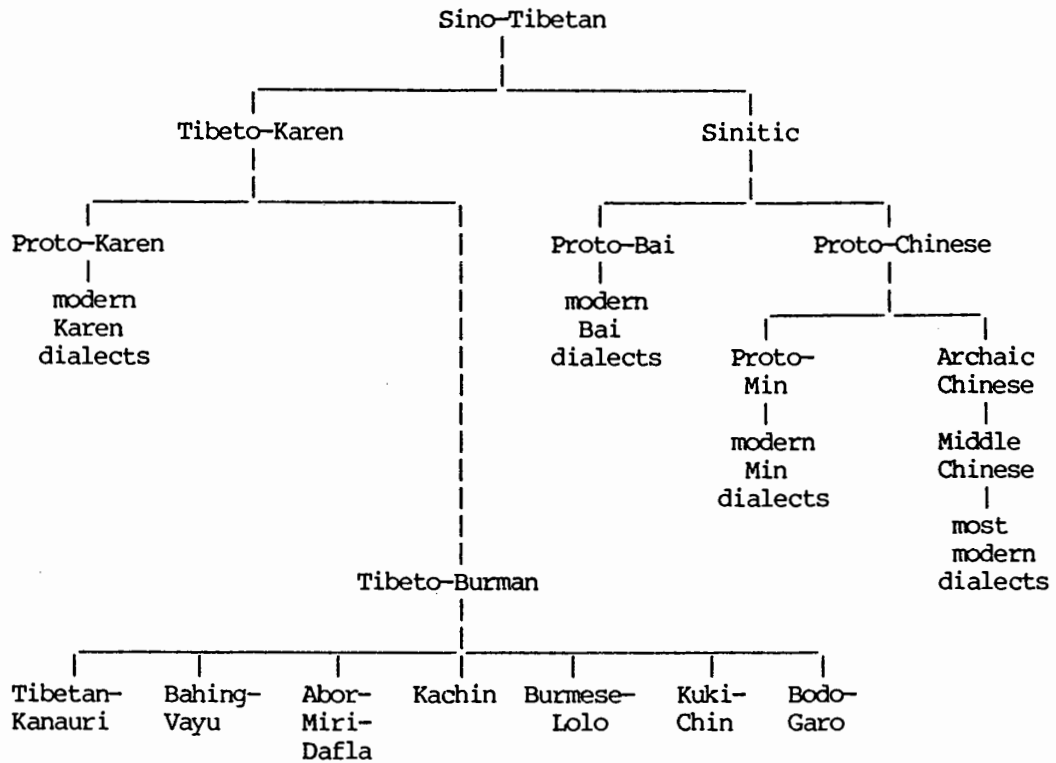


Figure 2b: Sino-Tibetan and Tibeto-Burman subgrouping.

Notes: The Tibeto-Burman 'subgroupings' in the above figure should be interpreted as provisional; that is, the figure does not represent the claim that Tibeto-Burman simultaneously broke into seven separate branches as much as it represents that claim that we do not know what the higher-level branching is. Several speculative subgroupings are discussed in the text.

(despite Figures 2 and 2b) the position of Karen,⁴ are still indeterminate.

With the caveat that our knowledge of higher-level branching is at present inadequate for definitive conclusions, Benedict (1972:11) speculatively suggests a 'Burmic' supergroup which would include Kachin,

⁴ The unique position of Karen in the Sino-Tibetan family tree is due at least in part to Karen's SVO (Subject-Verb-Object) word order, a pattern strikingly at odds with the SOV word order commonly found in Tibeto-Burman. However, Wheatley's recent recognition and explication of a quite similar shift toward SVO among northern Loloish Tibeto-Burman languages not only makes the path of such SOV > SVO shifts relatively clear but it also establishes that despite the apparent magnitude of the change the time depth required for such a reorientation need not be that long. Partially parallel incipient changes are also found in dialects of Angami and of Kham.

An obvious bonus from Wheatley's analysis is that it provides the mechanism needed for the early Chinese shift from *SOV > SVO.

The writer has suggested (Benedict, 1940, pp. 108-9) that a supergroup named 'Burmic', including Burmese-Lolo, Nung, and Kachin, be recognized, ...

but he also recognizes other affiliations for Kachin,

...but further research into Kachin has brought to light unexpectedly intimate lexical contacts with Konyak and the Bodo-Garo group. It may be that all these, perhaps together with Abor-Miri-Dafla, will ultimately be brought together under a single supergroup, as contrasted with the Kuki-Naga nucleus, but at the moment any unifying concept of this kind would be mere speculation. [underlines and bold face added]

Later Benedict gives further support for his Kachin-Konyak-Bodo-Garo-Chairel group with a lexicostatistical study (1976:178), which leads him to conclude:

The scores as a whole do strongly indicate...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." (cf. STC 6-7).

Burling (1983) provides confirmation for this latter grouping.

Austroasiatic

In contrast to Austro-Tai and Sino-Tibetan, our view of Austroasiatic has not been specifically formulated by Benedict--only strongly influenced. Earlier writers talked vaguely about a connection between Vietnamese and Mon-Khmer, but this was superseded by Maspéro's (1912) conclusion that Vietnamese is related to Tai, an opinion based largely on their common monosyllabic structure and the presence of a large shared lexical component which included tonal correspondences. Maspéro's reputation coupled with the evidence of the agreement in tonal systems had the effect of making this position almost dogma. But as early as 1924 in Les Langues du Monde Przulski broke with Maspéro's position by classifying Annamite (=Vietnamese) with Mon-Khmer. Similarly in 1942, Benedict in the influential paper "Thai, Kadai, and Indonesian: a new alignment in Southeastern Asia" concludes, "The overwhelming majority of basic roots...are of Mon-Khmer rather than Thai origin. ...there can be no question as to the genetic nature of the Mon-Khmer-Annamite relationship." In a 1947 paper on the Vietnamese kinship system, Benedict gives a complete analysis of the language noting the core of Mon-Khmer basic roots and elements and attributing the tones and some lexical items to Tai influence. Belief in the genetic connection of Vietnamese and Tai was finally laid to rest by Haudricourt's famous paper on the origins of tones in Vietnamese (1954b). Much earlier Maspéro had not only noted the effect of voicing of initials on pitch height but had also worked out the origin of one pair of tones from final *-h (and *-s); in this paper, Haudricourt completes the analysis by pointing out the origin of the two last pairs of tones, one pair from final *-? and the other pair from open finals. Despite the questions that still remain about final *-? as an origin, the lucidity and the explanatory power of Haudricourt's paper effectively destroyed the argument that existence of tones per se denied a Mon-Khmer affiliation for Vietnamese by demonstrating how such a tonal system

could evolve diachronically from non-tonal origins.

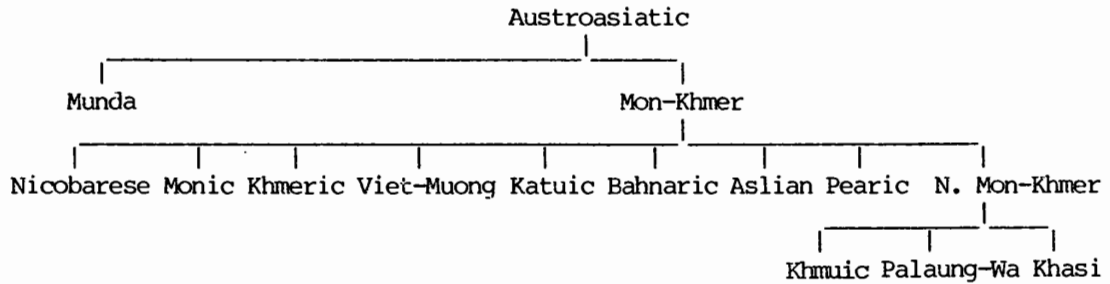


Figure 3: The Austroasiatic languages.

"Austriac"

In 1906, Wilhelm Schmidt (1906) proposed an 'Austriac' superstock, which connected Austroasiatic with Austronesian; transposed into Benedict's framework, this 'Austriac' would be an Austroasiatic connection with Austro-Tai. In 1942, Benedict wrote (1975:461, fn. 55):

The writer accepts Schmidt's postulation of an Austriac superstock including Mon-Khmer and Austronesian, even though this relationship has not yet been thoroughly demonstrated. In the present instance, the Austriac hypothesis is useful in interpreting certain roots which Thai and Mon-Khmer have in common...

Later based on the groundwork provided by a flurry of scholarly activity on Austroasiatic languages along with the results of his own work on Austro-Tai, Benedict did a preliminary survey to re-evaluate "the Austroasiatic

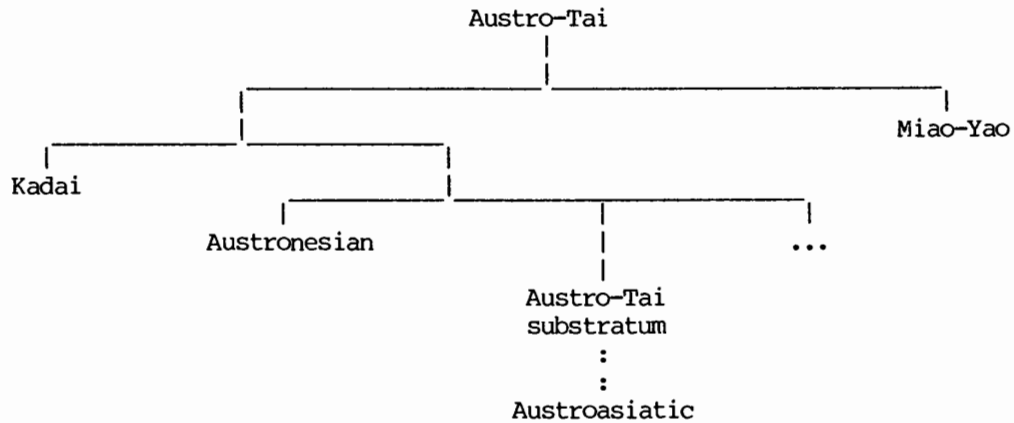


Figure 4: Austroasiatic and Austro-Tai interaction. (Benedict 1975:485)

stock as a whole from the very special point of view of comparing the phonological framework with that of Austro-Tai and of uncovering any basic

lexical agreement that might exist" (1975:465). In short, Benedict was re-examining his earlier conclusion on the basis of more recent evidence. Benedict's new conclusion was (1975:484):

...AT and AA do not have a core vocabulary in common, despite the morphological similarity of the two language stocks, hence the idea of an "Austrie" superstock must be abandoned. There are a number of lexical agreements, however, and these are best explained by postulating that a mainland branch of AT, now extinct, became "substratumized" by AA, yielding up certain roots in the process.

The above diagram represents the relationship involved (Figure 4).

However, Benedict is certainly not committed to the substratum explanation of lexical resemblances between Thai and Austroasiatic. More recently as our understanding of the forms in question has expanded, he has increasingly leaned toward analyzing the limited number of resemblances as nothing more than what Matisoff has termed 'comparabilia' or 'look-alikes'.

Methodology

Methodological innovation is an area in which Benedict's pioneering work has not received full recognition, perhaps because nowhere is his approach laid out explicitly. The comments in the literature either tend to point out minor deficiencies or, less charitably, suggest the absence of a 'legitimate' methodology. In particular, two objections are raised frequently, although more often informally than formally. One objection is to his use of "the principle that inexact, though close, semantic equivalence and a perfect phonetic correspondence is preferable to an exact semantic equivalence and a questionable phonetic correspondence" (Egerod 1973), a principle spelled out in Benedict's first paper "Semantic differentiation..." (1939). Although both Shafer and Chang have complained that this procedure amounts to 'relaxing the methods of comparative grammar', Egerod has criticized their position, noting that this principle was of help to Benedict in setting up Austro-Tai.

The second frequently-raised objection has to do with Benedict's failure to start at what is perceived as the proper starting point. Here Haudricourt's (1973) characterization, although it fails to capture the full essence of his method, does manage to establish a useful contrast between the two extremes by contrasting Shafer's 'analytic' approach with Benedict's 'synthesizing' approach.

Shafer's analytic approach is the widely-accepted, traditional approach to reconstruction (cf. Haas 1969 for a lucid and definitive description). And Shafer applied it closely, working first "from the local subgroupings, even dialects, to broader and broader supergroupings" (Benedict 1975b:89), eventually reaching the most chronologically-distant level of relationship. Benedict, of course, also uses the reconstruction of a subgroup rather than direct comparisons with languages within the subgroup as the basis for broader reconstruction, when such a reconstruction is available. The difference in approach, however, comes when no such reconstruction is readily attainable. Among some linguists, in fact, the belief in working up subgroup by subgroup to the higher level reconstruction is so strong that this is not just the preferred method of reconstruction but is the only method of reconstruction. An

obvious consequence of this belief would be to view Benedict's tentative reconstructions of Austro-Tai and of Sino-Tibetan as unsound in principle. This is, at least in part, the basis for Shafer's objections to Simon's direct comparisons of Tibetan and Chinese. For similar reasons, Benedict's 'teleo-reconstruction' would also cause many linguists to object in principle, for 'teleo-reconstruction' is a heuristic technique in which a provisional reconstruction is reached without the benefit of the various normally-prerequisite intermediate stages of reconstruction (see Benedict 1973; also Mazaudon's article in this volume).

More disturbing than the theoretical consequences of an insistence on a subgroup-by-subgroup approach are the practical consequences. A quick examination of the scope of the task of reconstructing of one language family, Tibeto-Burman, illustrates this. Matisoff (1980), "The languages and dialects of Tibeto-Burman", an alphabetic listing of the various names of Tibeto-Burman languages and dialects runs to 72 pages excluding prefatory remarks. Conservatively estimating only 20 names per page, the number of language names totals 1,440; even should the language list be exhaustive and fully two-thirds of the list be alternate names for already listed languages, we are still facing some 480 languages. These 480 languages comprise only the non-Chinese component of Sino-Tibetan; the Chinese-Bai component with its incredibly complex problems of analysis and evaluation is not included. Similar descriptions of Austro-Tai and Austroasiatic could also be put forth. And, in addition to the very size and complexity of the data bases involved, two other factors present obstacles to a painstaking and meticulous subgroup-by-subgroup reconstruction. Complementing the dearth of competent, complete synchronic dictionaries and grammars let alone comparative works is not only a tremendous lack of interested, trained manpower but also of the manpower available few—if any—of the workers have the luxury of devoting more than a fraction of their time to comparative work. This, of course, is coupled with time constraints. In short, a rigid insistence on the 'analytical' approach as the only approach does more than just label work such as Benedict's as 'premature'; its actual consequence is to make the task not just formidable but in practical terms virtually impossible.

Benedict's reaction to these problems is at once a measure of the man and his genius. Faced with a methodology whose pragmatic constraints would force him to abandon any attempt at reconstructing the superstocks of Southeast Asia, Benedict responded by adjusting the methodology rather than the task. He devised a new, more 'practical' approach. 'Practical' is not a casual choice here; it characterizes the conceptual focus controlling much of Paul's organization and motivating much of his methodology. It is in terms of his own cultural background of 'Yankee' practicality in the sense of optimization of effort e.g., in his works, patterns are not documented beyond what is absolutely essential nor once established are the more obscure reflexes worked out without a purpose. His work displays a fine sense of precisely what contributes to the solution of the task at hand coupled with the ability to spot 'crucial' data.

The technique itself is characterized by Benedict as (1975b:90) the "setting up of a series of provisional frameworks, then working within these frameworks to modify them as need be," an approach which accounts for the liberal sprinkling of 'contra Benedict's' in Benedict's work. As an illustration of the process, consider the evidence given in the Conspectus for a subset of the PTB vowels (adapted from page 62):

PTB	Tibetan	Burmese	Lushei	Kachin	Garó	Dimasa
*-aw	-o	-au	-ou	-au	-o	-au
*-a:w	-o, -u	-au	-au	-au	-o	-au
*-ow	-o	-u	-ou	-u, -au	-o	-au
*-ay	-e	-ai	-ei	-ai	-e	-ai
*-a:y	-e	-ai	-ai	-ai	-ai	-ai
*-ey	-e	-i	-ei	-i	-ai	-ei
	Tibetan- Kanauri	Burmese- Lolo	Kuki- Chin	Kachin	Bodo-Garó	

Chart 5: 'Synthetic' reconstruction of several proto-Tibeto-Burman vowels.

In addition to the information provided in the above chart, a small number of sets illustrating each correspondence is given. Two characteristics of this chart not specifically commented on are of considerable importance: (1) of Benedict's seven basic Tibeto-Burman nuclei, five are represented in the chart, and (2) this part of the proto-system is typologically sound. In this case, the intimate, often intricate details of subgroup-by-subgroup reconstructions does not need to be worked out before a fairly reasonable tentative reconstruction of the proto-system is made. On the basis of this very carefully selected data, the analysis has managed to bypass the task of reconstructing the various subgroups involved, while providing insight into the structure of the proto-system and establishing a provisional reconstruction. When this technique works, it has certain obvious advantages over a more meticulous approach.

Finally, an entirely different type of objection is sometimes raised to the provisional nature not just of Benedict's but of any pioneering work--an objection that frequently reveals as much about the psychology of the objector as about the merits of the particular piece of work. It seems to me that two distinct ways of viewing publication exist. The one--the more traditional and at the same time more conservative view--sees it as the final step, as the presentation of a completed, fully-developed, fully-worked-out piece of thought i.e., publication is seen as the endpoint and the culmination of the whole process. This position was epitomized in the well-known advice of Alexander Pope to lesser poets, "Keep your piece nine years!" The other---much less cautious and conservative---sees publication not as a final but as an intermediate step, as the presentation of ideas to a broader public forum i.e., as a stage in the on-going process of its growth and development. It is in this latter spirit that Paul Benedict has presented his works to the linguistic world, and it is in the same spirit that the essays in this volume are presented.

GENERAL INTRODUCTION

James A. Matisoff

I. PAUL K. BENEDICT - An Appreciation

First contact with Benedict (1967? '68?). Via Frank LeBar, whom I associate with his caged gibbon in Chiangmai. Sent him "Lahu and PLB" - got back the first of the many treasured manic letters I have received from Benedict, expressing great interest in my work, but noting that 'Shafer and I had gone over the same ground many years ago.' Our meetings on Wednesday afternoons in the West End Cafe, right next to Takome on Broadway, the takeout joint that my Columbia colleague Austerlitz and I always called Ta-ko-me, à la japonaise. Benedict would get wound up the minute I got there, as we went through the takeout line, not bothering to answer questions from the servers like 'broccoli or kale?' Indecipherable scrawls on napkins. Manic scribbles, crossed out and rewhorled before one's eyes. Sentences that never ended, broken off and sailing onto new tangents, pyrotechnics of ellipsis and apocope. Paroxysms of proto-forms, shards of syntax. Fighting to keep above water, finally getting some glimmers of what he was trying to tell me all at once. He was deep into 'Austro-Thai' at the time, reconstructing monstrous trisyllabic roots capacious enough to accommodate languages from Hawaiian to Ahom, Austronesian and Tai and Miao-Yao, meta-*proto-forms*. For months and years I had trouble deciding whether this was all incredibly brilliant or totally insane. He would announce he had solved, e.g. the RABBIT problem -*LETUKA. (I seem to remember irreverently suggesting a comparison between that particular PAT form and English 'lettuce.') Sometimes Egerod would join us, fascinated and appalled, as I was.

P.S. Last nostalgic meeting at the West End in Jan. 1981.

PKB qua all-American, Yankee. Upstate New York, Benedict Arnold, etc. Difficulty in adjusting to any other culture or language. His visit with us in Kyoto in 1976 - managed to last for one night in our house. Insisted on taking him to the public baths, getting him to squat on the floor next to me and all the other guys from Hyakumanben, each under our color-coded red and blue spigots - he took it in good part, but did have trouble with the futon, the kotatsu-pit in the dining room, the teeny kitchen table, knee-high sink, and especially the benjo. The next day he made a beeline for the local Holiday Inn. Like a benevolent grandfather he smuggled our kids into the swimming pool every day for the remainder of his stay.

As far as foreign languages go, as PKB cheerfully has said many times, actually speaking them is just not his thing. He is barely comprehensible even in English, and would never have the patience to slow down his thoughts enough to put them painfully into another language. So the way in which he 'knows'

languages is very special and limited, but quite amazing. Kind of like the savants who can tell you what day of the week it will be on March 12, 2023. (Well, maybe that's not such a good analogy.)

Benedict's intellect. He is of course a genius, in the sense that certain faculties are hypertrophied to almost superhuman dimensions; in that he has a vast capacity for concentration and feverish periods of creative activity; in that he has supernormal memory capacity for linguistic forms; in that he has the knack of identifying critical pieces of data, and going from the specific to the general, drawing far-reaching inferences and implications from seemingly trivial bits of material; has limitless intellectual curiosity and is an omnivorous reader within his fields of interest. Reads and processes and remembers all the articles and MSS one sends him, usually returning pages of detailed comments.

Personality type. Definitely an obsessive-compulsive and hypomanic individual. I know he will forgive me this psychoanalysis, since he himself is so fond of pigeonholing people in these terms. Has often boasted that during his psychoanalytic practice he could diagnose somebody within the first 5 minutes. One wonders what PKB's poor patients' sessions were like - whether they could ever get a word in edgewise. Or whether as they were lying or sitting there spilling their guts out, PKB was stealthily opening a drawer and memorizing some word list, or worrying about the VOMIT problem.

His hypomania. Is mania always the 'mask for an underlying depression?' (PKB hates that idea.) I've known other supremely creative hypomanics, who spend their whole lives in revved up state, accomplishing huge amounts. They say Teddy Roosevelt was the same. Minimal sleep requirements - 3-5 hours a night. PKB says his best worktime is in the wee hours of the morning. The constant fear of boredom and the necessity to fill his time - a hummingbird with superhigh metabolism, having to flit from language to language, as from blossom to blossom. Time-eating compulsions, like reading the N.Y. Times every day from beginning to end. How many times at conferences, when everybody else was pooped at 3 A.M., PKB would still be rarin' to go, eager to carry on a conversation with ANYBODY, on ANY subject (Middle Vietnamese sibilants, politics, oracle bones, personal anecdotes) - 'But you can't go to bed! It isn't time, I won't be able to sleep, I've got nothing to read!' Sometimes poignant, the biological clock that can't wind down.

PKB's breadth of vision and imagination, his intellectual courage and daring. He's not one of those scholars who hesitates to publish something for 20 years because there might be something wrong with it (on second thought, the Conspectus did lie around for a long time in MS form!). It's this boldness in his intellectual personality that is hard for some linguists to accept. In Japan, e.g., one should never state one's opinions or conclusions too positively. It is proper style to end a presentation by fuzzing everything over and saying that 'in conclusion, further research is needed on this very interesting problem.' That simply is not Benedict's style.

Fecund in hypotheses - like Bill Labov, PKB throws out dozens of ideas, many of which must inevitably be offbase, but some of which are brilliant. Has no real ego investment in the DETAILS - this is impossible to understand for those scholars who have sought, e.g. to vitiate the entire Conspectus by finding real or imagined 'mistakes' in it.

The MEGALO mind. The philosopher Isaiah Berlin spoke of the hedgehogs and the foxes - those who like the big picture and those who are preoccupied with details. Some, like PKB, can change their scale of observation at will - do broad pans or closeups. His pervasive image of 'putting things together,' or 'fitting the pieces together,' like a jigsaw puzzle. His favorite boast for a new etymology is 'Fits perfectly!' An architectonic mind-set undoubtedly inherited from his architect father.

PKB's versatility and his 'amateur status' as a linguist. Tied up with his self-image as the Yankee gentleman farmer who doesn't have to do linguistics for a living. His second career, highly successful and lucrative, as a psychiatrist - what he has called his 'period of psychiatric divertissement' (1949-65, from age 37 to 54). Has the casualness of an amateur about publishing his papers -an astonishing number remain unpublished, especially those presented at the ST Conferences. He seems to feel they're 'published' once they're circulated to those in the field most directly concerned. His retreat from linguistics probably due to his pioneer position - after the collaboration with Shafer he had nobody to play with for a long time.

PKB as a teacher. He's not a teacher in the conventional sense - has never held a university position - but you can learn a lot from him. He's great at providing feedback, reams of written comments. Will read whatever you send him. But he can't lay out the elements of a problem orally ad lib. Jumps around, has no feel for interplay with his audience. Defensively fixates on a particular abstruse point, scrawls on the board and stands in front of what he's written.

His almost mystical belief in the palpable reality of his proto-constructs. He would not be surprised to find a stele inscribed in Proto-Austro-Tai.

Relationship to the work of others. Like everybody, prefers to find his own mistakes, and put in his own 'contras.' Loves to playfully pounce on my errors, and can sometimes be surprisingly gracious when one of his own is pointed out. Perhaps more galling is to admit that somebody else has proposed a valid new etymology that he hadn't thought of first. There's a period of initial resistance, as he tries to improve on the new proposal and somehow make it his own -- but if one sticks to his guns, PKB comes around eventually, and may even cite it later.

PKB's flexible dogmatism. If you convince him he's wrong about something, he'll change his mind, but then becomes equally sure that his new position is absolutely right.

PKB's literary style. Writes excellently well; shares the virtue of concision with Haudricourt (sigh!). Has a fine understated ironic wit. His letters - I'll always treasure them, and will probably publish them someday, or put them into a time capsule not to be opened before the 23rd c. They have got to be expurgated first. He's incapable of writing a letter without adding illegible pencilled scrawls in all the margins, as if to say, you think I have crammed everything possible onto this page, but you're wrong!

His comments - the most assiduous member of the ST Conference constituency (both in point of view of attendance - he's the only one to have attended all 16 of them) and the number of his comments on other participants' papers [see

BIBLIOGRAPHY]. Likes the concision of the 'Squib style' - ideal for our featured department in the journal LTBA - the Squib is the manic scribble in the margin writ large.

The curve of Benedict's career. Brilliant youthful period, first publications at age 27. Collaboration with Shafer on the Sino-Tibetan Linguistics project. (For a highly readable account of the STL project, see PKB's own memoir in LTBA 2.1, pp. 81-91.) After the long exclusively psychiatric interlude was over (1965), the steady outpouring of work that has earned him a special place among the diachronic linguists of the 20th century. (I can hear in my mind's ear the anguished cry, 'And who was so great in the 19th century anyway?')

Productivity. If anything, his productivity has increased with age, or rather since retirement from active psychiatric practice. In particular, 1983 saw a veritable explosion, including a whole new book. (It is of more than passing interest to note that he is exactly the same age as President Reagan, who is also vigorous in a way that belies his years.) And yet PKB professes to be embarrassed that he has written so little in the course of his career - to the point where he asked the editors of this volume to arrange his lifetime bibliography by SUBJECT and not by YEAR. (Request denied - too confusing to posterity.)

A few contributions of PKB to East Asian linguistics:

SINO-TIBETAN. Proved the relationship between Chinese and Tibeto-Burman beyond the shadow of a doubt. Excluded Tai-Kadai and Miao-Yao (Hmong-Mien) from Sino-Tibetan, which although not universally accepted has at least led to more and more sophisticated discussions of the genetic interrelationships among the language families of the region.

Freed the field from its preoccupation with pseudo-issues, like irregularities in manner and voicing of initials (explicable by prefixes). Willingness to recognize semantic shifting in cognates (seems like a self-evident universal of language history, but not to this previously hyper-conservative field).

PKB did not leap to hasty conclusions about TB subgrouping, which is all to the good, in view of the still very spotty state of our knowledge.

His method of 'teleo-reconstruction' - had the Yankee practicality to recognize the '5 criterial languages for TB reconstruction.' As more and more data on hitherto unknown TB languages pour in, the basic correctness of his overall reconstructive scheme is confirmed.

His sympathy for the notion of word families, in TB as well as in Chinese. Prefers to rely by and large on Karlgren's reconstructions of the rhymes of OC, rather than on some of the many revisions of his work. PKB is now working with Paul Yang on a re-recension of Grammata Serica Recensa, not changing as much with respect to the rhymes (where previous revisionists had concentrated), as they do with respect to the syllable-initial - the prefixal dynamics -hoping to make Proto-Chinese look more like PTB.

AUSTRO-TAI. The whole idea is his. The field of AT studies contains but a single practitioner. (He has always loved somebody's reference to him as 'one

of the leading American Austro-Tai specialists.') I myself have grown increasingly skeptical over the years- in fact, my conclusion is that further study must be devoted to this most interesting problem.

One thing we can now be relieved about is that PKB has just abandoned his illogical spelling 'Austro-T-h-ai,' since the form without -h- is more general in scope, by convention. (Both spellings appear in free variation in this volume!)

Very recently Benedict has claimed to have discovered that Japanese too is but another sister language to Austro-Tai, so that the great "Austro-Japanese" stock now stands on 4 legs: Austronesian, Tai-Kadai, Miao-Yao, and Japanese.

Can this be the end of it, however? Like Alexander, PKB may finally have run out of worlds to conquer in East and SE Asia. He has been complaining in recent letters about "running out of languages."

SOUTHEAST ASIAN PREHISTORY. The brilliant SE Asian archaeologist, Chester F. Gorman, who died prematurely at age 44 in 1981 (and who had intended to submit a paper to this volume), realized the profound implications of PKB's 'AT hypothesis' as supporting evidence for his own impressively documented claims for the prehistorical cultural advancement of SE Asia. (See Matisoff, Languages of Mainland Southeast Asia, Ch. I.)

Particular points on which honest folk may disagree:

*** Did PST really have distinctive tone, and are all synchronically observable tonal systems in TB languages derivable from a single proto-tone system? [See Mazaudon's paper in this volume.]

*** Austro-Tai: does it fly? Must await evaluation by specialists in Austronesian and Miao-Yao, and more work on the Kadai branch of Tai-Kadai. Miao-Yao historical phonologists are still few and far between. Specialists in Austronesian are skeptical. This does not bother Benedict.

*** Austro-Japanese: is this a meta-chimera? How can this hypothesis be tested?

*** Does Lahu ye 'copular nominalizer' really come from *wa-n, as Benedict insists, or its it rather from *way, as JAM has so clearly demonstrated? [See "God and the Sino-Tibetan copula," 1983.]

*** Karen: is it really to be split off from the rest of TB, like Hittite from the rest of Indo-European in Sturtevant's conception? [See Wheatley's paper in this volume.]

*** Proto-variation vs. proto form-stuffing. PKB is still something of a stuffer, although he shows signs of coming out of the variational closet, and has even (after much prodding) adopted the term 'allofam,' which, like 'morph,' he might soon claim to have coined himself.

The field of Oriental linguistics is immeasurably richer because of the life and work of Paul K. Benedict. May he continue to provide an inspiration for us all, till the proverbial age of 120!

GENERAL INTRODUCTION

James A. Matisoff

II. NEW DIRECTIONS IN EAST AND SOUTHEAST ASIAN LINGUISTICS

The 29 papers in this volume can be interrelated in various ways, but for convenience's sake have been grouped into six large categories. In this brief summary the lines of research pursued in the papers of each section will be placed in the context of certain pervasive Benedictine themes and ideas.

(1) Prehistoric Cis-Yangtzeana and Outside Influence on Chinese

One of Paul Benedict's most enduring contributions to the linguistics of East and Southeast Asia will no doubt prove to be his placing of Chinese into a more balanced linguistic position with respect to its coterritorial languages. Whether or not one is a true believer in the orthodox version of his "Austro-Tai hypothesis" -- the view that Tai-Kadai and Miao-Yao (Hmong-Mien) are not part of Sino-Tibetan, but are to be grouped genetically with Austronesian in a superfamily called Austro-Tai, which is itself of equal dignity and antiquity to Sino-Tibetan -- recent research in archeology, proto-history, anthropology, and linguistics confirms that what is now China south of the Yangtze was not ethnically, culturally, or linguistically Han Chinese until relatively recent times.

This vast region, comprising the islands of Hainan and Taiwan, and large chunks of the modern provinces of Yunnan, Sichuan, Guangxi, Guizhou, Guangdong, Fujian, Hunan, Jiangxi, and Zhejiang, was sparsely inhabited by a large number of ethnic groups, mostly non-Han, who from earliest times were in cultural and linguistic contact with each other. These included Austroasiatic (=Mon-Khmer) groups like the Mon and Lawa (the Palaung-Wa are the only Austroasiatics still to be found in China today); the Austronesians (=Malayo-Polynesians), still found on Hainan and Taiwan and on contiguous areas of the mainland; the Tai-Kadai and Miao-Yao peoples, still abundantly represented in S. China, though they have also moved further south to Burma, Thailand, Laos, and Vietnam; and last but not least, the only "proven" linguistic relatives of Chinese, the myriad peoples of the diverse and unruly Tibeto-Burman family, the Karen, Jingpho (=Kachin), Lolo (=Yi), Tibetans, and dozens of others, including many groups now only to be found outside of China (especially in NE India, Nepal, and Burma).

In the early period, there is no reason to believe that the Han Chinese were culturally or linguistically predominant in "Cis-Yangtzeana."¹ All the

¹ This name, meaning "the region this side of the Yangtze", is introduced in my

ethnic groups of the region must have been on a cultural par, with the edge if anything belonging to the peoples who had penetrated southward first -- it can be argued that benign climates are more favorable to the earliest advances of civilization than cold ones.

Benedict's "Austro-Tai theory" provides linguistic evidence that the flow of cultural ideas among the peoples of what is now southern China was not unidirectional. In prehistoric times the scattered groups of Han settlers must have found themselves surrounded by peoples at least as advanced as themselves in agriculture, metallurgy, weaving, warfare, astronomy, and perhaps even writing.²

Prehistoric Cis-Yangtzeana was mother to hundreds of languages whose speakers shared the same cultural and ecological world. These languages must have borrowed freely from each other in all directions for millennia before Chinese achieved the overwhelming cultural and political prestige that it has enjoyed in later periods. It is in this sense that it is reasonable to speak of non-Han "substrata" underlying the southern dialects of Chinese.

W. L. BALLARD's paper, "The linguistic history of South China: Miao-Yao and southern dialects," goes a long way toward making these general ideas more precise, by identifying areas of phonological similarity between particular S. Chinese dialect groups and specific non-Chinese language families of the region.

In Ballard's view, the Wu, Yue (Cantonese), Chu (old Xiang), and Min dialect groups are not to be regarded merely as divergent variants of Mandarin that can ultimately be derived from "Ancient" or "Archaic" Chinese in the sense of Karlgren (1957), but rather represent "separate linguistic traditions that have incorporated much Chinese material." Though they have been long since "Mandarinated" through the influence of regional standard dialects of Chinese, Ballard feels that their deepest levels reflect Tai, Austroasiatic, and/or Miao-Yao substrata. While the Yue (and some Min) dialects show the influence of Tai-like languages, certain Min dialects show strong affinities with Yao, and the Wu and Chu groups display even more striking similarities with the Miao languages. Like Miao, Wu and Chu have a rich inventory of initial consonants (including a three-way manner distinction), but a degenerate system of final consonants; like Yao, Min has simpler initials, but preserves a series of four syllable-final stops. Wu and Miao both have elaborate systems of tone sandhi that function in a similar way (involving grammatical as well as phonetic conditioning), but are unparalleled by anything to be found in Mandarin. For Ballard, it is easier to suppose that the Wu dialects descend from Miao-type languages that "maintained their original tone sandhi morphology in the face of extensive Sinicization," than to suppose that Wu either borrowed or created its own tone sandhi system within the last millennium or so.

The "layer phenomena" so characteristic of S. Chinese dialects, with multiple traditions of pronunciation for each character (loosely referred to as

Languages of Mainland Southeast Asia [in prep.].

2 Benedict (1975, p. 130) believes that the Chinese word for 'writing-stylus' itself is a borrowing from Austro-Tai. Evidence is accumulating that even such humble writing systems as the syllabaries of the Lolo and the pictographs of the Naxi represent graphic traditions that go back thousands of years [pers. comms., Fu Maoji (1983) and Ma Xueliang (1984)].

the "literary" vs. "colloquial" readings), reflect a long-term diglossia³ where the population controlled at least two varieties of speech, a "higher" and a "lower." In modern times both varieties are considered to be forms of Chinese. In prehistoric times, Ballard surmises, the "lower" variety may not have been Chinese at all.

Jerry NORMAN's "A note on the origin of the Chinese duodenary cycle" deals with a topic that has attracted the attention of such great scholars as G. Coedès (1935) and Li Fang-kuei (1945). The calendrical cycle of Twelve Earthly Branches and Ten Heavenly Stems has been in use since the dawn of Chinese history. At an early date the duodenary subcycle was associated with the names of certain animals, even though the ordinary Chinese names for these animals bore no phonological resemblance to the pronunciations of the corresponding calendrical units. Since the Tai and the Khmer share this animal zodiac with the Chinese, it is reasonable to look at the Proto-Tai and Proto-Mon-Khmer etyma for the ordinary names of these animals.

In the 1967 version of Austro-Tai Language and Culture, Benedict proposed that the duodenary cycle had an Austro-Tai origin, basing his argument especially on the words for HORSE, DOG, and PIG. Not entirely convinced, Norman and Mei Tsu-lin sought connections rather with Austroasiatic (Mon-Khmer).⁴ Norman finds that 6 out of the 12 animal names have good AA etymologies, and concludes that the Chinese were in contact with Austroasiatic peoples before the first millennium B.C. and borrowed certain cultural concepts from them. Since the Chinese forms most closely resemble words now found in the Viet-Muong branch of AA, the source language for these loans was probably spoken along the SE coast of China, perhaps in the ancient states of Wu or Yue.

It is interesting to recall that Benedict himself once subscribed to the "Austrian hypothesis" — the view (going back at least as far as Schmidt) that Austronesian and Austroasiatic are themselves ultimately related, either genetically or substratally.⁵ While it may never be possible to pinpoint the exact origin of the duodenary calendrical cycle, at least it does seem to be "Austrian" in the broad sense — and pre-Chinese in any event.

Mantaro J. HASHIMOTO is another leading exponent of substratal theories of Chinese. In his conception, the Chinese dialects form a continuum with respect to their substratal composition, showing ever more pronounced Altaic influence as one goes further north and west, and increasingly greater affinities with Tai and Miao-Yao the further to the south one looks. Hashimoto agrees with Ballard that the Wu dialects strongly reflect a MY substratum, suggesting that Northern Wu is particularly close to Yao, and Zhejiang Wu to Miao.

In his paper "The interaction of segments and tone in the Be language," Hashimoto deals with a famous Mischsprache or "mixed language" of Hainan called Be (or Ong-be). Be phonology is definitely of the "Southeast Asian type" and

³ Benjamin T'sou [in prep.] speaks of the "collective diglossia that characterized traditional China at the grassroots level."

⁴ Norman's contribution to this volume was originally a section of his and Mei's important article "The Austroasiatics in ancient South China: the lexical evidence," though they omitted it as "too speculative" before presenting the paper at the Third Sino-Tibetan Conference (1970).

⁵ This view still has its champions today. See, e.g. Shorto (1976) "In defense of Austrian."

there are numerous cognates with Tai, yet waves of Chinese influence have repeatedly swept over the language, to the point where any further increase of Chinese features might well render it virtually indistinguishable from the local dialects of Fukienese.

Ong-be, like Cantonese and Hakka, has pairs of words showing alternation between final homorganic stops and nasals, e.g. hem⁴ 'raise' / hep⁵ 'pile up.' Hashimoto contends that these "surface segmental alternations" are actually to be analyzed as underlying tonal alternations, with the final stops being tonally conditioned variants of the corresponding nasals.⁶

The dean of French Southeast Asian comparatists, André-Georges HAUDRICOURT, returns to this mixed language of Hainan in his brief article "Du nouveau sur le Be." Comparing Savina's older material with the Limkow dialect of Be presented in Hashimoto 1980, Haudricourt succeeds in reconstructing several new phonemes for Proto-Be, including *ny- (> Savina's n, Limkow z) and *r- (> Savina's z, Limkow l).

(2) EAST AND SOUTHEAST ASIAN AREAL PHENOMENA

Benedict's approach to Asian languages is particularistic, in the sense that he focuses with unique intensity on one special problem at a time, whatever its scope on the micro-/macro-/megalo- scale. Whether he is dealing with a micro-problem concerning the Middle Vietnamese initial consonants or a multi-megalo-matter in Austro-Japanese, the nature of the argumentation and of Benedict's concern is much the same. The proto-languages that teem in the Benedictine brain are all imbued with vivid reality for him. Resolving a question in Proto-Austro-Japanese is really no different qualitatively for Benedict than discussing a point in the phonological history of a single language.

Benedict's writings have not laid much explicit emphasis on areal typological features or linguistic universals. These are primarily concerns of the general linguist, which Paul Benedict claims not to be. Yet his vast fund of erudition enable him to shift into a more "theoretical" gear when the spirit moves him. In recent years he has turned his attention to such matters as "Vocalic transfer: a Southeast Asian areal feature" (1979), and "Selective lexical retention in Southeast Asia" (1983), presenting his material in a manner calculated to capture the interest of theoretical linguists of a typological or universalistic bent.

As East and Southeast Asian linguistics gradually becomes integrated into the "mainstream" of linguistic discourse, we may confidently expect typological/areal/universalistic studies to assume an ever greater importance, not only in phonology but especially in syntax (both synchronic and diachronic). This trend is reflected by the five papers in this section.

⁶ Similar alternations among homorganic final consonants are characteristic of Tibeto-Burman (cf. e.g. Written Burmese khap [*kap] 'draw water', Lahu qho [*kam 'id.'], though these are usually interpreted as due to the influence of former suffixes [see Matisoff 1978, pp. 23-5]. For more discussion of the interplay between "segmentality" and "suprasegmentality" — a crucial issue in the diachrony of monosyllabic languages — see the paper of Sprigg, below.

Søren EGEROD has long emphasized the areal and typological significance of certain striking features of Southeast Asian phonology and grammar. The eminent Danish linguist returns to some of these themes in his paper "Typological features in Akha."

Early in the history of the annual Sino-Tibetan Conferences, Egerod (1971) introduced the phonetician Catford's term "phonation types" (a notion later developed by Ladefoged, Maran, and Halle) into discussions of the phonology of Chinese and SE Asian languages. The Firthian "prosodic" school of British phonologists (two distinguished representatives of which, Sprigg and Henderson, are represented in this volume) had long recognized the importance of such suprasegmental laryngeal features as "creakiness" and "breathiness." Egerod demonstrates how phonation contrasts, along with aspiration, preglottalization, and prenasalization, must be regarded as areal phonological features, since they are found in all language families of East and SE Asia.

Egerod's discussion focuses on Akha, a TB language of the Southern Loloish branch of Lolo-Burmese, where "the effects of the phonation types...tend to permeate the whole syllable, the creaky ones characterized by a general overarticulation and the breathy ones by a general underarticulation; with voiced stop initial this may manifest itself through preglottalization and prenasalization respectively."

Among areal grammatical features represented in Akha, Egerod discusses ergativity — another topic he was the first to introduce into modern Sino-Tibetan studies [1971b, 1973b] — and complex interrelated systems of sentence-particles for expressing a variety of discourse parameters like evidentiality.

In his entertaining paper "Alphabet or syllabary in Southeast Asia: new wine into old bottles," R. K. SPRIGG treats an areal feature of another sort, not merely phonological but what one might call grapho-phonological. Many of the Indic-derived SE Asian scripts are neither "alphabetic" nor "syllabic" in the conventional sense, but have become transvalued because of phonological change, to the point where they now indicate prosodic features like phonation, tone, and junction. Classic examples are Thai and Cambodian, whose writing systems distinguish between series of voiced and voiceless initial consonants, even though these have long since merged, leaving compensatory contrasts in their syllables' tone and register, respectively. The writing systems thus continue to mirror phonological contrasts, but now often in quite an indirect way, requiring a deductive process on the part of the user.

W. J. GEDNEY, one of the world's foremost specialists in Tai linguistics, raises a number of provocative questions in his deceptively simple and chatty paper, "Confronting the unknown: tonal splits and the genealogy of Tai-Kadai." Perhaps the most spectacular of all areal phonological upheavals in our region was the great wave of tonal splits that swept across East and SE Asia sometime in the first half of the second millenium A.D., affecting Chinese, Tai, Vietnamese, Miao-Yao, and (we may add) Loloish, as well as such AA languages as Mon and Khmer which developed register splits rather than purely tonal ones. The date of the split in Tai was relatively late -- Gedney places it somewhere between 1450 and 1650. Where then did these splits start, and how did they spread? Why did they diffuse so fast from language family to language

family?⁷

Even more intriguing is the basic similarity of East and SE Asian tonal systems before the splits: a pattern of no tonal contrasts in stopped ("dead") syllables, and a three-way contrast in "live" syllables (ending in a vowel or sonorant). Of these three tones, one is always much more common lexically, occurring on at least as many words as the other two combined. Many scholars have suggested that the fundamental difference among the three tonal categories must have been one of phonation type, with the predominant tone characterized by clear voice, and the others by "marked" phonation, probably breathy and creaky. How are we to explain these remarkable similarities in tonal systems and syllable structure?

Gedney's paper clearly implies the uselessness of using tonal criteria as an indicator of genetic relationship. Tonal systems, it turns out, are eminently borrowable and diffusible.

In his paper, "Observations on some cases of tone sandhi," Christopher COURT deals with a problem of pervasive interest throughout the East and SE Asian "Tonbund." Morphophonemic alternations in tone, sometimes purely phonetic but often exploited for grammatical purposes, are characteristic of languages throughout the region. Court presents data on tone sandhi patterns from a large number of Chinese, Tai, and Miao-Yao dialects, and succeeds in demonstrating that sandhi phenomena may be anticipatory as well as "recapitulative." William S-Y. Wang had suggested that tone sandhi might represent a diachronic regression in the character of a tone. In his more nuanced argument, Court furnishes evidence that sandhi processes may also foreshadow future tonological developments in a language. Sandhi seems to be "a Janus-like phenomenon that looks now forward, now backward in time."

In "Greenberg's 'universals' again: a note on the case of Karen," E.J.A. Henderson explains away the lone apparent exception to one of Greenberg's (1965) generalizations concerning initial consonant sequences: "if a language has an initial combination of two voiced obstruents, it will also have at least one combination of two unvoiced obstruents." Interpreting R.B. Jones' (1961) transcription of the Sgaw Karen cluster "bɣ" as a sequence of voiced stop plus voiced fricative, and noting the absence in Sgaw of doubly voiceless clusters like *px-, Greenberg had proclaimed Sgaw to be the only exception to his own generalization. Henderson aptly points out, however, that this "ɣ" is not really a fricative, but rather an unrounded velar semivowel (a sound only recently recognized by the IPA, but frequently encountered in SE Asian languages). The comparative evidence firmly supports this interpretation, since Sgaw -ɣ- regularly corresponds to -r-'s and -w-'s in other languages.

Concluding the papers in this section, F. E. HUFFMAN tackles the fascinating question of "why Mon-Khmer languages have so many vowels." The merger of the PMK *voiced and *voiceless series of initials led to tonogenesis in Vietnamese⁸, which was under the overwhelming cultural and linguistic influence of Chinese. Elsewhere the merger typically led to differentiation of register and/or a proliferation of vowels, often including stunning arrays of

⁷ Could the Mongol invasions have had anything to do with it?

⁸ Vietnamese is only the best-known MK language to have developed a full-fledged tonal system. Recent research has uncovered tonal languages in several other branches of MK, notably Waic.

diphthongs and even triphthongs. Huffman outlines a continuum of such developments in the various branches of Mon-Khmer, focussing on "restructured" systems like that of modern Khmer, where the transphonologization of the old voicing distinction in the initials has been carried through so radically that the new contrastive burden is best analyzed as falling completely on the vocalic system. Huffman offers several valuable generalizations on the diachronic consequence of vowel tenseness vs. laxness.

(3) SINO-TIBETAN HISTORICAL PHONOLOGY

In a very real sense it was Paul K. Benedict who ushered in the modern era of Sino-Tibetan historical phonology with his Sino-Tibetan: a Conspectus (1972). The Conspectus has been reviewed a dozen times, and this is not the place to undertake a thorough study of its significance. It is, as the name implies, only an overview of its vast subject, and certainly not to be regarded as the last word on every detail that it touches upon. Yet there is nothing to compare with it in scope, erudition, or insight. Dozens of Lautgesetze are formulated, testable hypotheses are offered by the bushel, and hundreds of roots are reconstructed. It is nothing less than the essential starting point for all future work in the field.

Nicholas C. BODMAN's expert knowledge of Chinese phonological history is joined to a thorough familiarity with TB languages, especially Written Tibetan. In his convincing article, "Evidence for -l- and -r- medials in Old Chinese," Bodman examines the Old and Middle Chinese reflexes of Proto-Sino-Tibetan initial and medial *(-)r- and *(-)l-, relying on evidence from TB cognates and old loans from Chinese into Tai and Vietnamese to distinguish between the two liquids in medial position.

Karlgren had set up clusters of velar or labial stop plus *-l- throughout whole phonetic series that show alternations between plain initial l- and such a stop. In reconstructing this lateral medial he took no account of the "divisions" in which the characters appeared in the Middle Chinese rhyme books. Bodman accepts Li Fang-kuei's and Pulleyblank's reconstruction of medial *-r- in syllables which appear in "Division II" in the rhyme tables, which leads him to posit -r- after dentals as well as after stops at other positions of articulation. He agrees, however, that there is little evidence for setting up clusters of the type *tr- (or, a fortiori tl-) at the PST level.⁹ After velars, Bodman maintains that *-l- suffered a "circular" fate, with Proto-Chinese *kl- merging with *kr- to Early Old Chinese *kr-, which then relateralized to yield Later OC *kl-.

The difficulty of distinguishing between the two liquids at remote time-depths is compounded by the tendency of these sounds to dissimilate from each other. Bodman points out the interesting Written Tibetan canonical constraint against having the same liquid in both medial and final position in the syllable: i.e. the types krol and klor occur, but *kror and *klol do not.¹⁰ As Norman and Mei (1976) pointed out, the Chinese word represented by Mandarin jiang 'great river; Yangtze' is actually an ancient loan from Austroasiatic,

⁹ Only one TB root is set up with *tr- in the Conspectus, *trak 'weave' [#17], which Benedict considers to be a loan from Austro-Tai (n. 68).

¹⁰ This is quite similar to the Latin rule that gives us such words as solar and moral, but not *solal and *morar. (The chemical term molal is a recent neologism.)

from a prototype such as *krung or *klung . Unfortunately it is so far impossible to specify the exact phonetic nature of the medial, and one might claim that it always will be impossible in principle.¹¹

A similar topic is treated in Paul Fu-mien YANG's paper, "Initial consonant cluster KL- in modern Chinese dialects and Proto-Chinese," this time from the point of view of a single extended word family. After explaining how Proto-Chinese consonant clusters are recoverable via five sorts of evidence (phonetic xiesheng series of characters; allofamic relationships within word families; comparisons of ancient and modern dialects; cognates from related languages; and foreign transcriptions and loanwords), he proceeds to apply all 5 analytic techniques to his imaginative study of a large word family with the basic meaning EMPTY/HOLLOW. He is especially interested in Chinese binomes and polysyllables which might reflect "dimidiations" of earlier clusters -- a topic on which he has already contributed several important papers (Yang 1971, 1972).

In "The Arakanese dialect of Burmese and Proto-Burmish reconstruction," D. BRADLEY presents the fullest description ever to appear of the phonology of Burmese dialects spoken in Arakan. Although Arakanese is written with the same orthography as standard Burmese, its consonantal and vocalic systems have been diverging from the standard for many centuries. Of special interest are the near collapse of front vowel oppositions (with the results partly conditioned by tone); the rather regular development of the rhyme written -añ into /e/ (as opposed to the inexplicable multiple reflexes in standard Burmese); the "rhinoglottophilia" nasalization of /i/ after /h/; and the preservation of the liquid r both in initial and post-consonantal position. As in standard Burmese, many Arakanese polysyllabic words have reduced syllables with shwa vocalism. Though many speakers of Arakanese now show considerable interference from the standard language, especially in more formal speech-styles, the viability of these dialects seems assured for the foreseeable future, and Arakanese will continue to provide invaluable help in the ongoing enterprise of reconstructing the Burmish branch of Lolo-Burmese.

In her beautifully reasoned paper, "Proto-Tibeto-Burman as a two-tone language? Some evidence from Proto-Tamang and Proto-Karen," Martine MAZAUDON questions both the empirical and theoretical bases for Benedict's (1972, 1973) reconstruction of a two-tone system for Proto-Sino-Tibetan. Benedict's "teleo-reconstruction" of such a system was based on data from a few carefully selected TB languages (including Tamang), which he compared directly to Chinese. He did not follow the method of step-by-step reconstruction of tones at intermediate levels of TB itself.

So far the latter method has not achieved particularly exciting results. Matisoff (1974) compared the tones of Jingpho to those of Lolo-Burmese, hoping to reconstruct the tonal categories of "Proto-Ji-bur-ish" -- with very limited success. Mazaudon's present study, based on a comparison of the tones of Proto-Tamang and Proto-Karen, arrives at a similarly negative conclusion.

Mazaudon reconstructs two tones, *A and *B, for Proto-Tamang¹², which she

¹¹ Even such a respectable Indo-European language as Sanskrit has hopelessly mixed up its r's and l's, so that Sanskrit data is powerless to decide between these two PIE phonemes in any given etymology.

¹² Tamang is a member of the Tamang-Gurung-Thakali-Manangba group of languages, spoken in Nepal.

proceeds to compare systematically to Haudricourt's current 4-tone system for Proto-Karen. The Tamang lexical items chosen for comparison do not include syllables extracted from disyllabic words. Tamang's system of "word-tones," where tonal patterns extend over two syllables, and where the tone of a syllable in a compound cannot be predicted from its tone in isolation (if it should also happen to occur in isolation!), points up the fact that it is extremely risky to use tonal data from languages with which one does not have first-hand familiarity. Once the corpus for comparison has been purged of questionable items, Mazaudon finds no significant correlation at all between the two tones of Proto-Tamang and the two major tones reconstructed for Proto-Karen.

Even if such a correlation could be found, Mazaudon feels that it would still not prove a descent from a common system of proto-tones. Since we now know that tonogenesis operates according to rather fixed phonetic principles in languages of a certain structural type,¹³ the possibility of parallel independent development always looms large. The whole issue of "monogenesis" vs. "polygenesis" of tones remains one of the most crucial in TB linguistics. Benedict's monogenetic hypothesis can certainly not be considered proved at this point. In the case of Tamang/Karen, Mazaudon feels that any demonstration of genetic relationship between their tone systems will require at least three intermediate levels of investigation: (a) a more precise reconstruction of Proto-Karen, (b) the establishment of regular segmental correspondences between Tamang and Karen, and (c) an understanding of the morphological variations of tone within each subfamily.

Tatsuo NISHIDA, among his many contributions to TB studies, has produced a long series of invaluable works on the extinct Xi-xia (= Hsi-hsia = Tangut) language. On the basis of his reconstructions of the pronunciations of the complex Xi-xia graphs, he feels the language to be most closely related to Lolo-Burmese. In his paper, "The Hsi-hsia, Lolo, and Moso languages," he offers a number of cognates between Xi-xia and other TB languages. Especially striking are the cases where Xi-xia and Moso agree in having prenasalized initials.¹⁴

The rhyme systems of the Loloish languages are complex enough, but that of Xi-xia seems even more so. The attrition of former syllable-final consonants, as Nishida shows, is responsible for a proliferation of contrasts in the vocalic nucleus.

In his persuasive paper, "Tibeto-Burman cognates of Old Chinese *-ij and *-ɨj," W. H. BAXTER reinterprets the reconstructions of certain Old Chinese rhymes and proceeds to compare them directly to similar rhymes in TB. Following Wang Li, Baxter divides Karlgren's *-(j) r and *-(j) d rhymes into two groups, one with a front vowel and one with a non-front one. Benedict (1972, pp. 184-6) had already observed that Chinese etyma with these rhymes correspond to TB forms in *-iy. In line with the "Bodman/Baxter" reconstruction of a high-central vowel *-ɨ for OC, Baxter breaks down Karlgren's *- r rhyme into *-ij and *-ɨj, enabling him to specify that PTB *-iy corresponds only to the former and not to the latter. (OC forms in *-ɨj correspond rather to TB etyma with

¹³ What Matisoff [1973b] has called the "tone-prone" monosyllabic type.

¹⁴ There are also several good examples where Nishida's prenasalized Xi-xia forms correspond to prenasalized words in the S. Loloish language Mpi (Matisoff 1978b).

such rhymes as *-al, *-ar, *-oy, *-ul and *-ur.)

The actual Chinese/TB comparisons that Baxter makes are all interesting, and most of them are undoubtedly correct. His explanation of the sibilant initial in OC *sjijs 'four' (in the face of PTB *b-liy) as due to contamination from the *s- in 'three' (< PST *-sum) must surely be accepted, in the light of similar well-attested cases of "interdigital influence" in Indo-European. The *-u- × *-i- alternation which the Conspectus sets up for PTB itself might better be treated, Baxter suggests, as a paradigmatically distinct high central proto-vowel *-i-, with the vowel developing to -u- in some languages and to *-i- in others. Although this is an attractive idea, there is much variation between these two vowels even within single languages, and it does not seem true that the -u- and -i- forms show clear patterns of geographical distribution.¹⁵

Baxter concludes by arguing that Karlgren's reconstructions of OC and MC, while brilliant for their time, are becoming obsolete and unreliable as a guide for Sino-Tibetan comparison. We are indeed entering upon a happy period of interchange between Sinologists and Tibeto-Burmanists, building on the great work of the past while remaining open to fresh new ideas from whatever quarter!

(4) SYNCHRONIC GRAMMAR

"On quantifier floating in Lushai and Burmese, with some remarks on Thai" is the sort of paper we have come to expect from F. K. LEHMAN over the years. Lehman has been one of the few to attempt to apply some of the concepts of generative grammar and the terminology of mathematical logic to TB languages. The conclusions of his paper are essentially negative, as he succeeds in demonstrating that the concept of "quantifier floating" is relevant to the grammars of the languages he considers only in the most tangential way.

Inga-Lill HANSSON's "Verb concatenation in Akha" is a valuable report on her ongoing study of 356 Akha verbs and verbal auxiliaries from the point of view of their syntagmatic and paradigmatic cooccurrence restrictions. All verbs which can occur in juxtaposition with others she terms "versatile," distinguishing between "restricted versatile verbs" (which only occur after one particular verb-head) and "non-restricted" ones (which may occur after several, or many different ones).¹⁶ Several important differences are to be noted in the syntactic behavior of these verb-strings in Akha and Lahu. Akha has both pre- and post-head "verbal auxiliaries" (i.e. verb-particles that are not themselves full verbs, since they cannot be negated) -- while Lahu has only post-head ones. Conversely, while Lahu has both pre- and post-head versatile verbs, Akha only has them in post-head position. While in Lahu the negative morpheme may intervene at various points within a concatenation, the Akha negative must always precede the first verb. As in Lahu, however, Hansson concludes that the more semantically specific a verb is, the fewer are its "functional possibilities" (i.e. the fewer verbs it can concatenate with). Furthermore, as in Lahu, the ordering of the verbs in an Akha concatenation is a reflection of their relative "abstractness," with the more abstract verbs

¹⁵ Jingpho [=Kachin] does not necessarily have -i- in these words -- cf. ʔyúp 'sleep'.

¹⁶ This usage differs from that of Matisoff (1969, 1973), for whom "versatile" verbs by definition may co-occur in concatenation with an indefinite number of verb-heads.

able to occur further away from the head.

In "Perfectivity in Mandarin," Charles LI and Sandra THOMPSON investigate the syntactic and pragmatic conditions that favor the use of the verb-particle le 'perfective; change of state.' This particle derives from a full verb (Mandarin liao³) meaning 'to finish,' and is roughly equivalent in function to similar morphemes in other languages of E. and SE Asia (e.g. Lahu ò, Thai léew). Complete parallelism of behavior must not be expected of particles in different languages, however, and Li and Thompson point out several idiosyncratic properties of Mandarin le. The use of le correlates strongly with a "concomitant signal of boundedness." This signal may be an inherent semantic property of a verb (e.g. die, be enough, depart), or a syntactic structure like a quantified complement or a following clause that refers to a subsequent event. An event will often qualify as bounded if the direct object is a definite NP (e.g. a name, a pronoun, or a noun preceded by certain modifiers), but the authors stress that whether a sentence is expressing a bounded event or not is basically a question of the state of mind of the speaker and the situational and discourse context of the utterance.

In other words, our grammatical analyses can go only so far.

(5) HISTORICAL GRAMMAR

A. L. BECKER's refreshing and original paper, "Person in Austro-Thai: comments on the pronoun paradigm in Benedict's Austro-Thai Language and Culture," takes the viewpoint of what one might call a cultural philologist toward Benedict's idea of Tai/Austronesian relationship. Becker mistrusts "proto-languages" as they are usually conceived. Following Gregory Bateson, for whom "resemblances do not presuppose common origins, only shared constraints," Becker looks for linguistic correlates of people's shared views of the world.

Pronominal systems, since they necessarily involve notions of personhood, can be especially revealing of cultural attitudes. Becker notes that pronominal forms may be freely borrowed, but pronominal systems and categories have great stability over time, so that etymologically new forms merely fill old cells in preexisting paradigms. The system of person is highly elaborated in both Austronesian and Tai. In many AN languages personal pronouns are inflected with temporal or locative morphemes, become affixed to nouns or verbs, or develop into complex focus systems. In modern Thai there are about 17 pronominal forms available for the 1st person, 19 for the second, and 10 for the third.

Becker agrees with Benedict that the Austro-Tai pronouns are morphologically complex, with certain well-defined 'matrix formatives' that have developed by analogical leveling. Instead of reconstructing SINGULAR/PLURAL as a basic parameter of the proto-system, however, Becker considers the underlying opposition to have been the culturally determined dimension of FAMILIAR/FORMAL or LOWER STATUS/HIGHER STATUS. In many modern AN languages, as in Old Javanese, the so-called plural forms are just as often used to indicate respect or formality of relationship.¹⁷ Becker observes that Tibeto-Burman pronouns do not mark speaker status paradigmatically — the TB peoples share a

¹⁷ Cf. the switches of pronominal person and/or number to show respect in such familiar European languages as French, Spanish, German, or Russian.

different set of cultural constraints in this area!

Tsu-lin MEI presents several interesting new ST etymologies in his paper, "Some examples of prenasals and *s- nasals in Sino-Tibetan," illustrating a prefixal theory recently proposed by Kun CHANG and Betty SHEFTS CHANG. In the view of these scholars, the two prefixes *s- and *N- could cooccur in that order before a root, both in pre-Chinese and in Sino-Tibetan itself, with pre-Chinese *sm-, *sn-, and *sng- developing into Old Chinese *xm-, *hn-, and *xng-, respectively. Of particular interest is the set for FLY (n.). Li Fang-kuei has connected OC *rang, *mrang 'fly' with Siamese mələɛng 'bug'. The Changs and Mei go on to relate these to such TB forms as Written Tibetan sbrang and Lepcha sum-bryong, reconstructing the double prefix *s-N - for PST.¹⁸

In "The meaning of early Zhou Chinese final *-s (qusheng)", A. SCHUESSLER returns to a topic that has fascinated Sinologists for 35 years.¹⁹ The classic study by Gordon Downer distinguished eight categories of "derivation by qusheng" (e.g. deverbal, denominal, causative, passive, adverbial), firmly establishing that the qusheng (lit. "departing tone") was exploited as an all-purpose derivational device in OC.²⁰ The implication is that it is secondary with respect to the original two-tone system of Chinese non-stopped syllables, indeed a "sandhi tone" as Benedict calls it (*Conspectus*, n. 494, p. 194). Haudricourt's suggestion that this tonal category arose through the loss of suffixal *-s has come to be generally accepted, and is one of the master strokes of tonogenetic reasoning.

Schuessler assumes that this *-s was already in existence in "early Zhou" Chinese, the language of the earliest classics *Shujing* and *Shijing*. He wishes to show that, "apart from a residue," all derivations in *-s in these early texts can be accounted for by a single meaning, roughly that of an Indo-European past passive participle. Only later, by Qin times, was this derivational device "diluted enough to become the very general morpheme described by Downer."

Boyd MICHAILOVSKY's paper, "Tibeto-Burman dental suffixes: evidence from Limbu (Nepal)," is an important contribution to our understanding of the verb morphology of the Himalayish languages. The languages of the E. Himalayish (or Bahing-Vayu) group have a "flamboyant verbal agreement morphology"²¹ which is of relatively recent date. Even older is a morphological stratum that featured two dental suffixes, -S and -T.²² Many Limbu verbs still have allofams with either or both of these suffixes, e.g. HA:P 'weep' / HA:PT 'mourn' / HA:PS

¹⁸ The *Conspectus* (n. 469, p. 176) cites the same Written Tibetan and Lepcha forms, reconstructing PTB *s-brang, though an allofam *yang must also be recognized (see set #492 and n. 448, p. 167).

¹⁹ See Karlgren 1949, Haudricourt 1954, Wang Li 1958, Downer 1959, Forrest 1960, Pulleyblank 1962, and Chou Fa-kaio 1963.

²⁰ The "creaky" tone of Burmese has a very similar status -- historically secondary and used synchronically in a variety of derivational processes. See Okell 1969, pp. 18-21.

²¹ I.e. morphemes attached to the verb which show agreement in person and number with the subject and/or object of the clause. Languages having morphology of this type have been called "pronominalized" ever since the *Linguistic Survey of India*. See Thurgood's paper, below.

²² The PTB trio of dental suffixes, *-s, *-t, and *-n, were extensively discussed by Wolfenden (1929, 1936), and are treated in the *Conspectus*, pp. 98-103.

'cause to mourn.' This postfinal -S is clearly causative in cases like this; the meaning of -T is more elusive, sometimes causative but often with an increment of meaning that Michailovsky calls 'directive.'²³ In other cases the suffixes may have aspectual meaning, signalling such categories as 'perfective' or 'middle voice.'

Limbu has another alternational pattern in verb-pairs: intransitives with unaspirated initial / transitives with aspirated initial. (This pattern, very similar to what is found in Burmese simplex/causative pairs, was already described in Hodgson 1858.) Michailovsky plausibly assumes these transitives to derive from forms with the *s- causative prefix, so widespread in TB. We are then confronted with a causative morpheme which was sometimes a prefix and sometimes a suffix.²⁴

Michailovsky poses the interesting question of why PTB non-syllabic suffixes should have been limited to dentals, in contrast to the rich variety of PTB prefixes. Invoking Greenberg's universal that coronal consonants enjoy a favored position in syllable-final clusters, he concludes that the very fact that these suffixes are all dentals suggest that they were not only added to open syllables, but also to closed ones (contra the Conspectus, p. 98).

A tantalizing glimpse of the prefixal morphology of a Chin language is provided in L. G. LOEFFLER's paper, "Prefixation in Paangkhua." Paangkhua, closely related to Lushai and Bawm in the Central Chin group, resembles the so-called "Old Kuki" languages in its preservation of certain prefixes. Some Paangkhua prefixes can be demonstrated to derive from independent PTB root-morphemes. Thus the prefix sa- comes either from PTB *sya 'animal' [STC #181], *za or *tsa 'child' [STC #59], or *dza 'rice' [cf. Lahu cà]. While Paangkhua ra- may occasionally be referred to a full morpheme (e.g. rayaam < rua-vaam 'bamboo ashes'), in other cases Loeffler feels it descends from "original" PTB *r-. The prefix ma-, which distinguishes transitive from reflexive verb-forms and can function as a causative marker, also seems to be of considerable antiquity, though it is not obvious how it relates to PTB *m-, which generally signifies the opposite sort of categorial notions: e.g. 'durative,' 'intransitive,' 'stative,' 'reflexive,' 'middle voice.'²⁵

Graham THURGOOD's paper, "Pronouns, pronominalization, and the subgrouping of Tibeto-Burman," is a valuable attempt to use the distribution of innovated pronouns as well as pronominal agreement morphology on verbs as a criterion for subgrouping the TB family. Bauman (1975) has established that these agreement systems were a native TB development, and that it is quite unnecessary to suppose that they arose due to influence from some other language family. While Bauman believed that verb-pronominalization was an inherited feature from PTB, Thurgood persuasively demonstrates that at least parts of the various modern systems represent a number of independent (though often partially parallel) developments -- so that the patterns of shared innovations provide "excellent criteria for subgrouping."²⁶

²³ Wolfenden (1929) uses a similar term to characterize certain functions of the TB *s- prefix. Cf. such Lahu pairs as dū 'dig (in general)' / tū 'bury smn' (i.e. perform digging directed toward a particular purpose).

²⁴ As Michailovsky points out, Conrady (1896, p. 43) had already proposed that Tibetan prefixed s- and certain -s suffixes were the same element.

²⁵ See Wolfenden 1929 (pp. 26-30), Conspectus pp. 117-21.

²⁶ A particular etymon that has become pressed into service as a pronominal agree-

Julian WHEATLEY's important paper, "Verb serialization and word order in Loloish: a comparative study," could just as well have been included in the section on SYNCHRONIC GRAMMAR, since it focusses on a synchronic syntactic phenomenon in the N. Loloish (=Yi) languages that is also of great diachronic significance. Central Loloish languages like Lahu and S. Loloish languages like Akha are "concatenating"²⁷, in that they can string together series of 2, 3, 4, or even 5 verbs in simple juxtaposition, with all their normal arguments jointly preposed to this single verb-clot. The N. Loloish languages, however, as Wheatley has discovered by going through Yi texts collected by Chinese scholars, have developed certain serialized verb constructions, involving grammaticalized "co-verbs" like GIVE (for 'dative case'), USE (for 'instrumental'), DWELL (for 'locative'), etc., which are preceded by their own nominal arguments.

It seems likely that these constructions were innovated into N. Loloish under Chinese influence. Since there are some contexts where the co-verb may be omitted, "unabashedly post-verbal constituents" may be left stranded. Besides helping to standardize and clarify the terminology required to deal with all the various types of multiverbal constructions to be found in these languages (consecutivized, concatenated, serialized), Wheatley's analysis incidentally sheds great light on the possible scenario whereby the Karen languages, alone of all the TB family, came to be verb-medial rather than verb-final.²⁸

(6) LEXICON AND SEMANTICS

In "Out on a limb: ARM, HAND, and WING in Sino-Tibetan," J. MATISOFF undertakes the reconstruction of some 30 PST/PTB etyma with meanings relating to the upper limbs of human and animal bodies. Forms are cited from over 100 TB languages, for many of which the laws of sound correspondence are still imperfectly known (at least to Matisoff), so a certain amount of educated guesswork is involved. This study is an illustration of the author's "organic semantic" approach to cognate identification, where a single semantic area is concentrated on at a time, and where account is taken of phonological and semantic variation at all time depths.²⁹ In typical fashion, the paper ends with a crude, but perhaps not unrevealing "flowchart" that schematizes the shifts and developments which seem to have occurred in this area of ST semantic space.

Y. NAGANO's paper, "A lexicon of gLo-skad (Mustang Tibetan)," provides

ment marker in a given language may, of course, exist with quite different functions in another language. The Nungish 3rd person prefix ang- seems certainly to be cognate to the ubiquitous Lahu noun-prefix ᵛ- (< PLB *ang [cf. Bisu ʔaŋ]).

²⁷ For the introduction of this term with respect to Lahu, see Matisoff 1969, 1973; for Akha, see Hansson [this volume].

²⁸ Benedict's setting off of Karen as a branch coordinate with the rest of TB (Conspectus, pp. 6, 127-52) was mostly due to this syntactic aberrancy. Now that we are coming to understand how this sort of dramatic syntactic change can easily happen under protracted foreign influence, there seems much less reason to regard Karen as anything more than another subgroup of TB. (In the case of Karen this influence must have come from Mon and/or Tai.)

²⁹ See Matisoff 1978, 1980.

phonemic transcriptions of the items in Kitamura's 1977 monograph, along with a preliminary analysis of the correspondences between the initials and rhymes of gLo-skad and those of Written Tibetan. While the Mustang dialect has some forms that show strong affinities to the Tamang-Gurung-Thakali-Manang group, the core of the vocabulary is clearly Tibetan. Nagano makes some interesting remarks on the relative progress of tonogenesis in the various Tibetanoid (= Bodish) languages, observing that "the pioneer of tone is always nasals." Amdo Sherpa has tonal distinctions only after nasal initials, while gLo-skad has them only after nasal and the lateral l-. With stops and affricates, voicing and aspiration remain as in Written Tibetan, and "tone is not needed."

The final paper in this volume is "Some archaic Vietnamese words in Nguyễn Trãi's poems," by NGUYỄN Đình-hoà, the foremost Vietnamese linguist in the U.S. In 1975, Nguyễn pointed out that the "Collected Poems in the National Language" by Nguyễn Trãi (1380-1442) contain a number of archaic words. After having collated several versions of these poems, both in quốc-ngữ (the romanized alphabet still used to write Vietnamese) and in chữ-nôm (the older, logographic writing inspired by Chinese), Nguyễn Đình-hoà now presents 50 lexemes which were used as free words in Trãi's time, but which are found only in compounds or in rare contexts in modern Vietnamese. Each item is exemplified by a passage from one of Nguyễn Trãi's 254 vernacular poems.

PAUL K. BENEDICT: IN HIS OWN WORDS ...

PKB was born July 5, 1912 in Poughkeepsie, N.Y., in the Hudson River Valley. During his formative years he was a juvenile delinquent, according to family accounts, but he remembers hauling a dictionary about (while stealing tires, breaking windows, etc.), indicating that his lifelong obsession with things linguistic had already begun. In high school he studied both Latin and French but spent most of his classroom time in English/French/Latin etymologizing. This was all for the best, perhaps, since his French teacher was a formidable lady from Denver who spoke the language with a Colorado accent. In his last year he contributed a Senior Essay on 'Deism' but withdrew it from prize competition lest it conflict with his image as a three-sport athlete.

His undergraduate college career started on a similar note. At Cornell University he studied Greek and logic, along with a number of more readily forgotten subjects, was on the football and track squads and wrote poetry as a member of the (somewhat epicene) staff of the literary Columns. This led to a certain split-life existence there and he spent much of his time on campus earnestly assuring whomever he happened to be with that he did not really know the twit/goon who had just greeted him. His departure from Ithaca after two years of this existential schizophrenia was hastened by a series of unfortunate circumstances, including a report from a female instructor who saw absolutely no future for him as a college student (an early instance of campus sexism!).

The next step in his college career was carefully planned. After two years on the Ithaca campus, perhaps the most beautiful in the country, he felt a need to hold to this high standard of college living. He came across a small volume on 'The Twelve Most Beautiful Campuses in America', including Cornell, to be sure, but also New Mexico University, in the land of sunshine, cowboys and beautiful Indian maidens. It was not difficult to contemplate spending his remaining college years in the Great Southwest. Ever a cautious man, he first reconnoitered the place by enrolling at the Laboratory of Anthropology at Santa Fe, studying Pueblo pottery. This did not really make much sense but there was a beautiful Indian maiden in the class, pretty much as described in the blurb, and she was a student at the University. The die was now cast and he made the final decision to matriculate at NMU, at that time (1932) a huddle of adobe buildings high above the Rio Grande, at perpetual siesta under the towering Sandia Mountains.

He felt right at home at NMU, which had plagiarized his old alma mater song ('Far above the rio Grande...') and where his classmates would often greet him as a 'fellow Easterner' ("You said you're from New York, Benedict? Here [pumping his hand] - we Easterners have to stick together! I'm from Oklahoma"). He discovered that the school had only some one thousand students,

largely with cattle ranch/mining town backgrounds, and only two departments worthy of the name: Spanish, widely spoken there as an officially recognized language, and anthropology. He had been studying Spanish that summer and had found it on the boring side, so he settled for anthropology as a major - and as a life career. It was not the best reason he had ever had for doing anything, yet it was far from the worst!

He arrived at NMU at the same time as Clyde Kluckhohn, fresh from a Rhodes Scholarship at Oxford and newly appointed Ass't. Prof. of Anthropology. CK was the first link in the chain of events eventually leading to Southeast Asia since he later got him into the graduate anthropology program at Harvard University. He was also his first teacher in Anthropology, five times a week (professors taught in those days), the weekly Friday sessions thrown open to 'questions on anything'. He spent much of his time with two close pals, the trio known collectively (and probably with good reason) as "The Filthy Three", devising questions designed to frustrate the young professor - usually with little success. PKB had never met anyone remotely like CK: the brilliant scholar with a seemingly limitless range of information and ideas. For the first time in his student years he became a scholar, as opposed to an intellectual dabbler, with visions of himself as another Kroeber. In language matters, however, his dilettante ways persisted. He continued with his Spanish studies, desultorily reading Spanish poetry and promptly forgetting most of it (he has been handicapped as a linguist by poor memory and mediocre language ability). He added German to his high school Latin and French, along with some Hebrew (taught by his German professor as a side-line) and even Yiddish, which became a kind of 'game' for him (to recognize the forms from his German). This hopeless dilettantism was only exacerbated by CK, who got him to work on Navaho at summer archeology camp (from this his sieve-like memory has retained only the word *Xi* 'horse' - and he might even have that wrong!). To make matters even worse, he failed utterly to learn anything of the Keresan native tongue of the Indian maiden! It was the first of what were to be many missed opportunities of learning exotic languages, all of which he has come to regret, much as most men brood over flubbed openings for seductions.

In due time (1934) he was graduated from NMU with a major in anthropology and with the coming of fall he set out for Cambridge. He found it to be a somewhat elevated Cornell, quite different from his Southwest alma mater. There were very few cattle ranchers or miners there, for one thing, and the native tongue of the Radcliffe girls sounded like something out of a Henry Miller novel. He had now become a conscientious student, even a scholar, and he worked diligently at Peabody Museum under the guidance of a distinguished faculty: R.B. Dixon and Carlton Coon in ethnography and ethnology, E.A. Hooton in physical anthropology, A.M. Tozzer (called 'Fluffy') in archeology and the newly arrived CK himself in almost anything (mainly theory courses). During that whole first year there were only occasional slips into dilettantism - into Rumanian, mainly to read Mihail Eminescu, and Italian (for Dante) and Portuguese. CK would tease him about these divertissements ('No one learns Portuguese except as a tour de force') but he would find ways to divert suspicion (the need for Portuguese in handling sources for a paper in preparation). CK himself had been a student of the Classics and was known at times to exchange jokes in Greek with Hooton, another former Classics student, hence these linguistic peregrinations met with a degree of acceptance. This spirit of tolerance, along with the 'gentleman's' tradition at Harvard, occasionally simplified things for him, as on the day he passed both French and German reading examinations (for Ph.D.) within a few minutes in Hooton's office

("You picked French, Benedict? Everybody knows French!" [dictating to secretary in outer office] "Passed French!").

The summer after his first year at Cambridge was a fateful period for PKB. Sapir came over from New Haven to present a course on general linguistics, 'slumming it' as the Yalies put it, and he was a most enthusiastic participant. The Yale view of linguistics as simply a field of anthropology was a most congenial one for him, of course, and Sapir dazzled him with his brilliance. He was also encouraged by Sapir's casual reply to a question one day ("How many languages do you speak, Prof. Sapir?"): "Only two - English and Yiddish - and one badly". That made him feel that there might be hope even for him, and his projected self-image shifted somewhat from Kroeber towards Sapir, yet his dallying continued. He became acquainted with a young Mexican linguist, Wigberto Jimenez Moreno, who was summering in Cambridge, and studied Nahuatl under his guidance. He was perhaps attracted more to the incredibly mellifluous Aztec poetry than to the morphophonemics or the like, but for the first time he had come into direct contact with professional linguists.

His entrance that fall into the Oriental field was as carefully planned as his entrance into anthropology had been. CK advised him that a program change was indicated ("You have to pick some area. You can't specialize in the whole world - not even at Harvard"). The upper echelon Harvard reasoning continued from there: "you like to play around with languages" (only Classical Greek and a few other languages were taken seriously) and "nobody knows anything about the Far East" (code for "no Harvard man has carried out anthropological research there"). He was by that time well cued in on Harvard upper echelon ratiocination and he dutifully took on, in effect, another major field. Actually he was delighted that this opportunity had come his way without even the need for any rationalization on his part! Once again he began to lead a schizo-life on campus but in this case between two different intellectual disciplines. They occupied two different worlds at Cambridge, the anthropologists/archeologists' world centering about Peabody Museum, outside the Yard, and the smaller, much more intimate world of the sinologists at Harvard-Yenching Institute within the Yard, even in the very shadow of Widener Library. This world of sinology was a tidy, neatly packaged household in those days, with the stern James R. Ware presiding over the Chinese language courses and Eliseeff teaching Japanese. There were some promising graduate students about, notably John Fairbank and the Reischauer brothers, but the emphasis was strictly on sinology (history/art) and linguistics had not yet intruded upon the scene. The Ware teaching method might have been considered brutal had it been carried on at any other place in the universe than the Harvard Yard ([PKB at the board, chalk in hand - a Cambridge survival of 17th century New England schools] - "Would you please write the character for 'dog', Mr. Benedict?" [the Harvard gentleman tradition] [PKB writes the wrong character, and has never forgotten it!] - "Mr. Benedict! The Chinese have been using that particular character for 'cat' for more than two thousand years - do you want them to change it?"). His fellow sufferers were two females - a rare gender in the Yard at that time - and David N. Rowe, later to become Prof. of History at Yale, and a 'day boy' (code for 'non-resident') from Boston: 'Teddy' White, a precocious undergraduate who later became better known as Theodore H. White. They worked together as a team, all five of them, mainly engaged in nefarious plotting against the professor, as when they discovered that Japanese texts could be used as 'ponies', with punctuation indicated and even the word-order shown alongside the characters (but to no avail - "Ladies and gentlemen, I hate to disappoint you but those ponies you've been using are wrong"). Ware was a

tough teacher as well as a very proper one, as befitted anyone teaching in the Yard. One day the class came to a text in the Former Han History with a passage describing how the newly crowned Emperor, a former bandit, pissed in a scholar's hat to show his contempt, and there was much talk as to how this should be handled in the classroom. Prof. Ware was fully up the emergency, however, taking over the translation himself at that point and rendering the passage: 'he micturated in the scholar's hat', upholding Yard tradition at the expense of lexicographic punctilliousness (MICTURITION: The desire to make water; a morbid frequency in the voiding of urine. Often errone.: The action of making water). Afterwards all five decided the professor might better have used the schoolmistress' 'voided'. Such were the problems faced in the Yard in those entre les deux guerres days of the 30's (1935-37).

The storm clouds were gathering in Europe but life for PKB went on pleasantly at Cambridge, with the best of two possible worlds at his disposal. There were differences in the two worlds, however, just as in the Southwest the several pueblos differed in their views as to the location of the sipapu, or ancestral 'place of emergence' from the underworld, each locating it in its own pueblo. At Peabody the sipapu of the anthropologists/archeologists seemed to be located in the basement of the museum - hardly an improvement over the Southwest, he thought. The sinologists were much more worldly, with a sipapu located not only in France but in Paris itself. The ancestral deities were a trinity of scholars named Chavannes, Maspéro and Pelliot. He learned that the aspiring sinologist (a rare breed) first studied in Paris, then traveled to Peking, rented a small house and hired a house-boy and a rickshaw boy, all ostensibly to learn how to speak the language. One was known by the Master under whom he (rarely she) had studied in Paris, much as psychoanalysts trace their descent from Freud. Pelliot was reputedly the most autocratic of the trio - one of his disciples even complained that all he taught her was 12th century Mongol, the language he was working on at the time! But complaints were rare and Prof. Ware certainly never exhibited any doubts about his own Master, Paul Pelliot. This academic devotion was not all bad, as it turned out, since at one point it came to PKB's rescue. He had been spending much of his time at the Institute reading the Masters, mainly Maspéro, the only real linguist of the group. He had spent even more time reading Karlgren, however, and he thought that he had come upon a solution overlooked by the scholars, for the Sino-Vietnamese t- < p- and d- < m- shifts. He drafted an article - his first - entitled 'On Some Initial Consonantal Clusters in Sino-Annamite' (the current term) and sent it off to Ware (one of the editors) for publication in the Harvard Journal of Asiatic Studies. The ms. eventually was returned, all neatly redacted up to fn. 3, which involved a mild criticism of Pelliot, at which point the editing had abruptly ceased. The editor's note on the ms. suggested that the problem should be considered 'at greater length'. PKB knew that the 'greater length' involved was approximately the distance from Cambridge to Paris and he was pretty miffed about it and even considered giving up the scholar's life altogether. In later years he has come to think more kindly of the whole matter - after all, his solution had been only half-right (about the d- < *y- < *my-) shift, hardly par even for an initial effort.

The war finally caught up with PKB in the Far East. One spring morning in 1937 Hooton had called him into his office and offered him the newly created Arnold Fellowship (for the 'Study of a Contemporary Civilization'), along with a Harvard-Yenching Fellowship, to carry out village research in North China. He had asked how much time he had to consider the offer, then had quickly agreed after being told that he had one hour. It was hardly the gentleman's

way of doing things, he thought, but China is China. It was then a very long way off, indeed, reached only after a lengthy voyage by sea. And it was that lovely, mysterious place where young sinologists rented houses and had their own rickshaw boys carting them about while they perused the Analects and absorbed Oriental atmosphere through some arcane process of academic osmosis. Yes, he would be only too happy to go, the more he thought about it. By now he was beginning to think of himself as a budding sinologue, the Maspéro image beginning to crowd out both the Kroeber and the Sapir.

It was a long voyage across the Pacific, in the company of David Rowe, the son of an old 'China hand'. On a sentimental visit to the Southwest en route he resisted the temptation to pick up on Keresan but once on shipboard he reverted once again to his old habits of linguistic flummery, this time involving lessons in Russian (read at Harvard) from a White Russian girl. He arrived in Shanghai at approximately the same time as the Japanese gun-boats. He escaped the shelling that killed Robert Reischauer, whom he had known at the Institute, and sent out for Japan when it had become clear that the original plans for research in North China would have to be scrapped. It was the beginning of a year of Wanderungen around the Far East, first to Japan, then to Taiwan and eventually to Yunnan via Hongkong and North Vietnam (then French-run Tonkin), always with research in view. Somehow he had acquired a certain reputation as an espionage agent, even as the Master (American) Spy of the Far East (credited to Japanese Intelligence on Taiwan, which expelled him), making him pretty much persona non grata wherever he went, even in China (Yunnan), then run by a rabble of local warlords. He was finally able to convince his overlords back in Cambridge that even a Harvard man could not be expected to carry out research with subjects who were being shelled, especially if they thought he was a spy! He was also given permission to attend an International Conference in Copenhagen (1938) and finally arrived back in the States via Tonkin (again), Annam (and Hue), Cochinchina (and Saigon), Cambodia (and Angkor Vat), Thailand (and Bangkok), the Malay States, Singapore, Colombo, Aden, Port Said, Naples, Marseille, Paris, Cologne, Berlin, Copenhagen, Amsterdam, London and Liverpool. By the time of his return to Cambridge he was able to report the successful completion of at least one aspect of his twin traveling fellowships. He had also improved his Chinese and Japanese (to the low-mediocre level) and had gained a little knowledge of Vietnamese but had missed any number of opportunities of recording exotic languages such as Ainu (Hokkaido too far away), the Formosan languages (as a spy in Taihoku was lucky if he could get outside the hotel door), Minchia or Bai (not allowed to travel to Er-hai), Moso or Nakhi (became friendly with J. Rock but not allowed to talk to his handsome Moso house-boy) and Muong, Lati, et al. (hardly known in Vietnam at the time).

As always, the next step in his career came about as the result of meticulous planning. In Tokyo he had had the foresight to attend a regular meeting of the royal Asiatic Society of Japan to listen to a lecture on Koxinga, a notorious Chinese pirate who had once ravaged the coasts of China. A query from the audience on the pronunciation of the name as /koŋiŋa/ had elicited only a blank, whereupon he volunteered a remark from the floor to the effect, "As we all know, in 17th century Portuguese /x/ was read as /s/" (at Harvard it was de rigueur to downplay on such occasions). This incident was to trigger a chain of events creating the impression that he was not only a professional linguist but also, in fact, an expert on Oriental languages! Unlike his reputation as a spy, which only too frequently had been brought to his attention, this additional bogus career became known to him only after his

return to Cambridge, and in an indirect manner. He received an invitation from A.L. Kroeber, Prof. of Anthropology at Berkeley and the dominant American (if not world) figure in the field, to take over supervision of the Sino-Tibetan Philology project, Shafer having left the job. He knew nothing of the project and had no idea of what might be expected of him. He did know something about California, however, and found the invitation irresistible. He accepted within a few days and, for the second time in his life, set out for the West, this time in the late fall or 1938.

His account of the Berkeley experience [1975], focused on Shafer and the project personnel, hardly conveys the utter dismay he felt as his situation became clear to him. It was a de profundis situation, to be sure, even for a Harvard man, and his immediate reaction was to high-tail it back to Cambridge. He realized, however, that it might be difficult to explain all this to the people there, especially after the spy stories! There was nothing to do but stick it out. It was soon apparent, however, that being an Oriental expert was going to be rather more difficult than being a spy. This was particularly so in the case of the STP project, primarily geared to handling Tibetan, Burmese and another one or two hundred Tibeto-Burman languages, along with the multitudinous Tai and Miao-Yao languages that Shafer had also thrown into the SEA pot. He had never really set eyes on any of these languages (the brief exposure to Thai had been subliminal), unfortunately, while only one (Chinese) of his miserable store of Oriental languages bore any relationship to the project. Kroeber had filled the staff in on the great Orientalist about to come their way, and they were awaiting his arrival in breathless anticipation. It clearly would not do to say something like, "Look, fellows - there's been a small mistake here - I don't know a thing about any of these languages." No, the game would have to be played to the hilt, even though it entailed much frenetic activity, often late at night, to keep a step or two ahead of staff, along with some 'double-talk' at times to a largely ingenuous staff ("That's difficult to explain - it's really a question of Tibetan morphophonemics"). The deception did come off, in part because the field lay outside the boundaries even of Kroeber's outrageous polymathy, and for years he took a smug satisfaction in this. It was only many years later, after he had left the field and then returned to it, that reading the pages of some of the leading scholarly journals made him wonder whether his masquerade had been such a rare feat, after all.

The opportunity of working under Kroeber, a man fit to be the guru of his own guru (CK), had been one of the factors drawing him to Berkeley. He had now once again become an anthropologist and associated mainly with the graduate students working under Kroeber. He participated with them in a peyote experiment of sorts, certainly one of the earliest (1940) with that powerful drug, which perhaps played a role in his later decision to go into psychiatry. He learned that Kroeber himself had once been a psychologist, and somehow all these fields became interrelated in his own mind. But Berkeley at the time (1938-40) was primarily an oasis of anthropology, an outpost of culture and learning in the West, and PKB felt sure that if the people back at Peabody Museum had recognized an ancillary sipapu they would have located it on the Berkeley campus. He got to see a good bit of Kroeber, an amiable man who seemed ready to talk on an endless array of subjects, but ever since leaving Berkeley has wondered what, if anything, of a specific nature he gained from that contact. Probably nothing specifically of linguistics but he was impressed by one of Kroeber's dicta: never do anything yourself which you can get someone else to do for you. Unfortunately, he has never been able fully to

implement this as a non-academic, having had no vassals (graduate students) to do his bidding. He also remembers a remark that Kroeber once made to the effect that a thing is not 'fun' unless it is difficult. This has come to his mind at times when faced with one of the 'impossible' linguistic problems that are legion in SEA. He has found that if one keeps saying, "this is fun" he can go on and on sweating out the problem interminably. He has often thought that what success he has managed in the field has been more the result of sheer doggedness of this kind than of any special aptitude.

Although seeing himself primarily as an anthropologist, he was now also officially a 'philologist' and he turned most of his attention to completing the job he had been hired to do: 'finishing off' the project. At times he felt it was he rather than the project that was being 'finished off'. He got little help on campus, what with Kroeber telling him how much 'fun' everything was. He soon discovered that the resident campus genius was Peter von Boodberg (as he preferred to be known), author of a remarkable paper ('Some Proleptical Remarks on the Evolution of Archaic Chinese', *HJAS* 2, 1937) which had greatly impressed him in his studies at Harvard (1939: fn's). He found the great man to be much less accessible than Kroeber and rather mad, to boot, being quite wrapped up in glottogenic speculation. He also had by far the greatest command of written languages of any scholar he had ever encountered (this still holds true), habitually carrying about with him on campus a variety of tomes in Syriac, Mongol, Classical Chinese or whatever, which he would pursue casually, as one might read the latest Campus Newsletter. Like many of his Orientalist colleagues of the period, however, Boodberg seemed to feel that spoken languages were an impediment, if anything, to good scholarship, and he undoubtedly would have refused simply on socio-academic grounds to have anything whatever to do with a language without even its own writing system. The 'Mad Russian' was delightful to talk with, really, once he had been coaxed to put down his books, but his ideas would have led to utter chaos on the project.

Within a few weeks on the project it had become obvious that the status of the project had much in common with the status of its subject matter (SEA languages), viz. each was in a mess. Shafer had thinly disguised the mess on the project by weird arrangements of all sorts of materials: books (often with Shaferian marginalia), tables (many torn from books) and endless mountains of paper, but it was difficult to make any sense of it all. PKB found the mess in SEA to be even less well disguised- he was later (Saek paper - 1979) to describe his early adventures in that never-never land as 'mucking about in a gallimaufry of languages'. He has never been a really neat person but it distressed him to see things in such disarray. He began by detaching both Tai and Miao-Yao from Sino-Tibetan, ever so gently. Here he was aided by his background in anthropology, with its emphasis on diffusion, making it seem not at all unlikely to him that monosyllabic patterns and/or tonal systems might readily cross linguistic boundary lines. Kroeber himself had played a key role here in developing the distinction between 'direct' and 'stimulus' diffusion - a feature that PKB would make use of later in a paper on kin numeratives in SEA (1945). He had also known Swadesh when that brilliant anthropologist/linguist was developing his lexicostatistical concepts and had taken over the idea of 'core vocabulary'. It seemed clear to him the first time around (1939-40) that neither Tai nor Miao-Yao had any 'core vocabulary' relationship with Sino-Tibetan, and he accordingly excluded them from further consideration on the project (much to Shafer's disgust when he returned to Berkeley). It was not nearly so clear, however, as to just where these two language families might

fit (it was not until much later that he came to realize that the two are also related to each other!). He was finally led by an early (1908) observation by Bonifacy on the similarity between Laqua (N. Vietnam) and Cham numerals to the recognition of a new (Kadai) group transitional between Tai and Indonesian (1942:440) and, ultimately, to the broader concept of Austo-Tai itself (1966). This radically new classification was included in his Introduction to the Sino-Tibetan Linguistics series, dated 1941 but actually written in 1940 before he left Berkeley to return to Cambridge. The eventual article on the subject was probably drafted in 1941 and appeared in 1942, bringing forth from Kroeber a cherished response written on the back of a penny postcard:

That's an exciting and important paper. It looks sound to me.
Hurrah for the helpful Kadai! An isolating tonal language out
of IN is a most interesting phenomenon....

For Kroeber, of course, it had been simply another case of his own 'stimulus' diffusion. PKB was overjoyed at this accolade from his guru of gurus although he actually had rather anticipated it. After all, the paper had been promptly accepted for publication without haggling by the prestigious American Anthropologist and the new classification for SEA was already gaining wide acceptance in his own (largely anthropological) world. He remembers wondering at the time why the great Maspéro, his idol from Harvard days, had not worked it all out. Nor Georges Coedès, whom he had met in Thailand, who knew Malay as well as Thai at first hand - and was later (see Comment on Egerod - 1976) to make the remarkable observation that he himself had long been aware of the same [as in 1942 paper] lexical correspondences as well as many others! After all, as pointed out in the 1942 paper, Schlegel had hinted at a Thai-Malay relationship as early as 1902. He has suggested (same Comment), "Perhaps it was simply that the time for AT had not yet come," but he has since come to believe rather that these scholars, great as they were, simply had never fully grasped the basic anthropological concepts of 'diffusion' and (yes!) 'basic vocabulary'. And even as late as 1973 James A. Matisoff found it necessary to make (and the journal to publish) the observation:

....this process of 'tonogenesis' [JAM's term] operates independently of the particular genetic affiliations of the language in question...

....tonal convergence and genetic relationship are totally independent things...

It was all enough to make him think that perhaps anthropological training should be a part of the background of all linguists!

The project came to a close at the end of 1940 and the time had come to leave Berkeley. He had 'finished off' the project by lopping off both Tai and Miao-Yao and 'retiring' the Chinese materials, deemed to be hopelessly inadequate by any standards. He had completed two volumes begun by Shafer (Burmish-Loloish [1939] and Kukish [1941]) and had got out three on his own, ranging in quality from 'bad - very bad' (Nungish - 1939) through 'barely decent' (Kachinish - 1940) to 'fair' (Baric - 1941). At least, he would console himself, I've improved since I've been here. Kroeber, who had been far out on a limb after backing Shafer's wild scheme, seemed confident that in the long run his gamble would pay off. He even volunteered a compliment at the end: "You're not a bad linguist for an anthropologist, Benedict." He accepted this as praise from Kroeber but would feel less sure about it in later years

when he would often hear the same phrase repeated by linguists. He never saw Kroeber again but he does treasure two penny postcards from him (see above, below). When he left Berkeley that winter to return to Cambridge his career as an official philologist was at an end.

Back in Cambridge there was still the little problem of writing a Ph.D. dissertation. His proposal to write on kinship in SEA had been accepted and he had collected some materials at Berkeley. The thesis, all 526 pages of it, was somehow ground out in about four months and sent to Kroeber for approval. The reply, on a penny postcard again, included the phrase 'well worth a Ph.D.'. At the special examination on the dissertation Hooton began by remarking, "I didn't read your damned thesis, Benedict!" and CK chimed in, "I read it but I didn't understand it". Aided by this good start - and Harvard tradition - he became an instantaneous Ph.D. (at Harvard in those days, and most emphatically in the world of Peabody, one simply didn't attend one's Ph.D. ceremonies). Yearning to see his first major work in print, he submitted his dissertation, the longest in Harvard annals at the time, to a publisher for publication. He got a rapid and rather abrupt reply, on the order of "Are you kidding?" He salvaged what he could of it by publishing, in revised form, the sections on Tibetan and Chinese terms (1942). He was later to expand his study of SEA kinship terminologies to include Tai (1943) and even Vietnamese (1947), as well as kin numeratives (1945). The bulk of the dissertation, however, on the various TB/Karen terminologies, has remained unpublished, although it has been used by workers in the field, including Lévi-Strauss (as the basis for his lengthy - and grossly defective - analysis of Sino-Tibetan terms).

The Ph.D. was now behind him but he was soon faced with a major decision. A teaching position in anthropology had opened up at his old alma mater, NMU, and it was his for the taking. He hesitated to go into academic life, however, feeling that it was not for him, and chose instead to work with the American Council of Learned Societies in Washington. It seems that the State Department had discovered SEA and that a frantic search was on, months before Pearl Harbor, for linguists qualified in that area. Even in those pre-McCarthy days, however, one's background had to be impeccable. The Department approached him, apparently not having been informed by Japanese Intelligence that he was known to them as a spy (espionage systems do not trade secrets!), and began to compile a dossier on his background. Not wanting to work directly for the government, he casually (but truthfully) mentioned that his older brother was a close follower of Norman Thomas, a leading radical of the 40's who believed in things like a graduated income tax. The gentleman compiling the dossier, with hardly more than a disdainful "Really?", carefully put his papers back in his attache case at that point and got up to leave. "You'll be hearing from us, Dr. Benedict," he announced. He was hardly surprised when no word came. Of course, he didn't wait very long.

The ACLS position, it turned out, mainly involved attending cocktail parties. This was easier than being a spy (one didn't get thrown out) - and a lot easier than being an Orientalist - but he was not really very good at it. His French, for example, was as dreadful as ever. He was also expected to round up people for the SEA program. It was decided that it made more sense to hire linguists and then provide training for them in some given SEA language than to engage missionaries or the like and then try to beat some linguistics into their skulls. He can't recall just who all he did manage to round up or just how it was done, but one of the recruits became a smashing success! He met Mary Haas one day as she arrived in Washington and introduced her to Mai'ai,

the Thai informant she was to work with. Mary had a little trouble with the tones at the very beginning but she immediately picked up the nasalization in ha 'five', et al. He informed her, of course, that the word was 'not supposed to be nasalized', having himself just discovered this feature of Thai phonology. He has often thought afterwards that if all he had done in Washington was to bring Mary Haas into the SEA field his efforts there would have been well repaid.

Before leaving Washington for New Haven, some time in the fall of 1941, he had made another critical decision - to go into psychiatry. He had originally planned to be a physical anthropologist, in his undergraduate days at NMU, and had dug up skeletons and dissected cadavers while still in the Southwest, but he had been weaned away from it at Cambridge, primarily through Kluckhohn's influence. He retained an interest in medicine and biology, however, and at Harvard even wrote a special paper on 'endoteinism' (inherent trends) in biology, anthropology and linguistics. At Berkeley he was, in all probability, the only student to discuss psychology with Kroeber at any length. This change in the direction of his life did not seem all that extreme to him, really, but it did to many others, including his Harvard guru, who never became reconciled to it. The main sticking point, as he saw it then, was that he would have to put up with going through medical school, followed by an internship and three years or so of residency (it does seem mad, looking back at it). But not right away, since there was the matter of certain pre-med courses to be taken. And then there was the war.

PKB was in New Haven, still with ACLS but working on Burmese, when Pearl Harbor came along. He had managed to find an informant for the language, apparently the only Burmese in the country at the time, and had set up a workshop in a magnificent, cathedral-like room in the Yale Stirling Library. The informant, however, proved to be a most difficult subject for eliciting Burmese forms and he showed a number of eccentricities, including an insistence on walking barefoot every day into the cathedral-like Stirling Library. Yale more than made up for it, however, with linguists like George Trager and sinologists like George Kennedy (also a linguist) on the New Haven scene at the time. He had many discussions with Kennedy about Chinese, and was out at his place chopping wood - and arguing about Wu phonology - on the day they heard about Pearl Harbor. He found Kennedy's approach too exclusively pragmatic for his own taste but he did come to appreciate the richness of Wu and other Chinese dialects. Trager taught him something about phonemics in general and Trager's work on accentual theory, with its sharp distinction between tonal (pitch height and/or direction) and glottal or other suprasegmental features, is reflected in the paper he was to produce later (1948), on tonal systems in SEA, which also includes a possible mora (intrasyllabic division) analysis of Thai (Siamese), anticipating much later developments in that field. He tried hard to get Trager involved in SEA linguistics, and Trager did accept his paper on Lepcha 'infixation' for his Studies in Linguistics (1943). Like most other scholars in the field, he was rather mystified by the recently published (1940) Grammata Serica (Karlgren) and showed it to Trager, hoping to gain a few pearls of wisdom. Trager studied it a short time and said, very simply, "It's not a language." Little did he know that Archaic Chinese had to be a language - with modifications, to be sure! That blunt remark of Trager's has stayed with him over the many years since then, which ironically have been devoted, one might say, to attempting to prove Trager wrong.

His family connections with socialism (above) notwithstanding, with the

outbreak of war he was recruited by the Office of Strategic Services for intelligence work behind the lines in SEA, the idea being that he would be dropped, say, in the Shan States. The OSS had discovered SEA, to be sure, and not long after the State Department, but it hadn't learned much about linguistics. Such simple ideas as the extreme rarity of Proto-Tai as a spoken language, for example, came across only with the greatest of difficulty. PKB had by this time, of course, become an expert in languages of this kind, which he would speak fluently with almost anyone who would put up with it. This compensated, in a sense, for his difficulties with more ordinary spoken languages, but the point never made it into the collective OSS mind. The Japanese gained control of the area in which he was to be dropped and continued to hold it throughout the war, thereby saving his life. It was a narrow escape.

He was now put to work, pending the collapse of the Japanese forces in SEA, in the Army Service Forces, with offices on downtown Broadway in New York. He was assigned to the Burmese 'desk' and given the task of turning out booklets to be used by American troops. He was also a 'consultant' to the Vietnamese and Cantonese 'desks', having worked on the latter language when in New Haven. The informants presented a number of practical problems: the Burmese informant was a semi-literate seaman, native of Arakan, who had jumped ship and was in trouble with the authorities, while the Vietnamese informant was transported back to Ellis Island every evening as a 'dangerous radical' (he believed in independence).

It was an entirely insane operation, of the kind found only in Hollywood and governmental agencies. It was headed by a clever linguist/bureaucrat named Henry Lee Smith, who had attracted a substantial radio audience as the star of a show entitled 'Where Am I From?', on which he displayed a startling ability to identify American (and other) English dialects. He tested Henry when he first met him and was straightway nailed to the mast ("You come from Newburgh, Kingston or Poughkeepsie" -all middle Hudson River towns). Like all administrators, Henry was not appreciated in some quarters, including the Burmese 'desk', where he was habitually greeted with the in-group salutation: "Hello, Henry Lee", sung out on an appropriate falling tone (Burm. transl.: Henry The Prick). The mad people on the scene included several linguists, among them the Indo-Europeanist, Bill Austin, and the Indianist, Bill Gedney, already Tai-bound. And Charles Hockett, already a dominant linguistic voice. He learned a good deal from Hockett - the hard way, some might say. It was a wonderful linguistic experience for him, sitting around with the boys. When some fine point would come up, say on a given phoneme in Lithuanian, a call would go out for so-and-so from the such-and-such 'desk': "He speaks Lithuanian - get him over here!" And the discussion would continue with the advantage of a native speaker's presence. He found it all quite fascinating, even Hockett's strong (and usually to the point!) language. He also found that he was better at tones than most and he became an unofficial 'tone specialist'. His paper on SEA tonal systems (1948) grew directly out of this war-time experience, with first-hand descriptions of Wu, Cantonese, Thai (Siamese), Burmese and Vietnamese tones. Roman Jakobson was about on the New York scene at the time and took a special interest in the tonal materials he had collected. The pair collaborated on a lecture at the New School on tones but Jakobson insisted, in effect, on pairing off all tones, to such an extent that mid tones were anathema to him. At times he was amazed at Jakobson's incredible store of information even on Oriental subjects, such as Chinese dialects and Burmese inscriptions, but he was less impressed with his ideas, remaining closer to

Trager and Hockett.

While working with the Army Service Forces he was attending Columbia to complete his pre-med requirements. He was also gradually clearing his desk of linguistic matters, although he continued to work on some papers well into his medical school days (1944-48). His main concern was to get out the Conspectus, to be a summing up of all he had learned in his days at Berkeley. He drafted a full manuscript in the years 1942-43, complete even as to Chinese characters, but was unhappy with it. The Chinese section simply didn't fit well, despite all his struggles to reconcile the Tibeto-Burman and Chinese phonologies, including the tones. The thought recurred to him that maybe Trager had been right after all! Maybe there never had been such a language as Archaic Chinese! At least, not the Archaic reconstructed by Karlgren. After all, Shafer had refused even to consider it when Karlgren first presented it and had continued to work only with Ancient Chinese. But he knew that Shafer could be much too conservative at times. He also knew that the characters (xiesheng) again and again made sense only when looked at in the light of the Archaic reconstructions. And he was never one to go against common sense. He finally did the only honorable thing: he carefully laid the ms. away on a back shelf one day and promptly forgot all about it. Well, almost.

With the Conspectus problem thus disposed of, life became a lot easier for PKB. He pursued his career in psychiatry, wrote about simple things like schizophrenia and ethnopsychiatry and even found time to coin a few more terms, such as 'axiatric' and 'hebephilia'. He occasionally encountered intellectuals among his medical/psychiatric colleagues but they were usually pathologists, with an unfortunate predilection for hanging out around cadavers. At least they were preferable to the psychiatrists, who tend to be irrational, and even more so to the surgeons, who tend to get excited by papers on 'Fifteenth Century Italian Obstetrical Instruments' and the like, but he could never get used to the dead bodies. It was enough to make one give up the field - which he did, in time. But not until he had once again succumbed to his old obsession with things linguistic.

It happened in 1965, or perhaps the spring of 1966. He came by chance upon a work that had only recently (1964) appeared: Ethnic Groups of Mainland Southeast Asia, edited by Frank LeBar, et al., and published by the Human Relations Area File Press in New Haven. He hadn't thought much about it for years but had rather assumed that his Thai-Kadai-Indonesian concept had prevailed, having got off to a good start. Much to his surprise - and considerable dismay - this handbook had split up Part III. Tai-Kadai and Part IV. Malayo-Polynesian while unabashedly placing Miao-Yao under Part I. Sino-Tibetan. It was enough to make one go back into the field - which he did, and rather soon. He first visited Frank in New Haven to give him a piece of his mind - the "How dare you?" kind of diatribe. Frank, the nice guy of all nice guys, pleaded innocent and the speech never came off. With nice guys like Frank it's very difficult to deliver diatribes. Frank insisted, in fact, that the authors had only been 'conservative' in keeping Tai-Kadai and Malayo-Polynesian apart. As PKB recalls it, the dialogue continued along the following lines:

"But how about Miao-Yao, Frank? You put it under Sino-Tibetan. You keep Kadai all by itself but then you go and put Miao-Yao under Sino-Tibetan! That's crazy! I may not know where it goes but I do know one thing: it's not Sino-Tibetan!"

Poor Frank could only come up with a very lame excuse. "Greenberg put it there."

"Greenberg? He's a great Africanist but what does he know about SEA?"

"Greenberg thinks you're right about Tai-Kadai-Indonesian. In fact, Paul, he's been your key supporter in all this right along. You know, a lot of guys in the field will believe anything Greenberg tells them."

"I see what you mean. But I do wish that he hadn't got you to classify Miao-Yao with Sino-Tibetan. He'll have people believing that for years."

The trip had hardly been an enlightening one for PKB but it did encourage him to take another excursion into the field. Before he left New Haven that afternoon he had promised Frank that he would reexamine his old Tai-Kadai-Indonesian materials. It could well be, he told him, that he had overlooked a few things.

It turned out to be more than a few things. A lot more. In the 1942 paper he had announced his firm belief that 'most of the important lexical correspondences have been uncovered'. He now realized that it is almost always idiotic to make statements of that kind - and this one happened to be particularly idiotic. On checking out the SEA scene he found that Li Fang-Kuei had plugged a huge hole in South-central China with his pioneering work on the Kam-Sui languages and had also made major contributions to the Tai field generally. On the Austronesian side, with the generous help of Raleigh Ferrell, the anthropologist/linguist, he was able for the first time to tap the key Formosan languages. The results were both good and bad. The enormous expansion in lexical correspondences, roughly tenfold, confirmed his earlier conclusions but also made him look like a bit of a fool because of the 1942 pronouncement. In due time he visited New Haven again and reported his findings to Frank, who offered to publish them right away in the newly created Behavior Science Notes, a journal intended for altogether different purposes (cross-cultural studies). As in the case of the 1942 paper, this was an anthropological rather than linguistic production. He later wrote Frank that he had devised a name for the group: Austro-Thai (better: Austro-Tai), a long over-due innovation that appeared in the title of the paper (1966).

The Austro-Tai business proved to be only the beginning of it all. Frank tipped him off about a young Tibeto-Burmanist teaching at Columbia and he soon arranged to visit him. He had not seen a Tibeto-Burmanist for over a quarter of a century and was hardly prepared for it. Prof. Matisoff was quite young, but bearded, and looked rather like a Russian spy. He was a devotee of the Burmese-Lolo branch of the family, which he kept calling 'Lolo-Burmese', and more particularly of Lahu, a minor language which he appeared to rank with Burmese and Tibetan. He soon discovered, however, that the young Lahu-head was a polyglot Columbian version of the 'Mad Russian' of Berkeley but with a warm humor and brilliance all his own. At first it seemed strange to have someone like Jim around. For one thing, he had never really had anyone to talk Written Burmese with, let alone Proto-Burmese-Lolo, and it was a fantastic experience - one he will always treasure. They met regularly in the crepuscular recesses of the West End cafeteria on upper Broadway, more appropriate perhaps for espionage than for linguistic conferences, where they would scribble endlessly on paper napkins over cups of coffee in the dark. At times they would even think to bring paper, the better to record their most recent achievements - and

to squabble over them. They covered most of SEA that way.

The time finally came for PKB to invite Jim to his Briarcliff Manor home. He had in mind showing him the STL Burmish-Loloish volumes (1939) and the rhyming dictionary of Written Burmese (1977), which he knew would be of immediate interest to him. He hadn't really been thinking about the Conspectus ms., very likely a defensive ploy on the part of his mind, but Jim found it buried in the clutter of what passed for his library. He was now forced to reconsider his abandonment of the ms., especially after Jim had copies made for teaching purposes and the Conspectus acquired a degree of currency, to the extent of being cited in scholarly articles. A re-examination of the ms. was not very reassuring. The Chinese section still didn't come off very well, and now even the Karen section was in need of revision in the light of Haudricourt's reconstruction (1942-45), which had not then been available. Only the Tibeto-Burman section looked solid. A rewrite was a possibility but the prospects daunted him. Jim set in motion the wheels that finally led to acceptance for publication at Cambridge (U.K. this time), with himself as the contributing editor - and the understanding that the ms. would be extensively annotated. He found Jim's enthusiasm to be contagious and he plunged into a task entailing, in effect, bringing the ms. up to date. He was relieved to find that, apart from Haudricourt's Karen contribution, the literature contained little that would require revisions in the text. He did find, however, that he had changed his mind about a number of things over the years, partly with regard to consonants (the need to set up a distinct palatal series) but mainly in connection with vowels. His re-analysis showed that the addition of */ə/ and */a/ to the basic Sino-Tibetan system not only made sense for Chinese but was useful as well in interpreting the 'ablaut' in Tibetan (1972: fn's 487, 488). He now felt much happier about the Chinese section but the consonants, especially the velar reflexes, continued to plague him. As he was to realize only much, much later (1981 and forthcoming), parallel problems exist in Tibeto-Burman but can be explained away much more plausibly (1972: 25-26 and fn. 82). He finally made peace with himself and inserted two footnotes (1972: fn's 441, 464), each a masterpiece of fudging in its own way, to handle the velar > ?- ~ x- , along with the velar > dental, shifts in Chinese. They apparently worked, escaping the notice even of scholars like R.A. Miller, whose review article (JAOS 94 [1974]) was on the unfavorable side. He continued to feel unhappy about his little piece of deception, however, until finally a great light dawned on him one day (1974 and ff.), providing a general solution to a whole range of problems with Chinese initials. He has ever since been beating himself for not having seen the solution earlier - a masochistic form of entertainment peculiar, it seems, to linguists as a professional group.

The Conspectus finally (after 30 years) appeared in 1972, on handsome paper and too expensive for anyone to buy. Jim Matisoff had already fled to Berkeley and the West End was no longer a center for Burmese-Lolo studies. PKB was now deeply involved in completing a merger, that of Miao-Yao with the rest of Austro-Tai, making for a complex 'three-legged' construction. By the spring of 1968 he had finally come to the realization, after many years of vacillation, that Miao-Yao belonged with Austro-Tai rather than with Austroasiatic or elsewhere. A group of the numerals were definitely linked with those of Tibeto-Burman (rather than Chinese) but they were the 'wrong' group (from 'six' through 'ten')! There was also, however, a possible correspondence for 'four', along with 'look-alikes' (at worst) for 'sun', 'moon' and 'year', but none of it seemed to spell out 'genetic relationship'.

There was even a pair of verbs showing classical Tibeto-Burman morphophonemics (1972: 124-26): PMY *day^C 'die' ~ *tay^C 'kill', but somehow this pair seemed 'too perfect' - and connected with Thai (Siamese) taay 'die', et al! This supplied the key he had been looking for, much as the same Thai word along with that for 'eye' (taa) had supplied the keys for the earlier (1942) rapprochement with Indonesian (*matay 'die', *mata 'eye'). The key had been known right along, of course, but in the absence of the Austro-Tai structure it hadn't unlocked anything. Yet the complete unlocking was to prove no easy task since even the key itself involved an 'exception' in Miao-Yao phonology. Comparative Miao-Yao materials had by this time become accessible in sufficient depth for the first time, thanks largely to the Ph.D. dissertation by Herbert Purnell (Cornell 1970), making possible a systematic study of correspondences with the newly assembled Kadai/Austronesian materials. It finally became evident that the phonological development in Miao-Yao had been the opposite of that in Kadai (incl. Tai, Kam-Sui), with (basically) disyllabic Austro-Tai roots typically reducing through fore-stress rather than end-stress, leaving 'split cognates' scattered about. It was as if some preternatural force had so shaped linguistic processes in SEA as to ensnare the unsuspecting linguist. Finally, with a silent hosanna for his deliverance, he sent the ms., Miao-Yao now firmly in place, off to New Haven for publication, several years behind schedule. At least, he thought, I've improved in that over my earlier pace!

SEA linguistics, as PKB had known it, was largely a world of isolated happenings until the decade of the 70's. Scholars wended their separate ways over this intriguing but lonely landscape, most often in solitary splendor. More specifically, sinologists rarely spoke with Tibeto-Burmanists, if indeed they knew that such existed, and the Tai people inhabited their own dominion, centered about Bangkok and Chiangmai. A careful observer might have noted a certain Sino-centrism: one studied Chinese or pursued the Classics but was 'into' languages such as Khamti, Lahu or Double-Loincloth Loi. Most of the SEA people would have been hard-pressed to identify Lahu, let alone Double-Loincloth Loi. It was, to be sure, an era of private lives.

The Sino-Tibetan conferences changed all that. They also brought about a lasting change in the life of PKB, who had been left in New York, following Matisoff's departure, without any immediate contacts in the field. At the first meeting (1968) of the brethren in New Haven, a most intimate affair, he set forth for the first time his new ideas about Miao-Yao. The few papers presented there were evenly divided, as one might have wished, between Chinese and Tibeto-Burman. The spring of 1969 came along and he was looking for a paper for the second conference, to be held that fall at Columbia. He was struggling at the time with a revision of the Chinese section of the Conspectus (above) and decided that he would take another look at the tones. He had made a much earlier survey (1948), with the conclusion that 'no correlation can be established' between the Chinese and the Burmese-Lolo or Karen tonal systems, and he anticipated a similar finding this time around. Instead he found, much to his surprise, that by recognizing a sandhi origin for the Chinese 'third tone' (qusheng) and setting up a basic PST *B > *A tonal shift after prefixed or initial *s- one could establish a correlation among these systems, after all. It would mean still another 'contra Benedict', he realized, but by this time he had got rather used to the idea! He presented a paper on this newly reconstructed PST two-tone system and it was incorporated in the Conspectus in a final (and monstrous!) footnote. At least, he felt, it was better than rewriting the whole book, as some would have liked.

He has continued to produce papers on various aspects of Sino-Tibetan reconstruction, including the Chinese s- prefix 'orgy' (1974, 1975), vowels (1977), tone/accent system (1972, 1980), suffixed */n (1971) and affixation patterns (1976), for the annual Sino-Tibetan conferences, along with one or more 'Comments' at times (for circulation only). He has also produced a paper on Chinese 'cryptoglyphics' in 1978 (Tucson), largely for the benefit of the sinologists (and himself), and on Austro-Tai (Saek) in 1979 (Paris), largely for the benefit of A.G. Haudricourt and the Tai contingent. He had been delighted when the Tai people (incl. some Thai) started coming to the conferences in 1970 (Cornell), not that he thought that Tai belongs with Sino-Tibetan but only because he was convinced that the Tai people belong with the Sino-Tibetan people. And it seems that indeed they do, joined at times by Miao-Yao people and Austroasiatic people (incl. Vietnamese people) and, recently, even an offshore visitor from Taiwan (Kanabu). It's been more than a SEA generalist like PKB could ever have hoped for!

A larger world also began to envelop SEA Linguistics in the 70's, bringing about further changes in the life of PKB. In 1973 he attended the First International Conference on Austroasiatic Linguistics, the planners of which had the foresight to schedule for Honolulu (in January). He didn't really belong there but he cleverly arranged for an appearance of legitimacy by presenting a paper on Austro-Tai and Austroasiatic (1976: revised). He was fortunate enough to share a hotel room with Harry Shorto, resulting in one of history's longest uni-directional conversations (he also tried to answer a few of Harry's questions about Sino-Tibetan). Spoiled by the Hawaiian setting, he also attended the First International Conference on Austronesian Linguistics, held at Honolulu the following year (again in January). He didn't belong there either, of course, but this time he pulled a booboo by giving a paper on the problem of tone assignment in Austro-Tai. The problem, unfortunately, lay with the audience itself, many of whom apparently had never heard of tone assignment, let alone Austro-Tai. All was not lost, however, since Hockett also attended the conference (he didn't really belong, either) and, in a chat later on the beach at Waikiki, showed that he knew exactly what PKB had been talking about. Hockett also contested his claim on the word 'morph' (1948: fn.4), however, so he realized that the man hadn't changed that much! In 1976 the scene changed, first in March to Toronto and a symposium on Austro-Tai (1976 - Comments), memorable for an initial meeting with Haudricourt (chaired by Matisoff), then in spring to Ann Arbor and an Austronesian conference, at which he was finally able to come up with a legitimate paper in the field (on 'PAN consonant Clusters' -1980), then in summer to Shizuoka, at the foot of Fujiyama, for a joint Japan-USA seminar, where he talked about early loans into Chinese (1976) and, finally, in the fall to Copenhagen for the annual Sino-Tibetan round-up (and a paper on affixation in Archaic Chinese - 1976). He was still fudging it on Austroasiatic (apart from his earlier work on Vietnamese), however, as late as 1979, when he presented a paper on Austroasiatic loanwords in Sino-Tibetan (1979: to appear) at a symposium in Denmark (Helsingør). He is looking forward to even more exotic settings in the future, having suggested that the Sino-Tibetan conference for 1985 be held in Kathmandu, with the 1982 conference already held in China. When not traveling he has kept busy with Archaic Chinese, trying to make the xie-sheng all come out right (forthcoming, with P.F.M. Yang), and with a proper reconstruction of the makeshift Kadai group (and hoping for a good source on Gelao, a key language here) and with attempting definitively to establish the two-tone system set up for PST (1980), along with an overhauling of his early work on SEA kinship nomenclatures (1941), now greatly in need of revision. From time to time he adds a desultory

note on one of the two or three dozen unfinished papers he has lying around. He has promised himself to stop frittering his time away. And to keep in mind the words of his old Berkeley guru: a thing is really not 'fun' unless it is difficult.

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THE LINGUISTIC HISTORY OF SOUTH CHINA:

MIAO-YAO AND SOUTHERN DIALECTS¹

W. L. Ballard

I. Historical Background

From Han Dynasty times onwards, many sources of Chinese history have treated the study of South China as essentially one of the expanding civilization (= sinicization) of backward barbarians by a totally indigenous, very advanced (= with writing) North Chinese cultural tradition. (I am perfectly well aware that this is somewhat of an exaggeration, but it is a convenient straw man to use for the purposes of orderly argument). In terms of language development we see a similar tradition: all South Chinese dialects except Min are regarded as mere variants of the Tang koine depicted in the Ch'ieh-yün tradition, and even Min is some sort of Han relic. Rarely do these dialects preserve or exhibit any features of interest in the reconstruction of the early history of the Chinese language.

Recently students of both the history and the archeology (= pre-history) of South China have criticized this tradition. Treistman (1968, 1970, 1972) reviews the archeological and early textual evidence and suggests some revisions in our interpretation of it. Her view of the Han historical sources is as follows:

Most of our knowledge of early China comes from Han sources, from scattered references to events and personalities, mythology, and traditions that have been selected (and at times distorted) to serve the political end of unification and justification of Han expansion (1968:853).

She feels that this Han bias against the surrounding "barbarians" has extended into modern historical and archeological traditions of interpretation of the data. She chastizes Chang for expanding his "nuclear area" to encompass all of the early Chinese cultures. I found Chang's 1977 views to be quite similar to Treistman's with, perhaps, a trifle less emphasis on the diverse origins of the various cultures. Chang says that certain evidence "suggests

¹ This paper is based on a paper I delivered to the 12th ICSTLL, Paris, Oct. 1979. I have attempted to respond to many helpful comments and criticisms, especially those from Mantaro Hashimoto, Paul Benedict, Kris Lehman, and Wm. G. Solheim. Of course, I assume full responsibility for all remaining errors, weaknesses, and inelegance.

that, for the earlier periods of the Chinese Neolithic, three centers are now discernible....Beginning about 3200 B.C., their descendant cultures came to exhibit an increasing tendency toward similarity to one another..."(155). Further, Chang says the data indicate "a rapid process of diffusion, migration and interaction" (172). More obviously pertinent to the thesis of this paper, he says:

The interior group...was probably the progenitor of the Shang and Chou civilizations. Coastal Lung-Shan cultures...gave rise to other civilizations parallel to the Shang and Chou of North China (173).

Later on Chang sees different cultural traditions among Eastern Chou civilizations in South China. One such tradition he ties to Wu, Yüeh and Ch'u (469). Thus, there were several cultural traditions in South China that evolved in situ and subsequently influenced each other.

Treistman (1948) suggests we are not dealing here with significant migrations:

...recent studies by physical anthropologists indicate that the present-day distribution of Asia's heterogeneous populations has a very long history with no remarkable changes from prehistory to contemporary times.

The usual historical accounts (and linguistic, for that matter) calls for the spread of one "civilization" from central China over uncivilized barbarians. Treistman counters:

...the growing evidence of the existence of several early centers of civilization, in China and southeast Asia,...challenges any theories of grand-scale diffusion (either from the west or from northern China)...(363)

Similarly, Eberhard (1977):

We now know definitely...that on the territory of China people of different cultures and even of different races lived. (2).

Whence the monolithic view? According to Treistman it is the result of Han prejudice:

Once we eschew the idea of the Chinese monolith as fiction created by early Chinese historians, it is probable that we can come closer to understanding the development of civilization; the genius of Chinese civilization can be viewed as the result, the product, of many cultures interacting with a heretofore unsuspected intensity. (1968:854)

This distortion...springs...from the Han historians' inability to cope with linguistic and cultural categories outside his own experience...In this case, one of the most interesting lines of research stems from redefinition of prehistoric and early historic southeast Asia to include the region of southern China

(1970:369).

If we look at China's prehistory in this way, what cultural traditions can we discern? First there is a north central one:

The peoples of Shensi, at 1000 B.C., were heir to generations of familiarity and interaction with the steppe cultures, but because of their uniquely diversified ecological situation, they shared as well in the great streams of civilization that were beginning to surface in northern southeast Asia (Treistman 1972:129-30).

The south is somewhat more complex. Leaving aside the southwest, there appear to be several traditions, but all are somewhat influenced by cultures in southeast Asia:

..this discovery substantiates an early interchange between the regions of southeast Asia and the inhabitants of the Yangtze river valley. ...It is probable that rice cultivation moved rapidly from the Hanshui region to the Yangtze delta and along the coast of southeast China...

As for the Ch'ü-chia-ling complex itself, historical records probably include these people among the *Miao-men* (author's italics), barbarians of the south, but they perhaps represent the cultural crystallization only somewhat later to be known as the kingdom of Ch'u. (Treistman 1968:855).

The entire complex of wet-rice cultivation is first seen in south China at river-terrace and hill-slope sites in Kiangsi and Chekiang. (Treistman 1972:65).

She further suggests that even within the distinct cultural traditions in the south, there may have been substantial variety: the south may have exhibited very well organized agricultural villages in flood plains interacting with "diffusely settled and imperfectly 'sedentized' people" (1970:368). She urges us to look for

...the origins of major civilizations and the influence of these major traditions on the indigenous local cultures with whom they came into contact (1970:370).

Elsewhere Treistman briefly alludes to some evidence indicating that the Thai tradition moved up into southern China at one point (1970:369-70). Chang also posits distinct southeast Asian influences in south China:

The Yang-shao culture was wholly confined to North China, but the Ta-p'en-k'eng culture resembles in some respects the Hoabinhian culture of Vietnam and the rest of Indo-China....(1977:142).

Chang also suggests that the Ch'u peasantry may not have been Chinese (438) and that the Wu and Yüeh peoples became sinicized at one point in their history (417).

Treistman (1968:856) nicely sums up her view of the pre-historical

evidence:

...it is a history of the "confrontations" of many cultural elements and not of the colonization of weaker or less-advanced peoples by stronger civilizations. Historical inference and archeology suggest that China, at 1000 B.C., was an area of great diversity. Perhaps in this diversity, this mosaic of cultures, lies the clue to the significance of later Chinese civilization. Certainly this diversity is the proper concern of historical, linguistic, and anthropological study.

A number of archeologists have also been sallying forth into the arena occupied to date by the champions of the North China Syndrome. Solheim, Bayard and Meacham have been debating with Chang on the matter of who influenced whom, when and how. Generally the first three scholars place South China in the same sphere of development with Southeast Asia; then they demonstrate the possibilities of strong cultural influence from the south into North China, at least prior to 1500-2000 B.C. (Bayard 1975:73). But the major brunt of their argument is that South China was a very complex area with a number of independently developing, but mutually interacting cultures:

...we can no longer talk about pristine, straight-line evolution of a North Chinese Neolithic tradition which exerted a continual influence on cultures to the South. (Bayard 1975:74).

...prior to the Han expansion the inhabitants of the Southern two-thirds of China (with the probable exception of Ch'u) were simply not Chinese, but presumably Tai, Austronesian and Tibeto-Burman. (Bayard 1975:76).

...the complicated cultural mosaic of South China has received much less attention than it deserves. (Meacham 1975:105).

Meacham (1974:76) goes so far as to suggest that there was probably little or no North Chinese influence on South China prior to Han. Bellwood has similar views:

Shang had little impact on the Neolithic societies of Southern China (1979:180).

Solheim (and others) suggests a possible southern source for such Chinese cultural items as bronze metallurgy (1971:332), wet-rice cultivation (335), and the domestication of cattle (335). Keightley (1978:8-9) suggests that plastronomy and the appropriate turtle shells may have come to Shang from South China. Solheim (ms.) says that within the south, Wu and Ch'u interacted more with each other than with Chou, and Meacham compares neolithic societies, suggesting that:

It is by no means certain that the Chou people at that time (three generations before the conquest of Shang) were any more advanced than were the people of Wu (1976-8:107).

Solheim feels that the south Chinese input to the Chinese civilization we know historically has been so great that

I feel that it would be best to say that China and the Chinese did not begin until the unification of the Ch'in and Han Dynasties. (ms:70).

Chang, as shown above, is not to be castigated as a proponent of an exclusively North Chinese origin for Chinese culture. In reply to his critics, he says:

In the last decade or so new archeological work in South China, Taiwan, and Thailand has shown that ancient cultures in these regions were much richer and more complex than were known before. (1974:34)

...the interrelationships of the ancient cultures in our area are highly complex, involving a multitude of mutual relations among several historic entities. (1974:35)

Not only was South China complex, Chang also agrees that

Obviously at times in the past the inhabitants of South China were very similar in their culture, and perhaps related in an ethnological sense, to their neighbors in the South. (1974:35)

He also cites a number of other Chinese archeologists who point to various south-to-north influences.

It is clear, then, that the pre-history of South China is turning out to be considerably more complicated than many earlier scholars had envisioned. But how are we to bring order from this chaos? I think Treistman points in the right direction:

What are these cultures? Are they archeologically recognizable and linguistically diversified, and do they correspond to historically categorized ethnic units? On the last two counts, linguistic and ethnohistoric studies remain mute; scholarly investigation has not yet begun. (Treistman 1968:854)

Such studies have begun. Norman and Mei (ms:1971) made substantive suggestions about an Austro-Asiatic substratum in Ch'u and Min and they cite some scholarly forebears who also recognized some non-Chinese elements in the south. But it is true that the dominant tradition in linguistics, just as in history, treats all of China as one culture area that has been more or less totally sinicized. It is the purpose of this paper to present some inferential evidence on the non-Chinese linguistic influences on south Chinese language forms.

Some of the archeologists and historians have been rather more specific in assigning ethnological and linguistic labels to the various cultural traditions in South China. While I find them less than precise and detailed in explaining the whys and wherefores of these ascriptions, there appear to be two kinds of arguments for these hypotheses:

A: The current location and cultural types of various ethnic groups are traced backward in the historical and archeological record to point towards an Urheimat.

B: Linguistic reconstruction of various elements (typical fauna and flora, cultural traits like matriarchal versus patriarchal social organizations, burial practices, early economic practices, etc.) suggests the appropriate Urheimat in terms of climate, topography, etc., or in terms of archeological data and inferences.

Since these hypotheses bear on some of the linguistic data to be presented, we need to examine them in some detail.

Bayard (1975) is probably the most explicit scholar I have read on these matters; he even provides a map (74) of his proposed early habitats for various ethnic groups. He labels all of the Wu area (Jiangsu, Zhejiang), Northern Fujian and Taiwan as Austronesian; southern Fujian (Amoy south), much of Gwangdong, Gwangxi and the Tonkin area of Vietnam is said to be Tai/Kadai. More western parts of southern China are labelled Tibeto-Burman; North China is Sinitic. Bayard, claiming to be in agreement with Chang and Solheim, says:

Most authorities are in general agreement that the Central Lowlands and northern Southern Coast were occupied by Austronesian speakers. (1975:77)

Meacham (1975) seeks to establish continuity in the archeological record for the area Bayard labelled Thai/Kadai and concludes:

Despite northern influence, much of the material culture, folklore, religion, language and physical stock in this area derives from Yüeh Coastal Neolithic (1975:107)

(The last term is what he calls certain archeological traditions in this area; Solheim (ms:33) doesn't think Meacham should use the term Yüeh because of its confusing values in the (Chinese) historical record.) Meacham 1976-8 discusses the archeological record in more detail, and shows differences between the more southern tradition and that of the lower Yangtze:

...it seems even more likely that the lower Yangtze had its own development with minimal outside stimulus. (1976-8:104)

And he says of the contentions of Shang/Chou acculturation of the lower Yangtze: "Nothing of the kind has been established" (1976-8:107).

Shih (1974) discusses the archeological record of the lower Yangtze delta region in some detail. He finds a series of indigenous developmental phases in the delta with connections to the southeastern coast in some periods. His traditions frequently tie together southern Jiangsu and Zhejiang, and sometimes include Fujian, Gwangdong and Taiwan. Rarely are there archeological ties to other regions in the early record; later there are ties westward to Hunan (Ch'u).

Solheim (1971) ties a number of the possible south to north influences to the very early seaworthy boats developed in Southeast Asia. Solheim 1973 puts the Austronesians in South China; in 1975 he puts them there as late as the Han migrations (109). He too sees Taiwanese traits as originating on the mainland

and cites Eberhard's claim that the Yüeh and Wu peoples were Austronesian, but he admits ignorance of Eberhard's evidence (111)--so do I! Here, however, he suggests that the Austronesians came to China by boat and probably overlaid another culture. Solheim (ms.) expands on his ideas in connection with seafarers. He posits an Austronesian seafaring culture, the Nusantao, that traveled and traded extensively all around the South China Sea area. He thinks these Austronesians may have been substantial settlements in South China, particularly in the Yangtze delta area, an area known throughout history for its involvement in trading overseas.

Chang 1974 supports the Austronesian hypotheses:

There is a strong likelihood that the Lungshanoid peoples were among the ancestors of the Malayopolynesians. (1974:37)

Howells (1973) seems generally to accept these hypotheses about a mainland, South Chinese origin for presumably Austronesian traits on Taiwan and elsewhere (198-206). And Eberhard speaks of non-Chinese elements in South China:

And there are literary allusions in Chinese texts suggesting that a dark-skinned race may once have lived in historical periods in some parts of south China. (1977:3)

Eberhard seems to place Thai agriculturalists in Gwangdong and Gwangxi, roughly from Canton to the west. He thinks the historic Liao were Mon-Khmer related; he thinks all of the south coastal area, as well as the Nan-ch'u province, was Yüeh, which he equates with the Yao plus the Thai, and he calls this lot Austronesian (6).

Bellwood (1979, 1980) holds the Austronesians radiated from Taiwan and feels that some archeological data may show that they came to Taiwan from South China, especially the lower Yangtze are (but not Ch'u) (1979:181). Thus:

Recent excavations in coastal areas of China south of the Yangtze indicate a possible cradle area for what later emerged as the Austronesian expansion...The Ta-p'en-keng culture, the earliest of the three, may reasonably be equated with the earliest recognizable stages of the Austronesian family of languages (1980:178).

But the Miao-Yao are also important for him. Before the Han period they lived along the lower middle Yangtze River and moved south and west within the last 500 years.

The Miao and Yao...may have been an important ethnic element in South China during the period prior to Eastern Chou expansion in the first millennium B.C. On these grounds, they may prove to be of more than peripheral concern in Southeast Asian prehistory. (1979:85)

One element I feel to be significant but missing in these discussions is the relationship between geography/ecology and culture. Mantaro Hashimoto has spoken to me of the importance of geographical zones, defined both by latitude and altitude, and of zoological habitats as defined by typical faunal and floral distributions, and climate, and by such geological features as soil

type, water resources, topography, etc. The importance of these features in discussing cultures and their preferred locations is clearly demonstrated in Higham 1979. He shows that today, historically, and in the archeological record, the upland, mountainous cultures and the lowland, riverine cultures form two distinct traditions.

These patterns reflect the adaptation of two distinct types of habitat: the upland evergreen forest and the lowland deciduous forest. (1979:670)

The upland types have remained primarily hunter-gatherers with some dry rice cultivation on frequently changed fields; they tend to remain in population equilibrium with their environment. The lowland types cultivate wet rice in permanent fields, manage their water, develop metallurgic skills and tend to expand.

The archeologists seem to be aware of this distinction; hence Bayard says:

This complex appears to have been widespread throughout the mountainous areas of our region from about 7000 to 4000 B.C. (1975:72)

But they don't seem to integrate such features very thoroughly into their accounts of early history and population locations. Surely the distribution we find today in South China/Southeast Asia has held for some time: in any given region a variety of ethnic types will sort themselves out as to preferred habitat and way of life, no matter what their ethnolinguistic, political or geographical provenience. We shall return to this point below.

Of all the peoples of Southeast Asia, the Tais seem to have stimulated the most scholarly interest in tracing an ancestry to an Urheimat somewhere other than Thailand. Briggs (1949) placed them east and south of the Tibeto-Burmans in South China and suggested they may have been closely related to Yüeh and part of Ch'u. He notes that they preferred a river plain habitat and cultivated wet-rice; the Yüeh, however, were oriented towards tidewater areas.

Terwiel (1978) finds this northern origin for the Tai improbable. He says that

...it may be historically plausible to depict a prolonged and bitter struggle between southern valley dwellers and northern Chinese during the first millennium B.C. ...(242)

and he feels that wet rice cultivation may have existed in the Yangtze valley by the first millennium B.C., but he finds no evidence that it was Tais doing it (242). The archeological Lungshan complex of the Yangtze seems very unlike Tai culture to him (243). Terwiel notes that some serological data lump the Tais with Austronesians (246), but he debunks most current theories about various Urheimats but one: the Tonkin/Gwangxi region for at least the period 1000 B.C. — 1000 A.D. or so. He also notes their alluvial propensities (249); his description of their conquest of their present homelands makes it seem as if they would not have taken well to Chinese suzerainty. Thus, if expansion was necessary, there was only one possibility: south and west. He feels that the Tonkin coast was probably occupied by Vietnamese groups, with the Tais inland (252).

Chamberlain bases his discussion of the Tai Urheimat on reconstruction of Proto-Tai words for various animals. On the basis of this evidence he locates them further up in China than does Terwiel. In Chamberlain (ms.) he claims they were coastal and no further north than Fujian (2). But the ancestor of "Proto-Tai and Proto Kam-Sui must have inhabited the valley of the lower Yangtze" (2). He associates these peoples with the wet-rice cultivation of that area, and posits Austro-Asiatic and Chinese borrowings for some taxa. He links turtles, turtle cults and shang plastronomy with the Yangtze Delta. In msb. Chamberlain does the same number on frogs, and concludes

...the amphibian evidence like the evidence from mammals, lizards, crocodilians and chelonians, points to a more northerly and coastal origin of the Tais. (msb: 26)

Speculations on the earlier distribution of the Miao/Yao are harder to come by. Lemoine (1972) provides one interesting but suspicious tidbit: the Mien Yao have an oral and written tradition of coming from the Nanking area during the Ming dynasty to Gwandong by boat and then inland. This legend would have them abandon the cultivation of rice. More likely for the Yao is the scholarly tradition he cites (55) that the Yao were very ancient inhabitants of the mountains of the southeast coast. The National Geographic Society (1980) says:

The She, who now speak mainly Chinese, may be descended from the Yao who retreated to the west 500 years ago under pressure of Han expansion.

They show She sites from central Zhejiang to southern Fujian; I have heard and seen other suggestions that the She were Yao (Downer msb: 5), but I know of no source on the She language(s).

II. The Sociolinguistics of South China

How might these ethnic groups have affected the history of Southern Chinese dialects? Several scholars have pointed to possible Tai influences on Cantonese; Hashimoto, O-K.Y., 1976, is one such source. There is some considerable debate on possible influences on Min. Norman and Mei (ms. 1971) argue for an Austro-Asiatic substratum for Min and Ch'u, and/or an Austronesian substratum for Min. Norman (1979) argues against one proposed Tai influence on Min. I have outlined (Ballard 1971, ms.) an hypothesis about the relationships among the Southern Chinese dialects, arguing especially for a strong connection between Wu and Ch'u (old Xiang). Wu dialectology shows that the Wu area is best treated as having three distinct sections: southern Jiangsu and a little of northern Zhejiang, central Zhejiang, and southern Zhejiang. I suspect that the southern third shows the strongest affinities for the contiguous Min area; the archeological, historical and geophysical data would seem to indicate a transitional area influenced from both the north and the south. I have argued for some years (Ballard 1971, 1979, 1980) that the dialects of south China cannot be accounted for as mere dialectal variants of Mandarin (in some sense); rather they seem to represent separate linguistic traditions which have been more or less influenced by the standard language of whichever capital, i.e., Mandarinated. Thus, Wu, Cantonese, Ch'u, and Min, traditionally regarded as being divergent dialects derived from Ancient Chinese (Archaic in the case

of Min), actually represent separate linguistic traditions that have incorporated much Chinese material. The picture parallels in many respects one version of the origin of Black English, as well as aspects of some explanations of why French, Spanish, Catalan, Rumanian, etc., are not just modern Latin.

It is easier to argue for substratal influences on a language form when both languages are still collocated. Thus a Tai influence on Cantonese, a Yao (via She) influence on Min or a Miao influence on (Nan)-Ch'u are more plausible on the surface than any influence on Wu. But in fact mere contiguity does not necessarily lead to any more profound influence than a little local lexical borrowing. So we need a more complex model to make plausible some notion of a pervasive, systematic impact on the distinctive development of these dialects.

First of all, the Southern Chinese dialects to this day display very extensive layer phenomena. Traditionally these layers are called "literary" and "colloquial", but there may be more than two layers, and in various ways either may be more conservative and/or more like Mandarin (Ballard 1979). In a sense each layer shows a life and history of its own. T'sou (ms) shows just how sociologically significant and long-lasting these layers are:

...at the grassroots level collective diglossia may be a characterization of the national scene in traditional China. (7)

...China presents a more classical model of the stratification of bilingualism in complex societies. (13)

Diglossia characterizes these areas and it can be shown for several of them that one "low" language form is often (at least until fairly recently), a minority language. Thus one can imagine a long-term situation of diglossia, with the low form preserving the non-Chinese indigenous language—purely during the early colonial period, more mixed later, and finally just as a very different kind of Chinese. The diglossia preserves the sociolinguistic situation over thousands of years with changing linguistic means.²

Then there are specific examples of dialects of a "mixed" nature. Yue (1979) says that her informant (a Mr. Su) claimed that all the Su families in Teng-xian were from Hunan; his dialect was very different from other Yueh dialects: a) he had implosive stops; b) all the Middle Chinese voiced initials had become voiceless unaspirates; c) there is more tone sandhi. All of these traits are reminiscent of Hunan/Ch'u features.

Hashimoto (1980b) shows that Be is a "mixed language":

The existence of this kind of languages will support, I hoped, my idea of the gradual assimilation of surrounding languages on the part of the central language—a type of linguistic development, observed widely in the East Asian continent, in a sharp contrast, for example, to the type observed in Indo-

² Bradley (1980) also suggests an influence on Burmese—as significant a one as restructuring the system of suprasegmentals—from Mon, though the Mons in Burma no longer speak their language. Perhaps the native stock must disappear for the most dramatic impact on the dominant language—when significant numbers of non-natives come to speak it.

European.

It turned out that the Be language was an ideal specimen of that sort, as the reader will immediately see from this lexicon. The phonology is undoubtedly of the mainland Southeast Asian type, and one will find there from the very beginning numerous cognates with Tai. Yet waves of Chinese structure, constituting at least two or three strata and perhaps constantly increasing their influence, are so deeply embedded in the basic part of this language that any further increase of Chinese features will easily make this language look very much like Fukienese, Hainanese (Hainan Hoklo) in particular. (i)

Is there any evidence to support the existence in ancient times of significant numbers of non-Chinese peoples in the Chinese sphere of influence, and/or of any impact of such people on Chinese?

Bielenstein's (1947) careful analysis of Chinese census reports from the Han to Tang periods gives us some notions about populations and their locations in South China during this period. Early Chinese colonization was restricted to alluvial areas:

In reality the districts in Middle and Southern China at first formed a thin network along the rivers, and their villages and cultivated areas were concentrated around the principal townships. (1947:134)

He claims the lower Yangtze delta and some of northern Zhejiang were unpopulated (135) during some periods. The Ch'in empire before 214 B.C. reached somewhat south of the Yangtze, but Fujian was dominated by barbarians (138). The total Chinese population in South China may not have been large until after Tang (139), though there was significant north to south migration during the early Han (141). The riches of the new Chinese arrivals must have tempted their non-Chinese neighbors to become Chinese, but the foreign tribes were not absorbed as such--they provided wives, but otherwise took to the mountains (144). Between the Han and Tang dynasties many northern barbarians were absorbed in North China (146)--which may account for some of Hashimoto's Altaicization (Hashimoto 1976, b, etc.). He notes that southern Jiangsu and Zhejiang was a center for international trade (149). His data seem to indicate that Fujian experienced little immigration during Tang--thus accounting for their not showing as much evidence of the Tang koine (Middle Chinese). Thus there is evidence of ethnically mixed populations in South China throughout the first millennium A.D. despite the political sinicization of the area.

Serruys (1959) shows that the linguistic situation in China was considerably more complicated than the uniformitarian Ch'ieh-yün tradition would imply.

Continued study of the modern dialects shows an increasing amount of exceptions and divergences from an assumed regular evolution from Ch'Y. More dialectal facts are discovered that do not go back to Ch'Y, but are older or belong to a side group of dialects. More diverging layers and archaic relics are found in otherwise "legitimate" daughter languages of Ch'Y. (8)

Some dialects are results of expansion of a dialect into an area which preserved elements of the original language or dialect--even non-Chinese elements--mixed with literary and standard influences. (77)

His study of Fangyan is most useful in showing dialect affinities--which dialects were most like each other. His evidence indicates that Wu, Yüeh and Nan-Ch'u were closely connected (95) and that Yang (a southwestern extension of Wu), Ou (Wenzhou area), and Yüeh were heavily interrelated. He feels that some of these, especially Wu and Yüeh (99), may overlay non-Chinese languages:

Chinese culture did not penetrate into the larger part of the Yangtzu Valley until the Chan Kuo period. (96)

But Fangyan ignores non-Chinese speakers in its survey (100), and reports words from such groups only if they had already been so nativized as to be unrecognizable as foreign, even where statistically the foreign words were numerous (166). How long did non-Chinese languages/influences persist?

These regions [Wu, Yang, Yüeh (Ou)] have always been known as originally non-Chinese areas. But little is known on how long the non-Chinese resisted before being absorbed and integrated in the Chinese language. (172)

Wu was strongly influenced by Ch'u (173), and Nan-Ch'u stands out for these reasons:

The combinations of Nan-Ch'u with other southern areas strengthen the impression of an isolated and strongly differentiated dialect. (175)

Serruys projects the following relationship between Nan-Ch'u and Wu:

By this expansion [to the south] Ch'u cut into a non-Chinese area, which was related (or had been in contact) with Wu Yang Yüeh so as to possess an amount of common (or mutually borrowed) words. (180)

Serruys summarized the sociolinguistic complexity of the process of sinicization:

Other expansions into non-Chinese areas proceeded by slow penetration and infiltration, so that the previous population is partly absorbed but also to a certain extent contributed originally non-Chinese words, which are sinicized, and accepted, partly disguised by means of convenient Chinese graph, and finally felt as a real Chinese word--a process differing in tempo and depth according to the social level, political importance of the area and population, and the time factor involved in the language contacts. Thus Chiang-Huai is further and earlier assimilated than Wu, and Wu is more receptive than Yüeh. (237-8)

And as to Minorities:

...There are now many non-Chinese peoples and languages in the area corresponding to the Yüeh of Han time. A Fortiori, at the time of FY, the non-Chinese population was more numerous and denser, and the FY material did not refer to them. (318, fn. 55)

Thus the meager Chinese evidence clearly indicates significant non-Chinese populations in South China up to at least the Han period. They have significantly affected dialect development in this area. Wu shows strong relationships with (Nan) Ch'u on the one hand with Yüeh/Yang/Ou on the other. I think the striking correlation between this linguistic data and the archeological cum historical data presented earlier provides a very plausible basis for comparing features of the modern dialects with those of non-Chinese languages in the hope of "explaining" various aspects of the development of these dialects as well as confirming, specifying, and identifying the earlier non-Chinese groups in some of south China. Since others have concentrated on the possibilities of Tai/Cantonese affinities, and since I have concentrated in my research on Wu and Ch'u, the rest of this paper will be concerned almost entirely with these dialects and their possible relationships with the Miao-Yao languages.

III. Segmental Affinities

One of the major mysteries in Chinese dialectology is why just the Wu and Ch'u dialects have maintained the three-way contrast in initial consonants that is posited for ancient Chinese, but that is lost everywhere else in Chinese dialects (and, similarly, in much of Southeast Asia).³ Both Miao and Yao dialects (but fewer of the latter) keep a similar three-way distinction, perhaps because of the reinforcement from an extremely complex system of syllable initial consonants.

One major typological difference between Miao and Yao is that Miao keeps a rich inventory of initial types, but very much reduces or eliminates contrasts in final consonants. Similarly Wu and, to some extent, Ch'u. Yao is much simpler in its initials system than Miao, but shows four final stops -p, -t, -k, -ʔ. Similarly Min.

Miao tends to reduce the nasals to one final nasal segment, which sometimes shows allophones -n, -ŋ, depending on the vowel, or to just nasalized vowels. Northern Wu dialects show one phonemic nasal, with allophones -n, -ŋ, distributed according to vowel; southern Wu dialects show a strong tendency toward reduction to nasalized vowels. Ch'u final nasals are somewhat more complex but show a similar tendency toward reduction. Min and Yao both tend to keep a full range of nasal final contrasts.

Complex vowel nuclei are simplified in Miao, just as in Wu and Ch'u (Hashimoto 1979). Min shows some very complex vocalic nuclei, and, like Yao,

³ I will eschew detailed resumes of the source material and descriptions of the dialects; the reader may resort to the original sources for these functions: Chang 1957, 1966, 1972, 1976; Downer 1967, ms., ms.b; Heimbach 1969; and five pieces from Purnell 1972 by Li, Mao and Chou, Miao Language Team, Wang, and Ying.

more than Wu and Miao.

My work on the Proto-Wu and Proto-Ch'u nasal finals (Ballard ms.) indicated that in 11 or 12 cases out of 18, both Wu and Ch'u shifted finals similarly when their finals are compared with Ch'ieh-yŋn. Thus both dialect groups show similarities in their response to the Tang koine.

The Mien dialect of Yao shows a contrast between plain, voiced nasals (muddy), and two voiceless series (clear) which could be either pre-glottalized or pre-aspirated (Downer ms:12) (Miao similarly--Chang 1972:5-6). Two southern Wu dialects, Wenzhou (as Downer notes) and Wenling show a similar distinction. Downer also notes ʔ- versus Ø distinction before glides and vowels (Downer ms:11), and similarly Miao (Chang 1976:181); this occurs in Ch'u as well (Ballard 1971:133). The ʔ-, h-, Ø-, contrast also occurs with stops (Downer ms:11). For some Wu dialects the voiceless, unaspirated series is described as being somewhat glottalized.

Yao and Wu show some similarities in vowel developments that are rare in other dialects. In Chinese loanwords, Mien Yao keeps the "wide" and "chat" rhymes separate, whereas most Chinese dialects do not (Downer ms: 31). Proto-Wu does, as PNW *ø (N), PSW *øN₁ versus PNW *e, PSW *aN₁, in my current reconstruction. Ch'u does not. According to John McKoy's reconstruction, Cantonese does not. Jerry Norman's reconstructions are not clear on this point, but Proto-Western Min seems to make the distinction, Proto-Eastern Min may.

Contrary to Downer, Wu and Ch'u show normal readings in "a" like vowels for some words where Mien Yao shows "e" vowels; for a few a particular reading or dialect in Wu or Ch'u may show traces of an "e" like vowel:

'select'	PNWu coll. *kε
'white'	Wenzhou, Coll. /bε/
'produce'	Wenzhou /sε, siε/ Proto-Ch'u lit. *sεN ₂
'cry aloud'	PNWu *hε

(Shuang feng-Ch'u-shows a variant /xiẽ/)

Thus for four out of the six words Downer cites, there are some Wu and Ch'u traces of an "e"-like vowel, as in Mien Yao. The significance of this sort of material is that the unanswered questions about the sources of extensive Chinese borrowings in Miao and Yao may yield some notion of the contacts, contiguities and affinities between Miao-Yao and the various southern dialects. All the studies cited below divide the borrowed forms into two or more layers; the most recently borrowed forms are always derived from some form of southwestern Mandarin. The origin of older layers of borrowing is subject to differences of opinion.

Downer (msb: 16) finds an old layer of borrowing in Yao that shows Cantonese or general southwestern traits. He cites a proto-Miao-Yao form *nok for 'bird'. Wu shows an open form; the initials are literary *n-, colloquial *t-. (I have shown elsewhere (Ballard 1979) that neither layer is reliably older or less Mandarinized.) Proto-Ch'u shows literary *ŋ-, colloquial *t-; proto-Eastern Min and Cantonese show *t-, while Proto-Western Min shows *ts-. Downer shows three forms for 'adze':

Yao	puən		Min	puŋ/ŋ
Miao	pia	But NB:	PSWu	pɛN ₃
			PCh'u	piɛN ₂

Downer cites problems in correspondences between Miao and Yao that involve Yao n-, Miao v-. Wu and Ch'u show similar problems between literary *v- (ϕ- or u- in Ch'u), colloquial *m-. (Ballard 1979:36)

Downer (ms: 3) states that in older layers of borrowing only southern Chinese dialects, frequently Cantonese, Min or Hakka, show forms similar to the Yao borrowings. He cites one word that he knows only from the Shuangfeng dialect (Ch'u) and one Miao dialect. On the other hand, some words have general Chinese cognates but look especially like Cantonese. Generally, Downer appears to opt for Cantonese as the origin of most of the Chinese loans in Mien Yao. There are also a number of shared forms between Thai and Yao (Downer msc), but the Yao form seems to look most like a form in Northern Thai or Kam-Sui. Downer says that if Miao and Yao both share a borrowed form with Thai, then Chinese will almost always show the form too. This seems to reinforce the notion that the Miao were more northerly and not in contact with Tai/Kam-Sui at an earlier period.

Downer (msb: 18) shows two borrowings with interesting Wu and Ch'u parallels:

	'quest'	'hundred'
Yao	khɛ?	pɛ?
PCh'u	khɛ E1	p(i)ɛ A1
Miao	qhua	pua
PNWu	khə?	pa?

Ying (1972:62-3) presents a chart of borrowings from Chinese into Miao divided by rhyme category and layer. In his Hsiao rhyme examples, two of the layers seem to parallel northern and southern Wu dialects and/or Ch'u:

ə layer:

'sedan chair'	Shuangfeng dɛiə IIIb Miao tɕə 6 (Wenzhou .3 **dzyə IIIb)
'embrace'	Wenzhou bæ I Ib Miao pə 6 Shuangfeng bæ IIIb (Note the tone similarity in the last two)

versus:

o layer:

'wrap'	CS, HM, SHS, JD, SJ (northern Wu dialects) bɔ III Miao po 1
'fourth earthly branch'	CS, etc. mɔ II Miao mo 4
'cap'	CS, etc. mɔ IIIb Miao mo 6
'prison'	CS, etc. lɔ Ib Miao lo 2

(Ying shows a third Hsiao layer in "u" that does not parallel Wu or Ch'u at all).

In the Shan rhyme, unrounded, we find these parallels in layers:

ɛ layer:

'charcoal' PNWu *the IIIa Miao the 5
 'class' PNWu lit. *pe Ia Miao pe 1
 'field' PNWu *die Ib, several dialects show just di Ib
 Wenzhou di Ib Shuangfeng dī Ib Miao ɸi 2

aj layer:

'umbrella' PSWu *saN₁ IIa Huang Qiao (Ch'u) saŋ Bl PCh'u *saN Bl
 Miao shaŋ 5
 (NB: PNWu final *ɛ corresponds regularly to PSWu final *aN₁)

And there is an "en" layer and an "a" layer that do not seem to parallel anything in Wu or Ch'u.

Finally, Shan rhyme, rounded:

ɛ layer:

'against' PNWu *fe IIa Miao fhe 3

en layer:

'lead (ore)' Miao zen 2 A Wenzhou variant reading fi Ib
 points towards **ziɛN or somesuch

aj layer::

'revolve' Shuangfeng tuī Bl Miao tɔŋ 3 (While the
 final is wrong, the parallel in initials is
 interesting)
 'ten thousand' PSWu lit. *vaN₁, coll. maN₁ IIIb Huangqiao βuaŋ IIIb
 Miao vaŋ 6 (Again the initial is more interesting than the
 final)

u layer: No interesting parallels.

The Miao Language Team (1972:12-3) also gives a list of early loans with forms from three Miao dialects. Parallels are shown below:

'ink' PSWu meʔ₂ IVb Wenzhou .3: mhe IVb
 PCh'u *m(i)ɛ IIIa (Xiangtan meɛ)
 Miao: YH me IVb LYP me IVb TNS me IVb
 (YH=Yang Hao LYP=La Yi P'ing TNS=Ta Nan Shan)
 'street' PNWu coll. *ka Ia PSWu *ka Ia PCh'u *ka(i) Ia
 Miao: YH qa Ia LYP ca Ia TNS ka Ia
 'sell' PNWu *ma IIIb PSWu *ma IIIb (Wenzhou .3 mhe IIIb)
 Miao: YH me IIb LYP me IIIb TNS mua IIIb
 'bushel' PNWu *təu IIa (Haimen tɔu IIa; SHS, JD, SJ
 tɔ IIa)
 PSWu *teu IIa (Wenzhou lit. teu IIa, JH təu IIa,
 XJ teu —, WL tɔ IIa)
 PCh'u *teu IIa (HQ tiəu IIa)
 Miao: YH to IIa LYP tu IIa TNS teu IIa
 'wine' PNWu *tsiəu IIa (HM tɕiɔu IIa, SZ.2 tsY IIa,

JD tsy IIa, SJ tsi~~x~~ IIa)
 PSWu *tsieu IIa (Wenzhou .2.3 tɕeU IIa, Tangsic
 tsɔ̃ 52)
 PCh'u *tsiu IIa (Shuangfeng .3.4 tsie-- , HQ tsiy 21)
 Miao: YH tɕu IIa LYP tɕu IIa TNS tɕeu IIa
 'charcoal' PNWu *thɛ IIIa
 Miao: YH thɛ IIIa LYP the IIIa TNS then IIIa
 'thousand' PNWu *tshie Ia (CS, HM, JD ts'ie Ia)
 PSWu *tshieN₁ Ia (JH lit. tshian coll. tshi
 Ia, YK tɕ'ia Ia, WX ts'ie Ia)
 PCh'u *tshieN₁ Ia (HQ ts'ia_ɲ Ia)
 PEmIn *tshan Ia PCan. *tshian Ia
 Miao YH shan_ɲ Ia LYP tshɛ̃ Ia TNS tsha Ia

Cantonese and Min Parallels:

'old' PCan. *lou I Ib Miao: TNS lou I Ib
 'year' PEmIn *nian I b PCan. *nian I b
 (JH (southern Wu) lit. nian coll. nia I b)
 Miao: YH ɲan_ɲ I b TNS na I b

IV. Tonal Affinities

The tone systems of these languages can all be subsumed in the following schema. There are four basic tones historically: I, II, III and IV--the last of which contained all and only words ending in oral stops. All four developed two allotones each--one for syllables with plain voiced initial consonants (b), and one for the rest (a). Most of these languages/dialects still show 8 tones, but some, Ch'u in particular, show some mergers. In some Miao dialects (Li 1972:86-7, Chang 1972:8-9, 27) the tones of syllables with voiceless initials have undergone tonal splits (and mergers) according to aspiration in the initial consonant. In each case of a split tone, the unaspirated tone is higher than the aspirated. The tone most likely to split is PMiao *3 (≅IIIa); the tones next most likely to split are *4 (≅IVa) and *2 (≅IIa). Three Wu dialects in Jiangsu (Xie 1958) show similar splits; the unaspirated derivative is always higher in tone; tone *IIIa splits in all 3 dialects; tones *IIa and *IVa each split in two of the dialects. Horizontal mergers then occur in one of the Wu dialects (asp. IIa = IIIa), and four of the Miao dialects (one dialect: asp., unasp. IIa = IIIa, and four of the Miao dialects (one dialect: asp., unasp. IIa = IIIa; two dialects: asp, unasp IIIa = IVa; one dialect: asp. IIIa = IVa).

Some Miao-Yao dialects, like some southern Wu dialects, keep a separate tone for former stopped syllables (D ≅ IV) despite the loss of a final stop (Chang 1972: 30). After various tonal splits some of these Miao-Yao tones merge; some of the mergers in a number of the dialects look like mergers in Ch'u dialects (A2 = D2), more look like Wu mergers (C1 = D1, C2 = D2--parallel to Jinhua, coll. layer, partial merger; B1 = D1, B2 = D2, parallel to Yongkang, in which IVa = IIa, IVb = I Ib in isolation, not in tone sandhi).

Chang (1976: 156) in describing a tonal split in Shih-men-k'an (SMK hereinafter) shows that A2 and D2 (≅ Ib, IVb) keep their aspiration; C2 (≅ IIIb) loses it everywhere, and B2 (≅ I Ib) loses it on nouns. Rose (ms) notes that I Ib and IIIb, more so than Ib, tend to lose aspiration in close juncture.

Why has Wu got such complicated, non-phonetic tone sandhi that involves a number of grammatical features? A brief review of some Miao-Yao tone sandhi and a comparison with Wu, some Min and the small amount of Cantonese and Mandarin tone sandhi shows how strikingly similar Wu and Miao are.

Henderson (1967) nicely summarizes the type of tone alternation we will be examining here:

There is a third type of pitch behaviour [beyond lexical and intonational] in which pitch contrasts play a grammatical role, in much the same way as a vowel or consonant alternations in some languages.... A distinction must be drawn here between "tone sandhi", which is phonetically determined, and the tonal behaviour under discussion here which is grammatically determined. There are, however, borderline cases when the solution chosen will depend upon the theory one works with.
(171)

A number of authors have reported on a tone shift in Miao that distinguishes nouns from verbs.⁴ According to Chang (1972: 45) SMK has the following system of tones:

	A	B	C	D
1	55	55	33	33,11
2	35	11,13	53	53,31

Proto Miao nouns in *B2 have merged with C1 [33]; PM verbs in *C2 have merged with D2 [31]. Verbs in A2, D2 and B2 show voiced, aspirated initials. Nouns in B2 and nouns and verbs in C2 have voiced unaspirated initials. Thus these two groups of lexical items are distinguished by tone changes and by differences in aspiration. Hashimoto (Oi-Kan 1976: 2-3) finds attractive the possibility that peculiar aspirated/unaspirated changes in Min are conditioned at least in part by a similar nominal/non-nominal (respectively) distinction. Thus the Min situation might be a mirror image of SMK. I know of no parallels in Wu or Ch'u.

Heimbach (1969) provides some tone sandhi data on White Miao, but his data are rather inexplicit. First of all, he says his rules are not predictive; he can't tell when sandhi will operate and when not, but its operation does appear to depend on word class and juncture (454). All of his sandhi shows up in changes on 2nd syllables; the change is especially noticeable after the numbers "one" to "five", all of which have high level tone (Downer's analogical change?); no tone change ever occurs after a classifier no matter what its tone. The most commonly sandhied sequences are: 1) numeral + classifier, 2) numeral + numeral, 3) noun + modifier, and 4) verb + complement (object); however, even these constructions are not always subject to sandhi.

Heimbach's rules are also difficult to interpret because of the way he marks and describes tones. His system of marking tones is as follows:

⁴ Chang (1972:20-23) forms the basis for this description. Li (1972:83-4) says more generally that in some Miao dialects aspiration is conditioned by word class for the formerly voiced initials. Downer (1967:589) says that White Miao shows different tone systems for nouns and verbs.

	level	falling	rising
high	-b	-j	
mid	-∅		-v
	-s	-g	-d
		(with breathiness)	
low	-m(?)		

His changes are as follows:

After -b, -j (both high),
 -j, -s, -m → -g
 -v → -∅
 -∅ → -s

Though the conditioning environment (-b, -j/___) constitutes a natural class phonetically, the rules themselves appear to be more categorical than phonetic: On the basis of Heimbach's data -j, -s, -m do not appear to constitute a natural class; the shifts of -v to ∅, ∅ to -s, and -s to -g seems to show that this cannot be mere phonetic accommodation; they are also reminiscent of Min tone sandhi 'circles.'

The Miao Language Team's description of Miao tone sandhi (1972) is based on a dialect (Ta Nan Shan = TNS) with the following tonal system (7):

	I	II	III	IV
a	43	55	44	33
b	31	21	13	24

(They use a different system for labelling the tones.) While they report (5) that tone sandhi occurs in both 1st and 2nd positions, their rules cover alternations only in 2nd position, the more common one:

- 1) Ib, IIb, IVb → IIIb / Ia, b ___
- 2) IIa → IIIa / Ia, b ___
- 3) IIIa → IVa / Ia, b ___

As in Wu there are shifts to III and/or mid level; note the chain lowering in the "a" series. The conditioning environment appears to overlap in part with that in White Miao. All "b" register syllables show voiced aspirated initials in tone sandhi positions (in isolation they are unaspirated and have voiceless obstruents or voiced resonants). As to the grammatical function of tone sandhi, the authors only mention that one dialect uses the high level tone on "the prefixed syllable" to indicate indefiniteness.

Wang (1972) provides some very particularistic and intriguing data on Wei Ning Miao tone sandhi, but his description seems rather more inclined towards details than system. Most of his data concern tone alternations in numbers and classifiers. The tone that appears as the result of the change is conditioned in part by the preceding tone(s). Thus a tone [53] becomes [13] after [55, 35] and [53], but [31] after [33, 13] and [11]. While it is not clear what would trigger the alternative feature falling/rising, the conditioning factors fall into natural classes (high versus low). But the same alternation is also shown in these two environments:

[31]: X (not [33]) + [31] / ____
 [13]: [33] + [31] / ____

While Wang's data is difficult to interpret, it does not appear to be possible to treat this as phonetic conditioning.

Some numbers ('one' to 'five') which immediately precede classifiers and have a [55] tone influence the tone of the classifier; others ('thousand', 'many') don't (116). The tone sandhi shifts also entail shifts in aspiration. Classifiers can change vowels as well, whether or not the tone changes (shades of Min); thus *i*, *ie* ~ *ia*, *iai*; *y* ~ *ya*, *yai*; other vowels ~ *a*, *ai*. One syllable, a classifier, shows the following variants.

segmental: *tu*, *du*, *d'u*; *tai*, *ta*, *dai*, *da*
 tonal: 33, 31, 13, 35

Some of the segmental changes apparently indicate meanings like 'grand, imposing' versus 'ordinary' versus 'small, delicate, lovable' or 'definite' versus 'indefinite'. Voiced initials may devoice and lose aspiration in sandhi position.

Downer (1967), as might be expected, gives a very lucid description of Miao (White Miao and others) tone sandhi. In his description, some words show tonal alternation after tones Ia, b as follows:

Ib, IIb, IVb (and IVa) → IIIb
 IIa → IIIa
 IIIa → IVa(=IIb)

The constructions where this occurs are:

number + quantity (where the number can be '1-5' or '9', i.e. numbers with tones Ia,b)
 noun + anything (as compounds, subordinate or co-ordinate)
 quantity + noun (only 3 examples)
 [∫i] 'each other' + verb
 verb + noun (where the noun is a sort of complement)

but Downer notes that there are far more exceptional examples than ones that follow the rules. There are a number of cases where the collocation may or may not be sandhied, with no apparent difference in meaning; but a few show some meaning differences depending on whether they are sandhied, e.g., alienable versus inalienable possession. In one case sandhi disambiguates homophony: 'there' [pe] (Ia) causes sandhi: 'we' [pe] (Ia) does not.

Downer speculates that his dialect exhibits a deteriorated form of an earlier, more extensive and regular tone sandhi system.⁵ The fuller system ceased functioning before many Chinese loans entered the language, since the

⁵ Downer (msb) notes that these vestigial remains show traces of an earlier morphology; he also points out that when sandhi is lost, the syllable usually reverts to its basic tone, not one of its alternants. This is "not" Wu-like, where the opposite often appears to be true. In the Wu dialects, many changes in the realization value in isolation of various categories seem best explained as fossilizations of generalized sandhi alternants.

latter don't undergo tone sandhi; the system must also have ceased functioning fully before IIb merged with IVa, since only IIb undergoes sandhi.⁶

Downer says that other Western Miao dialects show much more extensive sandhi throughout the sentence. In Magpie Miao, tone shifts occur after *Ia,b (high and low falling) no matter what lexical categories are involved. Xianjin may be even more like the proto-Miao(-Yao) tone sandhi system (594-5). The shifts in these dialects are as follows:

Magpie	Xianjin	White Miao
Ib, IIB → IIIb	Ib, IIB → IIIb	Ib, IIB → IIIb
	IVb → IIIb	IVb → IIIb
		(*IVb > IIB → IIIb)
IIa → IIIa	IIa → IIIa	IIa → IIIa
	IIIa → IVa	IIIa → IVa (= IIB)

Zhongguo shaoshuminzu yuyan jianzhi (1959) confirms Downer's data and shows one other interesting piece of tone sandhi in another Miao dialect, Xiangxi. Sandhi only affects combinations of tones 1 and 2 (14):

$$\begin{array}{l} 1 \rightarrow 2 \quad / \quad \underline{\quad} 1 \\ 2 \rightarrow [13] \quad / \quad \underline{1,2} \quad \underline{\quad} \end{array}$$

Here there is a shift in first position as well. Interestingly, of the four Yao dialects described in this source, none show any tone sandhi. One Yao dialect is said to show variants of the basic tones that appear mostly on borrowed forms (57). I was able to find only one reference to tone sandhi in Yao: Mao and Chou (1972) say Pu Nu has some extra tones that arise in tone sandhi.

Norman (1972) describes some dialectal material from a Min area that borders Zhejiang (Wu) and that is contiguous to the She minority referred to by Downer (above). In one of Norman's dialects Ningteh (NT) IIa and IIIb have merged in isolation as [41]. In tone sandhi, these two tones are differentiated:

$$\begin{array}{l} \text{II(a)} \rightarrow \text{Ia} / \underline{\quad} \text{non-falling Ia,b, IIIa, IVa,b} \\ \quad \quad \rightarrow \text{IIIa} / \underline{\quad} \text{falling IIa, IIIb (i.e. one of itselfs)} \\ \text{IIIb} \rightarrow \text{Ib} / \underline{\quad} \text{all TS environments.} \end{array}$$

The IIIb → Ib ([41] → [11]) shift is parallel to both a categorical shift (IIIb → Ib) and a phonetic shift (Ib [31] → IIIb [22]) in Wenzhou, a nearby Wu dialect in Zhejiang. Also note that the first shift is dissimilatory.

Chang (1972) describes various TS environments in Shangfeng, a Southern Min dialect. The tone system for this dialect is as follows:

⁶ But there are several Wu examples of isolation mergers that are distinguished in tone sandhi, e.g. Ib [31] versus IIB [31] in Wenling and IIa [35] versus IVa [35], IIB [13] versus IVb [13] in Yongkang.

	I	II	III	IV
a	44	42	21	3
b	13		33	3

In TS environments, IVa always acts like IIIa, IVb like IIIb, despite their isolation merger. Chang divides the TS environments as follows:

1) / ___ internal juncture:

Ia,b → IIIb
 II(a) → Ia
 IIIa,IVa → II(a)
 IIIb,IVb → IIIa (IVa)

2) / ___ close juncture, normal stress

Ia,b → IIIb
 IIIa,IVa → II(a)
 IIIb,IVb → no change
 II(a) → no change
 (This TS involves only one morpheme, a diminutive marker, or nominalizer).

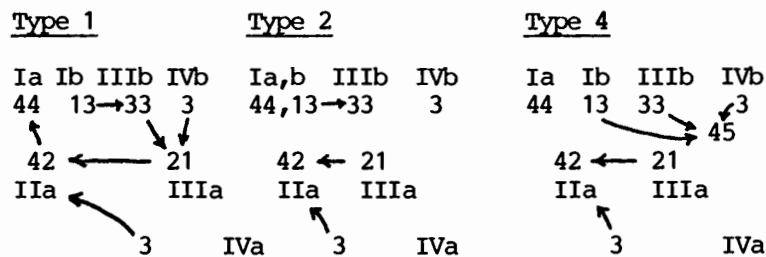
3) Under weak stress all tones become IIIa [21]; the preceding tones do not change, except that certain morphemes show slightly more complicated changes:

X → Ia / Ia ___
 → IIIa / IIIa, IVa ___
 → IIIb / Ib, II(a), IIIb, IVb ___

4) In reduplicated forms (stative verbs only), the penultimate syllable follows these rules:

Ia,b, IIIb, IVb → [45]
 II(a) → Ia
 IIIa, IVa → II(a)

It is obvious that this is another example of the tone circle type of sandhi:

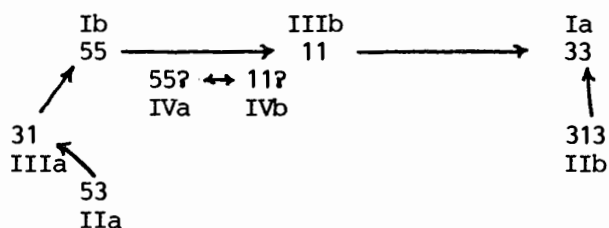


But there are some interesting wrinkles. In the first place grammar is obviously closely involved with this sandhi, since it is morphology and syntax that determine the conditioning junctures, stresses, etc. Secondly, the sandhi varies somewhat from environment to environment: although changes 1), 2) and 4) occur in 1st position (before another syllable), the rules are different.

Zhang (1979) describes Chaoyang TS in a way that makes it sound like quite an odd system. The tones and their alternates are as follows:

	Ia	Ib	IIa	IIb	IIIa	IIIb	IVa	IVb
Citation value	33	55	53	313	31	11	11?	55?
TS value in 1st position	33	11	31	33	55	33	55?	11?
TS value in last position	11	11	31	11	11	11	11?	11?

This doesn't seem to work very well as a tone circle and the only obvious parallel with Shangfeng is that IVa acts with IIIa, IVb with IIIb in 1st position sandhi:



In last position most tones become IIIb [11] (or the IIIb like [11?]), except IIa [53] → IIIa [31], just as in 1st position. The shifts between I and III here are, in fact, very reminiscent of Wu.

This tone sandhi applies to the 1st or 2nd syllable of two syllable tone sandhi groups (TSGs), or to the 1st and 3rd syllables of 3 syllable TSGs (every TSG must have one and only one citation tone; no Wu dialect that I know of works like that). Ia never changes in first position; IIIb and IVa never change in last position. Otherwise the determination of what is to be a TSG and of which syllable(s) are to be sandhied apparently rests on the syntax and lexicon. As a result, there are contrasting pairs of syllables in which the only difference in form is whether the first or second syllable is sandhied. In number sequences, all words except the last number word undergo the tone sandhi as syllables in first position. This sandhi also applies to measure words and some number word + noun combinations.

A few further notes from Downer are relevant. He speculates (1967: 596) that in White Miao the locatives all acquired the same tone by analogy, and he cites Mandarin and Cantonese parallels. I am not aware of any Min, Wu or Ch'u parallels. He also points to a White Miao tone (8) that may now function as "definite reference" and which may result from a lost syllable with compensatory tone shift. Wenzhou has tone shifts associated with definite reference and Wenling shows extensive tone shifts (including the creation of non-etymological tones that do not occur in isolation) associated with the loss of a morpheme, but the meaning is 'diminutive' or 'nominalizer'. Downer (msb: 4) suggests that Yao may be thought of as a creole. Modern day Miao dialects are north (and west) of Yao forms: the parallel to Wu(Ch'u) and Min is striking.

Yue (1979) describes a dialect, Teng-xian, that, for various reasons, may reflect features of Hunan dialects (where Ch'u is located) or may simply be an aberrant type of Yüeh dialect. One feature in particular is interesting here: Teng-xian shows tone sandhi "on a more extensive scale" (4) than is typical of Yüeh dialect. Apparently this sandhi is not "regular", but very common. Yue's

provisional analysis (11-13) can be summarized in these rules:

$$\begin{array}{l} \text{Xa, I Ib} \longrightarrow \text{IIb} / \text{___ Ib} \\ \text{Xa} \longrightarrow \text{IIIa} / \text{___ Xa} \\ \text{Ia} \longrightarrow \text{IIIa} \sim \text{IIIb} / \text{___ Xb} \end{array}$$

In other words most of Teng-xian's tone sandhi can be subsumed under the rubric: shift to III, with the additional feature of some a/b (register) assimilation, and more shifts for Ia than other tones. This is very reminiscent of Downer's Miao data, and of much of Wu tone sandhi.

Ong-Be, a fundamentally Tai language spoken on Hainan that has been heavily influenced by Chinese shows some interesting tone sandhi features (Hashimoto 1979b). There is some sort of tone sandhi phenomena associated with a reduplicated verb syntagm (282)—as in southern Wu. Hashimoto also notes that the stop tones alternate only with each other in Min (281), a feature not seen in Wu.

I have described Wu tone sandhi extensively elsewhere (Ballard 1980b). A brief resume is appropriate here.

Wu tone sandhi must be described in terms of tone categories, not phonetics, with simultaneous rules. Such a description is simpler (in terms of number of rules and number of symbols), is more comparable across the dialects, and avoids systematic difficulties with such phenomena as partial exchanges ($X \longrightarrow Y / \text{___} Z$, $Y \longrightarrow X / \text{___} Z$ less some categories), and chains ($X \longrightarrow Y$ and $Y \longrightarrow Z$ in the same environment), among others. Categorical description also avoids trying to create rules that make phonetic sense—most of Wu TS doesn't. We have already seen parallel situations in Min and Miao.

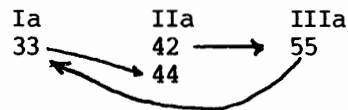
Most Wu TS shows shifts to III and/or shifts to mid-level. Min and Miao show similar shifts. Wu TS varies, in general, from more extensive preservation of 1st syllable contrasts with changes in the following syllable(s) in the north, to more extensive preservation of right-most syllables and loss of contrast leftwards to the south. Some of the Min data show the greatest change to the left, others to the right. Miao appears to favor change in following syllables.

The contrast with Mandarin is strong. As usually described Mandarin sandhi is far less extensive, much simpler in terms of rules and is more obvious phonetically. Mandarin, of course, also tends to preserve far fewer tones and lacks any systematic reflex of the voiced/voiceless (a/b, yin/yang) relationships between tones. Wu and Miao, at least, usually keep their registers straight in TS, so that a tones tend to exchange with a tones, b with b.

Wu TS, like Miao and Min TS, is clearly grammatical. Grammar determines the boundaries and types of TSGs; TS in most Wu dialects may or may not apply with a difference in meaning. An even more striking fact is special rules for certain morphological types of TSGs. Various Wu dialects show distinct sandhi effects for noun compounds, numerals, classifiers, verb + complements, diminutives, appellations, reduplications, definiteness, and others. We have seen parallels with these from Miao and Min. Some Wu dialects show special sandhi phenomena in addition to tone sandhi rules: Suzhou shows special number TS and segmental variants for 'ten': $zəʔ$, $səʔ$, and so, i.e. with devoicing and

vowel change. Iwu shows the 'ten' alternants *zə?* and *za*.

Recent data on a southern Wu dialect, Wenling, shows some possibility of interpretation as an incipient tone circle (Li 1979:12). Before Ib, WL shows these changes:



What kind of hypothesis would explain the extensive tone sandhi of Wu—sandhi which does not show up in Mandarin and which is not traceable to the Ch'ieh-yün koine? It is much easier to hypothesize a Miao type of language maintaining its tone sandhi morphology in the face of extensive sinicization than to suppose Wu either borrowed or created its own tone sandhi within the last millenium or so (since Ancient Chinese times). This tone sandhi evidence, coupled with the archeological/historical data, the sociolinguistics of South China, the dialectological history of Wu, Ch'u, Min and Cantonese, and the typological and segmental affinities provide fairly strong confirmation of the following hypothesis about the linguistic history of South China: Cantonese (Yüeh) shows the clear influence of Tai-like languages; some Min areas show similar influences. Min shows strong affinities with Yao, and Wu/Ch'u even more so with Miao. We can suggest, then, that the original populations in these areas before sinicization were related to these ethnic groups. The complexities in Wu and Min dialect subgrouping indicate that the substratal influences and sinicization may have fluctuated somewhat up and down the coastal region at least through the Tang koine period. Benedict (1975) groups Tai, Miao-Yao and Austronesian in one large family, but aside from this claim, there is no compelling linguistic support for an Austronesian presence in the Yangtze delta/southeast coastal area—at least that I know of.

Thus I would divide South China into several linguistic types: Tai/Yüeh, Min/Yao, Wu/Ch'u/Miao; this division somewhat contradicts Hashimoto's (1976, 1980) hypothesis of an even continuum, south to north, of more Tai-like to more Altaic-like developments in Chinese dialects. Hashimoto (1979) does support a Miao-Yao substratum for Wu on the basis of similar tendencies toward monophthongization and parallels in the demonstratives. He suggests (199-200) a closer link between Yao and Northern Wu, and between Miao and Zhejiang dialects. I find the later quite likely, but the Yao affinity is otherwise supported only by Lemoine's legend and seems odd geographically. Northern Wu must remain a problematic area for the time being. Mei and Norman (1970) and Norman and Mei (ms) suggest an Austroasiatic influence in Min; perhaps we need some hypothesis to explain Yao's great dissimilarity to Miao. These speculations do not, regretfully, have anything to say about preferred habitats. Did the Miao originally prefer the valleys or alluvial plains? Is there some germ of truth in the Mien Yao legend of abandoning rice fields and moving to more mountainous terrain and a different lifestyle? Some careful, detailed ethnographic work could shed some very welcome light on the early locations and movements of these various groups.

V. Conclusion

It must be strongly emphasized that this paper is highly speculative. But based on the data herein, we might suggest the following historical

possibilities.

The Ch'u, Wu, and Min areas constituted an archeological cultural continuum. The modern dialects in these areas show typological affinities with each other and with Miao-Yao. Perhaps, then, there is a Miao-Yao substratum in these dialects. From all appearances (though the data are scanty) Ch'u was the most heavily sinicized, perhaps because it achieved "statehood" in its own right before the Ch'in unification of China. Wu and Min, on the other hand, show striking parallels with the Miao-Yao differentiation. In addition, we might speculate that fuller information on southern Zhejiang and northern Fujian would show more dialect mixture and perhaps more of a dialect continuum so that Wu and Min might appear to be less distinct from each other.⁷

On the other hand, there are a number of Cantonese/Thai parallels, as the Hashimotos have pointed out, and Downer notes a Thai influence on Yao. This may represent a Thai intrusion in China. Thus both Mandarin and Thai may have influenced the present distribution of Miao-Yao on the one hand, and its residues in Chinese dialects on the other. The systematically regular Cantonese borrowings in Yao that Downer found seem less archaic than the oddments he and other authors have noted. Mandarin appears to have early on been open to influences from the north and west.

We may speculate, then, that modern Chinese represents a convergence of various rather different language strains--Sino-Tibetan in the Shang/Chou area, the northern and western barbarians, Miao-Yao, Thai and potentially others. Such convergences have occurred a number of times in English: the original blend of the Saxons, Angles and Scandinavians (and Celts): the Middle English blend of Old English with Norman French; the blending of English with various Indian dialects to produce that modern variety of English; and the suggested ongoing blend of Black English and "Standard English" in the southeastern United States. Such a convergence makes extremely difficult the application of the classical comparative method which depends crucially on the notion of a branching tree with diverging dialects.

Because of the possibilities I have reviewed here, it may not be wise to relate every Chinese phenomena to Tibeto-Burman. For example, while the comparative data suggest that "some" Chinese tone III etymologies can be explained as resulting from a suffixed consonant, e.g. -s, or -h, or syllable, we had perhaps best not infer that necessarily all tone III words arose because of such a suffix. Similarly, we may find that there was no *s- orgy in China; rather a number of very different etymological and linguistic sources may have resulted in convergent linguistic forms. Or as Hashimoto cites Sapir:

We remember Edward Sapir wrote...that the Chinese language is
'a very secondary development among Sino-Tibetan languages'.
(1979c:20)

Perhaps we should replace our image of an all pervasive, fecund, even orgiastic family tree for Chinese, with one that allows for far more extensive cross-fertilization than we may find ideologically comfortable. Chinese might just turn out to have more Austronesian, Austroasiatic, or what-have-you bars on the escutcheon than Tibeto-Burman.

⁷ Pulleyblank (ms. 1978) suggests the southern Wu area may be transitional between Min and Wu proper.

CHARACTER INDEX

'adze'	鐮	'fourth earthly branch'	卯	'select'	揀
'against'	反	'guest'	客	'sell'	賣
'bushel'	斗	'hundred'	百	'street'	街
'cap'	帽	'ink'	墨	'ten thousand'	万
'charcoal'	炭	'lead (ore)'	鉛	'thousand'	千
'chat'	談	'old'	老	'umbrella'	傘
'class'	般	'prison'	牢	'wide'	單
'cry aloud'	喊	'produce'	生	'white'	白
'embrace'	抱	'revolve'	轉	'wine'	酒
'field'	田	'sedan chair'	轎	'wrap'	包
				'year'	年

A NOTE ON THE ORIGIN OF THE CHINESE DUODENARY CYCLE

Jerry Norman

Paul Benedict's work on Austro-Thai has challenged the widely held view that Chinese culture and language were from the most ancient times immune to any but the most trivial outside influences. While not everyone agrees entirely with Benedict's formulation of the Austro-Thai theory, many believe that he has done a great service to East Asian linguistics by opening up the whole question of early Southeast Asian influence on Chinese.

In 1967 Benedict proposed that the names of the Chinese duodenary cycle referred to as the earth's branches (*ti-chih*) were of Austro-Thai origin. Specifically he attempted to establish Austro-Thai etymologies for numbers seven (午 -- 'horse'), eleven (戌 -- 'dog'), and twelve (亥 -- 'pig').¹ This was a bold and exciting idea, but Benedict's equations were not entirely convincing. In fact the only actual form found by him which really resembled the Chinese name in any way was the Li word *ngà* for 'horse'. This led me to consider another hypothesis -- viz., that of an Austroasiatic origin of the cycle.

The cycle of twelve earth's branches and ten heaven's stems have been used from the very beginning of Chinese history; in fact, they are among the most frequently encountered graphs in the oracle bones. If they are indeed borrowed, then there is evidence for close cultural contacts between the Sino-Tibetan speaking Chinese and an Austroasiatic-speaking group prior to the first millenium B.C. One objection to this hypothesis is that the connection between animal names and the cyclical characters is not found until the Han dynasty. But this does not mean that such a connection did not exist, and in fact there is graphic evidence in favor of such a supposition: the graph for the last cyclical character is generally recognized to be the pictograph of a pig.²

Georges Coedès in 1935 published a paper in which he demonstrated that the ordinary names of the Siamese and Cambodian duodenary cycles are derived from what he thought to be Old Muong.³ A mere glance at the list he gives (facing

¹ Paul K. Benedict, "Austro-Thai Studies, 3. Thai and Chinese", *Behavioral Science Notes*, 1967, II, no. 4, 288-291. The present note was originally part of a longer paper, "The Austroasiatics in Ancient South China: Some Lexical Evidence" [now published in *Monumenta Serica* XXXII (1976), 274-301], presented to the Third Sino-Tibetan Conference at Cornell. Later my co-author, Mei Tsu-lin, and I deleted this section from the final version because we thought it too speculative. Since subsequently the ideas presented here were quoted or referred to in print by others, I have decided to publish a somewhat revised version of the deleted section here.

² Namely for 亥 which is the drawing of a pig. See *Shuo-wen chieh-tzu Tuan chu pien* 14, 44a: 豕部與亥右文無二字 Also, *Chu Fang-p'u 朱芳園, Chia-ku-wen hsüeh 甲骨文學* (Taipei, 1965), 14, 24a.

page 328 of his article) leaves no room to doubt that he was essentially correct. A close examination of the same list reveals that at least six of the Chinese designations may have an Austroasiatic origin. Following is a rather

	1	2	3	4	5	6	7	8	9	10	11	12
MC	rat	ox	tiger	hare	dragon	snake	horse	goat	ape	cock	dog	pig
Sino-Viet	tí	si ¹ jəu	jen	mau	zi ¹ en	zi	nguo	mjwəi ³	si ¹ en	ɕiəu	si ¹ u ¹ et	ɕi ¹ gi
Muong	tí	su ¹ u	dán	məo	thln	tj	ngò	mù	thán	dəu	tuət	ho ¹ i
Ahom	cheu	khéu	rán	məo	sin	té	ngò	mù	thán	rəu	tət	ho ¹ i
Lù	tsai ³	piəo	ngi	məo	shi	sheu	shi-ngá ⁴	mut	shán	rəo	mit	keu
Dioi	chaeu ³	pau ³	ji ²	mau ³	si ¹	sai ³	sa-ja ⁴	met ⁶	san ¹	hrau ⁴	set ⁵	kai ⁴
Pu-yi	sa ³ w ³	piu ³	ngien ²	maou ³	chi ²	seu ³	sa ³	fat ¹	san ⁴	thou ³	seut ¹	kaeu ³
			pan ²	mau ³	pi ²	si ³	sa ⁴	fat ⁸	san ¹	zu ⁴	sat ⁷	ka ⁴
Camb. (1)	jlt	chlū	khāl	thoh	roh	msān	mami	mamē	vok	rakā	ca	kur
Camb. (2)	cut	chló	khāl	thoh	roh	msān	momi	momē	vok	rokà	ca	kór
Siam. (1)	jvat	chū	khāl	thoh	məron	māhsēn	māmia	māimē	vok	raikā	cō	kuñ
Siam. (2)	c'uet	chālū	khān	thoh	mārong	māsēng	māmia	māimē	vok	rāka	co	kūn
Siam. (3)	chúad	chālū	khān	tho?	marooj	masej	māmia	mamec	w'og	rakaa	coo	kun
VN	chuót	trəu	khái	tho	rōng	rān	ngi ¹ a			gə	chō	(gōi)
Muong (1)		'tsu	khái	tho	hōng	sān			vok	k'a	ɕyo	kuñ
(2)		klu	k'al			t'ān				ka	ɕyo	kuy
(3)		tlu	k'ān	tho		t'ān				ka	ɕo	kul
(4)		klu	k'al			sīn				ka	ɕo	kwi-kul-kun
(5)	chuót	tlu-klu	k'al-k'an	tho	roh	ran-zan	ngi ¹ a	bē	vok	ka	ɕo	
								dē-bē	vok	ka		

³ Georges Coedès, "L'Origine du cycle des douzes animaux au Cambodge", Toung Pao XXXI (1935), 315-329.

extensive list of forms on the basis of which I will argue that Austroasiatic origin of the duodenary cycle. In the list the Middle Chinese (MC) forms of the cycle are given first. These are followed by the Sino-Vietnamese and modern Muong forms. Next are various forms from Tai dialects; these are for the most part taken from Li Fang-kuei's 1945 article on the Tai names for the cyclical signs. The Siamese and Cambodian forms (both written and modern spoken) which were discussed by Coedès come next. These are followed by the actual animal names in Vietnamese and a number of Muong dialects.⁴

Before proceeding to an actual discussion of the separate names, let me first state the general hypothesis: the duodenary cycle has been in use in Chinese since the earliest written records; at a later date these names are found connected with the names of animals, but the cyclical names themselves bear no resemblance to the ordinary Chinese animal names. A significant number (six out of twelve) of these resemble Austroasiatic words for the animals which they represent. From this, one may hypothesize that the cyclical names, at least in part, derive from the ordinary Austroasiatic names for the animals in question. This of course means that the Chinese were in contact with Austroasiatic-speaking peoples before the first millennium B.C. and that they borrowed certain cultural concepts from them. Since the Chinese forms most closely resemble words now found in Vietnamese and Muong, the source language for these loans was most likely spoken along the southeast coast of China, perhaps in the ancient states of Wu or Yüeh.

2. 丑 'ox, buffalo' F. K. Li in his article on the cycle in Tai alluded to the rather surprising initial found for this form in the Tai dialects which he examined. His conclusion was that the original Tai form must have had a cluster initial *pl-. This provides us with a very useful clue: the Middle Chinese palatals (both stops and affricates) may in part have come from clusters of a stop plus a liquid. This was in fact noted long ago by Maspero who found that certain old Chinese loans in Vietnamese which had Middle Chinese palatal initials had initial clusters of a stop plus a liquid in Middle Vietnamese; the two examples given by him are Middle Vietnamese *blang* 'page' from Chinese 張 *tiang*, and *blong* 'to plant' from Chinese 種 *tšiwong*.⁵ With this it is not too difficult to see the connection between the Tai forms, the Chinese form, the Siamese and Cambodian names on the one hand and the Austroasiatic word for 'buffalo' on the other. To the forms on the chart should be added the following Austroasiatic forms: Old Mon *glau*, *dlau*, Spoken Mon *klɛa*.⁶ It often seems all but impossible to determine the exact shape of consonant clusters in Austroasiatic. The word for 'ox, buffalo' is a case in point. The Tai forms imply something like *plau; the Siamese and Cambodian forms both point to a *chlū. Written Mon has both *glau* and *dlau*. For the present it seems best just to postulate a form *Cl- where *C represents some

⁴ Middle Chinese is cited according to Karlgren. Vietnamese is from Nguyen Dinh-hoa, *Vietnamese-English Student Dictionary* (Saigon, 1967). Muong forms are from J. Cuisinier, *Les Rites Agraires* (Ecole Française d'Extrême Orient, Hanoi, 1951) and Georges Coedès, *op. cit.* Ahom, Lù and Dioi are taken from Fang-kuei Li, "Some Old Chinese Loan Words in the Tai Languages", *HJAS* VIII (1945), 333-342. Pu-yi is from *Pu-yi-yü tiao-ch'a pao-kao* (Peking, 1959). Cambodian (1) and (2), and Siamese (1) and (2) are all from Coedès, *op. cit.* Siamese (3) is from Mary Haas, *Thai-English Student's Dictionary* (Stanford, 1964).

⁵ Henri Maspero, "Etudes sur la Phonétique Historique de la Langue Annamite, les Initiales", *BEFEO* XII (1912), p. 78.

⁶ H. L. Shorto, *A Dictionary of Modern Spoken Mon* (London, 1962).

undetermined consonant.

5. 辰 'dragon' This cyclical name surely does not resemble the Vietnamese or Muong words for dragon. We should, however, consider the possibility that this originally represented the name of a real animal. And indeed, Austroasiatic provides us with a good candidate, namely the word for 'python'. The pertinent forms are the following: Vietnamese trăn, Mon (Written) klan (Spoken) klɔn, Chrau klăn.⁷ These all clearly point to a velar plus liquid cluster; since the Chinese initial is voiced, we can assume that the word at the time of borrowing had an initial *ql-. This hypothesis is strengthened by an analysis of the Chinese graph. The Shuo-wen phonetic gloss is 从乙匕象芒達厂声; 厂 is read xân -- and there is ample evidence for other velar initials in the series. (See Kuang-yün sheng-hsi, pp. 975-978.) Further the homophonous graph 蜃 (or 蜃) seems to preserve the original meaning: in Tuan Yü-ts'ai's commentary to the Shuo-wen under the character 辰 is the quotation "律書曰辰者言萬物之蜃也" 'The Lü-shu says "ch'en is said to be the ch'en of the myriad things"'. The character 蜃 is defined by the K'ang-hsi tzu-tien as 蛟之屬其狀亦似蛇而大有角如龍 a type of chiao; its shape is like that of a snake but larger and it has horns like a dragon.' This would seem to indicate a solid ancient connection between 辰 and a serpent.

7. 午 'horse' The only Austro-Thai form found by Benedict for this sign is the Li word ngã. But Vietnamese and Muong have ngư; it seems likely that horses were introduced to Hainan from the adjacent mainland -- an Austroasiatic-speaking region even now.⁸ The Old Tai forms indicate a prefix sa-, but this need not be postulated for the source dialect; it is more probably a Tai innovation.

8. 未 'goat' Despite the discrepancy between the Chinese and the Austroasiatic forms as regards the presence or absence of a final consonant, there still remains an obvious similarity among the various forms. The Austroasiatic language from which Chinese borrowed this cyclical sign may have had a final dental of some sort. The Atayal word for 'goat' is mi:ts; this word seems isolated even among the Formosan languages. Could it be a loan from the same mainland Austroasiatic language from which Chinese borrowed the cyclical term for goat?⁹

10. 酉 'chicken' André Haudricourt in his 1965 study has shown that the voiced fricative initials of Vietnamese (v, d, g) with voiceless stop correspondences in Muong can be accounted for by the assumption of lost prefixes.¹⁰ His hypothesis is proved by forms of some newly reported Viet-Muong languages of North Vietnam:

⁷ David Thomas, Chrau Vocabulary (Saigon, 1966), p. 16.

⁸ F. M. Savina, "Lexique Day-Français", BEFEO XXXI (1931), p. 107.

⁹ Almost all the scholars who have worked on Old Chinese would agree that mjwěi had some sort of final dental in Old Chinese. Karlgren, Li Fang-kuei, and Tung T'ung-ho reconstruct a final -d; Yakhontov and Pulleyblank presumably would have -ts. The Atayal form is from N. Ogawa and E. Asai, The Myths and Traditions of the Formosan Native Tribes (Taihoku, 1936), appendix, p. 21. The closely related Seedeq language also has similar words.

¹⁰ André Haudricourt, "Les Mutations Consonantiques des Occlusives Initiales en Mon-Khmer", BSLP 60 (1965), p. 171.

	'chicken'	'uncooked rice'	'cotton'
Vietnamese	gà	gạo	vải
Muong	ka	kao	pai
Ruc	rəka	rəko	kupal
Arem	lak		
May		rəko	kəpai

From this it is clear that Vietnamese gà and Muong ka derive from an earlier *rəka or perhaps *ruka. It is quite possible that the name of the cyclical sign comes from a truncated version of such a form (cf. the Arem form), perhaps something like *rə or *ru. (This process is to be seen in the Tai forms for the cyclical sign for 'horse' where Ddoi preserves only the prefix while Ahom and Lü preserve the entire form.) The likelihood of this is greatly strengthened by the parallel development of the word for 'liquor' in Chinese, Vietnamese, and Tai.¹¹ The graph 酉 in the oracle script appears to be the drawing of a wine jug; it is not impossible that 酉 was originally the word for 'wine' or 'liquor'. The word for wine in Vietnamese is ru'ə'u, in Muong rəo, and in Siamese lau⁴¹. F. K. Li in his article on the Tai forms of the cycle remarked also that in certain Han works 酉 was glossed paronomastically by 老 (lâu) or 留 (liəu).

12. 豕 'pig' The Chinese form can be explained as related to Muong forms and the obsolete Vietnamese gỏi. There is little doubt that the oracle form of this graph is the picture of a pig.

¹¹ This is assuming that all these words come from a common source.

THE INTERACTION OF SEGMENTS AND TONES IN THE BE LANGUAGE

Mantaro J. Hashimoto

"The Kadai languages had always seemed to the writer to be of critical importance if new advances were to be made in the field."

-Paul K. Benedict (1975:3)

O. Introduction

If, as has often been proposed, human language evolved in three overlapping phases from gestures to suprasegmentals to segmentals, and since suprasegmentals persist to this day in all languages, most prominently in the form of intonation systems (Wang 1976:67), it is no wonder that we witness numerous cases of interaction between suprasegmentals and segmentals, particularly tones and consonants/vowels in the so-called tone languages. A classical example is the case of Mandarin Chinese tones 2 and 3 and shwa (Hashimoto 1970:212).

The Mandarin phoneme /ə/ can be syllabic or asyllabic in the syllables of the (C)iəu, (C)uəi and (C)uən types: under tones 1 and 2, it occurs as a "very short and weakly articulated" mid vowel (Chao 1948:23-4):

(C)iəu
(C)uəi
(C)uən

while under tones 3 and 4 the same phoneme occurs as follows:

(C)ǐou
(C)ǔei
(C)ǔen

Both syllabic and asyllabic shwas occur in complete complementary distribution with respect to tones, hence they fall under a single phoneme /ə/.

However, Mandarin Chinese has a well known tone sandhi phenomenon --isolated tone 3 changes into tone 2 when it is followed by another tone 3 syllable (Wang & Li 1976). Thus, when (C)iəu, (C)uəi and (C)uən undergo this sandhi, the following three-way contrasts become possible (syllable tones are indicated by numbers in the upper-right corner):

(C)iəu^{1/2} : (C)ǐou² : (C)ǐou^{3/4}
(C)uəi^{1/2} : (C)ǔei² : (C)ǔei^{3/4}
(C)uən^{1/2} : (C)ǔen² : (C)ǔen^{3/4}

A well-known example is the distinction between [iɔu² tʃiŋ³] 'oil-well' and [iɔu² tʃiŋ³] 'there is a well' (which is from the underlying [iɔu³ tʃiŋ³]/iəu³ ciŋ³/) (Addenda to Charles F. Hockett 1947 and 1950. See Joos 1957:228). Thus what was originally a tonal distinction now turns out to have a segmental surface phonetic realization.

I. Syllable endings and tones

The interaction of segments and tones offers some very interesting evidence for analyzing the syllable structure of the so-called monosyllabic languages of East and Southeast Asia.

The alternation between Chinese final nasals and homorganic stops, such as Hakka [k'em⁴] 'box with lids' vs. [k'ep⁵] 'to cover with a lid', Cantonese [k'im³] 'tweezers' vs. [k'ip⁸] 'to pick up with tweezers', have been pointed out in various places, and in this short paper it does not seem necessary to quote the literature here, as examples are so numerous. The Be (Ong-Be) language is not an exception in this respect. One can readily find pairs exhibiting similar alternation such as [hem⁴] 'to raise' vs. [hep⁵] 'to pile up', in this language.

These alternations have been understood as fossilized reflexes of morphological derivations that were formerly productive in the proto-languages. What has not been well accounted for is why these are limited to the alternations of final nasals with homorganic stops. The proto-language of modern Chinese dialects is believed to have maintained at least a three-way contrast for nasal endings and for stops, though it is probable we can add at least one more pair, *-ŋ and *-c (Hashimoto 1970b), and possibly two, palatal *-ɲ and *-c as opposed to retroflex *-ŋ and *-t̚ (Hashimoto 1973). If the derivations in question were in fact phonological alternations of final consonants, we should expect an equal, if not more, number of instances of alternations like -m vs. -n, or -m vs. -ŋ. Indeed, we do find some such pairs as [tʃ'ən²] vs. [tʃ'əŋ²] 'orange' in Mandarin, but very few alternations --practically none--between -n and -m (which once both existed in this language), and we interpret the presence of the former type of example as due to the palatal endings *-ɲ and *-c, which, we believe, once existed in the proto-language (Hashimoto 1970b:341).

Our understanding is that the surface alternation between final nasals and homorganic stops are in fact alternations between tones, phonologically interpreting these stops as tonally-conditioned variants of the homorganic nasals. This view has been presented long ago and has recently been defended elsewhere (Hashimoto 1979b). The Be language provides a piece of powerful evidence for such a defense.

Be reduplicated stative verbs take the following form regardless of the tones carried by the verb stem:

a high-level tone (tone 2) + original tone of the stem

There are six tones in the Be language, of which first four are legato tones and cooccur only with syllables having non-stop endings, and last two are staccato tones and cooccur only with syllables having stop endings, -ʔ, -p, -t

and -k. Thus stems having first four legato tones are reduplicated in the following way (examples all from Hashimoto 1980b):

Tone 1 (low-rising) stem:	lam ¹ 'black'	→	lam ² -lam ¹
Tone 2 (high-level) stem:	lam ² 'blue'	→	lam ² -lam ²
Tone 3 (mid-level) stem:	nau ³ 'new'	→	nau ² -nau ³
Tone 4 (low-falling) stem:	lau ⁴ 'old'	→	lau ² -lau ⁴

When syllables having glottal stop endings and staccato tones are reduplicated, the reduplicated stems lose their stop endings:

Tone 5 (high-level) stem:	koʔ ⁵ 'rank (smell)'	→	ko ² -koʔ ⁵
Tone 6 (mid-level) stem:	luaʔ ⁶ 'hard'	→	lua ² -luaʔ ⁶

Thus the glottal stop endings which appear in the syllables carrying tone 5 or 6 are best understood as part of the 'tonal' features (strictly speaking, 'performance' features) of these two staccato tones.

Incidentally, when Haudricourt proposed interpreting the old Chinese pairs *âk 'bad' vs. *âks 'to hate' and *dâk 'to measure' vs. *dâks 'measure' as parallel to *xâu 'good' vs. *xâus 'to like' and *ʃi 'to dispatch' vs. *ʃis 'ambassador' respectively (Haudricourt 1972:182), he was talking about what corresponds here to our tones. So it still remains that when one interprets the type of alternation found in Hakka, Cantonese, Be, etc. as being phonological alternations of segments, he still must explain the limited character of the changes.

II. The autonomy of segments

To say that these stop endings can be interpreted as tonal variants of corresponding homorganic nasals does not mean that they totally lack autonomy as segments. The above interpretation is a phonological characterization of the given sound system; however, the stop endings in question maintain their reality. The Be language offers interesting cases to show this autonomy.

Stop endings in Be undergo certain synchronic changes of their own, not bound by the tones of the syllables they occur in. When followed by syllables having nasal initials, these stops consistently undergo nasalization within word boundaries. For example:

-t > -n:

$$\left(\begin{array}{l} [\text{kit (mid-level tone)}] + [\text{ŋaʔ (high-level tone)}] \\ /g\text{in}^6/ \text{ 'to play'} \quad /ŋa^5/ \text{ 'needle'} \end{array} \right) \\ \rightarrow \left(\begin{array}{l} [\text{kin (mid-level tone)}] + [\text{ŋaʔ (high-level tone)}] \\ /g\text{in}^3 + \text{ŋa}^5/ \\ \text{'to give an injection'} \end{array} \right)$$

-k > -ŋ:

$$\left(\begin{array}{l} [\text{tʃik (high-level tone)}] + [\text{ŋiap (high-level tone)}] \\ / \text{ciŋ}^5 / \text{ 'job' } \qquad \qquad / \text{ŋiam}^5 / \text{ 'profession' } \end{array} \right)$$
$$\rightarrow \left(\begin{array}{l} [\text{tʃiŋ (high-level tone)}] + [\text{ŋiap (high-level tone)}] \\ / \text{ciŋ}^2 + \text{ŋiam}^5 / \\ \text{ 'occupation' } \end{array} \right)$$

/giŋ⁶/ 'to play' in ordinary environments is [kit⁶] with mid-level tone. Since the ending -t undergoes nasalization and since tone 3 also happens to be mid-level, the staccato syllable [kit⁶] now turns out to be a legato syllable [kin³] whose syllabic intonation can now be interpreted as tone 3. Similarly, /ciŋ⁵/ in ordinary environments is [tʃik⁵] whose tone is high-level. Since the stop ending undergoes nasalization and since tone 2 also has the high-level pitch contour, the originally staccato syllable [tʃik⁵] now turns out to be a legato syllable [tʃiŋ²] and is interpreted as having tone 2. What is a regressive segmental assimilation on the phonetic level is a suprasegmental alternation between tones 6 and 3, or between tones 5 and 2 on the phonological level, though the assimilation in question has nothing directly to do with supra-segmental features.

From this we can see that the physiological basis for phonological changes cannot equally be sought with respect to all types of change -- the phonological change from tone 6 to 3, or from tone 5 to 2 here is not directly conditioned by any physiological factor, and the tones themselves undergo no phonetic change at all.

DU NOUVEAU SUR LE BÊ

André-Georges Haudricourt

En 1965 j'avais montré que six mots en -ê correspondaient à des mots thai en -au¹, en 1980 Mantaro Hashimoto nous procure un autre dialecte², où ces mots sont en -o ce qui nous permet de doubler la liste:

Savina	Hashimoto		
ê	o	(ton 1)	se souvenir
kê	ko	(ton 2)	gorge
ngê	ngo	(ton 4)	cing
p'odê	mado	(ton 1/2)	nombril
lê	lo	(ton 3)	près
lê	lo	(ton 1)	gendre
nê	no	(ton 1)	mobile
p'ê	pfo	(ton 4)	rendre
bê	bo	(ton 2)	feuille
mê	mo	(ton 2)	main
mê	mo	(ton 4)	mou, tendre, enflé

et d'établir deux correspondances d'initiales:

nê	zo	(ton 3)	grand ³
zê	lo	(ton 1)	dans
dongzê	donglo	(ton 2)	après-demain
bazê	balo	(ton 1/2)	carpe, vandoise

La première correspondance permet de restituer un ñ dans la langue commune et se retrouvera dans les mots suivants:

niêm	ziam	(ton 4)	teindre
nông	zung	(ton 2)	moustique
nom	zum	(ton 1)	oeuf
nau	zau	(ton 3)	sel ⁴

¹ Voyez ma présentation du vocabulaire BÊ de F. N. Savina (Savina 1965).

² Hashimoto 1980b.

³ Correspondant au thai-commun hñau².

⁴ Mot qui se retrouve dans les langues "kadai": Laha ño, Pupeo kañu, Li ña:u, et aussi en Miao-Yao commun ñja:u (Mun da:u, Mien dza:u, Hmong ntše: voyez Wang Fushi 1979:78-4), ce qui prouve à mon avis que les Kadai étaient entre le bord de l'océan et les Miao-Yao.

La seconde permet de restituer un r- dans la langue commune et se retrouvera dans:

zan	lan	(ton 2)	maison
zoa	lua	(ton 2)	bateau
zeao	liau	(ton 1)	rire
zông	long	(ton 2)	cribler
zêat	liat	(ton 5)	punaise
ziap	lip	(ton 5)	ongle
zop	lip	(ton 5)	millepatte
zop	lop	(ton 5)	riz décortiqué
zu'o'n	lən	(ton 3)	lièvre

Ces deux derniers mots sont précieux car "riz décortiqué" est un concept qui manque dans les langues de la famille⁵, et le lièvre, animal de mauvaise augure est remplacé par l'emprunt chinois: tho³ ou par une périphrase "longues oreilles".⁶

⁵ Voyez Haudricourt (1970).

⁶ En Bu-yi, d'après: J. Esquirol & G. Williatte (1908:610).

TYPOLOGICAL FEATURES IN AKHA

Søren Egerod

Akha is a Lolo language, and as such belongs to Lolo-Burmese within Tibeto-Burman. It is spoken in the region where Burma and Laos meet and in adjoining areas of Yunnan and Thailand.

The initial consonants are labial, dental, alveolar (affricates), velar, glottal, labio-palatal, or dento-palatal; and within each of these classes voiceless, voiced, or nasal, except that there is no alveolar nasal but as corresponding continuant a lateral l. The glottal class has no voiced or nasal members. Alveolars, velars, and dento-palatals include voiceless and voiced fricatives (s, z; x, ɣ; ʃ, ʒ ~ j).

There are two laryngeal phonation types, creaky and breathy. All syllables belong to one or the other type although in some phonetic manifestations a type is represented by the absence of its opposite (the syllable ba with no creakiness will count as breathy, even if there is no audible breathiness). In breathy syllables initial voiceless stops and fricatives are aspirated. The aspirated glottal is an ordinary h. Initial voiced consonants are never aspirated in breathy syllables. -q̣ indicates creaky.

Akha possesses three tones high, mid, and low, which are all level, or are manifested with a non-phonemic rise in creaky syllables and a non-phonemic fall in breathy syllables. We mark high tone as ' , low tone as ` , and leave mid tone unmarked. All syllables have an inherent tone. Words are of one or two syllables, rarely three syllables (four in some reduplication patterns). Most, but not all, syllables in polysyllabic words are meaningful morphemes.

There are no phonemic final consonants in that m and n [nasalization] enter the vowel system in such a way that to non-labialized i, e, ɛ correspond labialized ü, ö, m; to labialized u, o, ɔ correspond labialized y [i], ə, ŋ. There is also an a, which occurs as a monophthong and in the diphthongs ai, au [a], au. Of these, however, only au is a common and constant part of the phonological inventory. ai is found e.g. in mái 'exclamation of surprise', am e.g. in mam 'Burmese', au e.g. in bau 'authority' (from Burmese). au is also the end product of contractions as in jò Yà na lù 'everybody' > jò Yà nau (pronunciation of older generation) and > jò Yà nau? ~ nauq ~ nàqu (pronunciation of younger generation). m occurs as a syllabic with or without an initial consonant, ŋ syllabically as an allophone of au. ü is rather a rare sound (e.g. in sjhü 'to urinate').

The distinction between voiceless unaspirated and voiceless aspirated initials is found in stop consonants in languages all around Akha (Burmese, Lahu, Tibetan, Chinese, Thai); in Akha the aspiration feature is however not independently phonemic, but part of the bundle of features which make up the breathy (non-creaky) phonation type. This Akha aspiration also hits the voiceless spirants in breathy phonation.

Structurally contrastive phonation types are found a in number of Southeast Asian and East Asian languages (including Burmese, several Chinese and Thai dialects, Mon, Khmer, Vietnamese) with a historical origin in consonant features at the beginning or at the end of the syllable. The proto-tone (corresponding to Ancient Chinese shang sheng and its equivalents in Thai, Burmese and Vietnamese), which in its modern form often displays voiced (non-breathy) laryngeal phonation type as a concomitant feature, does not cause creaky laryngealization in Akha (where it is the low breathy tone), which is also true of Lahu and such South Chinese dialects as Cantonese and Hakka. The Akha creaky phonation type derives from loss of final stops, corresponding to Burmese final glottal stops (different from Burmese creaky "tone"). In regular development creaky syllables occur in two of the three Akha tones (mid, cf., in breathy syllables, qusheng of Ancient Chinese; and low, cf., in breathy syllable, shang sheng of Ancient Chinese). In some loan words from Thai and in a few deictic words like loq 'as, like' we find a high tone in a creaky syllable. Such syllables are also found in connection with a tonal sandhi phenomenon, for which see further on.

The effects of the phonation types in Akha tend to permeate the whole syllable, the creaky ones characterized by a general overarticulation and the breathy ones by a general underarticulation. With voiced stop initials this may manifest itself through preglottalization and prenasalization respectively. Consonants of these types are well known in Southeast Asia (preglottalization in Thai and Vietnamese; prenasalization in Miao, and in some Austro-Asiatic languages which also have distinctive preglottalization), but in Akha they occupy a subphonemic redundant status. The final -ŋ [nasalization] represents a coalescence of all nasals, and the syllables in which the phoneme occurs are intrinsically non-creaky. Final -m and syllabic m can in rare cases be found with creaky phonation (nŋq 'to stuff', i nŋq 'brain', jo ŋq 'tense-faced').

So phonation types, aspiration, preglottalization, and prenasalization are all areal, non-inherited features in Akha. Basically the Akha vowel system contains the 3 times 3 system of e.g. Lahu, Thai and Cantonese, but the patterning has been altered by the addition of two front rounded vowels and two syllabic nasals. In any case vowel proliferation is an areal feature (as opposed to the simpler systems of e.g. Northern Chinese and Malay-Indonesian). The vowel proliferation has taken place in connection with consonantal losses and through borrowings.

Tonal sandhi in Akha in all cases consists in movement to or towards mid level. High before high becomes high-mid (still phonemically high) or mid (morpho-phonemically high, but phonetically mid), and low before low becomes low-mid (phonemically low) or mid (morpho-phonemically low, phonetically mid). In a series of three identical tones, the middle one is usually mid. An inherent mid tone never changes.

Particles (which will be further treated below) have their own rather complicated tonal sandhi rules which are, in contradistinction to the ordinary regressive sandhi described above, mostly progressive. Noun particles usually keep their inherent tone, except that the possessive particle ə has mid tone after another low tone syllable. The marker of adverbs ɛ and the marker of verbs in series ɔ̄ always keep their tone, as does the verb particle ə, whereas the verb particle ə has mid tone after high and low tone syllables. Most sentence particles with an inherent high tone are manifested as mid tone after syllables with high tone, if they are followed by zero or a high tone syllable; if they are followed by a low tone syllable the tone is high or mid, followed by a mid syllable always high (special rules pertain to strings of sentence particles, especially as regards high tone sentence particles). Sentence particles with an inherent low tone are always low, except after another low tone syllable where they are mid or low before zero and high, mid before low. The sentence particle nja has an inherent mid tone, but can be preceded only by a high tone (different from the secondary verb nja 'able to' and the sentence particle njá), so that a mid or low tone syllable before the sentence particle nja adds an extra syllable consisting of the vowel on a high tone maintaining its phonation type (e.g. guq + nja > guquq nja 'I am scared'; thereby creating instances of the diachronically unexpected combination of high tone and creaky phonation). The modal sentence particles njá and á never change their inherent high tone, but can change a preceding high tone into a mid. The sentence particle a (which in negative sentence replaces the sentence particle á) has an inherent mid tone which of course never changes. The quotation particle djé (which follows sentence particles), the question particle lá (which stands in final position), and the topic markers à and è keep their tone. Bisyllabic particles (as míá and míá) never change.

Akha tonal sandhi is dissimilatory, except in the few cases where a preceding high pulls a following low up to mid. There is no obvious genetic connection between Akha tonal sandhi and the sandhi of Northern and some Coastal Chinese dialects which is also dissimilatory in nature, but based on the inherited (laryngeal) phonation categories. Typologically Akha in this respect belongs with the Chinese dialects in questions, especially the Min dialects which like Akha offer examples of both regressive and progressive sandhi. The Southern languages, such as Cantonese, Thai and Vietnamese have little or no sandhi. The same is true of Lahu and Burmese. The tones of Akha particles, which are morphological in nature (low tone for past tense, high tone for non-past tense), are non-inherited. All particles have the non-creaky phonation type and they never begin with a glottal (stop or aspiration, except that some older speakers pronounce hɔ̄ instead of ɔ̄ 'particle marking the first of two verbs in a series'; cf. the verb hɔ̄ə 'together with', used like 'and' between nouns).

The Akha word order accords with Tibeto-Burman in general: noun phrases (topic/subject/agent, beneficiary, object, place, instrument, in that order with certain possible variations; time less predictably placed) before finite verb phrase.

All particles follow their head, as all modifiers precede their head, except that adjectival and classifier phrases follow their head (historically these phrases are not modifiers, but appositions or further clarifications). Noun particles (including zero) indicate syntactic and case relationships (à

'statement about topic', è 'question about topic'; zero 'unmarked subject, object or place'; án 'beneficiary, goal'; nē 'origin, instrument, originator, agent'; è 'subordination, possession'). The construction unmarked subject-verb is found with non-past verbal phrases; marked agent-unmarked object-verb in past tense verbal phrases. nē as indicator of origin and instrument is phonologically identical with nē as indicator of originator, agent, but does not appear in the same place in the sentence (and the two may co-occur).

The phonemic shape /ə/ as a particle is not restricted to postnominal usage, but also functions as a verb particle. In the latter function it is (in the same way as sentence particles) inflected for tense, so that é is non-past and è past tense. Both the é-marked and the è-marked verb phrase can be used as a nominal or as a noun modifier. The é-marked phrase takes an unmarked subject and the è-marked phrase a marked agent just like the finite verb phrases. In other words past tense, whether è-marked or not, is ergative, non-past is not.

The verb itself is unchanged in ergative and non-ergative constructions, a phenomenon also known from Modern Northern Chinese: tā dǎ wǒ 'he beats me', (ràng) tā bǎ wǒ dǎ le 'he has beaten me', wǒ ràng tā dǎ le 'I was beaten by him' (ràng is marker of the energetic member, bǎ of the inertial; Frei 1957 p. 104), where however sometimes the verb is preceded by the particle gěi 'marker of verb in ergative construction' (Rygaloff 1973, p. 133). Uninflected bigeneric verbs (verbs functioning as active and as passive) without ergative noun phrases are known from Classical Chinese, yāng mǐn 'he nourishes the people', mǐn yāng 'the people are nourished'. Verbs which can enter such constructions have been named ergative verbs by Cikoski. This designation is somewhat confusing, but admittedly easier than uninflected bigeneric - it should in any case be borne in mind that in Classical Chinese the ergative verbs take no ergative noun phrase, whereas in Modern Chinese they can and do so and in Akha they always do. Uninflected bigeneric verbs are known for instance from Thai, inflected bigeneric verbs for instance from Indo-European.

The tendency for ergative constructions to concentrate on past or perfect statements is universal. Notice that the Classical Chinese "ergative verb" constructions are not thus restricted, whereas the ergative noun constructions in Modern Chinese and Akha (as well as Indo-Aryan, Caucasian, and Basque) are.

The bigeneric nature of the Akha verb will appear from the following examples:

- 1) àjǝq m ə já jɔ mỳ ná 'the field he is doing looks good' [àjǝq 'he', m 'do', ə 'sandhi form of é non-past tense verb particle', já 'field', jɔ 'prefix for adjective', mỳ 'good', ná 'sensorial sentence particle for non-expected, direct, visual perception']
- 2) àjǝq né m è já jɔ mỳ ná 'the field which was done by him looks good' [nē 'noun particle for origin, instrument, originator, agent', 'past tense verb particle']
- 3) ná mɔ nja é má [~ é é má] 'it is something I am able to see, I can see it' [ná 'I', mɔ 'see', nja 'can', é 'non-past tense verb particle (also pronounced é before high tone which has not undergone sandhi)', má 'informational sentence particle for expected, non-past, first person prime mover']

- 4) $\eta\grave{a}$ ne $m\acute{o}$ nja \grave{e} $m\acute{a}$ 'it is something that could be seen by me, it is by me it could be seen, I could see it' [$\eta\grave{a}$ 'form of $\eta\acute{a}$ 'I', used before some noun particles' ne 'noun particle for origin, instrument, originator, agent', $m\acute{o}$ 'see', \grave{e} 'past tense verb particle']

In examples 2 and 4, the past tense verb particle \grave{e} is combined with the non-past sentence particles $\eta\acute{a}$ and $m\acute{a}$ respectively. This is the only possible combination, \grave{e} does not occur with past tense sentence particles, therefore the literal translation 'it is something that could be seen by me'. This can be compared with Latin periphrastic passive perfect e.g. a me visum est 'it is something which has been seen by me, I have seen it'.

The fact that $m\acute{a}$ \grave{e} means 'which (he) is doing', but $m\acute{a}$ \grave{e} 'which was done (by him)' can of course be compared with the corresponding English participles 'doing' which is active and 'done' which is passive. Closer to home (in terms of Akha) we find the Indo-Aryan perfect participle passive construction which has given rise to the modern past tense constructions (of ergative origin).

The Tibeto-Burman verb is characteristically impersonal, existential (as for instance in Classical Tibetan ergative constructions 'there has been killing by me', 'there has been beating by me'), to which the logical object can be added as an unmarked modifier of the verb ('king-killing', 'killing of the king', or as a place, goal 'beating on him'). There is reason to think that Akha has moved or is moving in the direction of personal verb construction, because each sentence is equipped with a sentence particle which, in addition to other information, in most cases indicates the grammatical person of the prime mover. In this connection a remarkable fact has to be noticed, viz., that the indication is identical whether the prime mover is an unmarked subject or a marked agent (ergative). Thus sentences 3 and 4 above both end in $m\acute{a}$ 'sentence particle for first person prime mover', even though 3 has a non-ergative and 4 an ergative prime mover, and the bigeneric verb $m\acute{o}$ in 3 is active and in 4 is passive. (In Indo-European where the bigeneric verbs are inflected, the grammatical person changes with the inflection: video, vidi \neq a me videtur, visum est). Sentences 1 and 2 terminate with particles which do not emphasize the grammatical person as much as the kind of perception which takes place: $j\grave{o}$ $m\acute{y}$ $\eta\acute{a}$ means 'looks good' different from $j\grave{o}$ $m\acute{y}$ nja 'tastes good', 'sounds good', 'smells good' or 'feels good'.

There are four important groups of sentence particles each containing four members, if we do not count the tonal variations (inflexion). The first group, particles of non-sensorial knowledge or informational particles have different forms in positive and negative sentences. The three remaining groups are particles of sensation or sensorial particles, particles of assumption or contrastive particles, and particles of prediction or modal particles. Each group can be divided along two axes which we can call U/V and X/Y. With informational particles U/V indicate 'expectation'/'non-expectation', and X/Y indicate 'first person'/'non-first person prime mover' in declarative sentences, 'second person'/'non-second person prime mover' in questions, and 'third person'/'non-third person prime mover' in indirect reference.

The actual forms of the informational particles are in positive sentences:

	X	Y
U	ma	mɛ
V	e	a

and in negative sentences:

	X	Y
U	ma	mɛ
V	zero	a

All these forms have a high tone in non-past tense (except the negative a, which has mid tone, and the negative zero, which is meant to indicate absence of any overt form) and low tone in past tense (where all the four negative forms coalesce in à).

With sensorial particles X/Y indicate 'non-visual'/'visual perception', U/V 'no surprise'/'surprise', 'luckily'/'unfortunately', or 'all the time'/'intermittently'. The actual forms are:

	X	Y
U	mia	ɲaa
V	nja	ɲa

The high tone/low tone distinction with these particles denotes 'direct perception'/'indirect perception' i.e. whether you only make an inference from something you perceive, or whether you actually experience the event yourself. The second syllable of the bi-syllabic particles mia and naa have mid tone in the high tonal category (i.e. mía and ɲáaa), high tone in the low tonal category (i.e. míá and ɲáá).

With the contrastive particles the X/Y distinction is one of grammatical person, but used somewhat differently from the informational particles, in that not so much prime mover as main actor or protagonist is involved - a statement about a thing I own, for instance, will be treated as X. With these particles U/V indicated 'exclusion'/'inclusion' (excluding one specific assumption or including one specific assumption). The forms are:

	X	Y
U	le	la
V	the	tha

The high tone/low tone distinction is the same as for informational particles.

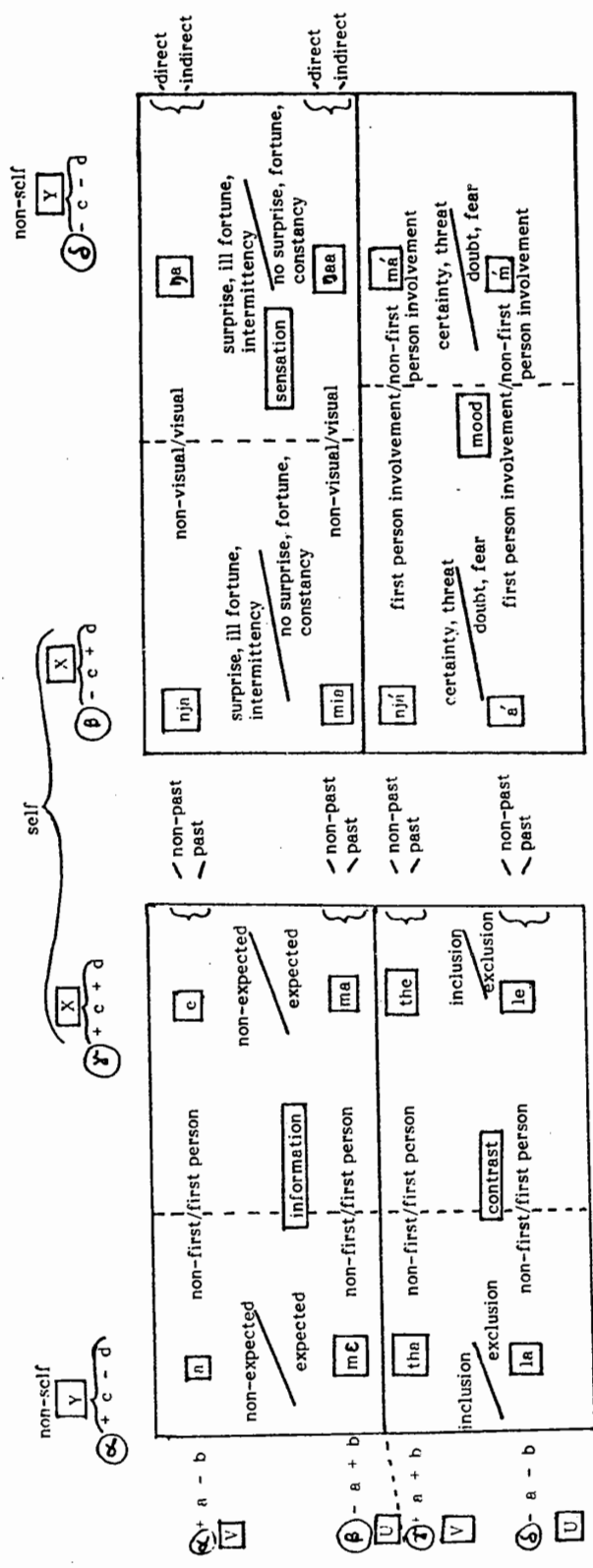
Finally with modal particles X/Y indicate 'first person involvement'/'no first person involvement', so that rather than referring to the prime mover (as is the case with informational and contrastive particles) the grammatical person refers to the speaker and his involvement or non-involvement in the event. U/V with modal particles indicate 'fear'/'threat' or 'doubt'/'certainty', so that the combination of X with U means that the speaker personally fears or doubts the outcome, X with V that the speaker expresses a threat or a certainty; Y with U indicates a general, often a ceremonial, ritual fear, Y with V a general acceptance like a duty or an obligation. The forms are:

	X	Y
U	á	ím
V	njá	má

The modal particles possess no low tone manifestations (and they never refer to past events). When treating the tonal sandhi of particles earlier in this paper, we noticed that the modal particle njá never changes its inherent high tone (which keeps it apart from the sensorial particle nja and the secondary verb nja), neither does á change. The two remaining modal particles do undergo tonal sandhi, so that má may coincide in form with the informational particle ma.

If we consider the relationship of the speaker (or the prime mover) to the utterance we find that the Akha system of sentence particles in each utterance takes a stand on whether it is a matter of a first move, a lead, a beginning, or not; whether it is an accord, an assertion or not; whether it is a matter of knowledge or not; and whether there is personal involvement or not. By designating these features as a,b,c, and d (and their possible combinations as $\alpha, \beta, \gamma, \delta$), we can place our particles in the arrangement seen in the chart on the following page.

The usual placement of the sentence particles is after the predicate. If the predicate is nominal only non-low manifestations can be used, and the modal particles are excluded from usage with nominal predicates. The same non-low manifestations, excluding the modal particles, can, however, also be placed after the unmarked subject (but not after the marked agent in ergative construction) as a kind of predicativization of the subject ('cleft sentence', "I am the one who ... " etc). Topicalization of nouns (unmarked subjects or objects, and also marked beneficiary or goal, the later of which maintain their case particle án) is achieved (as mentioned earlier) by the particles à for statements about the topic, and è for questions about the topic. In a sentence with a nominal predicate the informational and the contrastive sentence particles (but not the sensorial or the modal ones) can be used in their high tone manifestation after the predicate to indicate S is P.



The fact that the modal particles behave differently from other sentence particles (in admitting no low tone manifestations and being excluded from the predicativizing construction) can be compared to the situation in Late Archaic Chinese, which has however a very much simpler system of particles, where the particle yě 'marker of predication' occurs either after predicate (more commonly) or after subject (less commonly), whereas the particle yǐ 'marker of perfective aspect' occurs after predicate only, whether the predicate is postponed (more commonly) or preposed (less commonly). We can in other words in Akha as in Late Archaic Chinese distinguish between predication marker(s) and predicate marker(s). The informational and sensorial particles preceded by the negative mǎ form a very special construction which is not just the negating of a copula but which implies that the speaker is ignorant of what is happening (e.g. ǎjǐq án dì ə à shú Yà mǎ ná 'I don't know who (the person is who) is beating him', ǎjǐq 'he', án 'noun particle for goal, object marker', dì 'beat', ə 'sandhi form of é non-past tense verb particle', à shú Yà 'who', mǎ 'negative', ná 'sensorial sentence particle for non-expected, non-past, visual perception'). The combination of a negative with a particle may be e.g. the origin of Archaic Chinese fēi 'is not' (piwər, cf. the negatives with initial p- and the copular particle diwər), but the meaning 'don't know' seems unique with Akha.

A system of sentence particles ("existential verbs", "copulae", etc.) is known from Tibetan, especially modern Tibetan, where such particles indicate tense, person, mood, source of knowledge etc. The Tibetan system is far from being as elaborate as the Akha one, but the salient point in both languages is the fact that the same particle by syncretism carries several kinds of unrelated information. To find a system of this kind which approaches Akha in intricacy we have to go to the Indo-European verb conjugations. In Indo-European languages the same verbal endings carry messages concerning tense, aspect, person, number, mood, and genus, in other words categories which also semantically resemble several of the Akha categories. Of course, some of the semantic features which in one language take part in verb desinence syncretisms, in the other language may be periphrastically expressed. It is the very presence of such syncretisms which is the common typological feature. However, such general features as tense, grammatical person, origin of knowledge, attitude or involvement of speaker are certainly present in many Indo-European languages as well as in Akha.

In our survey of typological features in Akha, which is far from complete, we have found points of contact with a number of related and unrelated languages, as well as, of course, lack of agreement on other points with these same languages. All of this must to a considerable degree be the product of contact and loss of contact with other languages over a long period. Some features, such as tones, phonation types, ergativity, participial genera and tempora, expression of grammatical person outside of the pronoun, and verbal desinence syncretisms, offer great similarities with Indo-European languages, past and present. Contacts with Indo-European in the form of sprachbünde and waves of diffusion cannot be ruled out as contributing factors in the development of the Akha language structure.

ALPHABET OR SYLLABARY IN SOUTH EAST ASIA:

'NEW WINE INTO OLD BOTTLES'

R. K. Sprigg

South East Asia and the islands of the Pacific are almost entirely without indigenous writing systems;¹ the languages have generally drawn, for their symbolization, on European, Middle Eastern, eastern Indian, and Chinese scripts, with suitable modifications.² Through adopting these foreign scripts the principal languages of the area have been drawn into the current controversy over the grammatological status of the Arabic script and the numerous derivatives of the Brahmi script.³ This may be seen from a comparison of the following two passages, one of them claiming alphabetic status and the other claiming syllabic status for the Arabic script, while a further passage claims syllabic status for the Indian scripts, as against the predominantly alphabetic classification that I wish to give to them and, with qualifications, to their South East Asian derivatives.⁴

(i) 'I strongly agree with Barr (as against Gelb, possibly Pulgram, and certainly Abercrombie) in regarding the Semitic scripts of the type of Arabic and Hebrew as alphabetic and not to accept the recent trend towards the designation of them as syllabic' (Ullendorff 1977, 573);

(ii) 'we must, however, remember that the Arabic script is syllabic and not in our sense alphabetic' (Mitchell 1953, 13; cf. also Robins 1964, 123);

(iii) 'the script used in writing Gujarati is a slightly modified form of the Devanagari script, The writing system, based on the character

¹ The only scripts to originate from this area the Rongo-rongo script, of Easter Island, and the Caroline Islands script or scripts. The former of these seems to be free from any foreign influence; the latter, according to Hamp and Riesenbergh, is an example of 'stimulus diffusion from the West' (Gelb 1952/1963, 302), and certainly looks to me as though it had made some use of roman letters. The current view of Rongo-rongo seems to be that it is either 'nothing else but pictorial concoctions for magical purposes' (Gelb, 61) or, possibly, a mnemonic form of writing, and lying outside the scheme of categories devised by Gelb, which comprises letters, syllabograms, logograms, and phraseograms.

² E.g. ê, ô, ù for Vietnamese, and ق (p), غ (ng), ف (ny), and ج or ج (g) for Malay.

³ For 'grammatological status' cf. Gelb 1952/1963: 'the aim of this book [A Study of writing] is to lay the foundation for a full science of writing, yet to be written. To the new science we could give the name "grammatology", ...' (23).

⁴ For my grammatological analysis of a related script, the Tibetan, as being alphabetic apart from a small syllabic component see Sprigg 1978, 184-5.

representing the syllable, is the same for all these languages' (Lambert 1953, 1; cf. also Jones 1971, 75).⁵

Proceeding, now, to definitions of 'alphabet' and 'syllabary' I find Gelb's observation 'if by the word "alphabet" we understand a writing system which expresses the single sounds of a language' (197) serviceable (cf. also Diringer 1948/1968, 13) except that it fails to cover three polyphonic letters ζ, ξ, and ψ, symbolizing [zd]/[dz], [ks], and [ps] respectively, in Ionic Greek and, later, in Greek generally, not to mention the polyphonic function of x in in the roman script, more relevant than Greek to South East Asia, in symbolizing the [ks] of (Latin) rex and (English) paradox and fox.⁶ If we are to bring polyphonic letters such as these within the scope of that definition, it needs to be amended to read as follows: a writing system in which letters symbolize single sounds, and clusters and sequences of sounds provided that these are non-syllabic.

Diringer's definition of 'syllabary' is as follows: 'a syllabic system of writing is a set of phonetic symbols, the single symbols representing syllables, also vowels when these constitute syllables. It generally contains only open syllables.' (1948/1968, 13). I shall save my criticisms of this definition until later when I apply it to Indian and South-East-Asia languages (p. 107).

J. R. Firth and 'renewal of connection'. The general approach to alphabet and syllabary I owe to J. R. Firth and his concept 'renewal of connection': "renewal of connection with the language under description in experience requires that recognizable phonetic and possibly graphic shape shall be given to what have been termed the exponents of the phonological categories" (1957:15). This approach leads me to a quite different view of the Indian scripts from Lambert and from Jones, and, therefore, of the Burmese, Thai, and Cambodian scripts too, and to a somewhat different view of the Arabic script from either Ullendorff's or Mitchell's, and therefore of the Malay form of the Arabic script.

I can illustrate the way in which I apply Firth's concept to grammatical categories most clearly from the passage in Jones 1971 in which he uses a Hindi example to illustrate his view of the Devanagari script as a syllabary: 'thus written metlebe "purpose" is spoken /metleβ/' (75). I feel that Firth would have regarded Jones's interpretation of the Devanagari form here as unsatisfactory, because it fails to meet the 'renewal of connection' test: analysing मतलब as 'metlebe' results in a non-existent word of four syllables, all of them open, --hardly even a possible word structure in Hindi -- whereas the Hindi word in question has only two

⁵ Against this cf. French 1976: 'the Devanagari script is neither syllable-delimiting, in any normal sense of the word syllable, nor syllabic (i.e. syllable-representing); it is a (segmentally) minimal cenemic (i.e. alphabetic) script' (153).

⁶ Other ancient Greek dialects, however, used sequences of mono-phonetic symbols, ῥσ, χσ, φσ, and the like and therefore meet Gelb's definition without any need for the amendment that I have proposed; e.g. (Lesbian) ῥσδος (= ῥζος) 'bough', (pre-Eucleidean Attic) εδοχσεν [= ἔδοξεν], φσεφισμα [= ψήφισμα] (cf. Allen 1968, 53-7).

On the phonetic difference in English symbolized by the letter x versus the sequence of letters cks and ks see Sprigg 1974, 21-2.

syllables, both of them closed. In other words I would say that Jones is putting the cart before the horse, working from the symbols to the sounds. Working from the sounds to the symbols, on the other hand, means recognizing that the six sounds of [mətʰəb], grouped into two syllables, are rendered in its writing system by the four symbols म, न, ल, and ब; consequently, the function of म must be that of symbolizing a consonant-vowel (CV) sequence, and so must that of ल, while the function of न and of ब must be purely consonantal (-C). Thus, as orthographic symbols, म, न, ल, and ब, and others like them, the 'consonant characters' of Lambert 1953 (11, 15, 61), can have two functions: a polyphonic function, that of symbolizing a CV sequence of sounds, in which, moreover, the V place is limited phonologically to the short-vowel unit a (Jones' /ə/), and a monophonic function, that of symbolizing a single consonant. This consonantal function can be specified by using a subscript symbol, the viramaḥ of Sanskrit and the viram of Hindi and Marathi, though its use in the latter two languages is mainly confined to Sanskrit loanwords; e.g. नद, सत (Lambert 1953, 66; cf. also the limited function of the '/wiqriəm/' in the Cambodian script; Huffman 1970, 53).

I. Scripts of Indian origin

Having used an Indian script in the passage from Jones 1971 to illustrate the difference between his analysis and mine, and to introduce what I might call the 'matlab approach' to the problem of alphabet versus syllabary, I must now illustrate this approach directly from South-East-Asian scripts, beginning with those of Indian origin, and especially, since I am more familiar with it, from the script now used for Burmese and, with a few additional symbols and variations in the shape of some symbols, for Mon. Luce places this script in relation to other scripts of Burma as follows: 'All these were ultimately derived from India, and were written, like Brahmi, from left to right. ---more than one type of North Indian Nagari had spread from Pala Bihar and Bengal to Arakan, ---. Very different from both, the 'Mon' script, which ultimately triumphed, had come, it seems, from South India (?Kancipura) via Dvāravatī and the Gulf of Siam' (1969, 96-7).

Syllabic/consonantal symbols. As applied to the Mon-Burmese script the 'matlab approach' at once enables me to identify certain symbols as having a comparable polyphonic function to that of the म and the ल of मतलब; symbols such as ဣ, ဏ, and ဣ ('a, ka, kha) also symbolize a consonant-vowel (CV) sequence, which, as one would expect from the Indian origin of the script, follows not only the more general limitation to the open type of syllable but also the more restrictive limitation to a particular phonological vowel unit (a); e.g.

[?a:]	ဣ	[ka:]	ဏ	[kha:]	ဣ
'a		ka		kha	
'be defective'		'dance'		'hire' ⁷	

⁷ Another, and common, function of this so-called 'consonant' symbol in Burmese, and one that is foreign to Hindi, is that of symbolizing weak-stress syllables (in [-ə]); e.g. ဣ ဣ ဣ [shə ja:] cha-ra 'teacher' (not *[shd :ja:]; ['] symbolizes ligamental phonation, cf. Sprigg 1978b, 15), ဣ ဣ ဣ [θəkhī:] sakhan 'master' (not *[θa:gī:]); cf. also the corresponding use of a CV symbol for the pěpět of Malay (p. 111). It is worth noting that Burmese and the Indic scripts are markedly more specific than the un-'pointed' form of Malay and the Arabic script: in them the CV type of symbol specifies the a vowel unit, of a

Mon-Burmese symbols such as these can claim to be not merely polyphonic but also syllabic in the sense that they symbolize not only the syllable nucleus but a preceding consonant as well, in the same way as the much-cited Japanese kana syllabary (apart, that is, from the kana vowel series a, i, u, e, o, and from its final symbol ん n); e.g. かきくけこ (ka, ki, ku, ke, ko); さしすせそ (sa, si, etc.), except, of course, that the Japanese 'syllabary', clearly, symbolizes a fivefold differentiation in vowel unit, while the Mon-Burmese script is limited to symbolizing only one of its vowel units in this way (in open syllables; for the more complex situation to be found in syllables in -an/-aŋ and in -an/-am see p. 110 below).⁸ The same limitation also applies to other scripts of Indian origin, in the pronunciation of which, incidentally, like Bengali and Newari (more especially the Kathmandu dialect) but unlike Burmese (and Hindi), the a vowel unit has lip-rounding; e.g. (Cambodian) កា ka [kɑ:], ដាប dap [dɑ:p] (Henderson 1952, 152, 156); (Thai) ๒๒ pan [bɔn], ๓๓ tak [tɔk] (but lip-spreading in ๒ (๓) mahā [məhɑ:], ๓๓ karr [kan]; cf. Anthony 1970, 42, 45, 105).

Open-syllable and closed-syllable symbols. The South-East-Asia scripts of Indian origin can, therefore, at least be said to have a syllabic component; but otherwise they conform to the same pattern as I have already illustrated for the Devanagari script in मल्ल they do not provide single symbols for closed (CVC) syllables, though the languages that they symbolize all have syllables of the closed type. The Mon-Burmese script, for example, needs two symbols each for the two syllables of [jɑŋgɔ̃:] ရန်ကုန် ran-kun 'Rangoon' (and even the kana syllabary, incidentally, needs two each for the two syllables of, for example, [nippon: にとほ 日本 nippon 'Japan'). The Ca symbols of the South-East-Asia scripts are, therefore, syllabic in the sense of symbolizing the syllabic sound of the syllable (-a) together with its preceding consonant sound but not necessarily syllabic in the sense of symbolizing a whole syllable, CV or CVC. It is only the Ca symbols that symbolize open syllables which are syllabic in this latter sense as well, while, from this point of view, the 𑄓 and the 𑄔 of मल्ल and the ရ of ရန်ကုန် are only partially syllabic. Only the Caroline Islands language and Vietnamese can each be said to have a fully syllabic script; and this is true of Vietnamese only when it is written with syllabograms of the Chinese script, e.g. 越南 việt nam, or modifications of them.⁹

Ca sequence; in the Arabic-based scripts the CV type of symbol serves for -a, -i, and -u alike, and, in un-'pointed' Malay, for -o and -e as well, in at least one important context, Ca/i/u/o/eCC-, e.g. (a) bantal, (i) singkah, (u) tumpat, (o) lompat, (e) tempat. Lewis 1954, however, refers to this as 'older usage' (43) (cf. pp. 111-12 below); the examples are from Winstedt 1945, 137, 132.

⁸ In this sense of the term the use made of the roman script in English is also 'syllabic' to a small extent: the sequence [(-)ju:] is symbolized by u, as in U, U-turn, use, Buse, emu. The same function is performed by Я, Ю, and Ё in the Cyrillic script, and by E as opposed to Э.

⁹ Japanese, too, draws on Chinese syllabograms (kanzi), as, for example, 日, symbolizing the [nip-] syllable of nippon 日本 'Japan', in one of its on (Sino-Japanese) readings, but with the added complication that not a few of the kanzi symbols symbolize two syllables, and are in such cases therefore, disyllabograms; e.g. the alternative pronunciation of 日 as [nitci], in niti-niti sinbun 'Nichi Nichi Shimbun'. From the standpoint of the kun (original Japanese) readings, however, the role of the kanzi is either that of

Circumscript symbolization of vowels. Apart from that phonological unit in each of the Indo-Aryan and Dravidian languages of South Asia and the Tibeto-Burman, Austro-Asiatic, and Austronesian languages of South East Asia which is symbolized by a syllabic or partially syllabic symbol, Ca or Ca-, the symbolization of vowels is alphabetic.¹⁰ Only incidentally, though, is that symbolization linear; for the positioning of the vowel symbols is circumscript, and comprises postscript, prescript, superscript, subscript, and combinations of some of these, with only the modern Vietnamese script, through its origin in Europe, as an exception here; e.g. from Burmese (postscript) - ၁ (-ā), (prescript) ၆ - (-e), (superscript) ၁ (-ai), (pre- and post-script) ၆ - ၁ (-ō), (super- and sub-script) ၁ (-ui), e.g. [lā:] လ၁ လာ 'come', [pō:] ပ၁ ပူ 'send' (certain vowel units are, however, symbolized by linear symbols of a consonantal appearance, such as, for [i:], [e:], and [ɛ:], ၁, ၂, and for [ɛ:], also ၃ -y, while others are symbolized concurrently with consonant features, as part of a syllable-final complex, by ၄, ၅, ၆, ၇, and by ၈, ၉, ၁၀, and ၁၁, for which see p. 109 below). When the vowel is symbolized by one of these symbols, whether vowel, consonant-like, or consonant-and-vowel, the syllable-initial consonant is symbolized alphabetically, by monophonic symbols such as ၁ and ၂ (-l-, p-) of the two examples earlier in this paragraph. The Cambodian and the Thai vowel and consonant symbolization follows the same alphabetic principle as the Mon-Burmese, but with two further types of vowel combination for Cambodian, and one for Thai (cf. Henderson 1952, 154; Huffman 1970, 24; Anthony 1970, 17). At this point it is interesting to note that the pre- and post-script type, which is common to the three languages (Burmese ၆ - ၁, Cambodian ၆ - ၁, Thai ၆ - ၁), is not shared by Devanagari, though it is found in two of the south Indian scripts, Tamil and Malayalam.¹¹

Suprasegmental (or prosodic) symbolization

A. Junction

1. 'Vowel-final'. Certain of the Mon-Burmese vowel symbols apply only to open syllables, e.g. - ၁, ၂, ၃, ၄, ၅; they therefore act as syllable-final symbols.¹² Their symbolizing function does not, however, end there: in junction

logograms, symbolizing whole words, of one, two, or three syllables, e.g. 南 minami 'south', or that of symbolizing not the whole word but a grammatically defined part of it, a (monosyllabic or polysyllabic) stem, leaving the inflexion to be symbolized by a kana symbolization (with the final consonant of the stem included in the kana symbolization for the class of verb that has a root-final consonant; e.g. 越す ko-su 'cross', cf. also ko-si-masu, the stem being kos-).

¹⁰ But, in Burmese, a suprasegmental (or prosodic) role is proposed below (pp. 108-11) for certain syllable-final symbols.

¹¹ A north-Indian script, the Bengali, also makes uses of the pre- and post-script type, e.g. ក ko; and so does the Newari script of Nepal. In this they continue the pre- and post-script modification (or something closely resembling it) of the Brahmi script; e.g. 𑄎 bo, cf. 𑄎 ba; 𑄎 ko, cf. 𑄎 ka.

To English-speakers and English-writers the pre- and post-script principle should not appear exotic, because it is used in English to symbolize certain long-vowel and diphthong units; e.g. /i:/, as in mete (cf. met); /u:/, as in use (cf. us); /aɪ/, as in bite (cf. bit); /eɪ/, as in fate (cf. fat); but in English it is the following consonant symbol, not the preceding, that is circumscribed in this way.

between syllables within words (intraverbal junction) these, and all other syllable-final vowel symbols, whether limited to syllable-final position or not, also symbolize a feature of the following sound: voice as an alternative to voicelessness; e.g.

[(m ə)θw a :bu:] (မ)သွ ဘးဘူး (ma) swā:bhū: 'does not go'; cf.
 [(m ə)θa əpphu:] (မ)ဆာ ဘးဘူး (ma) sokbhū: 'does not drink'.

This means that a sizable number of lexical items alternate in voicing between voice and voicelessness, e.g. [ph/bu:] ဘူး bhū: 'not', and cannot be pronounced with the correct feature unless the type of junction in which they occur is taken into account; and this, for correct phonetic interpretation of the symbols in reading, means consulting the final symbol of the preceding syllable in order to find out whether the type of junction is, for example, the 'vowel-final' or the 'stop-final', exemplified above. In other words, in intraverbal junction both syllable-final and syllable-initial symbol are linked in a junction complex, e.g. -ā:bh- versus -kbh-. The features appropriate to 'vowel-final' junction are symbolized by one or other of the three types of symbol distinguished above e.g. (CV) ခ, ဓ (p. 108), (final vowel symbol) - ဘ, ဖ- (p. 109), (final consonant-like symbol) - ည, - ဋ (p. 108). These types of symbol therefore have a junction function, and are best regarded not merely as alphabetic symbols distinguishing one vowel unit from the others appropriate to that context but also as suprasegmental, or prosodic, symbols for the features appropriate to the type of junction. As far as 'vowel-final' junction is concerned, these features do not end with the voice feature: in fast-tempo utterances the syllable-initial feature symbolized by, for example, -ā:bh- is not plosion, as in [- a:b-] above, but friction, [- a:β-] (for a full account of 'vowel-final-junction, see Sprigg 1963b, 90-6).

၉, ၂, 'Nasal-Final'. The status of the syllable-final nasal symbols ၉, ၂, ၃, ၄ (-ñ, -ñ-, n), etc. of the Mon-Burmese script is still more complex, and difficult to classify in terms of a clear-cut dichotomy between alphabet and syllabary. In the first place they symbolize voice in contrast with the 'stop-final' type of junction's voicelessness as a feature of a following syllable-initial consonant (p. 110); but they also symbolize nasality for that consonant as a fast-tempo alternative to plosion; e.g. [(mə) jaomb/mu:] (မ) ရောင်း ဘူး (ma) roñ:bhū: 'does not sell' (Sprigg 1963b, 93-40), in which the plosion-nasality alternation ([-b/m-]) is symbolized by ၉. The labiality feature of this junction is symbolized by the syllable-initial bh of the -n:bh--; for the place of articulation is symbolized in the initial symbol of the second of the two orthographic syllables, whether labial, alveolar, palatal, velar, or, as in the following example, dental, and therefore symbolized by s: [(mə) jaonñe: (bu:)] (မ) ရောင်းဆေး (ဘူး) (ma) roñ:se:(bhū:) 'has not yet sold'.

Finally, and paradoxically, the distinction symbolized by ၉, ၂, ၃, ၄, ၅, and ၆ /- (ñ, ñ, ñ, n, m/m) is not one of place of articulation for consonants but place of articulation for vowels, helping to distinguish certain phonological vowel units; e.g.

[m ẽ:]	[s ẽ:]	[nã:]	[tɕã:]	[wõ:]
မင်:	စင်:	ဥာန်	ကြံ	ဝမ်း:
<u>mañ:</u>	<u>cañ:</u>	<u>ñāñ</u>	<u>krañ</u>	<u>wam:</u>

12 Apart from certain loan words from Pali; e.g. ဥာန် nāñ.

'ruler' 'chop' 'intellect' 'plan' 'belly'

3. 'Stop-final'. Similar statements can be made for the syllable-final symbols က , ခ , ဂ , and ဃ (-k, -c, -t, -p), an example of which, sok, was given on page 110 ('stop-final' junction): [(m^ə)θa^əpphu:] (မ) ဆေဇ်က တ : (ma)sokbhū: 'does not drink'. The term 'stop-final' is, however, a term of convenience; for the characteristic features of the junction are not confined to the stop and plosive ([-pph-]) shown above but also include the friction feature [-θθ-] that appears in [(m^ə) -θa^əθθe: (bu:)] (ma)sokse:bhū: 'has not yet drunk', and indeed go beyond that to include laterality and even nasality ([-ll-, -mm-, -nn-]), in all of which the features appropriate to place of articulation and manner of articulation are symbolized in the initial symbol of the second syllable of the junction.

To summarize, in 'nasal-final' and 'stop-final' junction the various features, voicing, place-of-articulation, and manner-of-articulation, require the two symbols that symbolize them to be taken jointly; and this joint symbolization reflects the suprasegmental (or prosodic) type of analysis that I have given them elsewhere (Sprigg 1963b, 90-6). It is unprofitable, in my view, to isolate the two symbols from each other and treat them as alphabetic.

B. Phonation A further suprasegmental feature, for the symbolization of which the Indian loan scripts had to be adapted, is a phonation difference found in Cambodian and Burmese. The means whereby the two types of phonation difference are symbolized in the two languages are not the same, possibly because Burmese also has to provide for tonal distinctions; in Cambodian they are symbolized through syllable-initial consonant symbols, but in the syllable final in Burmese.

1. Cambodian (syllable-initial). The Cambodian 'first' and 'second' registers, with associated differences in vowel quality to some extent, are reflected in the two classes into which syllable-initial 'consonant' symbols are divided: '/qakhoosaq/ "voiceless", e.g. k-, kh-, s-, h-, and '/khoosaq/' "voiced", e.g. gg-, gh-, n-, y-, r- (cf. Henderson 1952, 151-3; Huffman 1970, 13-20). Since certain of the vowel symbols differ in phonetic value according to the class of syllable-initial 'consonant' symbol, those vowel sounds must be taken to be jointly symbolized by 'consonant' symbol and 'vowel' symbol; e.g. [khao] កខ្លា kho versus [kò] កខ្លា go (Henderson 1952, 152-4; cf. also Huffman 1970, 19-20). This means that 'consonant' symbols have something of a vocalic role.

2. Burmese (syllable-final). Burmese, on the other hand, symbolizes its distinction between 'ligamental' and 'normal' phonation to some extent through the symbols whereby its Indian predecessors distinguished short from long vowels; e.g.

'lig.': [ʔá:] အ 'a' 'dumb'; က [kú:] ku 'treat medically'
 'norm.': [ʔa:] အ 'ā:' 'at leisure'; က [ku:] k \bar{u} 'help'

(for 'ligamental' and 'normal' see Catford 1964, 32-3, and Sprigg 1978b, 9, 15, and for a detailed account of this distinction in Burmese, Sprigg 1964, 431-6). This method of symbolization through the Indic short and long vowel symbols gives these symbols a further prosodic function, a function that applies to the syllable as a whole, in addition to the junction function described on p. 109; otherwise, 'ligamental' phonation is symbolized by a subscript circle, the

'okmrac, -, and 'normal' phonation by the rhe'pok, -:, by ၵ (-k), etc., by ၶ (-y), and by other means (Sprigg 1964, 431-3).

C. **Tone (Thai, Burmese)** A further major prosodic feature of Burmese, and of Thai, that is to some extent symbolized by symbols that also have consonantal and vocalic functions is that of tone. Both languages make use of tone marks for this purpose, the ˉ, and -: of Burmese (in addition to their phonation functions), and the ˉ, ˊ, ˋ, and ˌ of Thai. Thai, however, but not Burmese, also makes considerable use of initial 'consonant' symbols, though always jointly with syllable-final symbols, both 'vowel' and 'consonant'. The 'mid' tone, for example, is symbolized by one of the nine syllable-initial symbols of the klan class, k-, c-, t-, etc., or one of the twenty-four initial symbols of the tan class, g-, gh-, n-, y-, etc., combined, in either case, with a final long-vowel symbol or a final sonorant symbol such as n or w; e.g. na ka'/kɔ:/, nu pin/bin/. When combined with a final short-vowel symbol, however, e.g. -i, -o, or with a final stop symbol, e.g. -t, -k, it is the 'low' tone that the klan type of initial symbolizes, and so does the third class of initial symbols, the sun; e.g. kh-, s- (for a detailed account of these and other such combinations of syllable-initial and syllable-final symbols see Anthony 1970, especially 70-2 and 91-2).

Like Thai the different tones of Burmese have usually been associated with the syllable unit. One can say that (apart from certain exceptions considered below) (a) the upper of the two distinctive pitch levels is symbolized by such varied means as (i) -: (rhe'pok), combined with one of the long-vowel symbols or the nasal-final symbols; (ii) certain syllable-final vowel symbols: ˊ, ˋ, ˌ (ai, o); (iii) the syllable-final 'consonant' symbols ၵ, ၶ, ၷ, ၸ (-k, -c, -t, -p); (iv) all three means of symbolizing ligamental phonation: the syllabic CV symbol (p. 107), the 'short-vowel' symbols, and the 'okmrac (-) (p. 110); while (b) the lower of the two distinctive pitch levels is symbolized by syllable-final long-vowel symbols, e.g. ˉ, ˊ (-i, -u), or syllable-final nasal symbols, e.g. ၵ, ၶ (-ñ, -ñ), or ၷ (-y), or the syllable-final vowel symbol ˋ-5 (-ɔ).

Disyllabic and trisyllabic symbolization units. The exceptions to this general statement, which make it an over-generalization, are due to the fact that in certain contexts it is not the upper but the lower pitch level that is symbolized by methods (a) (iii) and (iv) above. These contexts are grammatical: particle lexical items written with the (a) (iii) and (iv) symbols have the lower pitch level when preceded within the word by a noun or a verb lexical item written with any of the upper-pitch symbols (a, i-iv); e.g. ([—]) [mjó:ñé:] ၵ ၶ mrui'nai' 'from the town'; noun and verb lexical items written with the (a) (iii) and (iv) symbols also have the lower pitch level when followed within the word by a noun or verb lexical item written with the (a) (i) and (ii) symbols; e.g. ([—]) 'ipkhan: 'bedroom', en'khan: 'drawing room'. The types of symbolization (a) (iii) and (iv) are not, therefore, a constant symbolization of the upper pitch level; the grammatical status of the lexical item containing those symbols has to be taken into account; and so do the pitch and phonation features of preceding, or following, lexical items accordingly. In other words, those symbols cannot be interpreted in isolation, but must be taken jointly with symbols of their preceding, or following, lexical items; e.g. in the noun-and-particle word ၵ ၶ mrui'nai' the two 'okmrac (ˋ) symbols combine to symbolize a pitch pattern [—] (cf. Sprigg 1964, 428); and in the disyllabic verb ၵ ၶ ၷ ၸ: cwan'ca: the symbols 'okmrac and rhe'pok (ˋ, -:) combine to symbolize a pitch pattern [—] (cf.

Sprigg 1957, 128), while, in အိပခန: 'ipkhan:, it is the 'consonant' symbol ၵ -p that combines with -: to symbolize that same pitch pattern. Since, in some cases, one has no choice but to give a joint phonetic interpretation to two symbols in successive syllables, as a disyllabic tone unit, it seems reasonable to extend this 'unit' type of approach to all disyllabic nouns and verbs, and even to trisyllabic nouns. Thus, in [tceṃṃ ၵ:le:] ကြိမလေး: 'little hen' the three symbols ကြ, မ, and -: combine to symbolize a pitch pattern [— — -] for this trisyllabic word treated as a tone unit; and from the point of view of the Burmese reader too, I should guess that the three symbols are not phonetically interpreted one by one but as a three-part symbolization for a single tone unit with a [— — -] pitch pattern, to be distinguished from seven other such trisyllabic patterns (cf. Sprigg 1975-6, 16-19).

II. Scripts of Arabic origin

The Malay means of symbolizing weak-stress syllables, those containing the pépét vowel, provides a parallel from the Arabic script to the Burmese adaptation of an Indian script to deal with its [C ə-] syllables (cf. note 7); it does this by means of a syllabic symbol; e.g. the -ب of بَسْر bēsār (Lewis 1954, 19, 23: but by alif for word-initial pépét, e.g. اَمَام enam, اَمَاط empat, and for a few exceptions, including a loan-word from Sanskrit, Lewis 1954, 25, 32).

A. Suprasegmental (or prosodic) symbolizations A further parallel with Burmese (and, incidentally, Tibetan), perhaps reflecting the influence of scripts of Indian origin, is to be found in the symbolization of the a vowel.¹³ In Burmese this is, again, done by a syllabic symbol, Ca (simultaneously with ligamental phonation; p. 107); the Malay script uses the same means in most contexts: (i) generally, in closed syllables; e.g. سَمَاط sampan (Lewis 1954, 23-4, 41), very similar to मल्ल matlab (pp. 106-7); (ii) in word-final open syllables where the preceding (penultimate) syllable is also Ca; e.g. راج ra-alif-jim raja (Lewis 1954, 24-8, 41). Symbolizations of this latter type, though, lend themselves to a prosodic interpretation whereby the alif is treated as a monograph symbolizing a as the vowel of both syllables taken together as a disyllabic unit, as it were ^a(CVCV). Lewis 1954 lists a number of exceptions to generalization (ii) above, including a type in which a in a word-final open syllable is symbolized not syllabically but alphabetically, by alif, e.g. تَرا tēra (24-8, 41); but here too it is possible to give the alif a prosodic (or suprasegmental) role, as symbolizing an ě-a sequence, ěa (CVCV), abstracted from a CVCV unit. A further type of disyllabic unit in which alif has implications for more than one syllable is the (-)CVCCa type, e.g. تَبا timba, بَنا bangsa (Lewis 1954, 23), indicating an open syllable preceded by a closed syllable, or, to put it another way, word-final -VCCa, not *timaba, *bangasa.

B. Alphabetic symbolization In word-initial position, and in certain other types of sequence within words, a is symbolized alphabetically, by alif;

¹³ For the use of scripts developed from south-Indian early Grantha in Malaysia see Diringer 1968, 300-1, 314-15, 331-41, and 345-9; all these scripts, Kavi, and its descendants, in Java, Sumatra, the Sundanese islands, and Borneo, Buginese and Macassarese in the Celebes, and Tagalog and its related scripts in the Philippines have in common the use of a syllabic symbol for sound sequences of a Ca type.

e.g. (word-initial) انتن antan, مولا mula, موات muat, واغ wang (Lewis 1954, 29-30, 32-3, 41-3).¹⁴

In older usage there were contexts in which some of the remaining vowels, u, o, and i, were symbolized syllabically, through CV symbols, by ya and wau respectively, with alif-ya and alif-wau digraphs as the word-initial variants (alif alone in a number of exceptions; e.g. امشن umpan, انسغ insang Lewis 1954, 43, 34-5).

The wide use of ya and wau means that i, e, and ai share a common symbol; and u, o, and au are similarly unspecified; e.g. (ya) تالي tali, ليار lebar, سونغي sungai, (wau) بولو bulu, بولا bola, فولو pulau (Winstedt 1945, 134). This must place those with little or no knowledge of the Malay lexicon at a disadvantage; but it should be borne in mind that English too is not without under-specification: the roman alphabet provides only five symbols for the sixfold vowel differentiation to be found in certain types of closed syllable, including syllables in /-l/, with the result that /ʌ/ and /ʊ/ have to share the letter u. Consequently, I do not know whether to pronounce Pulgram (p. 105) as /pʌlgrəm/ or /pʊlgrəm/; it is not included in the English Pronouncing Dictionary (1977), and the rather similar word Bulstrode appears as: 'bulstrʌd, 'bʌl- (66).¹⁵

III. Conclusion

In conclusion I would say that there is a grammatological lesson to be learnt from the adaptation of scripts of Indian and Arabic origin to the phonation, tone, and junction features of the Sino-Tibetan, Austro-Asiatic, and

¹⁴ The Arabic script as used for symbolizing Arabic seems to me to be almost entirely alphabetic in its 'pointed' form: the three short vowel units, a, i, and u are symbolized respectively by the super- and sub-script symbols fathah, kasrah, and dammah, the long vowel units by fathah and ' alif, kasrah and yā, and dammah and wāw, with consonant status indicated by sukūn for short consonant units and by tashdid for long. The only syllabic symbol in this form of the script is tanvīn, a set of three VC syllabic symbols, -an, -in, and -un, distinguished by their grammatical role, as suffixes (the use of 's in English for the syllable [ʌz] of, e.g., fox's brush is a rough parallel).

In its un-'pointed' style, on the other hand, the syllabic component is more prominent in the Arabic form of the script than the current Malay form; for all CV syllables, Ca, Ci, and Cu, are symbolized syllabically, and without distinction; e.g. by -ʾ for ma-, mi-, and mu-, as in the initial syllables of mashhurun, miṣakkun, and muṣṭanaʿun (Mitchell 1953, 60-1), and, since tanvīn is absent from this style, the -an, -in, and -un suffixes are symbolized syllabically by the final symbol of the word. Thus, the -un of the three words above is symbolized, in the case of mashhūr-un, by the word-final; ra, which therefore functions as a syllabic symbol of the CVC type (-run), while -kun and -ʿun are similarly symbolized by kāf and ʿain respectively.

¹⁵ The limitation to 'certain types of syllable' is due to the fact that the five roman letters are enough for symbolizing the fivefold differentiation for short vowels in syllables closed by a nasal: /ɪ/, /e/, /æ/, /ɒ/, /ʌ/, but not /ʊ/; e.g. rung, run, rum (though certain speakers, including myself, use [ɔ] in preference to [u:] in syllables with /r/ in the syllable initial: room, broom, groom; but I would assign these examples of [ɔ] not to the /ʊ/ unit of the short-vowel system but to the /u:/ unit of the long-vowel system, as members of a r-initial sub-system).

Austronesian languages of South East Asia. The outcome has been novel, and especially prosodic, roles for symbols that had been devised for consonantal or vocalic purposes, or, in the case of C(a) symbols, both. I would suggest that there is room for a further symbolization category in addition to the alphabetic and the syllabic, namely, a prosodic category (pp. 108-9), and, further, that one should not expect a script to be exclusively alphabetic, syllabic, or logogrammatic, but to be mixed, its components being drawn from several categories of symbolization.

CONFRONTING THE UNKNOWN:¹

TONAL SPLITS AND THE GENEALOGY OF TAI-KADAI

William J. Gedney

As a young man I lived for many years in a small town high up in the Cascade Mountains, just a short distance east of Seattle. On weekends I used to do a lot of hiking in the high mountains. Nowadays I understand everybody does this, but in those days it was a rather unusual hobby. Like ancient Southeast Asia, the area was then much more sparsely populated than now. Sometimes we went in groups, sometimes I went alone. And sometimes when I was alone I liked to strike off into areas which had not, so far as the maps showed, been explored. I still recall the thrill I used to feel from time to time at the thought that I might well be the first human being, from the beginning of time, to have stood on that particular spot. Sometimes I got lost, which served me right, and then my strategy always was to head downhill, trusting that eventually I would come out at a road or a house or at least a stream. I remember one evening just at dusk, when I was crashing down a gully in hopes of finding my way out of the woods before nightfall, I came face to face with a grizzly bear which I still remember vividly as being in size somewhat larger than Mount Rainier. Fortunately the bear was as startled as I was, and headed off in one direction while I made haste in the other.

I remember once finding myself in a mountain meadow high above timber line, with a clear view of Mount Baker to the north. It must have been springtime, because there were a great many alpine flowers blooming. One's joy in the crystalline purity and freshness of that scene is matched in my experience only by one's joy in the beauty and balance and subtlety of the newly analyzed tone system of a previously undescribed Tai dialect. One of these plants was a little thing exactly like an English daisy, with bright yellow flowers. I carefully dug it up and took it home and tried to look it up, but it wasn't in any of the books then available. If I felt sure that I had made a discovery, but before I had time to get in touch with someone at the university, or someone at the state capital at Olympia, the poor thing withered away to nothing. I have always intended in later years to look into more recent books on the flora of the Pacific Northwest to see if anyone else ever found this plant and named it.

There is a place in the extreme north of Thailand where the Mekong River forms the northern border of the country, where one can sit on the banks of the great river and gaze off toward the northwest at a lofty mountain range. Through the years I used to find myself drawn back again and again to this

¹ This is a slightly curtailed version of an after-dinner talk given at the XVIth International Conference on Sino-Tibetan Languages and Linguistics, University of Washington, 16 September 1983.

spot, where I would dream of unknown Shangri-Las inhabited by God knows what strange peoples, speaking fascinating undescribed languages. Of course these areas and their languages were no doubt well known to others, but not to me.

No more reminiscences, I promise you. My point is that, as I realize now, I have always been fascinated by the unknown. I think this is probably also true of every one of you, and each of you could probably come up with better anecdotes than mine about your experiences in confronting the unknown. I think this fascination with the unknown is what distinguishes us Sino-Tibetanists from lesser mortals. Many people, perhaps most, don't like the unknown. They fear it, try to avoid thinking about it, or pretend that it doesn't exist.

What else could account for our persistence in pursuing our Sino-Tibetan studies? Lord knows it isn't the prospect of fame or riches. Most of us find that in our own institutions we are tolerated as relatively harmless crackpots who seem to know a great deal about very little, and if we gain academic advancement or rewards these are usually not for our Sino-Tibetan studies, but rather for more socially redeeming activities such as teaching language courses or serving on stupid committees. Our spouses and families and close friends tend to resign themselves to our Sino-Tibetan pursuits because they find that these activities keep us from worse mischief, and they become even more reconciled when they see us going for our meetings to such exotic places as Seattle, Peking, Gainesville, Charlottesville, Paris, and so on. Of course when they actually meet our Sino-Tibetan colleagues in the flesh, they see that they are the wittiest, the most glamorous, and the best-looking people on earth, and this also helps.

So I am suggesting that what keeps us going so enthusiastically year after year, indeed for a lifetime—for who ever heard of a reformed or rehabilitated Sino-Tibetanist?—what gives us strength to endure the disapproval, or at best, reluctant tolerance directed at us by our associates and our families, is this obsession with confronting and penetrating the unknown, with trying to find out things that no one ever knew before, or to make sense of things that have not been understood.

I would like to talk about two areas of Sino-Tibetan studies about which we know very little, where what we do know suggests that there is a great deal more to be learned or to be understood. Each of these two general topics is of the sort that have often kept me lying awake nights speculating, and perhaps some of you as well. Each of the two subsumes a variety of problems, some of which, as we will see, seem likely to be soluble if we were to get the right people together and have them combine their knowledge and undertake a cooperative investigation. Other problems seem unlikely to be resolved except in the fullness of time as we gradually come to know more and more about the linguistic history of our area.

The first of these two general topics is the great wave of tonal splits that swept across Southeast Asia and the Far East some centuries ago, surely one of the most drastic and extensive sets of sound changes ever to have occurred anywhere. Virtually everyone here, perhaps indeed everyone, is a student of languages that underwent these changes.

What usually happened, as you all know, is that an earlier system of, say, three contrasting tones, changed into a system of six or so. The splits are generally believed to have come about in this way: At first an allophonic

pitch difference arose, conditioned by the phonetic nature of the initial consonant of the syllable, so that, for example, a particular tone came to be pronounced with a lower pitch after a voiced initial than after a voiceless one. At this stage the difference was automatic, probably not noticed by speakers or listeners. But then changes occurred in initial consonants. Sometimes previously voiced consonants became voiceless, or vice versa. And sometimes these changes in initial consonants had the result that the previously allophonic, noncontrastive pitch variants of what had been a single tone became contrastive. For example, a language perhaps had at the earlier stage syllables like paa with higher pitch and baa with lower pitch. If the voiced b changed to a voiceless p, then the two syllables came to be distinguished only by the pitch difference, so that now there were two contrasting tones where there had previously been only one, with allophonic variants but no contrasts.

The first question about this wave of tonal splits is its geographical extent. So far as I know, this has never been determined. To start with Southeast Asia, every known language or dialect of the Tai family underwent such tonal splits, from Assam in the west all the way across to the extreme northeast of Vietnam in the east, and including all the Tai dialects spoken across the southern part of China. To the west, I understand that the Tibeto-Burman group was affected. But did this include all languages and dialects of the Tibeto-Burman group? If not, which were not affected, and where are they located? Other tonal languages in Southeast Asia were affected, including Vietnamese and the languages of the Miao-Yao family. The non-tonal Mon-Khmer languages underwent a similar set of changes, making splits in vocalic nuclei conditioned by the phonetic nature of the preceding consonant, and sometimes even developing two registers of voice quality. This happened in the two major languages of the group, Khmer or Cambodian and Mon, but how about all the many small islands of Mon-Khmer speech scattered throughout many countries of Southeast Asia? Were they also affected? All of them? And what were the western limits of these splits in Austro-Asiatic?

Chinese was affected, but all dialects and all Chinese-speaking areas? Small minority languages in southern China, outside of but related to Tai, are generally assumed to have been affected, such as Kam, Mak, Sui, T'en, Li, Be, etc., but are we sure that all of them without exception underwent these splits?

This question of the geographical extent of this great wave of tonal splits could, I believe, be solved by combining all the knowledge available among the participants in this conference. If we were to stop at this point and ask around, we could probably get a detailed and accurate picture right now, but then I would never get a chance to finish my talk, and of course we don't want that to happen, do we? At one point as I was thinking about all these matters it occurred to me that this would make a good subject for a paper for next year's Sino-Tibetan conference, in which you would do all the work and I would get the credit. That is, in the next few months I would undertake to write to each of you asking you to furnish what information you could on the languages you work on, and then I would piece it all together for a paper for the next conference, but as many of you know I am finding it increasingly difficult these days to cope with my mail, so I won't undertake this project. Anyone else is welcome to do so.

So the question of the geographical extent of this great wave of tonal

splits is probably soluble, if we could get a cooperative investigation organized. A more difficult question is that of date. It is sometimes said that this wave of changes occurred in the Tai languages about a thousand years ago, or about 1000 A.D., but that Central Thailand was an exception, and was affected later.

It is certainly true that these changes occurred late in Central Thailand, perhaps much later than anyone has imagined. The changes certainly had not occurred at the time of the earliest inscriptions in Thailand, which date from the end of the 13th century. Moreover, there seems to be no doubt that the poetic works from the earliest part of the period of the old capital at Ayutthaya, which was founded in 1350, were composed in the earlier three-tone language. And the great mass of loanwords into Siamese from Cambodian clearly predate both the tonal splits in Siamese and the similar vowel-splits in Cambodian, and it seems not unreasonable to assume that these borrowings date from a time after the final conquest of the Cambodian capital at Angkor, when the Siamese are believed to have imported great numbers of scholars, teachers, and books from the conquered Cambodian capital. This would bring us to some time after the middle of the 15th century for the date of the tonal splits in Central Thailand, which seems very late indeed. On the other hand, European travelers who visited Thailand in the 17th century describe the Siamese alphabet, with indications of the pronunciation of the consonant letters which show clearly that the consonant changes involved with the tonal splits had by then already occurred. These facts and arguments, if correct, place the date of the tonal splits in Central Thailand some time in the two-hundred-year period between the middle of the 15th and the middle of the 17th centuries, barely the day before yesterday.

Careful study of inscriptions and other older literary records where available, for example in Thailand, Laos, and Cambodia, and to a lesser extent in other countries, will no doubt eventually provide further clues as to the dates of these tonal changes in each language in Southeast Asia. No doubt the situation in China, of which I am blissfully and totally ignorant, is more hopeful. Vietnamese may also be more accessible to investigation along these lines; I don't know enough about Vietnamese to say. For most of Southeast Asia one has the feeling that it would be discouraging, perhaps even futile, to set out deliberately to investigate this question, because there is so much material to be looked at without having a very clear idea of what one is looking for, since evidence for the date of the tonal splits may show up in unexpected sources and forms. Rather, it seems likely that for the resolution of this question as to the date of the tonal splits we will simply have to watch and wait for enlightenment as our detailed historical and philological knowledge of each language is deepened and broadened.

A related question is where these tonal splits started and how they spread. It may be that this question will not be answered until we know the date of the splits in each area. On the other hand, it is conceivable that careful study of the modern tonal systems by scholars highly skilled in phonetic and phonological fact and theory will throw light on this question, without waiting for historical evidence to come to light. Indeed, we already have some bits and pieces of speculation about all this here and there in the literature. There is also perhaps the same possibility of help from synchronic studies in the case of another question, whether within a single language all the splits occurred at once, or some splits occurred earlier and others later. Here again there has also been some speculation regarding some changes in some

of the languages.

There is another question regarding the tonal splits in the Tai languages which I raised years ago at a Sino-Tibetan conference at Cornell University, and to which I have yet found no answer. In many Tai languages there was a simple split conditioned by the voiced or voiceless nature of the initial consonant, giving in many cases six contrasting tones instead of the earlier three. But in many other Tai languages and dialects the situation is more complicated. A single earlier tone was often split into two or even three tones on the basis of other conditioning phonetic features of the initial consonants than the simple voiced-voiceless contrast. If one charts these facts he ends up with four categories of initial consonants: 1st, voiceless friction sounds like such fricatives as s, f, x, aspirated voiceless stops such as ph, th, kh, and voiceless or preaspirated sonorants such as l, m, or hl, hm; 2nd, voiceless unaspirated stops such as p, t, k; 3rd, preglottalized sounds, including simple glottal stop; and 4th, voiced consonants. The puzzling thing about this chart is that these four categories have to be listed in exactly this order, because in any one dialect the splitting of any one earlier tone was always such that each resulting tone involved always contiguous categories of initial consonants in our chart. That is, one never finds the same new tone associated with, say, consonants of the first or second category, and also the fourth, skipping the third. I have therefore called this a phonological spectrum, because the inflexibility of this ordering is like that of the colors of the rainbow, where for example one never sees orange over among the blues. The puzzle of this inflexible order seems to me to be one of interest to general phonetic and phonological theory, but so far no one has been able to suggest an explanation for it. At the Paris Sino-Tibetan conference a few years ago I presented a paper in which I reconstructed a series of six additional initial consonants for Proto-Tai, three stops and three spirants, which would have to form a fifth category in our chart of initial consonant types, contiguous with the fourth category, the voiced sounds, because in Tai languages of the Northern branch they behaved like voiced initials, and also with the first category, the voiceless friction sounds, because in all other Tai languages they behaved like these, so that our chart becomes a closed loop, just as in the color spectrum infra-red at one end meets ultra-violet at the other.

In Chinese, I understand, some dialects underwent splits conditioned by more complicated phonetic features of the initial consonants than the simple voiced-voiceless distinction. But I have never heard it suggested that in Chinese, or in any other tonal languages in the area, the conditioning features involved the rigid ordering of phonetic features of initial consonants that we find in Tai. This is surprising, because the fact that the Tai languages invariably adhered to this principle of a fixed order of phonetic features in making their tonal splits, even though the splits occurred very late, long after the Tai family had broken up into its various branches and subbranches, indeed after the various Tai languages and dialects were pretty much in place in their present locations, seems to imply that we have here a general phonetic or phonological principle that has nothing to do with the fact that these Tai languages are genetically related to each other. So if all Tai dialects adhere to this principle not because they are genetically members of the Tai group but because the principle is a general phonetic or phonological one, why don't we find the same principle at work outside the Tai family? Of course everyone recognizes that the Tai languages are superior in many respects, but it's hard even for me, with my pro-Tai bias, to believe that only the Tai languages were

capable of observing so elegant and systematic a set of principles in making their tonal splits, while everyone else either stuck to the simple voiced-voiceless routine or else, if they deviated at all, did so in some sloppy, slipshod, haphazard or ad-hoc manner.

I wish to say just one more thing about this subject, the possibility that there may be Chinese dialects that obeyed this principle of an ordered series of phonetic features of initial consonants in making tonal splits. I do so with fear and trembling, because I know nothing about Chinese, and you may reasonably charge that this is a case of a youngster trying to teach his grandmother how to suck eggs. What I have in mind is this. A number of times through the years as I have sat listening to some of you, and others, describe the tonal splits in some Chinese dialect or other, I have sometimes heard allegedly irregular examples cited as evidence for the anti-neogrammarian theory of sound change, or sound change one word at a time. It has sometimes looked to me as if the allegedly irregular words tended to cluster around a single earlier tone and a particular category of initials, suggesting that the author has made a mistake in assuming a simple voiced-voiceless distinction as the conditioning factor, so that a regular change may have been involved after all, with more complicated Tai-like conditioning features in the initial consonants. You may now shoot me for my impertinence and irreverence if you wish, but even if you do, I make as my dying request a plea that these cases be re-examined for the possibility that a Tai-like ordered series of consonant features may be involved.

So these are the problems relating to the tonal splits that seem to me to be most challenging and tantalizing, the geographical extent of the splits, the dates, and the questions about the conditioning features in the initial consonants.

The other topic that I wish to talk about is the earlier three-tone system in Tai and other language families of Southeast Asia and the Far East.

So far as Tai is concerned, it is generally agreed that the proto-language had three contrasting tones on syllables ending in voiced sounds, that is, vowels, diphthongs, and nasals. There were also other syllables ending in one of the three voiceless stops *p*, *t*, or *k*, in which there was in Proto-Tai no tonal distinction. No one knows the date of Proto-Tai unity. It certainly must have been during the first millenium of the common era, perhaps around the middle of the first millenium or somewhat earlier. Some have suggested that it may even have been somewhat later. This three-tone system appears to have persisted long after the dispersal of the family, until the tonal splits occurred in the various dialects long after they had scattered to their present locations, perhaps, as we have seen earlier, as late as the middle of the second millenium.

Of the three tones, the one called the A tone was by far the most common; it occurred on at least as many words as the B and C tones combined, or perhaps more. This suggests that the A tone was somehow the normal, unmarked tone. Some of us have suggested that the other two tones were marked by special features, in the case of the B tone perhaps breathy voice or a syllable-final *h*, in the case of the C tone perhaps glottal constriction or a syllable-final glottal stop. In view of the long period during which this three-tone system survived, and the vastness of the geographical area over which the dialects were finally dispersed, it seems likely that these tones, while maintaining the

original system of a three-way contrast, would have developed phonetic differences from place to place in the course of the long period of perhaps a thousand years between the time of Proto-Tai unity and the time of the tonal splits.

Now we are told that both Chinese and the Miao-Yao languages also had in earlier times three-tone systems. I am assuming that there was considerable chronological overlap in the three-tone stages of these three groups, Tai, Chinese, and Miao-Yao. If I am wrong about this, everything I am about to say will have to be disregarded, and we will see to it that Rosemary erases the next eighteen minutes.

So a number of questions arise. Did the similarities go beyond the mere fact that the number of tones was three in each group? Did, for example, the A-tone in other groups, as in Tai, occur on far more words than the other two tones? And did the other languages show the special phonetic features in the other two tones that have been suggested for Tai?

Were there other groups in the area besides these three that had three-tone systems at more or less the same period? We have mentioned in another connection the group of languages in southeastern China that seem to be related somehow to Tai, that is, Mak, Sui, Kam, Li, Be, and others. These are sometimes called the Kadai languages, but I have always avoided this term for two reasons, first because the term Kadai has been used by various scholars in different senses, and second, because the term is associated with a linguistic theology which I eschew. What little work has been attempted at comparing these languages with each other and with Tai has usually been based on the assumption that they also had in earlier times a three-tone system similar to that of Proto-Tai, and that they later underwent tonal splits conditioned by the voiced-voiceless distinction in initials. I have sometimes wondered whether the great difficulty that has been encountered in the comparative study of these languages, and the lack of any real progress, may be due to errors in either or both of these assumptions. Could it be that some or all of these languages had in earlier times two tones, or four, or some other number than three, and that the conditioning factors in the splits were sometimes, as in Tai, something other than the simple voiced-voiceless distinction?

Be that as it may, we are left with a picture of a number of language groups in this area, assuming that the location of Proto-Tai at the time of unity was in southeastern China, which shared in at least a general way remarkably similar tonal systems. They shared other phonological features as well, for instance a severe limitation on the number of permitted syllable-final consonants. And of course they agreed in favoring monosyllabic morphemes or words.

Scholars have identified a great number of words shared by Chinese and Tai, and assumed that these must be due either to common genetic inheritance or to borrowing from one group by the other. Most of these shared Chinese and Tai words agree in their tones in the earlier period, allowing for the unfortunate but unavoidable and uncorrectable accident that what is called the B tone in Chinese corresponds to the C tone in Tai and vice versa. This is, of course, an accident not in the languages but in the history of scholarship, which has quite correctly followed a different firmly established traditional ordering in each case, neither of which could be changed merely to suit the convenience of us Sino-Tibetanists. When people speak of Tai and Chinese tones corresponding

in this way, or, in the case of exceptions, failing to correspond, all that is meant is that these shared words fall into this pattern of tonal agreement, Chinese A-tone words having the A tone in Tai, Chinese B-tone words having the C tone in Tai, and Chinese C-tone words having the B tone in Tai.

I am suggesting that at one time, and perhaps over a fairly long period, a number of linguistic groups in this area shared a tonal system that varied rather little from group to group, so that there may have existed a kind of primordial tonal soup. If so, borrowing from one group to another with fairly regular tonal agreement would surely have been greatly facilitated.

If a number of linguistic groups in the area shared similar tonal systems, as well as the feature of monosyllabic morphemes and the severe limitation on permitted syllable-final consonants, how did this situation come about? How was it that these groups, regardless of earlier genetic connections, ended up in this condition? Surely there must at one time have been tremendous pressure from one group to another to have brought about this remarkable degree of conformity to a linguistic type which is, after all, unusual among languages of the world. The wave of changes necessary to result in this typological conformity must have been even more drastic, even cataclysmic, than the much later wave of tonal splits discussed earlier.

Presumably it has to be assumed that at an earlier period, before all these language groups underwent this typological merger or convergence into the monosyllabic tonal type, each group was of some other phonological type, with perhaps morphemes and words of more than one syllable, more permitted syllable-final consonants, and no tones or different types of tonal systems. For the linguistic historian involved in trying to push back his reconstructions as far as possible, this period of transition from earlier types to the monosyllabic tonal type seems to me to constitute a kind of impenetrable iron curtain or wall.

In Tai studies we have been fairly successful in reconstructing the entire phonological system for earlier stages, including Proto-Tai, thus accounting for the past history of each sound as part of the system. This kind of systematic reconstruction has the benefit, of course, of bestowing greater certainty on our individual etymological comparisons.

So the question is, how far back can we push our reconstructions before we come up against this iron curtain? All our work on comparative Tai would, at first glance, seem to lie this side of the iron wall. But suggestions that have been put forward by some would imply that this is not necessarily the case. Proto-Tai has been rather thoroughly reconstructed except for the vowel system, which still presents difficulties. At least two rather different vowel systems have been reconstructed for Proto-Tai, neither of which I find totally convincing. It has been suggested by at least one distinguished scholar that the inconsistencies and irregularities in vowels between various branches of Tai are due to prior syllables at an earlier stage which were lost, but which left their traces in the the vowels of the later monosyllabic forms. This would be a case of going behind the iron curtain to seek explanations for forms found on this side.

Another question involving this iron curtain is that of the relationship of Tai to the so-called Kadai languages, that is, Mak, Sui, Kam, Be, etc. We don't know yet whether these Kadai languages constitute a single genetic group

or more than one, to say nothing of the exact nature of their relationship to Tai. An interesting question is whether the whole story of Kadai-Tai relationship lies this side of the iron curtain or behind it. That is, was the single parent language from which both the Tai and the Kadai groups developed subsequent or prior to the time of the iron curtain?

Digressing for a moment, I say nothing about the seriousness of this iron curtain problem for the student of other language groups such as Chinese or Tibeto-Burman, out of ignorance. Some of you who work in these other fields would know whether you also have an iron curtain problem or not, and if so how serious it is. Vietnamese is an interesting case. If, as reliable authorities tell us, Vietnamese, or rather the Viet-Muong group, is genetically related to Mon-Khmer, then it would be logical to infer that there is no problem of an iron curtain for those who try to work out the details of the comparisons and reconstructions involved in the relationship of Viet-Muong to Mon-Khmer.

But to return to Tai and the so-called Kadai group, we find that scholars are of two persuasions. Everyone seems to have definitely and incurably one preference or another, with no one belonging to an AC-DC or ambidextrous school. One school, which includes myself, prefers to work exclusively this side of the iron curtain, encouraged by past successes in reconstructing entire phonological systems. Others prefer to disregard the iron curtain, moving back and forth through it as if it were a mere wisp of fog or mist, constantly pointing out alleged etymological connections between monosyllabic words in Tai and words of more than one syllable in other language groups. It may be that even for those of us who belong to the first more rigid group it may ultimately be necessary to admit that the other bolder spirits of the second school may turn out not to have entirely misspent their lives. For it may be that some day, when we who attempt to reconstruct entire systems this side of the iron curtain have spent our bolt, and find that we have done all we can within this limitation, it may turn out that our earliest reconstructed systems this side of the iron wall may then be found to be comparable to other entire phonological systems in other non-monosyllabic and perhaps non-tonal groups, and the rash etymologies which our bolder brethren have prematurely proposed may then suggest the directions in which to seek to make sounder, more systematic connections between our monosyllabic groups and other groups outside our area.

OBSERVATIONS ON SOME CASES OF TONE SANDHI¹

Christopher Court

From the field of comparative and historical Tai linguistics we have a great deal of information about the tones of numerous dialects, including most importantly a fine-grained profile of the patterns of tonal splits and mergers. From this information a very elaborate typology of Tai tonal systems has been constructed² which some would interpret genetically, requiring, it would seem, very little else in the way of data before proceeding to the reconstruction of family trees, on the principle that a pattern of tonal splits and mergers cannot be borrowed—or accidentally duplicated—while most other things can be borrowed, including the actual phonetic character of the tones³. In a brilliant tour de force J. Marvin Brown in his doctoral dissertation, published as From Ancient Thai to Modern Dialects (ATMD) "guessed at" a protosystem of suprasegmentals from which the tone systems occurring in his corpus of southwestern Tai dialects might have been derived, and then proceeded to elaborate the subgroupings, reconstructing the intermediate suprasegmental systems at the various nodes and eventually deriving the present-day systems. Not only pitch level and contour but phonation types and length were included in these suprasegmental systems. Various principles of phonation-dynamics were posited to account for many of the changes. Now it had been known before Brown's work, with regard to the tones of Chinese and Tai that these languages must have had since ancient times four tones (or three tonemes in non-staccato syllables plus an "architoneme" in staccato syllables) and that this set of tones must have subsequently split into an upper and lower version of each tone, producing eight tones (six in smooth syllables, and two in staccato syllables), by the devoicing of a set of originally voiced initial obstruents. The mechanism of this split (that a voiced initial consonant depresses the pitch of a following vowel) was also fairly well understood. But in the modern Chinese and Tai dialects the original picture—two matching series of tones on an upper and lower level—has almost everywhere been more or less obscured. Not only have changes of tonal contour and pitch level occurred but in many cases the total of eight tones has been drastically reduced. Not infrequently high tones and low tones, or rising tones and falling tones seem to have changed places. The next milestone that we might look forward to in the realm of what might be called "general tonology" is a satisfactory answer to the question of what laws govern the evolution of tonal systems once they are in being⁴. From the 1960's we have two attempts at the beginning of an answer to

¹ An earlier version of this paper was presented at the XIIIth International Conference on Sino-Tibetan Languages and Linguistics, October 24-6 1980, at the University of Virginia, Charlottesville. It is a pleasure to dedicate it to Paul Benedict, who has been, among so many other things, an acute observer of tonal systems and has a place for tone sandhi in his grand scheme of things.

² See Li 1977:43-55, for instance.

³ See Brown 1965:48, 51, Chamberlain 1972, 1975.

this question, one from Brown in ATMD (1965) and one from William S.-Y. Wang in his paper entitled "Phonological Features of Tone" (1967). Recently Brown (1975) applied some of the principles of tone-system dynamics that he had expounded in ATMD to help explain the paradox that in most southwestern Tai (SWT) dialects the tones of words with the old voiced initials have tones higher than words with the old voiceless initials. More recently still David Strecker⁵ has developed some of Brown's ideas and applied them to explain the shapes of certain tones of central Tai dialects. At the same time Tsu-lin Mei (1977) had been applying basically similar ideas -- drag chains and push-chains -- to the tonal history of Mandarin. Now Wang in the paper just mentioned presents the seminal idea that tone sandhi may represent a diachronic regression in the character of a tone. It would seem worthwhile then to provide some data on tone sandhi and comment on it in the light of the views of Brown/Strecker and Wang. From such an endeavour we may perhaps develop a perspective from which to assemble data relevant to a theory of possible tone changes. The present writer feels that the approach in this matter should be systemic, i.e., restructurings of the tonal system. One should also be on the lookout for data bearing on the hypotheses that tone sandhi on the one hand re-enacts past changes in the citation form of words, or on the other hand that it foreshadows future changes in citation forms. It is the aim of the present paper to present some data with a few comments along these lines⁶.

The Data: Figs. 1 through 13 show the tones and tone sandhi of six varieties of southern Min Chinese, one variety of southwestern Tai, and three varieties of Northern Chinese. The tones are displayed in matrices according to their historical classes: even (E), rising (R), going (G) and entering (En), in upper (U) and lower (L) grades. The Thai tones are entered according to correspondences in ancient vocabulary shared with Chinese (whether the sharing is due to borrowing, in whatever direction, or not). Boldly drawn lines unite boxes whose tones have merged. Arrows refer to changes that take place in sandhi and are to be read as "becomes" or "is replaced by". Different arrows starting from the same box indicate sandhi resultants that are in complementary distribution. Dotted arrows indicate sporadic sandhi. Dotted boxes enclose tones of sandhi that cannot be identified with any citation-form tones. "x" next to an arrow indicates a sandhi change that takes place only in syllables ending in a glottal stop ([-ʔ]). "o" next to an arrow indicates a sandhi change that takes place only when certain tones are in the next syllable. For the sake of exposition Figs. 1 through 6 are arranged in a kind of ascending order of complexity. Fig. 9 shows the Satun subdialect of Pak Tai (southern Thai, the regional dialect of southern Thailand), one of the few Tai dialects known to me that has any significant degree of tone sandhi. It should be noted that for the Tai language one must distinguish the entering tones (or "dead syllables", as they are known traditionally) into long and short. Sandhi for the entering tones is not marked, because I am uncertain of the facts. Fig. 10 attempts to show the Pekingese system in all its complexity, while Fig. 11

⁴ Or, more precisely, once they have either just been established or just undergone a major, but neat, systemic change, such as a split of the entire system, since some kind of drift seems to set in rapidly.

⁵ For instance, Strecker 1977 (m.s.), 1979ab.

⁶ In the present paper we shall not deal with the intricate discussions of Wu tone sandhi in Ballard 1972, 1973, 1975, and 1980, nor, except in passing, with the claim of Egerod (1971:fn. 12) that tone sandhi in Chinese is in its origin a type of dissimilation of phonation types, nor with the question of the psychological reality of tone sandhi (v. Hsieh 1970).

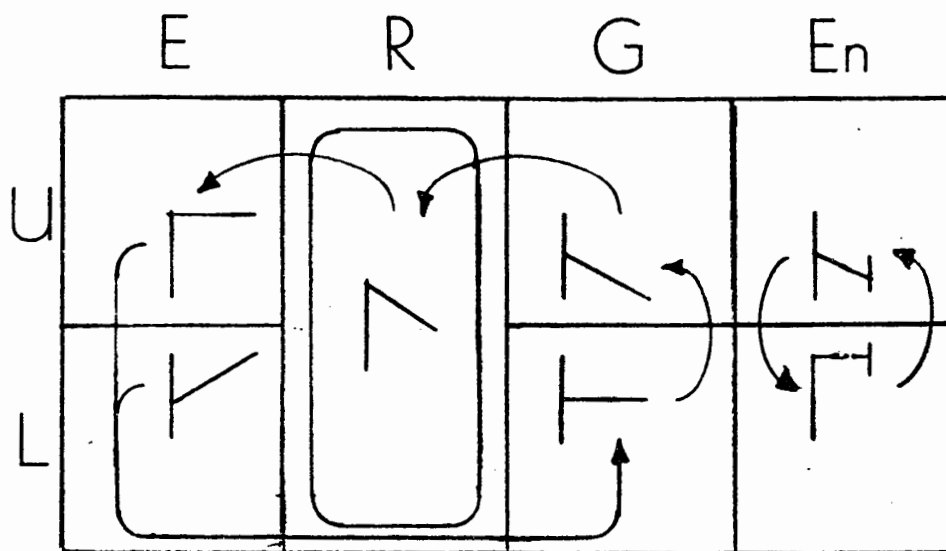


Fig. 1 Bodman's Amoy Hokkien (BAH)⁷

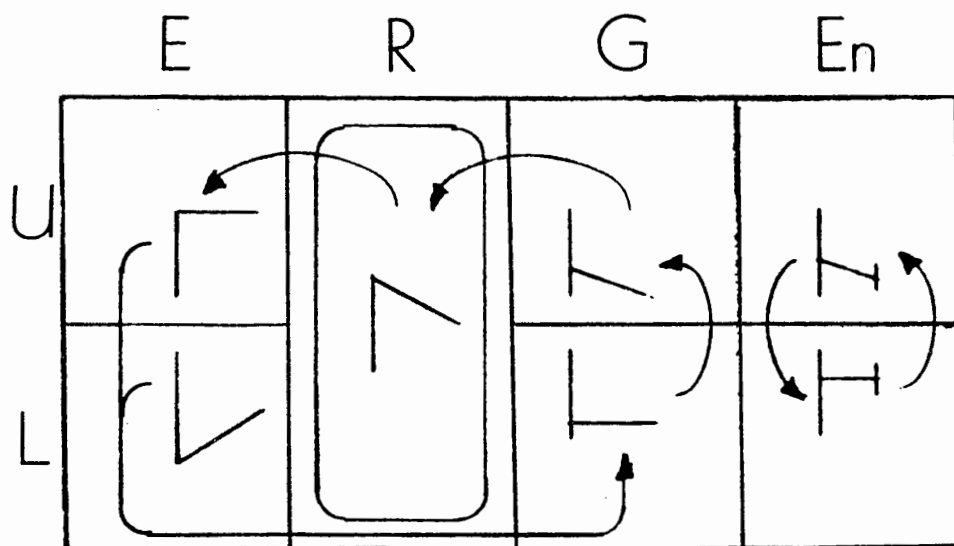


Fig. 2 Cheng's Taiwanese Hokkien (1977) (CTH)

⁷ Taken from Wang (1967:99). Thanks are due to Judith Betts for assistance in the preparation of the figures.

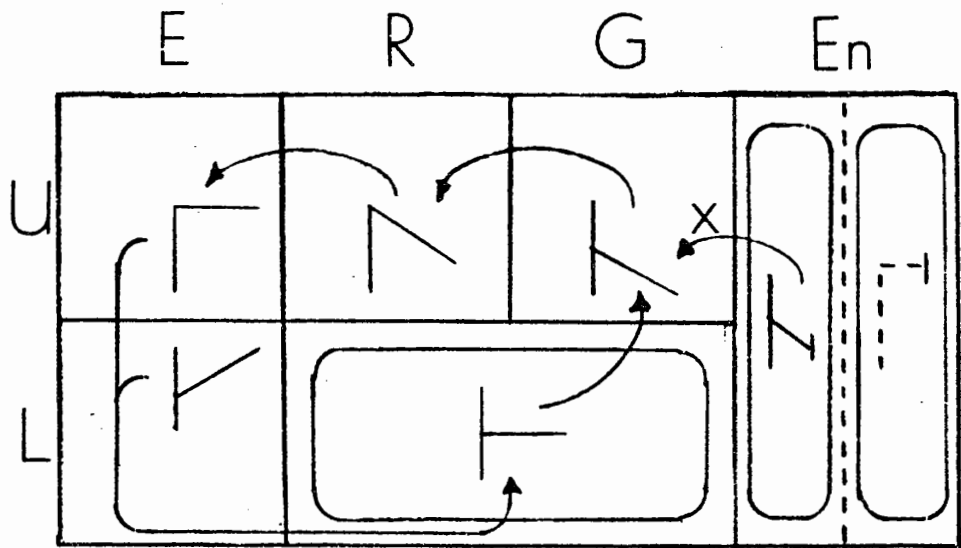


Fig. 3 Yao's Taiwanese Hokkien (YTH)⁸

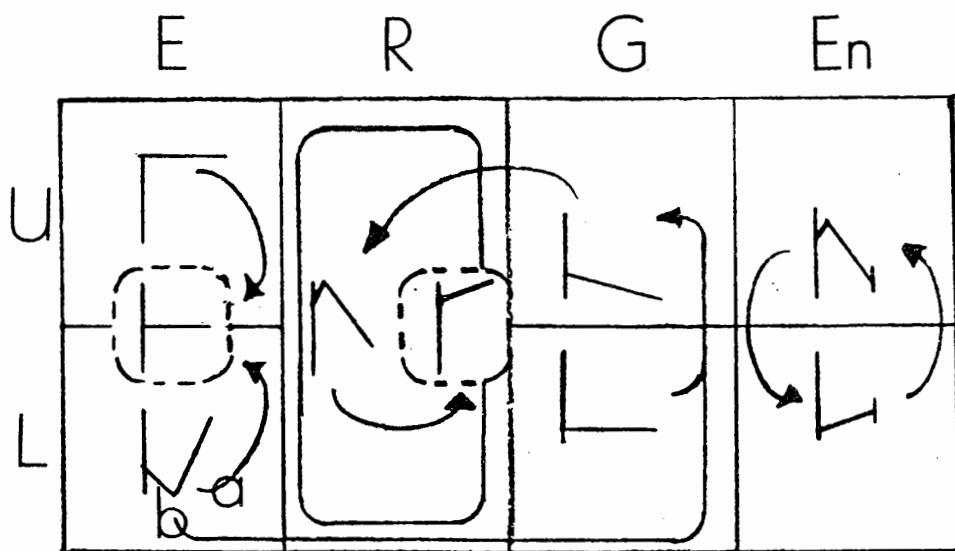


Fig. 4 Carstairs Douglas' Amoy (1873) (CIA)⁹

⁸ Data personally collected by the writer in Hawaii during the summer of 1977 from a Mr. Yao Rong-Song, 31 years old, native of Tou Nan town, Yin Lin County, Taiwan. To Mr. Yao, a fellow-linguist who graciously agreed to be an informant, many thanks are hereby expressed. Mr. Yao was, of course, a very insightful informant, but time was very short, and for any errors of fact or interpretation the writer is responsible. Tone shapes were plotted on graph paper with the aid of a pitch pipe. Only tones and tone sandhi were studied.

⁹ (1899:xiii-xv). It is assumed that if the tones had changed since 1873 Douglas would have mentioned the fact. I have interpreted his description somewhat in

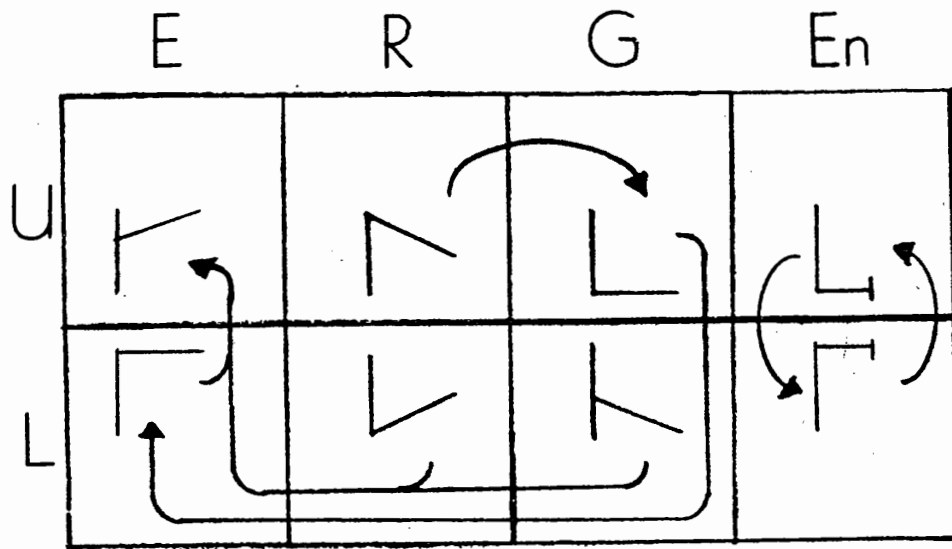


Fig-5 Egerod's Swatow (1956) (ES)

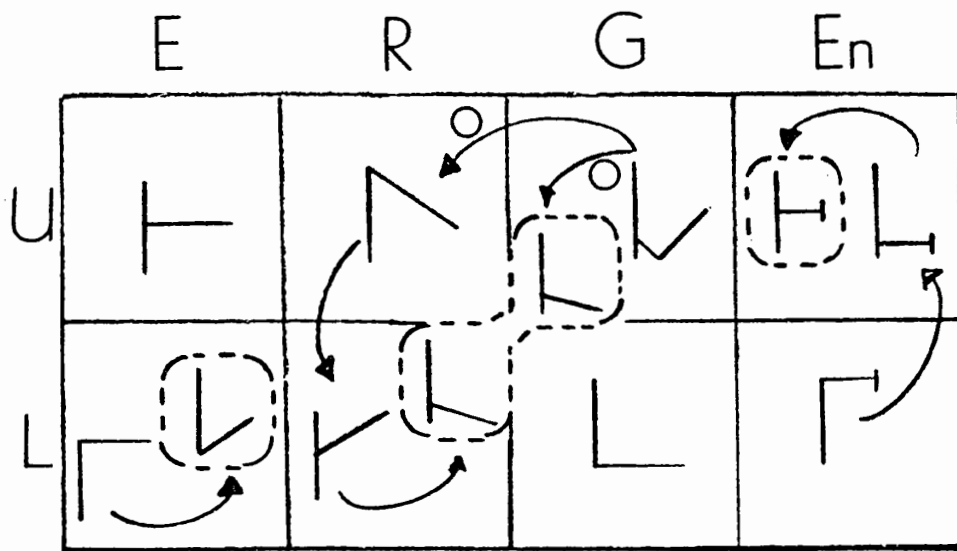


Fig-6 Li's Ch'ao Chou (1959:15) (LCC)

order to fit it to the present framework.

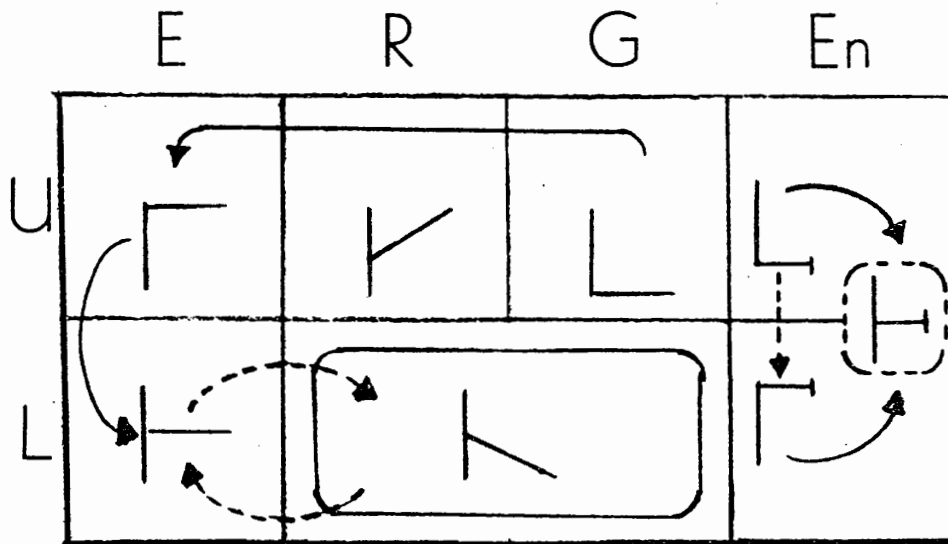


Fig. 7 Egerod's Lungtu (EL)¹⁰

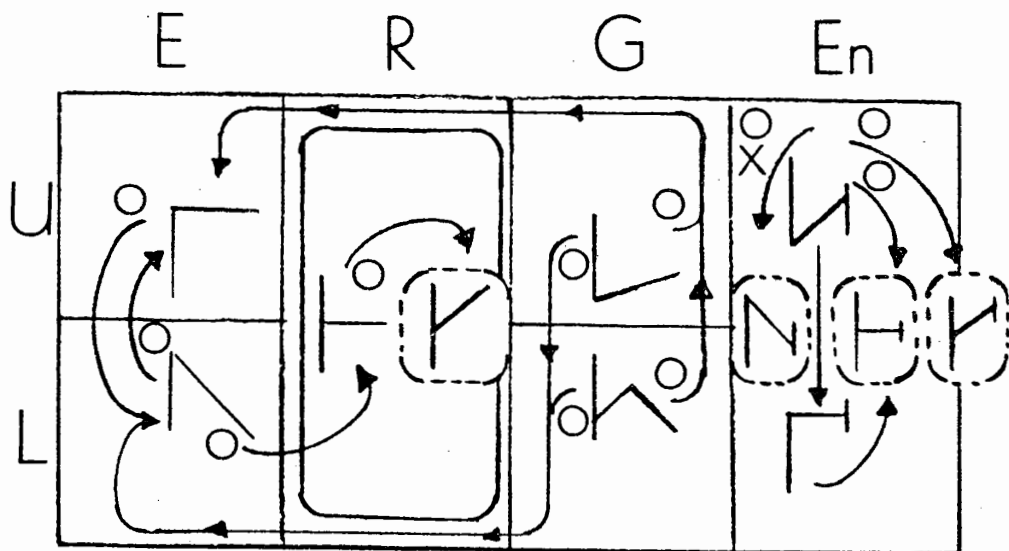


Fig. 8 Egerod's Fuchow (EF)¹¹

¹⁰ Egerod (1956:29-30, 50, 272-77) at this last place disregarding, for simplicity's sake, literary pronunciation and words with nasal and lateral initials.

¹¹ See footnote immediately above.

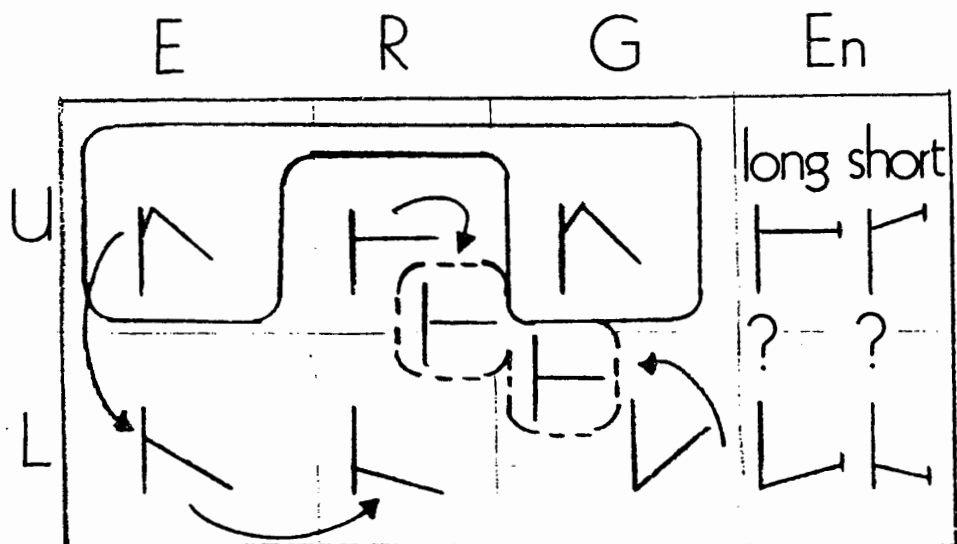


Fig. 9

Court's Satun Thai (1975) (CST)¹² (In normal comparative Thai terms En = dead, G= mak ek, R = mai tho, E = no tone sign, U = non-low initials, L = low initials)

simplifies it for the present discussion. In the dotted square is the "half third tone", and in parentheses is a citation-form variant of the second tone (see below). Figs. 12 and 13 show as much of their respective tone systems as is relevant for the present discussion.

Comments: If we agree with those Tai comparativists who take merger patterns as genetically indicative then Yao's Taiwanese Hokkien would seem to be an interloper in its present location--a "captured" dialect, or rather subdialect¹³. Its different merger pattern marks it off from the unity presented by the first, second, fourth, seventh and eighth systems diagrammed, in spite of the similarity of tone shapes, for it seems, both from certain Tai dialects and from various Chinese dialects as spoken in Thailand and Laos, that tone shapes can be borrowed, perhaps through correction to prestigious models. Further evidence of its having fallen "captive" to a more prestigious subdialect, presumably that of Fig. 2, is provided by the evolution of the entering tones, for which two speech styles have to be distinguished. First there is the formal style, in which, as well the merged entering tone, a high staccato tone makes its appearance, though randomly distributed with regard to the historical upper and lower entering tones, and also there is a [-?] final alongside the supraglottal stops. Secondly there is the informal style, in which upper and lower entering tones have merged to a low falling staccato tone for the supraglottal final stops, and in which [-?] has ceased to be a final and can be attached, in an intonational or boundary-marking capacity, to any of the smooth tones, with the formerly [-?] -finalled syllables having merged tonally into the smooth low falling tone. The upper staccato tone of the formal

¹² Slightly different tonal shapes, and a separation of my tone \wedge into a high and a mid toneme of similar shape are to be found in Brown (1965:134). For comment on this see Court (1975:fn. 5).

¹³ For the concept of "captured" dialects see Forrest 1965:217.

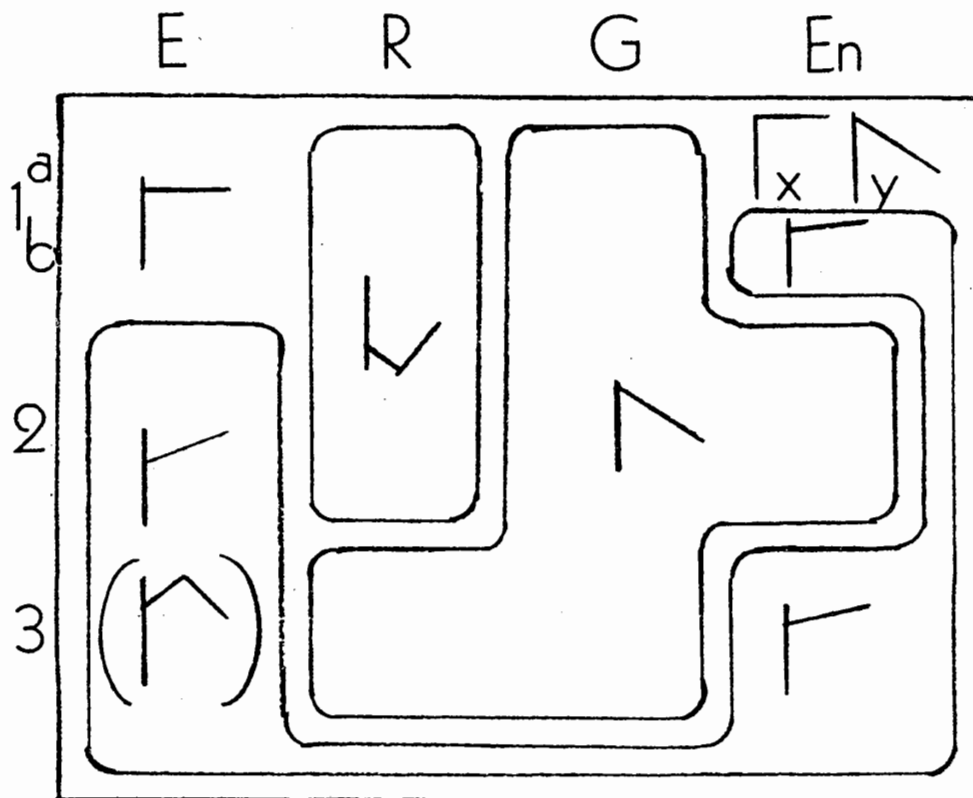


Fig. 10 Peking (Forrest 1965:202-3) (P) ((1)--vl. obstruent initials; (a) asp. initials, (b) unaspirated initials, (x) popular words, (y) literary words; (2) nasal and lateral initials; (3) old vd. obstruent initials; En column has many exceptional correspondences (not shown). Conventional numbers for the four modern tones of Peking are ┐ tone 1, ┐ tone 2, └ tone 3, ┐ tone 4. Parentheses enclose variant of tone 2 noted by Karlgren (cited in Bröring 1928).

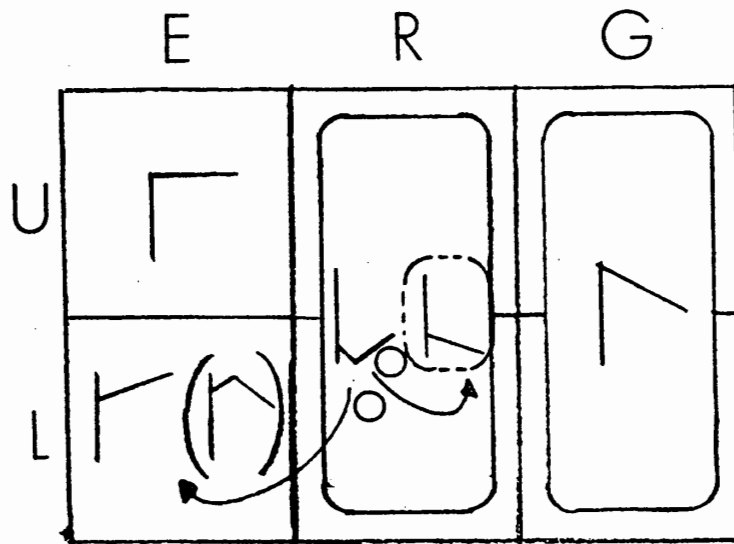


Fig. 11

Peking simplified for present purposes (P).
 Parentheses enclose variant form of tone 2.

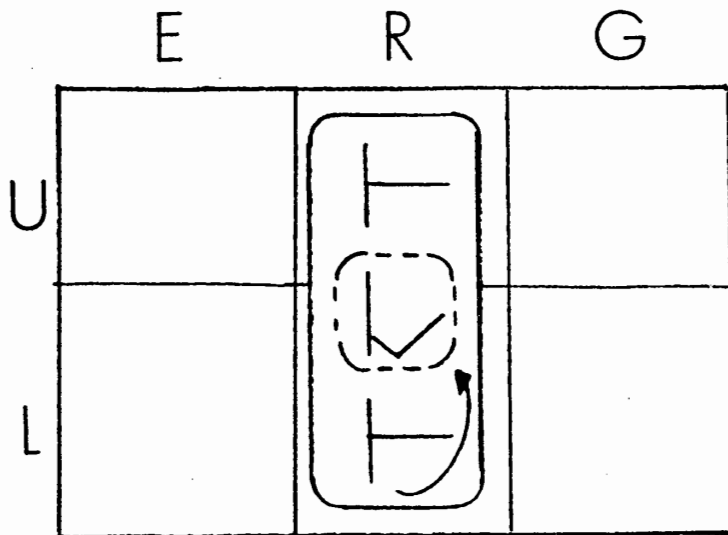


Fig. 12

Bröring's E. Shantung (1928). Only relevant
 portion shown.

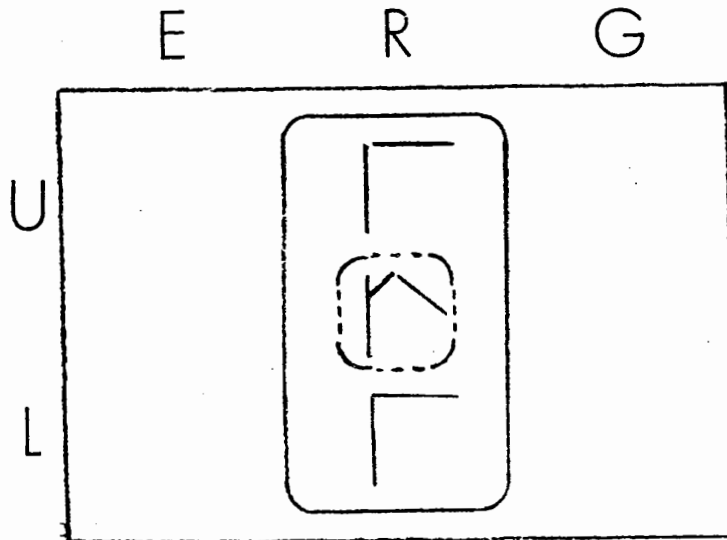


Fig. 13 Brøring's W. and NW Shantung (1928). Only relevant portions shown.

style is probably a hyperurbanism: the speaker knows that the prestige dialect has it, but because of the merger in his own dialect he is unable to use it in the etymologically correct places.

Carstairs Douglas' Amoy and Li's Ch'ao Chou, among others, show the phenomenon of tones that exist only in sandhi. The Amoy shows two subvarieties: (a) in which tones Γ and \vee merge to a special sandhi tone Γ , and (b) in which Γ becomes Γ , and \vee goes to Γ . Egerod's Swatow (ES), and Li's Ch'aochou (LCC) agree in having six smooth tones, corresponding to the six non-entering tone categories of Ancient Chinese, but in sandhi, mergers reduce this number to three, one less than with the 5-citation-tone systems of Figs. 1-4. LCC, for its part, has six tones in sandhi, but only before Γ and Γ , with \vee elsewhere merging with \vee to become Γ .

The isogloss of the merger of the two old rising tones cuts across the east-west isoglosses which are sometimes reckoned to divide Min fundamentally into a northern branch, which includes Fuchow, and a southern branch, which includes Amoy, Swatow and Ch'aochou. If the practice of some Tai comparativists, such as Brown and Chamberlain, were followed, this would count rather heavily against north-south being the fundamental division.

If Brown and Chamberlain are correct, and patterns of merger cannot be borrowed though tone shapes can, the YTH subgroups genetically not with its present neighbor CTH, but with EL. Note especially that, apart from the shared merger of LR and LG, the merger of UE and LE which shows up in sandhi in EL is a fait accompli in citation forms in YTH, thus suggesting that sandhi rules have predictive power (see further below). Since the same merger shows up in sandhi in EF, albeit with many constraints, we should not be surprised to find subdialects of Fuchow too in which it had taken place in citation forms. If we accept the genetic interpretation of the merger pattern, the phonetic

similarity of YTH to CTH suggests that it borrowed from the latter not only its entire inventory of tone shapes but its tone sandhi rules as well. Such a massive borrowing might, on the analogy of the term relexification, be referred to as retonification¹⁴. The alternatives are clear: either the shared merger pattern is fortuitous, or else the sandhi rules and everything else about the tones of YTH have been borrowed.

Although the tones are arranged in the matrices on historical criteria and not in some order contrived ad hoc, the direction of sandhi displacement tends to be uniform around the matrix in one and the same system: mostly anti-clockwise, as in BAM, CTH, YTH, CDA and EL, but clockwise in ES, and indeterminate in LCC. The famous "sandhi circle" can be clearly seen in several of the dialects. Even the Thai dialect shows this tendency towards uniformity of direction. Surely this predilection for tonal "musical chairs" calls for some explanation. We should note too, that the entering tones, so long as they keep their finals, form a separate system of interchanges in sandhi, in some cases executing so-called "flip-flops" (see below). Now since "flip-flops", whether tonal or otherwise, are not all that uncommon in languages around the world, it may be that the tendency towards musical chairs in general, bizarre as it seems, is rather widespread. Furthermore, if tone sandhi, really does, like art, imitate life (i.e. the "real world" of citation forms) then we might expect to find cases of diachronic changes in citation forms in which some or all of the tones had moved in the same direction around some matrix. It is interesting to note, for instance, that both Brown and Wang were independently and for different reasons prompted to draw an analogy between the behaviour of tones and the Great Vowel Shift of English.

Another point to be made about the "flip-flops" of the staccato syllables is that they are more complicated, and perhaps less certain than they may appear at first blush. In some cases the tones have more features than pitch level alone—they may also differ in pitch contour, as can be seen in the diagrams, and, in the case of CDA (although not shown in the diagram) in relative duration or relative stress as well, and it is not clear that the additional features are involved in the interchange¹⁵. In other cases there are more than two etic tones involved, as in LCC, LE, and especially EF.

In YTH and ES the sandhi in the entering tones depends in some way on whether the final is [-ʔ] or a supraglottal stop. This discriminatory treatment of final [-ʔ], plus the fact that the deleted [-ʔ] sandhi form in the YTH formal style is the citation form in the informal shows us that, whether or not the sandhi "flip-flops" of the entering tones are really backward-looking, sandhi processes may definitely be forward-looking, foreshadowing impending changes in citation syllables. Let us now, in the light of this fact, turn to the dialect of Peking. Let us suppose that the ancestor of Peking dialect had, like formal YTH, acquired, probably through interdialectal or inter-style borrowing, a [-ʔ] replacing the supraglottal final in some

¹⁴ A converse case is the Thai dialect of Khorat town in northeastern Thailand, which, while keeping its northeastern merger pattern and tone shapes has relexified to central Thai, becoming central Thai with a northeastern accent. See Brown 1965. Actually, for all the writer knows, YTH may have relexified too.

¹⁵ In fact it is fairly clear from Douglas' description (1899:xv) that the two entering tones retain their relative "strength" (roughly, intrinsic stress or loudness) unchanged through the flip-flop.

entering tone words while others still retained their supraglottal finals. Suppose further that there was some phonetic difference, say level pitch vs. falling pitch, between [-ʔ] - final words and supraglottal-stop-finalled words. Let us then imagine an ensuing stage in which this "pioneer" glottal stop had been elided, leaving bare level pitches, upper and lower, which now merged with the most similar non-entering tones and still remained distinct in pitch from the other entering-tone words whose supraglottal final consonant had now gone to a secondary [-ʔ], while the falling pitch remained. Let us suppose finally a third stage in which the secondary [-ʔ] too has elided, so that these old entering tone words are likewise merged with original non-entering tone words. The point is that because the primary-[-ʔ] words had different etic pitches from the secondary-[-ʔ] words they would merge with different non-entering tones. This could then partially explain the irregular distribution of the old entering tones among the four tones of modern Peking Mandarin. It is very likely that the primary-[-ʔ] words in such a scenario would be popular words, and the secondary-[-ʔ] words would be literary words (see Fig. 10 with caption).

A neutralization-under-sandhi affinity between historical tone categories may cut across dialects and subdialects, even though the etic tones involved are different. Thus the affinity between the UE and LE categories shows up in BAH, CTH, YTH, CDA, ES, EL and EF, i.e., in both northern and southern Min, but not in LCC. On the Tai side, the affinity between the UR and LG categories in Satun Thai shows up in the citation-form merger of the same categories (high/mid-initial-with mai-tho and low-initial-with mai-ek respectively) in standard Thai and Shan.

An affinity between a historic tone category and a particular tonetic shape may show up in citation forms in one dialect or subdialect and in sandhi forms in another. Thus the Peking affinity between Tone 3 (or rather the historical categories represented by Tone 3) and the shape \vee appears in citation forms in Peking and in sandhi, under certain conditions, in Shantung East (see Fig. 12).

A mixture of the phenomena described in the last two paragraphs above is also to be seen in N. Chinese--In Shantung West and Northeast, Tone 3 is normally \sqcap , but under the same circumstances which trigger the sandhi form of Tone 3 described in the last paragraph for Shantung East, the other two varieties of Shantung undergo the sandhi rule $\sqcap \rightarrow \vee$ (see Fig. 13). Now it will be seen that this sandhi resultant has the same shape as the alternative (or, as the case may be, older) Peking realization of Tone 2, and as is well known, Peking Tone 2 under certain sandhi conditions shares its shape with Tone 3.

Finally, the existence in Peking, at least in Karlgren's day, of two variants of Tone 2-- \vee and \vee --suggests a way in which the present-day sandhi neutralization to Tone 2 on the part of Tones 3 and 2 (under certain conditions) may have developed: viz. an earlier stage in which the sandhi shape of Tone 3 was \vee as now, but tone 2 was invariably \vee . Tone 2 then lost the falling section and became identical in shape with the sandhi form of Tone 3. If this is how things actually happened it has the interesting result that while it remains descriptively true to say that under certain conditions "Tone 3 changes to Tone 2", historically things would be just the other way around: Tone 2 changes to Tone 3, or at least to one of the variant forms of Tone 3. Note that if the tonetic shape \vee belonged to Tone 3 before it did

to Tone 2 (and Egerod 1971:fn. 12 claims that this probably is the original form of Tone 3, both in sandhi and citation), then we have another case of sandhi being backward-looking, retaining today Tone 3's original shape¹⁶.

Conclusion: As with Tai, so with Chinese, the close comparison of the tonal systems of genetically related language-varieties proves to be both revealing and intriguing. In tone sandhi, especially, we have a dynamic phenomenon that seems, Janus-like, to look now forward, now back in time. It seems reasonable to suppose that, provided the tones are fully described, with not only their pitch level and pitch contour but duration and phonation type as well, in both citation forms and sandhi, we will be able to draw up a list of universal tonal distinctive features at least as plausible as what we have for consonants and vowels, and in comparison-and-reconstruction work to develop the same sense of what is a possible sound-change that we have for consonants and vowels.

¹⁶ On the other hand Mei (1977) argues from philological evidence that the rule really has been that Tone 3 changes to Tone 2 (and not vice versa) since at least the sixteenth century.

GREENBERG'S "UNIVERSALS"¹ AGAIN:

A NOTE ON THE CASE OF KAREN

Eugénie J.A. Henderson

Having had occasion elsewhere² to argue that Khasi does indeed provide a valid exception to generalization No. 21, as set out in Greenberg's well-known 1965 paper on consonant clusters, it is perhaps appropriate here to refer briefly to another case cited by Greenberg as the "single exception" to generalization No. 26, which upon closer inspection turns out not to be an exception at all. A minor point, perhaps, but one which has not hitherto been raised, as far as I am aware.

The reader is reminded that generalization No. 26 states that "in initial systems the existence of at least one combination consisting of two voiced obstruents implies the existence of at least one combination consisting of two unvoiced obstruents." Greenberg goes on to say: "There is here a single exception, the Sgaw dialect of Karen which has the voiced obstruent combination /bɣ/ but has no sequences with both members unvoiced. There are, however, combinations in which the first member is unvoiced and second is /ɣ/, for example /pɣ/ and /sɣ/."

The crucial point here, of course, is the interpretation of the sound symbolized by R.B. Jones, from whom Greenberg gathered his examples, as [ɣ]. Luce regularly represents this sound in his transcriptions by [R]. Older romanized texts sometimes transcribe it -gh-. It is clear that these are all attempts to represent a voiced fricative made in the back of the mouth, i.e. either velar or uvular. To my ear, in listening to tapes and to the relatively few Sgaw speakers that I have met, the sound may indeed be pronounced with some "audible friction" on occasion, but is more often than not what is nowadays commonly referred to as a "frictionless continuant". That is to say, it is to be interpreted as what used to be called a "semivowel".

Those of us who work in S.E. Asian languages have long deplored the lack of recognition in the chart and symbolic system of the International Phonetic Association of an unrounded velar "semivowel". Until very recently there was

¹ It should be made clear that in the relevant paper Greenberg himself cautiously refers to "generalizations" rather than "universals", though some of these generalizations have been interpreted by other scholars as putative universals or quasi-universals.

² On the occasion of the Symposium on Austroasiatic Languages held at Helsingør in October 1979. See also Henderson (1976).

always an awkward asymmetry whereby we had:-

	<u>Palatal</u>	<u>Velar</u>
<u>Rounded</u>	ɥ	w
<u>Unrounded</u>	j	-

The latest edition of the phonetic alphabet of the Association has at last remedied this situation by recommending the symbol [ɥ] (derived from the unrounded close velar vowel symbol) to fill the gap. The sound [ɥ] is to the vowel [u] as [w] is to [u], [j] to [i] and [ɥ] to [y].³

If sequences like Sgaw /by/ are interpreted as being stop+semivowel rather than stop+fricative, they no longer violate generalization No. 26, and conform comfortably to the general pattern for clusters containing semivowels.

The status of Sgaw Karen [ɣ ~ R] as an unrounded back semivowel rather than as a fricative is supported by comparisons with other Karen dialects in which the cognate form frequently has a rounded back semivowel: [w]. There is also sometimes an interesting correspondence with [r], which lends support to the notion, difficult to avoid in this area, that in clusters at least 'semivowels' and 'liquids' form a single natural class in many S.E. Asian languages.

A few examples are appended below. Bwe examples are from my own notes; other dialects from Jones and/or Luce, marked J. and L., respectively, and given in their own transcriptions, though minor variants are not always shown. It will be observed that in some cases the semivowel appears to be a glide-onset to the following vowel, cp. Six, in which the semivowel in the (Luce) Sgaw and Paku forms and the Luce Bwe form take on the rounding feature of the following vowel. In the (Luce) Pwo, on the other hand, there is dissimilation of the rounding feature as between semivowel and vowel. The forms for Snake are also interesting in this respect with dissimilation in both Bwe variants, and in Pwo, but assimilation in Sgaw and Geba.

	<u>Pwo</u>	<u>Sgaw</u>	<u>Paku</u>	<u>Palayachi</u>	<u>Bwe</u>	<u>Other</u>
'bark fibre'		L.s'Rɔ ⁴ , ʃɔ ⁴			ɛɔ ²	
'body dirt'	J.xì	J.xì L.XRi ⁴	L.XRi ³ , gRi ³	J.krìq	wi ²	<u>Geba</u> L.hwi ²
'bone'	J.xwì	J.xí L.XRi ²	L.XRi ¹		-khwi ²	
'bowels'	J.xwè?	J.pyì? L.pRi ² ⁵	L.pRi ²		bwi ³	
'buy'	J.xwe L.hwe ² , Xwe ²	J.pye L.pRe ³	L.bRe ²		bwi ²	<u>Taungthu</u> J.phre
'Bwe Karen'	J.bwe	J.byé, bwé		prè?	bwe ¹	

³ In R.B. Jones' transcription, the symbol [ɥ] is used for the IPA [ɯ], i.e. for an unrounded back vowel, not a rounded front vowel, as in the IPA system.

'clear (of water)'	J.xì L.XRi ¹ , XRi ⁴	shyí L.s'Ri ¹	L.fí ¹	J.shríq	ca ¹ chi ¹	
'dry'	J.xèn L.Xrāi ⁶ , XRēi ⁴	J.xè L.XRe ¹	L.XRe ¹		we ¹	Geba L.hwe ¹
'full'		L.pRe ³	L.bRe ²		pwe ¹	
'lead'	J.sārbwá	J.pyà? L.pRa ⁵	L.pRa ²	J.pwà	ba ³	
'morning'		L.Rɔ ³	L.Rɔ ²		wɔ ²	
'old'	J.sá'	J.pyà		J.pwà	bwe ³	Taungthu J.phrà
'pheasant'	L.-Re? ¹	L.-Ri? ⁵			-we ³	
'side of body, ribs'	J.yíxwì	J.yíxí L.Ry? ⁵	L.Ry ²		we ³	Taungthu J.rə?
'sing (of birds)'	L.Xwē ⁵ , hwēi ²	L.pRe ³	L.bRe ²		bwi ²	
'six'	J.xù L.-XRu ⁶ , XRu ⁴	J.xý L.XRy ¹	L.XRy ¹		L.Xwu ¹ H.xu ¹⁽⁴⁾	
'snake'	J.yu L.Ru ¹ , Ru ⁴	J.yý L.Ry ⁶	L.Ry ⁵	J.rù	wi ² ~ wu ² ₁	Geba L.wu ² Pá-o L.ru ¹
'to sow'	J.xwi L.Xwi ¹ , hwi ⁴	J.phyí L.p'Ri ¹		J.phwiq	phwi ²	Taungthu J.phré?

⁴ The form [xu¹] appears to be borrowed from Sgaw. My informant felt that the 'true' Bwe form was [θɔ¹θv²] = "three pairs".

VOWEL PERMUTATIONS IN AUSTROASIATIC LANGUAGES¹

Franklin E. Huffman

Why do Mon-Khmer languages have so many vowels? The classical theory is, of course, that in many Mon-Khmer languages, an original voiced series */b d j g/ merged with a voiceless series */p t c k/, essentially doubling the number of vowel contrasts. There is good evidence for this hypothesis in many Mon-Khmer languages; in examining 15 Mon-Khmer languages in 1976 I found that some languages, notably the Bahnaric languages, are 'conservative', retaining the original voiced-voiceless contrast in the initials, with little or no change in the vowels; other languages, especially certain Katuic languages, are 'transitional', retaining a lax:tense distinction in the initials (/p' t' c' k'/ vs. /p t c k/), with subphonemic register differentiation after the stops but not after the continuants; a third group, including the Monic and also certain Katuic languages, are 'pure' register languages, with complete merger of the stops (although still phonetically distinct in some languages) and a complete register dichotomy in the vowels (although the term 'register' has been loosely applied to both 'transitional' and 'register' languages, I like to reserve the term 'register' for languages in which every vowel can be unambiguously assigned to one register or the other); and finally, a fourth group, including Khmer, are termed 'restructured' in which there is a complete phonetic and phonological merger of initial stops, with the 'vowel split' reflected by change in absolute articulatory position and/or diphthongization (Huffman, 1976). Vietnamese might be considered to represent a fifth category, in which devoicing doubled the number of tone contrasts (Haudricourt 1954; Huffman 1977). To give a rather idealized example, if you had the words */kaa/ and */gaa/ in the proto-language, they would be reflected as follows in the various categories:

	<u>Proto-language</u>	<u>Conservative</u>	<u>Transitional</u>	<u>Register</u>	<u>Restructured</u>	<u>Tonal</u>
1.	*/kaa/	/kaa/	/kaa/	/kaa/	/kaa/	/k ^á aa/
2.	*/gaa/	/gaa/	/k'aa/	/kàa/	/kia/	/kàa/

Now what do we mean by restructured? If we juxtapose the 1st and 2nd register reflexes of the nine long vowels implied by the Khmer writing system, we find that the 18 long vowels of Khmer can be analyzed totally in terms of diphthongization vs. non-diphthongization, or changed versus unchanged (ignoring for present purposes the two diphthongs /ia ua/, which appear to be relatively recent developments in Khmer):

¹ This article is based in part upon work supported by the National Science Foundation under Grant No. BNS-7820671.

2nd	ī	{ ii ↓ əi	īī	{ īī ↓ əī	ū	{ uu ↓ ou
1st						
2nd	ē	{ ee ↓ ɛe	ə̄	{ ə̄ə̄ ↓ aə̄	ō	{ oo ↓ ao
1st						
2nd	ē	{ ɛɛ ↓ aɛ	īa	{ īa ↑ aa	ō	{ ə̄ ↑ ō
1st						

As a result of this analytical leger-de-main, the following two patterns emerge:

1) In the high and mid vowels, and the low front vowel ɛ, the 2nd series reflexes have been unaffected, while the 1st series reflexes have lowered onsets.

2) In the low central and back vowels, the 1st series reflexes are unchanged, while the 2nd series reflexes have a raised onset.

Only two facts disturb the symmetry of the pattern:

1) We would have preferred that the low front vowel ɛ should have a counterpart with a raised rather than a lowered onset.

2) The contrast /aa:ia/ is the only one in which the onset of the diphthongal counterpart differs by two steps from the cardinal position. However there is good support for this hypothesis from several quarters:

- a) In some dialects of Khmer, this diphthong is still pronounced /ea/, as in Battambang, Takeo, and Surin.
- b) Comparative data reflects a progression from /aa/ to /ia/, e.g. 'duck': Stieng /daa/([da:]) : Alak /t'aa/([t'īa:]) : Mon /ʔatəa/([ʔatə̄·a]) : Kuy /tia/([t'ī a]) : Khmer /tia/([tī·ə]). This example provides a veritable roadmap from Khmer orthographic da to modern /tia/.

In 1976 I included only Khmer in the restructured category. However during my research on 12 Katuic languages in the Ubol refugee camp in Thailand in 1979, I found further evidence for this theory of diphthongization, and at least three more candidates for the restructured category.

In a Bru dialect spoken in Ubol Province, the distributional pattern of diphthongization is identical with Khmer, although qualitatively and quantitatively a bit different:

2nd	ii	īī	uu
1st	↓ eii	↓ ɣīī	↓ ouu
2nd	ee	ɣɣ	oo
1st	↓ ɛee	↓ ə̄ɣɣ	↓ ōoo
2nd	(ɛ ɛ)	īia	uua
1st	↓ aɛɛ	↑ aa	↑ ōo

Whereas in Khmer all the diphthongs have progressed to falling diphthongs, the low-onset diphthongs of Bru are all rising diphthongs, which would indicate that they are in the early stages of diphthongization (in fact, Ubol Bru is a language that lends itself to analysis either as a register language, treating the raised and lowered onsets as subphonemic conditioning of lax and tense onsets respectively, or as a restructured language).

In Nge?, a Katuic language spoken in Saravane Province of Laos, no lowering has taken place, and the mid vowels all participate in the raising characteristic of low 2nd register vowels; as in Bru, they are all rising diphthongs.

2nd	ii	iɨ	uu
1st	-	-	-
2nd	iee	iəə	uoo
1st	↑ ee	↑ əə	↑ oo
2nd	-	iaa	uɔɔ
1st	ɛɛ	↑ aa	↑ ɔɔ

Finally, in Katang, also a Katuic language from Saravane Province, the 2nd register reflexes of the mid and low vowels have raised onsets, as in Nge?, but the resulting diphthongs are falling rather than rising. In the high vowels, the first register reflexes do not diphthongize, but are lower in absolute quality than their 2nd register counterparts.

2nd	ii	iɨ	uu
1st	↓ Iɨ	↓ ɨɨ	↓ ʊʊ
2nd	iie	iɨ	uuo
1st	↑ ee	↑ əə	↑ oo
2nd	-	iaa	uua
1st	ɛɛ	↑ aa	↑ ɔɔ

I am not one who feels that phonological change must, or in fact can, always be explained; phonological changes are sometimes unmotivated or arbitrary. However it appears to me perfectly reasonable that a tense initial should condition a lowered onset in a following high vowel; in Thai, for example, /tii/ [tʰai:] 'to strike' has a quick centered onset resulting from the tense slightly implosive [ʔt]. To test the validity of this mechanism, try to pronounce the English word 'bee' with a tense implosive [ʔb]; what results is something like [ʔbʰai:], rather similar to Khmer /bʰai/ pʰi 'three'. Conversely, a

lax initial conditions a centered or 'lazy' onset to a following low vowel, as in the Upstate New York pronunciation of 'Dad': [d₂¹·æd].

To summarize the theory:

- 1) High lax vowels and low tense vowels tend to remain stable.
- 2) Tenseness produces lowered onsets in high vowels.
- 3) Laxness produces raised onsets in low vowels.
- 4) Mid vowels may participate in either pattern, depending on the language.

Examples (NB: Due to a variety of other sound changes not dealt with here, the preceding examples do not always provide minimal contrasts of the vowel sets discussed above; the decision to use sets of cognates rather than random minimal contrasts was made in the interest of distinguishing between 1st and 2nd register roots.)

	1	2	1	2	1	2	1	2	1	2	1	2
Conservative	Stieng	hand	able	big	drunk	seven.	done	soft	foot	far		
	Loven	tii	paan	-	-	-	šen	-	Jʌŋ	-		
Transitional	Surin Kuy	tei	-	-	-	-	ceen	-	Jɛŋ	-		
	Souei	t'ii	bʌn	p'ɛt	buul	tɛp'ool	cɛn	lɛmɛn	Yɛɛŋ	-		
Register	Thai So	t'ii	bʌn	p'ɛt	buul	tɛp'ool	ceen	-	Yɛɛŋ	-		
	Mangkong	ʔatii	bʌn	p'ɛt	buul	tɛp'ool	ciin	-	Yɛɛŋ	Yɛɛŋ		
Restructured	Ubol Bru	ʔatay	been	p'ɛt	bool	tɛp'ool	ciin	lɛmɛn	ʔayɛɛŋ	Yɛɛŋ		
	Nge?	tii	bɛn	p'ɛt	bouul	tɛpuul	cɛen	lɛmɛn	ʔayɛɛŋ	Yɛɛŋ		
Restructured	Katang	tee	bieen	-	buool	tɛpuool	ceen	-	Yuu	-		
	Khmer	ʔatiz	bʌn	p'ɛt	bʌn	tɛpuul	cɛn	lɛmien	ʔayɛɛŋ	Yɛɛŋ		
Conservative	Stieng	1	2	1	1	2	1	2	1	2		
	Loven	grasp	buttocks	ricefield	tasty	weave	duck	dog	ivory			
Transitional	Surin Kuy	-	-	-	-	taan	daa	ɕoo	blok			
	Souei	-	-	-	-	taan	daa	ɕoo	blok			
Register	Thai So	koop	kep'ook	ʔem	taan	t'ie	ʔacaa	pluu?				
	Mangkong	-	tepò?	ʔem	taan	-	ʔacoo	-				
Restructured	Ubol Bru	koop	mpò?	ʔem	citaan	téa	ʔacaa	-				
	Nge?	koop	kumpoo?	ʔem	tentaan	ʔatfa	ʔacaa	pellua?				
Restructured	Katang	koop	kepuook	ʔacem	tentaan	tiaa	ʔacaa	pellua?				
	Khmer	ʔaop	kumpuuo?	-	taan	tiaak	-	pelucc?				
					taan	tiaa	ʔacoo	pellua?				
					pgacm	tbaan	-	pluk				
					(sweet)							

EVIDENCE FOR l AND r MEDIALS IN OLD CHINESE
AND ASSOCIATED PROBLEMS

Nicholas C. Bodman

Introduction

It is a pleasure to contribute a paper to the Festschrift honoring Paul B. Benedict, the pioneer of modern Sino-Tibetan linguistic studies. This book appears at a time of great creative ferment. No one scholar in this field can be expected to agree completely with another scholar's views, but it is perfectly clear that without the stimulus of Benedict's Sino-Tibetan works we could not have progressed as far as we have done, even if our work is now largely still in an exploratory stage.

The present paper derives from one presented in Paris, 1979, at the Twelfth International Conference on Tibeto-Burman Languages and Linguistics, then more simply entitled "Evidence for l and r Medials in Old Chinese". There have been no major changes, but new data have been added and errors have been corrected.¹ In both the Paris paper and the present version, most of the examples are taken from a much longer work which came out at the end of 1980: "Proto-Chinese and Sino-Tibetan: Data Towards Establishing the Nature of the Relationship"; this work will be referred to as Bodman 1980. To facilitate reference to the more detailed argumentation in the longer work, the section numbers and example numbers are often included here within parentheses.

The Old Chinese (OC) reconstructions are based on a backwards projection of the Middle Chinese (MC) values with the added evidence of the OC rhymes and the structure of the graphs in phonetic series (*xiesheng*). The internal reconstruction is also greatly aided by observing the alternations in word families and the presence of doublets, some of which must be due to dialect variation. In a good number of cases, the Min and Gan dialects point to phonological features for stages that differ from and antedate the MC forms. Important phonological clues have also come from transcriptions of foreign words, largely place names, and in the Eastern Han period also from paranomastic glosses. Poetic rhyming of various periods of course is of much use in helping to determine the changes of the phonological system through

¹ I am happy to thank T. L. Mei and W. Baxter for helpful comments on the earlier paper. The discussion of OC types *tr- and *trj- has been considerably revised and expanded. Old Ex. 14 and 15 have been deleted, a new Ex. 14 added, and old Ex. 16 through 47 renumbered as Ex. 15 through 46. Ex. 70 has had errors in definition and tone category corrected. Most importantly, the last part of the paper including Tables 5 and 6 has been amplified and revised.

time. The reconstruction of the initials, medials and the features that gave rise eventually to the MC tones owes much to previous scholarship, especially to the studies of F. K. Li 1971 and E. C. Pulleyblank 1961-2 and 1973, but here my views sometimes differ (Bodman, 1980 Sec. 1.1 and especially Table 6). The analysis of OC vocalism stems from Bodman 1971 but has been modified and improved greatly by the work of W. H. Baxter (refer to Baxter 1977, Baxter 1980, and his oral presentations of 1978 and 1979). The MC forms are in Karlgren's system as modified by F. K. Li (1971).

The well-proved methods of internal reconstruction of Chinese, the essential first step, have provided much knowledge on the phonology of OC, but there are still many doubtful or disputed points. The phonological systems devised by various scholars, no matter how elegantly formulated, show many areas of divergence and disagreement. With our present better understanding of OC phonology, however, we are now at the stage where it is profitable to attempt seriously the work of Sino-Tibetan (ST) linguistic comparison. The comparative evidence, drawn from various Tibeto-Burman (TB) languages, especially Tibetan (T), often suggests an early Chinese form which could not be assumed from internal Chinese evidence alone: I label this stage Proto-Chinese (PC) and mark it with the asterisk. In the examples, the OC forms if different follow, and the MC forms come last. The OC and MC forms are separated by the slash symbol (/). Although many of the rules of phonological correspondence between TB and PC can be definitely established, we are still far from having an accurate knowledge of the phonology of many TB languages, nor do we have as yet an adequate knowledge of their subgrouping. Our work is still in an exploratory stage. Nevertheless, I think that we have enough information to make a good beginning. Correlations can certainly be made between TB l and r medials with PC and OC medials. These show essentially a cognate relationship. The relative abundance of related forms between T and Chinese may be due both to genetic relationship and borrowing (this is discussed at some length in Bodman 1980, sec. 1.0). Much supporting evidence on OC medials comes from loanwords in unrelated languages; I have cited many forms from Proto-Tai, Proto-Yao and Austroasiatic, including old loans into Vietnamese. Some of these loans bear witness to changes in the values of the medials in late OC.

Reconstruction of Medial r

Medial r in OC is taken up first because the phonetic series in which it occurs are numerous and well understood. As elsewhere in this paper, I deal primarily with the medial after stops and will not take up very many examples of medials after spirants or nasals. The phonetic series we deal with here mainly show MC initial alternations with l- and either velar or labial initials. For this type of alternation, Karlgren reconstructed OC clusters with stop plus l throughout the phonetic series regardless of the MC syllable type (i.e. he disregarded the MC placement into the deng or divisions). Li follows Karlgren in reconstructing the l medial when MC shows l- initial in Division 1, (Div. 1), no medial, or the sequence of l- plus yod (lj-) which appears in Div. 3. MC Div. 2 syllables are now generally reconstructed with the OC r medial, and both OC -r- and -rj- are set up by Li and Pulleyblank for the antecedents of the MC retroflex initials of type t-, t̥j-, ts-, and ts̥j-. Baxter and I agree in extending the domain of -rj- in OC (see Baxter's 1979 paper, p. 2). A table will clarify these notations for forms that in MC were placed in Div. 1 or Div. 2.

Table 1

	OC	MC Div.1	OC	MC Div.2	OC	MC Div.2
Karlgren	lâm & glâm /	lâm	kam & klam /	kam	tam / ʔam	
Li	lam & glam /	lâm	kram /	kam	tram / ʔam	
Pulleyblank	ram (only?)/	lam	kram /	karm	tram / tram	
Bodman	(g-)ram /	lâm	kram /	kam	tram / ʔam	

I am uncertain how Pulleyblank would reconstruct the leftmost item in the table. My view is that MC l- is a reflex of various clusters in the earlier stages of OC (which I represent by the ad hoc notation g-r, b-r and d-r). Later, probably during Eastern Han, these clusters simplified to r- which later shifted to MC l-. I believe it is also reasonable to assume that OC medial r first shifted to l which was then lost shortly before the stage of MC, as in the syllable type of OC kram, late OC klam and MC kam. Note that MC l- (with a tiny number of exceptions in Div. 2) regularly occurs in Div. 1 whereas the reflexes of OC type kram, etc. always are placed in Div. 2. There is therefore complementation between late OC and MC l- initial and -l- medial. The OC sequence -rj- would likewise have been -lj- at a later stage. OC clusters of the type tr- would have been phonologically /tɹ-/ in late OC but probably phonetically retroflex [t-] (Bodman 1980 6.2). The shift from r to l will be treated in more detail below. Changing now from emphasizing the xiesheng evidence, I present a number of examples of cognates and old borrowings which provide the chief evidence for reconstructing medial r rather than medial l. The fact that a contrast between r and l occurs in many of the languages cited is good evidence for the nature of the reconstructed medial here as r. Unless the MC initial is l- (with Div. 1 vocalism), these examples all illustrate MC vocalism of Div. 2.

1.	(34)	T	sgreg	'to belch'	噫	*sgræks, *skræks,	
			fft. sgreqs			ʔræks / ʔǎi-	'to belch'
2.	(35)	T	grags	'to bind'	鞮	*gwɹæk / ywɛk	'to bind'
			hgroggs	'be associated, bind, tie, fasten'			
			sgrog	'to bind'	鞮	*sgwɹæk, *skwɹæk	
						ʔwɹæk / ʔwɹɔk	'to bind'
3.	(78)	T	brgyad	'eight'	八	*pret / pwat	'eight'
			(*b-ryat)				
		Lushai	pà-riát	'eight'			
		Proto-Tamang	*bret	'eight'			
4.	(79)	T	brgya	'hundred'	百	*pra?	
	(246A)		(*b-rya)			prak / pɹɔk	'hundred'
						also ?	
						*prya?	
						prjak Taiyuan piə?	

² See Bodman 1980, sec. 8, pp. 125-9 regarding this final -- either OC *-w? according to Baxter or *-kw according to F.K. Li. The same remark applies to Ex. 8 here.

5.	(308)	T	dkrog	'rouse'	覺	*kraw? ² or *krakw / kāk	'awake, rouse'
6.	(310)	T	(h)phru-ma	'uterus'	胞	*pru / pau *phru / phau	'womb'
7.	(311)	T	khraab	'armor, scales'	甲	*krap	'shell, buffcoat'
	(405B)				韃	also: *krəp / kep	'cuirass'
8.	(311A)	WB (Written Burmese)	prok	'speckled, spotted'	駁	*prwa? or *prakw / pāk	'horse with mixed (brown & white) colors'
	(254)	Mikir	phròk	'speckled'			
9.	(312)	WB	krwe	'shellfish, cowrie'	蝸	*kroy kroj / kwa kwai	'snail'
		STC (Benedict: Sino-Tibetan Conspectus)				(luâ) ³	
	311		*kroy				
10.	(313)	T	grong	'habitation, village, town'	巷	*grongs / yāng-	'lane, street' (?*'village')

Examples 2 and 10 above are placed in MC Div. 2. The OC voiced initials here contrast with another type for which I am temporarily using the ad hoc notation of *g-r, *b-r, and *d-r, which all develop to MC l- with Div. 1 vocalism. Evidence for this second type, as in Ex. 11, 12, and 13 below comes from the Tai languages where we assume borrowing from OC to have occurred. Clusters can also be reconstructed from the xiesheng evidence alone.

11.	(81)	Thai	phruan	'neck bells (for domestic animals)'	鑿	*b-ron, b-ruan / luân	'bells on horse's trappings'
			(*br-, Tone A2)				
12.	(82)	Thai	khraam	'indigo'	藍	*g-ram / lâm	'indigo' ⁴
		(PTai	gram, Tone A2)				
13.		--PTai	*gran, Tone C2	'lazy'	懶	*g-ran:/ lân:	'lazy'

Although there are many words with MC dental retroflex initials that go back to OC type *tr- (Div. 2) and *trj- (Div. 3), we find similar clusters strangely lacking in most TB languages, and no good case for reconstructing such a type for PST.⁵ I has only the voiced type *dr- as in the word 'six' drug (see Ex. 37 below). In such words the d- may sometimes represent a prefix; T hdr- is also common, and this can often be taken back to an earlier *h-r- (Li 1959). It is possible that T rt- and rd- are sometimes metathesized from an assumed *tr- or *dr- (see Ex. 39 below for a possible case of Pre-T *tr- and OC *tr-). Types of dental and resonant clusters like *tr- and *tl- have been reconstructed for PTai (Li 1977, Chapter 7). Chang Kun 1966 includes a few such clusters for Proto-Miao, while Purnell sets up both types for both Proto-Miao and Proto-Yao (Purnell 1970:172-4). With the possible exception of the two cases mentioned just above (Ex. 37 and Ex. 39), I have not found good TB

³ The reading luâ seems aberrant. (Bodman 1980, note 49, p. 143).

⁴ A late OC *ram borrowed as T rams is indicated here. I assume Lepcha ryan was probably borrowed from T.

⁵ The Central Chin language Lushai has tr- and thr- from Proto-Kuki-Chin *kr-, *khr and *pr-, *phr-, as well as tl- and thl- from *kl-, *khl-, pl-, *phl-. (Bodman 1980 Ex. 238 and footnote 44).

evidence that type *tr- should be reconstructed for PTB when OC has initial clusters of the *tr- type. However, we may find an occasional loan word between OC and one of the non-Han languages. Example 14 below relates an Austroasiatic form with Proto-Min (PM) for which no sure OC form is known:

14. (464) Proto-Vietnamese-Muong			PMin	*tau	'dry'
	*traw B	'dry'	Fuzhou	ta ¹	'dry'
(Thompson 1976:1170)			Amoy	ta ¹	'dry'

This comparison involves deriving the PMin form from an earlier *tr- cluster such as would occur if OC had a related form. PMin *-au here relates regularly to MC -au (Div. 2), hence the r medial is inferred for OC; it seems well established now that Min is an "r-losing" dialect group.⁶ (The fact that Amoy ta¹ is sometimes written 焦 MC tsj¹au 'roast, burn, scorch' is irrelevant, merely a popular etymology).

Another source for OC trj- (Div. 3) has recently been suggested by T. L. Mei in his paper for the International Conference of Sinology, Taipei, August 1980 (to have been published late in 1981, see the bibliographical entry under Mei 1981). He sees this as sometimes being a reflex in the Qi and Lu dialects of older *krj-, and I find this argument convincing. I shall cite one such example here (Mei's Ex. 2) which compares T gru 'elbow' with 肘 MC t¹ju:; 'elbow'. In Mei's notation, the earlier and later stages of the OC are **krjəux and *trjəux; my notation for these forms would be **krū: and **trjəu:. Mei's article gives other reflexes of **krj- as MC tsj- (following Li 1976) and MC kj- (where he agrees with Baxter and Bodman, see our 1980 papers, especially Table 22, p. 186 in Bodman 1980). In all these formulations the existence of doublet and triplet dialect forms is explicitly recognized. Another formulation, Type *K-l- > MC Tj- is shown in the present paper, Ex. 96 and Ex. 99.

MC is noteworthy for the fact that roughly half of the forms are reconstructed with yod. I have distinguished two types, "primary yod" that is reconstructable for PST in that yod occurs both in TB and OC cognates -- this is sometimes part of the root, and sometimes an infix occurring in derivations; probably more frequent is what I call "secondary yod" where yod does not appear in cognates or old borrowings, and therefore is assumed to have developed within Chinese from some other feature. Pulleyblank (1961-62) originally thought it arose from OC long vowels. In his 1973 article he posited two syllable types for OC, each with two morae: an accent on the first mora yields Type B where yod has arisen in Chinese and Type A with accent on the second mora which yields yod-less forms. Loeffler in his 1977 and 1979 papers attributes yod to a metathesis of an early ə- prefix. Although I am not happy with any of these explanations, I have a slight preference for the long vowel hypothesis. I make use of Pulleyblank's Type B notation, marking it by the grave accent. Here I treat only Type B syllables that developed the sequence -rj-. I assume that the chief source of these is -r- in Type B syllables. Forms with the -rj- sequence are placed in MC Div. 3.

15. (221) T	hbrub	'gush, spout forth, overflow'	沸	*prùp,	'to gush forth (as a spring)'
				prjut / pjuet	
	T hbrubs	'water that has flowed over'		*prùps,	
				prjuts / pjwèi-	'to bubble up'

⁶ See Bodman 1980 Sec. 10.381 and Mei 1979:128.

(STC 151 *brup, *prup)

cf. Jinghpaw (JP):

16. (228)	T	prùt hbrim	'boil, bubble, gush forth' 'to distribute, deal out'	禀	*prim:, prjəm: / pjəm: and *b-rim: b-rjəm: / ljəm:	'rations'
17. (229)	Sanskrit:	Brahma	'Brahma'	梵	*bràm(s) brjam(s)/bjwəm-	'Brahma; Sanskrit, Pali, Indian'
18. (118)	Bahing	rap	'to stand'	立	*g-rəp or *g-ryəp g-rjəp / ljəp	'stand, set up, raise'
	WB	rap	'to stand'			
	P-Lolo	*ʔryap ^L	'to stand'			
	Jiarong	ka-ryap	'to stand'			
19. (119)	TB	*krap	'weep' (STC 116)	泣	*khrəp khrəp / khjəp	'weep'
	JP	khràp	'weep'			
	Thulung	khrap	'weep'			
	T	khrab-khrab	'weeper'			
20. (417)	T	grang	'cold'	凉	*g-ràng, g-rjang / ljang	'chilly, cold'
21. (418)	T	hgrang	'to count'	量	*g-ràng, g-rjang / ljang-	'to measure'
	T	grangs	'number'		*g-ràngs g-rjangs / ljang-	'a measure'
22. (419)	T	nya-gra	'fishbones'	吕	*g-ræ: g-rja: / ljwæ	'spine'
23. (419)	T	dgra	'enemy'	旅	*g-rà:, g-rja: / ljwo:	'troop, guest, stranger'
(267)						
24. (420)	T	khri	'chair'	几	kr :, krj j: / kj : 3	'small table, ⁷ stool'
25. (421)	T	hbrong	'wait upon, serve'	奉	*bròng:, brjòng: / bjung:	'hold in two hands'
26. (422)	T	hbrong	'wild yak'	犏, 犏	*pròng and phròng, / pjong / phjong	'kind of wild humped cattle'
27. (423)	T	hbru, hbrud (*brut)	'dig, carve, cut, chisel'	筆	*prùt, prjət / pjət 3	'kind of writing pencil'

Old borrowings from Chinese are Japanese fude and V. búť. (See Baxter, 1980 2.3 and 3.2; where I use shwa, he has í.)

28. (424)	T	bkres	'be hungry, hunger'	飢	*krəy, krjəj / kj 3	'famine, hunger'
	L	krft	'hunger'			
		(* -s)				
	T	bkren	'poor, hungry'	殓, 餓	*grəns, grjəns / gjən- 3	'starve, famine'
		bgren				

⁷ See Bodman 1980 Table 5 and footnote 17 on p. 48.

29. (425)	T	gru	'boat (of inflated hides)'	表	*gru grju / gjəu	'fur' (*hide)
30. (426)	T	hgrul	'to walk, pass, travel'	逵植	*gwrùl, *gwrùw, gwrju, gwrjə / gjwi 3	'where several roads meet, thoroughfare'
31. (427)	JP	khrun (*khrul)	'path'	軌	*kwrùl; kwrùw; kwrju, kwrjə; / kjwi: 3	'...rut...'
	T	šul (*hryul ?)	'empty place, track, rut, furrow, road, way'			
32. (429)	L	tā-gryu	'cheek'	頰 九頰	*gwrju or *gwrù, gwrju, gwrjə / gjwi 3 *gwyu or *gwù, gwju, gwju / gjəu	'bones of the face' 'cheekbones, bones of the face, face'
33. (430)	T	gru	'lustre of gems'	球	*grù, grju / gjəu	'gem adorned'
34. (431)	PLB	*kruw 1 (STC 37 *kruw	'horn' 'horn')	球	*grù, grju / gjəu	'long and curved, hornlike'
35. (433)	WB	krt (485a)	'great'	祁, 柝	*grt, grtj / gj 3	loan for 'great, large, numerous'
36. (434)	Thai	kreeng A1 (Manomai vibool '75 #131)	'to fear'	驚 驚	*krèng krjəng / kjəng	'be afraid, attentive, scare'
37. (80)	T	drug	'six'	六	*kiang 1 *C-rùk, *C-rjuk / ljuk	'be afraid, fear' 'six'
	Lepcha	tā-rók	'six'			
	JP	krú	'six'			
	PLB	*C-krok				
	PTai	*xr- , D1 tone				

When one finds similar words in OC, some of which are doublets and others related members of word families, it often happens to involve a relationship of medial r and late OC -rj- which has arisen from a Type B syllable. There are many "double readings" of this kind. The few examples following by no means exhaust the inventory; all save the first (Ex. 38) were chosen because of TB cognates.

Division 2				Division 3			
38. (415A)		*breis / ban-	'divide, distinguish'	采, 辨	*brèi:, brjel: / bjän: 3	'discriminate'	
39. (452)	T	rtod	'to attach'	鍛	*trot, trwat / t̥wat	'sharp iron point at end of whip'	
	T	rtod (*trod)	'stake, peg'	鍛	*tròts, trwats / t̥jwäi-	'needles used as tallies'	
	also:	gtod	'stake, peg'	雙, 綴	tròt trwat / t̥jwät	'tie, connect'	
		btod	'stake, peg'				

40. (453)	WB	ŋrǎ	'meet with, find; copulate'	訝, 逢	*ngraʔs, ngraks / ngǎ-	'meet, receive'
	JP	nyā	'encounter; frolic'	逢	*ngraʔ, ngɾjak / ngjɔk	'... go to meet, receive'
		(STC 154 *ŋra)				
41. (454)	T	skrag (*skhrag)	'be terrified, afraid'	嚇	*skhrak(s), xrak(s) / xāk xa-	'to scare' 'to scare'
				驚, 虎	*skhrak ɣɾjak / ɣjɔk	'fear'
42. (454)	T	skrog dkrog (-khr-)	'to stir, rouse, scare up'	懼	*skhwak, ɣwɾjak / ɣjwɔk	'scared'
					(Above is irregular for expected ɣjwɔk)	

On page 148 above, I assumed the passage of OC type kr- to late OC kl-; parallel to this would be the transitional form -lj- for earlier -rj- (the latter usually attributable to the development of secondary yod in Type B syllables). As support for this notion, I cite several cases where reconstructed Proto-Tai shows -l- rather than -r-, and assume that these represent later borrowings from Chinese. However, it is also possible that these forms go back to an original l medial, so I have here represented the medial as l in the reconstructions.

43. (314B)	PYao	*klaau 3 (209) (tone aberrant)	'to pay'	交	*klaw / kau	'cross, exchange, hand over'
44. (315)	PTai	*klet DIS	'fish scale'	介	*klets / kǎi-	'scale (fish, armor)'
45. (316)	PTai	*kla C1	'young rice plants, rice seedlings'	稼	*klas / ka-	'grain; to sow' (PTai C1 implies shang tone)
46. (317)	Thai	phlɔɔng Tone A2 *blɔɔng	'club, cudgel'	棒	*blɔɔng: / *bɔɔng:	'club, stick' (PTai A2 implies ping tone)
47. (318)	Wu-ming	klwe PTai ? *klwe Tone C1	'small green frog'	蛙, 蛙	*Kwie / ?wai ɣwai ?wa ɣwa	'frog' ⁸ 'frog'
48. (437)	Thai	pleeu A1 PTai *pleu A1?	'flame'	標, 票	*plèw & *phlèw, pljew & phljew/pjǎu 3 /phjǎu 3	'leaping flames'
49. (438)	PTai	*pliu A1	'float in air'	漂	*phlèw, phljew / phjǎu 3	'to float (in air)'

Related forms are 飄 MC pjǎu 3 and bjǎw 4 'whirlwind' and 大 MC pjǎu 4 'rushing, violent (of wind)'. The forms placed in Div. 4 may be a dialect development of -lj-.

There have been quite a few illustrations of types *g-r- and *b-r- whose

⁸ See remarks after Ex. 318 in Bodman 1980.

MC reflexes are l-. I now adduce some examples where borrowings indicate a late OC stage of r-. These borrowings probably reflect that later stage. The next example from the Fang Yan of Middle Han date is unusual because the entry comes first where we expect the standard Chinese term to occur, and it is not specified as a regional dialect term, yet since it is not a normal Chinese word, one assumes it may have been originally Tai.

50.	Thai	cŋgrild	'cricket'	蜻蛉	*tsəng rət,	
	PThai	*ɕiɣriət			tsjeng rjet/ tsjəng	
	Tones:	C1-D1			ljät	'cricket'
					(also read tshjäŋ)	
					(Fang Yan 11.4)	

The following show Vietnamese r- from early borrowings and the expected l- for Sino-Vietnamese. The different tonal reflexes are regular. *r- is posited for late OC here.

51.	(113)	V	rào	'enclose with a	牢	*raw / láu	'pen, fold; jail'
		SV	lao	fence', 'jail'			
52.	(114)	V	rồng	'dragon'	龍	*b-rông,	
		SV	long	'dragon, imperial'		rjong / ljwong	'dragon'
		Khmer	rong	'dragon'			
		Thai	piimərong	'year of the dragon'			
			(Thai pii = 'year')				
		PYao	*rong ²	'dragon'			
53.	(115)	V	rèm	'bamboo blinds'	簾	*rəm, or *g-rəm,	
						rjem / ljəm	'bamboo screen, blinds'
54.	(116)	V	rét	'be cold'	冽	*rət,	
						rjet / ljät	'cold'
55.	(117)	V	nư òng	'beam, girder'	梁	*rang,	
						rjang / ljang	'beam, bridge'

For an early stage, probably the Proto-Chinese stage, I reconstruct *r- that corresponds to TB initial r-, but which has an annoying number of reflexes in OC. The various values I assign to the correspondence sets are shown in the following table.

Table 2

	Set 1a	Set 1b	Set 2	Set 3
*r-	hr / ʔ (Div.2)	hwr / ʔw (Div.2)	*w hr / ʔw (Div.1)	*y hj / dz (Div.3)
*ry-	hrj / ʔj (Div.3)	hwrj / ʔjw (Div.3)	hrj / jw (Div.4)	Three dialect reflexes: rj / zj (Div.4) rj / ʔ (Div.3) rj / j (Div.4)

Sets 1a and 1b have MC Div. 2 placement, agreeing with the reflexes of medial r as shown above. Set 2 has merged with PC *w- and Set 3 with PC *y-. Some cases of the PC *ry- sequence may be due to secondary yod. Phonemic forms

for Set 3 MC reflexes differ from the Karlgren-Li notation.

Ex. 18 (118) above, PC *g-rəp or *g-ryap 'to stand' belongs in a phonetic series with velar initials. The simple graph appears in bronze inscriptions usually in a loan sense for Ex. 56 below 'place of rank, position as ruler'. The two words are possibly related, but at any rate the same graph could be used in either sense.

56. (120) T	rabs	'lineage, family, generation, series'	𠄎	*rəps, hrəps,	'place of rank'
	Mikir rap	'family'		hwrjəts / jwl- 3	(*place in lineage)
	Rawang rap (Daru dialect)	'family'			

The OC form of the above fits perfectly with Set 1b in Table 2, but since the phonetic series otherwise has no forms with the lip-rounded feature -w-, it may more properly belong to Set 1a with a transfer of lip-rounding from the final -ps to the initial before the earlier -ps was assimilated to -ts. (Further examples of PC *r- are given in Bodman 1980 6.31 through 6.34, Ex. 121 through 143).

OC -l- clusters like *kl-, *pl-

Some TB languages like Tamang, Lepcha, Mikir, Jiarong, Thulung, etc. show many minimal contrasts between medial l and r, but TB cognates of l medial words with OC are disappointingly few. Jinghpaw has no l medials, nor does modern Burmese, although both l and r medials are reconstructible for Proto-Lolo-Burmese, and even for Proto-Burmese. In T besides initial l- and lh- there occur kl- and gl- (and several T words have doublet forms in kl- and gl-), bl- and sl-. T has no clusters of aspirate initials with l. (T lt- and ld- are sometimes to be derived from earlier *hlh- and *hl-; the rare zl- may be from *d-sl-). The following two correspondence sets, although not numerous, seem valid:

57. (319) Lepcha	klo, glo	'to fall'	下	*gla: / ɣa:	'down'
PBurmese	klà	'to fall'		*glas / ɣa-	'go down'
PBurmese	khlà	'to drop'			
Mikir	klò	'to fall'			
(STC 123 *klà, *gla	'fall')				
58. (177) T	lçi	'dung'	屎	*hlyl: or *hlɿ:,	'dung'
(* hlyl)				hijlj: / śjl:	
JP	khyf	'dung'			
Thulung	khli	'dung'			
PTamang	kli	'dung'			
(STC 125 *kliy)		'dung'			

The last example may even point to a common innovation from *khl- to *hl- shared by T and OC. In the following three examples, we may perhaps reconstruct medial l for pre-Tibetan (remembering that l does not occur with aspirated stops in the written T).

59.	(320)	T	phugs	'end, innermost part, innermost apartment'	窟 *phlaks, phlaks / phau-	'cave cellar'
		cf. T	phug-pa (*phi-)	'cavern'		
60.	(321)	T	phar (*phi-)	'board'	板 *plar; plan: / pwan:	'board, plank'
61.	(322)	T	hphar (*phi-)	'great'	大 *plar; plan: / pwan: & bwan:	'great'
62.	(269)				膚 *plaks, pljaks / pju	'skin'
	(443A)	T	(l)pags (*plaks)	'skin'		(MC has ping rather than qu tone) ⁹

T md- cluster may sometimes be a reflex of *ml-; T mda 'arrow' has been compared with Kha Li ka-mla, Thangkhol mla, WB hmrà, etc. (Benedict STC 449). (*mr- is excluded as Coblin 1974 has demonstrated that the latter is one source of T rm-). Ex. 63 and 64 below are exact correspondences, but in Ex. 65 we have a vowel difference -- perhaps an ablaut variation.

63.	(442)	T	mdongs (*ml-)	'white spot on horse's forehead; eye in peacock's feather'	龍 *mlong / mǎng 龙, 眼 mlong / mǎng	loan for: 'mixed black and white color, variegated' 'particolored, motley, variegated'
64.	(443)	T	mdangs (*ml-)	'color of face, appear- ance, brightness'	明 *mlǎng, mljang / mjwǎng	'light, bright' 'light, bright'
65.	(441)	T	mdongs (*ml-) ldongs ldong (*hl-)	'blind' 'blind' 'become blind'	盲 *mlang / mǎng	'blind'

In Ex. 66 below, the medial appears in Southern Chin as l, but there is no medial r in contrast in this language.

66.	(457)	So. Chin	hmleng	'rafter'	梁 *mlǎng or *mrǎng / mǎng	'rafters, beams inside roof'
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In the following three examples, I conjecture Pre-Tibetan may have reduced a medial sequence of *-ly- to medial y. (*-ry- is less likely since in T, syllables with the same medial and final consonant like *kror or *klol do not occur). In these items, the vocalism of the Chinese forms might also be *-o- rather than *-wa-. In all three cases, we have a MC chongniu doublet placed in Div. 3 for which the OC sequence is either -rj- or -lj-.

⁹ See Bodman 1980 sec. 2 for qu tone derivation from final stop plus -s. A small number of examples show ping tone rather than qu.

67. (339) T	h̄khyor	'to warp'	捲	*khwlyar,	'crooked wood,
	(*khlyor)			khwljjan / khjwän 3	curved bowl'
68. (340) T	kyor-kyor	'weak, feeble'	倦	*gwlyars,	
	(*klyor)			gwljans / gjwän- 3	'tired'
69. (341) T	khyor	'handful'	拳	*gwlyar,	
	(*khlyor)			gwljjan / gjwän 3	'fist'

In the Zhuang Wu-ming language the word for 'roll' is obviously a borrowing from Chinese (but it does not occur in common Tai and hence is not listed in Li 1977). Note that all these words belong to the same phonetic series. Li 1956 (p. 246 and the text reference of XIII-27) clearly identify the meaning as 'roll (up)' and the PTai tone correlation is regular for this meaning. Note that the Chinese character now tends to be written without the 'hand' radical for the two meanings, basic 'to roll' in shang tone, and derived 'a roll, scroll' in qu tone.

70. (200) Wu-ming	klian	'roll, roll up (as bedding)'	捲	*kwlyar:,	
				kwljjan: / kjwän: 3	'to roll'

The next example is added here for its remarkable phonological and semantic agreement; the Mon form is the only Austroasiatic form I could find with this meaning, and can well be regarded as a chance resemblance:¹⁰

71.	Mon	klòn	'crest, tuft'	𠵼	*klon(s),	'two tufts of hair
	(written: glon) Mon:	sok klòn			kluan(s) / kwan-	on child's head'
	(Shorto: 1962)	'tuft of hair'			(First OC attestation is in the QI Feng	section of the Odes).

Definitely to be ascribed to an Austroasiatic origin is a word for 'river' which has been widely borrowed into TB languages; it occurs in 'Middle' Old Chinese, but not in the oracle bones. (Norman and Mei 1976: 280-3). The evidence for the medial in this word is mixed -- either l or r is possible. Note also that both T and OC have related words originally referring to river-bottom cultivation.

72. (239) T	klung	'river'	江	*krung or *klung,	'river, esp.
	Related to this is:			/ kǎng	Yangtse River'
T	klungs	'cultivated land' (river-bottom cultivation)	耕	*krung; or *klung:	'to cultivate'
				kǎng:	
	Katu	karung	'river'		
	Bru	klong	'river'		
	Old Mon	krung	'river'		
	V	sóng	'river'		
	(PMV	*khong A)			

¹⁰ See also my remarks on Ex. 91 on the Mon form which may also be suspect. However, I regard Ex. 72 and 93 as very solid.

Merger of Types *kr- and *kl-

We have seen that the r medial, and to a lesser extent, the l medial correspond to MC forms placed in Div. 2; Type B syllables placed in MC Div. 3 also go back to both medials. I have also assumed (p. 148) that it is reasonable that type *kr- went through the late OC stage *kl-, paralleling the changes of type *g-r- to r- and eventually l- in MC. Therefore one might logically also assume that "original" type *kl- was unchanged and in Late OC the *kr- type merged with it. This would be the simplest chain of events. However, we shall see starting from Ex. 89, that yet another type which I represent with the ad hoc notation of k-l-, etc. became t-, etc. thus merging with "original" dental initials. It is therefore worthwhile to posit that original *kl- type forms merged early into the *kr- type and only in Late OC did the then *kr- type change to *kl-. Although the latter sequence of changes seems at first glance to be considerably more complicated, it seems to provide a neater explanation overall.

Before taking up the *k-l- type, attention should be given to doublet forms that have multiple readings in MC between Div. 1, where no medial is normally reconstructed, and Div. 2 forms where a medial r or l is reconstructed. It may be true that we sometimes have in such cases a word family alternation where one can assume a medial r or l infix in the form that appears in Div. 2; this assumption would be attractive if we could establish a morphological and semantic function to the so-called infix. It seems to me more likely that the forms with the medial are conservative and the forms placed in Div. 1 represent a dialect in which there was an early loss of the medial.¹¹ In such cases the medial appearing in the Div. 2 forms can merely be regarded as a phonological feature of the word rather than a morphological one.

73. (328) T hbral	'be separated, be parted'	畔 *brals, *b(r)ans / buân- buân-	'bank between fields (*separator)' 'to separate from'
		采辨 *brels, brens / bân ¹²	'divide, discriminate, distinguish' (one reading)
T hpral	'to separate, to part'	半 *prals, p(r)ans / puân-	'half' (separated into two parts)'
		判 *phrals, ph(r)ans / phuân-	'cleave, divide'
		泮, 盤 ph(r)ans / phuân-	'semi-circular pool' (divided circle)
		般 ph(r)ans / phuân-	'meat on the side of an animal (split carcass)'

In the following, one finds this kind of alternation in two phonetic series.

¹¹ Details are given in Bodman 1980 Sec. 10.22.

¹² MC -ân can according to Baxter (1977 sec. 5.3) go back to OC *-rin, *-rân (my *-rən), or *-ren (whereas *-ran gives MC -an). See also Ex. 38 where the vocalic alternation between Div. 2. and Div. 3 is only possible with *-ren and *-rjen.

Division 1 Reflexes		Division 2 Reflexes	
74. (329)	震 *skh(r)am:/ xâm: 'roaring' 𩇛 *skh(r)am:/ xâm: 'to shout'	震	*skhram: / xam: (roaring, enraged (of tiger) (& xãm:)
75. (330)	檻 *g(r)am:, 'railing, h(r)am:/ yâm: cage'	檻	*gram:, hram: / yam: 'railing, cage'
76. (331)	盪 *grams, 'bathtub, h(r)ams / yâm- mirror'	盪	*grams, hrams / yam- 'big bowl, basin' *krams, krams / kam- 'mirror, to mirror'
77. (332)	覓 *g-ram:, g-ram: / lâm: 'to see'	覓	*kram, kram / kam 'see, look at' *krams, krams / kam- 'see, look at, to mirror'

In the next case, the unexpected l in the Wu-ming form might be evidence for an original OC medial borrowed from a conservative dialect.

78. (198)	Wu-ming plôn 'volume' C1	李	*p(l)un: / puən: 'volume'
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On the other hand, there are words reconstructed for PTai which point to borrowing from forms without medial, although here we may have a conditioning feature. PTai *pr- is reconstructed (Li 1977, 5.3) but not when *ɛ is the vowel. For the next example, refer again to Ex. 3:

79. (332A)	PTai *pet 'eight'	/\	*pret / pwət 'eight'
(78)	PTamang *bret 'eight'		
80. (323)	PTai *ke C1 'untie'	解	*kre / kaĩ: 'untie, unloose'

In the following we have an apparent case of doublets in Division 2 and Pure Division 4.

81. (324)	PTai *yeng B2 'leg, shin'	脛	*gengs / yleng- 'leg, shank'
		脛	*khreng / kheng 'shankbone of ox'
			*greng / yeng 'shankbone of ox'
82. (325)	Thai ta-kiap 'chopsticks' (not in Li 1977)	筷	*kep / klep 'chopsticks'
			*krep / kăp 'chopsticks'

With the above, compare the doublet:

83. (326)		蛺	*kep / klep 'butterfly'
			*kăp Cantonese kap ⁷
			Japanese kai (*kapi)

Summing up, in the normal evolution, we have types *kr- and *kl- as sources for MC Div. 2, and in Type B syllables, they yield MC Div. 3. In less conservative dialects, we have some evidence for an early loss of the medial, yielding MC Div. 1.

Reflexes of PC *l-

In comparison with the reflexes of PC *r- (see Table 2) those for PC *l- are relatively simple, and the correspondences with TB *l- regular and fairly numerous. Pulleyblank revised his 1961-2 paper and sets out his new system in his 1973 paper. I agree with these reconstructions. A table will clarify the

various views of different scholars.

Table 3

	Type A	Type B
Karlgren	d* / d*	di / i
Li	d / d	r ^h / j
Schuessler	dl / d	l / j
Pulleyblank	l / d	l ^h / j
Bodman	l / d	l ^h / lj / j

Frequently alternating in word families and phonetic series is *hl- which Li and Pulleyblank agree as being one of the sources of MC th-. The Type B form is *hl- / śj- (which Li reconstructs as *hrj- in his revision of 1976). I shall limit my illustration of *l- and *hl- to two important word families, adding two more for *hl-. (Many more examples in Bodman 1980 6.4 and 6.41).

84. (71)	T	lang	'to rise'	揚	*làng / jang	'to lift, raise'
		ldang	'rise, get up'		*làng / jang	'to winnow (toss high)'
		(*hlang)	(applies also to the rising of vapors, see rlang below)	風	*làng / jang	'hawk (high soaring)'
	T	rjangs	'vapor, steam'	陽	*làng / jang	'tossed up by the wind' in the meaning 'elated'
		slong slang	'cause to rise give upwards'	湯	*hlang / thang	'hot liquid, soup'
				商	*hlang / śjang	'(trade), endow, give'
85. (178)	T	long-mo	'alms'	賞	*hlang: / śjang:	'to reward'
		glod	'loosen, relax, comfort, cheer up'	克	*lots,	'glad'
		(g-lot)		悅	*lòt,	'pleased, glad'
	T	lhod	'loose, relaxed, easy, unconcerned'	脫	*hlòt,	
		(also glod, lod)			hlwat / thuât	'peel off, take off clothes, relieve, careless'
		WB hlwat	'free, release'	脫	*lot,	" "
Lepcha	WB klwat	'taken off'		lwat / duât		
	WB khlwat	'to take off'	說	*hlòts,	loan for 'let loose,	
	flyát, flyót (*hlwyat)	'relax, loosen'		hljwats / śjäl-	'pleased, glad'	
86. (179)	V	lòt	'to strip, change skin'	蛻	*lot / duât	'peel off'
		lòt	'slough, cast-off skin'	蛻	*lòt	'exuviae of insects or reptiles'
		(*hl-)?			ljot / jwät	" "
					*hlòts / thuâi- thuâ-13	" "
				*hlòts / śjwâl-	" "	

¹³ See Bodman 1980:104 for an explanation of the form thuâ-.

87. (74)	Chepang	hlay?	'ladder'	梯	*hləy, hlej, thəj / thiei	'wooden steps, staircase'
(307A)	(a = ə, -ʔ often relates to ping tone)					
88. (436)	T	lhem	'now, at present, directly, instantly'	覘	*hləm: or *hlyəm: hljam: / ʃjäm:	'time of a short glance, moment'
	(* -yam ?)					
		lhams	'at once...'			

Clusters of Type *k-l- > MC t-

Initials of *l- and *hl- set up both by Pulleyblank and me, are now agreed upon by many scholars; they seem to have been present from PC times down to about Middle Han, at least; Pulleyblank went a step further (1961-2:118-9) in pointing out that there was alternation in some phonetic series between velars and dentals of a more extensive nature. (To distinguish these from Type *kl-, I temporarily use Type *k-l-). For instance, he assigned to one phonetic series graphs that Karlgren had kept apart because of the different initials in MC. The following correlations are very convincing; they appear in my notation as follows:

Yin bone:

唐 *g-lang / dāng

隍 *g-luy / du̯i

Yin bone:

庚 *klang or *krang,
krang / kong

貴 *kùts / kjwěi-

(See Ex. 89 below)

89. (201)	T	gus-pa	'respect, reverence'			
	(* gut-s)					
		gus-po	'expensive, costly, dear'	貴	*kùts, kjuts / kjwěi-	'precious, dear, expensive'

Apparently examples of this kind went largely unnoticed at the time since I am not aware of discussion on the subject, and Pulleyblank himself has not recently given them prominence. However, there is a very considerable number of good examples in *xiesheng* series, although the alternation is certainly less common than that of the *kr- and *kl- series. TB cognates are also not easy to find. I supplement the *xiesheng* evidence with data from a conservative Gan dialect and have added PTai and PYao data to make a very good case of clusters of the *k-l- type. Moreover, these data can now be supplemented somewhat by parallel labial clusters, Type *p-l-, which like the others, also fall in with the dentals. These too can be confirmed by PYao forms. Some puzzling sound glosses are now clarified by establishing the origin of some MC dentals in earlier labial sequences of Type p-l-. It is interesting to observe that the phonetic series that include forms from *l-, *hl-, *k-l- and *p-l- seem to be quite separate from those that are apparently original dentals and include roughly as many (or perhaps slightly more words) than do the dentals; however, this is a preliminary judgement only.¹⁴

Taking illustrations first from the *k-l- type, we can assume earlier

¹⁴ It is possible, perhaps likely, that types *k-l- and *p-l- merged first into a *tl- stage (at least phonetically) before reaching the t- initial found in MC.

*k-l- > MC t-, earlier *kh-l- > *hl- and then MC th-, and *g-l- > *l- and MC d-. The latter two merged with "original" *hl- and *l-. The evolution of the last is comparable to that of *g-r-, etc. which became *r- in late OC and l- in MC.

In the following, MC *thəm* has as phonetic MC *kjəm*, and the Gan dialect of Linchuan has doublet forms with th- and h-:

90.	(201A) T	ham-	'avarice, covetousness,	貪	*kh-ləm	
	(188)	(*khləm?)	greediness'		hləm / thəm	'to covet'
				Linchuan:	thəm ¹ or hom ¹	'covet'
91.	(202) ? Mon	klòm	'inner room or	窟	*g-ləm; / dəm:	'recess or small pit
		gləm	chamber...'			in bottom of cave or cellar'
		klòm thət	'relic chamber'			
				白	*gləms / yəm-	'pit' (no text)
				陷	gləms / yəm-	'fall down, fall into (as in a pitfall)'

It is doubtful that we should relate the Mon word to the Chinese, especially as I cannot adduce other Austroasiatic forms. The Inscriptional Mon form (Shorto 1971) spells it *dləm*, here defined as 'chamber, enclosed place, ...monk's cell'. On the Chinese side, the word glossed as 'pit' occurs in *Shuowen* but is not used in old texts. However, the word meaning 'fall (as into a pitfall)' is common. This word may be a qu tone derivation from a word 'pit' that might have originally been in the shang tone. If so, we have a doublet in OC, one with initial *g-l- and the other with *gl-. Other similar doublets occur in the next example; note that the first graph has the same phonetic as in the case above, and the fourth, fifth and sixth graphs have the same phonetic as in Ex. 90 above.

92.	(203)			嚼	*g-ləm: / dəm:	'eat, swallow'	
				啖	*g-ləm: / dəm:	'devour'	
				嚙	*g-ləm: / dəm:	'keep in mouth'	
		T	hgam	'put in mouth'	含	*gəm: / yəm:	'hold in mouth, contain'
			kham	'throw in mouth'	颌	gəm: / yəm:	'jaw'
		T	hgram	'cheek'	颌	*gram or *glam	'a bit (for horses), carry in
			hgram-rus	'cheekbone, jawbone'		/ yəm	mouth, carry'

If the last Chinese form is related to T *hgram*, we must reconstruct PC **gram*, but if it was **glam*, then it can be compared with the third from above **g-ləm*: showing the same alternation of **gl-* and **g-l-* as in Ex. 91 above.

The next example with two related Austroasiatic forms is particularly interesting since it may suggest that the word was borrowed into Chinese from a non-TB source. The OC word appears rather late (*Zhanguo*).

93.	(210) Khmu?	kiam	'carry on the	擔	*k-ləm / təm	'carry on the shoulder'
	PWa	*kləm	shoulder'		k-ləm / təm-	'burden'

Purnell's work on PYao and PMiao-Yao provides further good examples. In the next case, the graph is related to that mentioned between Ex. 88 and 89; the third following case has the same phonetic as in the word family illustrated in Ex. 84.

94. (205)	PY *glaang ²	'pond, lake'	塘	*g-lang / dāng	'dam, dyke'; currently 'reservoir, pond'
95. (206)	PY *klaau 3 PMY *glaau 3 A	'peach'	桃	*g-law / dāu	'peach'
96. (207)	PY *klaang 2	'intestines'	腸	*g-lāng / djang	'intestines'
97. (208)	PY *klui 2 (tone aberrant)	'pestle'	碓	*k-luy, k-luj / tuəi-	'pestle'
98. ---	Thai khlai PTai *glei, A2	'moss' (Pallegoix)	苔	*g-ləy / dāi	'moss'

(Ex. 95 and 98 are also given in Benedict 1976:188 with similar PTai and PYao forms and with the correct Chinese identifications, but with OC initials rendered as *sg'*). Ex. 95 above shows a case of secondary yod, and the following is similar. Note that the phonetic of the first variant appears in a series with velar initials elsewhere:

99. (204)	JP khyeng (*khi-)	'be red'	紅	*kh-lyeng or *kh-lèng, hijeng / thjäng	'red'
	(STC 162 *kyeng)				

In Coblin 1978 we find a pair of glosses that show that in about 100 A.D. Xu Shen, the author of *Shuowen*, could still couple *kh-l- with *kh-:

	(using my notation)			Coblin's index:
100.	精 *kh-lu / tháu	is read like	類 khyu: / khjəu:	(538a L224)
101.	頰 *kham: / khəm:		*kh-ləm / thəm	(3889b L169)
			(See Ex. 90 above)	

Also paired are 响 and 含 which occur in our Ex. 92. (Coblin 566b L164).

Listed below are other cases where we have MC dental reflexes where the phonetics have velar initials:

Table 4

MC phonetic	MC dental initial	PC *k-l-
合 yəp	答 təp	
見 kien	靦 thien	*kh-l-
鬼 kjwei-	脛 tuəi:	*k-l-
敢 kām:	廩 thām:	*kh-l-
敢 kām:	澗 thām-	*kh-l-
君 kjuən	渚 thuən	*kh-l-
去 khjwo- (PC *khyaps)	鮪 thəp	*kh-l-

右 kuo:	后 tuo:	*k-l-
孑 khâu:	饜 thâu	*kh-l-
果 kuá:	磔 duá	*g-l-

In the following Linchuan dialect forms, we find *l-, *hl-, and *hn-) all with initial h- in the colloquial stratum. (The original dentals appear as dentals still in the colloquial stratum, in contrast to the h- forms).

	PC *l-		Linchuan:	Literary	Colloquial
102. (181)	*lon, luan / duân	'round, everywhere'	團	thon ⁵	hon ²
103. (182)	*lon:, luan: / duân:	'cut off, decide'	斷	thon ⁵	hon ⁴
104. (183)	*lon:, luan: / duân	'satin, thick silk'	緞	thon ⁵	hon ⁵
105. (184)	(*lam) and *lãm, ljam / jiãm	'phlegm'	痰	tham ²	nam ²
106. (185)	*laj:, laj: / dá:	'rudder'	舵	thai ³	ho ⁵
107. (186)	*lo,	'head'	頭	thc:u ²	hɛ:u ²
	PC *hl-				
108. (187)	*hlæn / then (thien	'to swallow' 'to swallow')	吞	then ¹	hen ¹
109. (188) (**khl-) (89) (201A)	*hləm / thəm	'to covet'	貪	tham ¹	hom ¹
	PC *hn-				
110. (189)	*hnəks / thài-	'bearing, manner'	態	thui ¹	hai ¹

Note that the Linchuan colloquial initials are superficially like those of the Toishan dialects where ʔ- corresponds to Standard Cantonese t- and h- to Cantonese th-. The Toishan initials however are reflexes of all dental stops in MC regardless of their OC origin; Linchuan colloquial contrasts "original" *t-, etc. from type *k-l- > MC t-.

Clusters of Type *p-l- > MC t-

I assume that clusters of the type *p-l- merged with the much commoner *k-l- type;¹⁵ the MC reflex of both types is the same. There is some xiesheng evidence for the *p-l- type along with a good sound gloss, but the best evidence comes from PYao and PMiao-Yao:

111. (211) PY	*blau 2	'rice (plants)'	*b-lu: / dáu:	'rice, paddy'
	PMY *nblau ¹ A		稻	
	(aberrant tone)			

¹⁵ See footnote 14 above.

In the phonetic series of 缶 MC pjəu is the word 陶 MC dāu 'kiln, pottery' which Xu Shen puts into a sound gloss:

112. 陶 *b-lu / dāu read like 缶 *pyu: / pjəu:

(My notation. See Coblin 1978:60). Other xiesheng evidence:

113. 駝 *pheng / phleng is phonetic in: 駝 *ph-ləng / tʃjäng
 114. 駝 *blak or 駝 *ph-lak / thāk
 白 *brak/bək is phonetic in: 魄 *ph-lak / thāk

Lastly, I speculate that the difficulty of relating the Ahom plāo, borrowed from 駝, MC tʃjəu:, may be resolved by reconstructing OC *ph-lū:. The problem comes from the initials of the other members of the phonetic series which indicate OC nj- and snj-. Perhaps a yet earlier form would have to be reconstructed as **ph-nū: (See Li 1945:336 and 338).

We have seen that the types *kh-l- and *b-l- (Ex. 99 and 111) probably remained in that phonological shape, or one very similar, in the dialect of Xu Shen about 100 A.D. In the Shi Ming (see Bodman 1954) it seems likely that initials of this type had already passed into dental stops by about 200 A.D. Moreover, Pulleyblank (1961-2:121-2) cites a transcription for 'camel' from the second century B.C. with MC th- from earlier *lh-, which in Later Han was replaced by MC l-. In his transcription:

Early Han

Later Han

駝 (駝) 陶 lhək-dəd (/) thək-də 駝 (駝) (MC) lək-də

He therefore concludes that, although the origin of the word 'camel' is unknown, the shift of *lh- (my *hl-) to th- had already taken place in the Later Han period. No doubt the change occurred earlier in some dialects than in others.

It has been useful to resort to employing ad hoc notations like *b-r- and *h-l-, etc. to distinguish correspondence sets from other forms like *br- which may have gone through a bl- stage at a later time; it is also easier to set up such abstract formulae than to try to pin down what the "real values" might have been. However, I shall risk making a few such assumptions as I bring this paper to an end. I was not yet prepared to voice some of these assumptions when I submitted the manuscript of Bodman 1980 quite a while ago. Some are newer ideas that have resulted from further study of the materials in the intervening period.

At about the time that types *k-l- and *p-l- had merged with the dental stops, we still have quite good evidence from sound glosses (as in Shi Ming, Bodman 1954) of clusters that derive from the OC *kr- type. I assume that at this relatively late period, ca. 200 A.D., that the phonetic shape of the OC *kr- type had become by then *kl-. Whether one wants to ascribe this to a drag chain phenomenon or not, at this time there had ceased to be a contrast between *r and *l either as initials or as medials. The Late Han value of the medial was presumably l. Late OC r- initially, (which could derive from *g-r-, *b-r- and *d-r-) and which had become l- by MC, may have been hl-¹⁶ phonetically (and

¹⁶ See Ex. 36 where the PTai initial *xr- probably derives from a late OC value

perhaps phonemically) in the Late Han period. The changes through time, presented as a kind of flow-chart, are presented in Tables 5 and 6; I here substitute the articulatory class of labials because of the simpler MC reflexes. The last column shows the MC initials and the placement of the syllable type in the various deng (divisions).

Table 5

PC & OC	Later OC	Early Han	Late Han	MC
*pr-	pr-	pr-	pl-	p(2)
*pl-	pr-			
*p-l-	pl-	pl-	t-	t(1)
*b-r-	b-r-	(b) r-	(b) l- ¹⁷	l(1)
*b-l-	bl-	(b) l- ¹⁸	d-	d(1)
*r	hr-	(h) r-	(h) l-	ʎ(2)
*l-	l-	l-	d-	d(1)
*hl-	hl-	hl-	th-	th(1)

The voiceless initials without medials like p and ph presumably remained basically unchanged. *b-r- as in Ex. 11, and *b-l- as in Ex. 111, judging from the reconstructed values of the borrowed forms were very likely voiced lenis since the stop initial was eventually lost.¹⁹ How then to account for the ancestor of MC b- (Karlgren's b^l-) in Div. 2? I suppose that the *b- in *br- was voiced and lenis, and it must have had this value also when no medial followed. On the other hand, the ancestor of MC b may at one time have been aspirated — at any rate it contrasted with the former.

Table 6

PC & OC	Later OC	Early Han	Late Han	MC (Div.)
*b-	b-	b-	b-	b (1)
*br-	br-	br-	bl-	b (2)
*b-r-	b-r-	(b)r-	(b)l-	l (1) ²⁰
*bh-	bh-	bh-	bh-	b (1)
*bhr-	bhr-	bhr-	bhl-	b (2)

hr-; this later went through the hl- stage in Late Han. This item has s- in Northern Min (Mei and Norman 1971 PMin *lh-).

¹⁷ The initial cluster may have persisted until Late Han.

¹⁸ The initial was lost ca. 100 - 200 A.D. See Pulleyblank's comments on a word for 'camel' in the second paragraph after Ex. 113.

¹⁹ Both Karlgren and Li posit OC clusters of *gl- and *bl- from xiesheng evidence for the OC period. Since these correlate with MC l-, they assume a lenis initial that dropped before the MC stage.

²⁰ See footnote 17.

Some scheme such as this is needed even without bringing in the Min evidence which requires the PMin contrast of *b- and *bh-, etc. (See Norman 1973, 1974 and the detailed discussion in Bodman 1980 Sec. 3.0). In the scheme presented here for OC and MC, the Late Han types b- and bh- merged to one phoneme in MC, here represented as /b/, where regardless of its phonetic status as [b] or [pʰ], whatever it was, there was certainly no longer any phonological contrast. In Min the medial that occurred in OC Div. 2 words was apparently lost early, so that in PMin the initials of OC types Div.1 and Div. 2 merged; as for the finals of Min forms that relate to OC Div. 1 and Div. 2, there was a vowel merger. In Min the reflexes of OC *b-r-, *g-r- and *d-r- were in most of the area similar to those elsewhere, namely l- as in MC, but in Northern Min, some of the items have initial s- with yang tones (Mei and Norman 1971). These they interpret as PMin *lh- and correlate the initial with OC clusters Cl. Because the yang tone reflexes relate to original voiced initials, I would regard the initial as phonetically [ʃl-] (see this paper, the text preceding Table 5 and footnote #16).

This paper has dwelt at length on r and l medials and their reflexes and correspondences, but of course it cannot be regarded as 'the last word'. However, because of space considerations for this volume, for the present this must be the last word.

INITIAL CONSONANT CLUSTERS KL- IN MODERN CHINESE DIALECTS
AND PROTO-CHINESE

Paul Fu-mien Yang

O. Introduction

There are at least five methods for the reconstruction of Proto-Chinese initial consonant clusters: (1) through "hsieh-sheng" characters; (2) through cognate words of the same word-family; (3) through comparing ancient and modern dialects; (4) through comparing related languages; and (5) through foreign transcriptions and loan-words. During the past half-century, linguists in the fields of Sinitic and Sino-Tibetan languages have adopted these methods either separately or in combination in their reconstructions of Archaic and Proto-Chinese. The results are very promising and encouraging. The existence of initial consonant clusters in Proto-Chinese has thus become a linguistic fact accepted by many scholars.

Since the beginning of the Sino-Tibetan conferences, I have delivered three papers, one at Princeton University in 1968, and two others at this conference in 1971, and 1972 (see Yang 1968, 1971, 1972). I have always emphasized the importance of modern dialect data, especially polysyllabic words and binomes, which might contain traces of Archaic and Proto-Chinese consonant clusters. In these papers I have studied single words separately without touching upon the problem of their cognates. In the present paper, however, I shall, whenever possible, make use of the five methods mentioned above in studying a group of words probably belonging to the same word-family. My "hsieh-sheng" characters, could be and should be reconstructed by a combination of certain significant insights concerning Proto-Chinese may be brought to light for consideration and discussion.

The words studied here all share the basic meaning 'empty' and 'hollow'. Many of them, but not all, have been grouped and listed in Karlgren's "Word families in Chinese" (WFC) (Karlgren 1933: A 35-37; 206-227), and Tōdō's Kanji gogen jiten (Tōdō 1965: Nos. 74:1-33; Nos. 104:1-16). Karlgren's reconstructions of Archaic and Ancient Chinese are taken from his Grammata Serica Recensa (GSR) (Karlgren 1957); Li Fangkuei's reconstructions are taken from his "Shang-ku yin yen-chiu" (Li) (Li 1971). For Sino-Tibetan (ST) and Proto-Tibeto-Burman (TB), reconstructions made by Benedict (1972), and by Forrest (1956) are adopted. The Proto-Chinese (PC) and Proto-dialect (PD) forms are my own reconstructions. For Chinese written sources, the Shuo-wen chieh-tzu (SW), Kuang-yūn as rearranged in the Kuang-yūn sheng-hsi (KYSH) (Shen 1945), and other dictionaries are cited. Modern Chinese dialect data have been collected by myself from spoken and written sources (for bibliography

see Yang 1968). The order of presentation will be: first, a listing of the earliest written data, including monosyllabic words and binomes, with their reconstructions; second, a listing of modern dialect data with Chinese characters, whenever available, but without tone marks; third, linguistic data from other Sino-Tibetan languages; and finally, tentative reconstructions of PC and PD forms followed by remarks and discussion, when necessary.

I. Reconstruction of kl- type Clusters

1. Words sharing the meanings 'empty', 'hollow', 'hole', 'cave', 'pit'

A Written data

- (1) 空 (GSR 1172 h) *k'ung / k'ung hollow, empty (Shih); *k'ung / k'ung- exhaust (Shih); *k'ung / k'ung: hole (Chou-li). (SW) hole, opening.
- (2) 孔 (GSR 1174 a-b) *k'ung / k'ung: very, greatly (Shih); empty (Lao). (KYSH 174) cave, hole, empty; (Huai-nan tzu) a hole.
- (3) 竅 (GSR 116 h) *k'ioŋ / k'ieu- hole, opening (Li); Li *khiagwh.
- (4) 窖 (GSR 1039 o) *k'ôŋ / kau- cave, cellar (Li); Li *kragwh.
- (5) 窳 (GSR 1114 i) *p'loŋ / p'au-, and *klôŋ / kau- cave, cellar (Chou-li); Li *phragwh, *kragwh.
- (6) 榻 (GSR 1041 s) *xiog / xiâu empty, spacious (Chuang).
- (7) 口 (GSR 110 a-c) *k'u / k'əu: mouth (Chih); Li *khugx.
- (8) 穹 (GSR 901 e) *k'iuŋ / k'iuŋ hollow, hole (Shih); high and vaulted, vault (Shih); loan for *k'ung (1) (Chou-li); Li *khjəngw.
- (9) 穹隆 *k'iuŋ-gliōŋ (Erh-ya Commentary) arched firmament; Li *khjəng-gljəngw.
- (10) 隆 (GSR 1015 f) *gliōŋ / liung high (Kuots'e); ample (Li).
- (11) 窟 (KYSH 251) 孔窟 k'ung-lung cave, hole.
- (12) 坑 (GSR 698 h) *k'äng / k'eng pit (Ch'u-tz'u); Li *khrang.
- (13) 坑 (GSR 698 i) *k'ang / k'eng pit, hole (Chuang).
- (14) 豁 (GSR 766 d) *klâk / kâk armpit (Li ap. Shihwen); Li *klak.
- (15) 豁 (GSR 766 e) *klâk / kâk armpit-seam (of a coat) (Li).
- (16) 宕 (GSR 701 a) *d'äng / d'äng- cave-dwelling (SW).
- (17) 洞 (GSR 1176 h) *d'ung / d'ung- to flow rapidly (SW); mountain cave (Cheng tzu t'ung); mountain cave (Han texts).

(18) 洞 (Chi-yŭn) d'ung < *d'ung: cave in a mountain.

(19) 竇 (GSR 1023 s) *d'ug / d'əu- and *d'uk / d'uk hole (Li).

B. dialect data

1. 窟窿, 窟窿, 窟窿, 窟窿, 窟窿, 窟窿, 窟窿

khu.luŋ (Peking, Shenyang, Chinan, Loyang, etc.) hole, opening.

khu.luŋ (Sian) hole, opening.

khu? loŋ (Wenshuei and Shansi) hole, debt.

khuə? loŋ (Soochow and many Wu dialects) hole, opening.

khy [loŋ] (Wenchow, also doŋ, see below) hole, opening.

khæ [khou?] ləyŋ (Foochow) pit, hole.

ko? e laŋ or ko? e khaŋ [腋下空] (Amoy) armpit.

垆 垆 kha laŋ (Chünan, Shantung) pit, hole.

2. 空 khaŋ (Swatow) empty, cavity, hole, hollow.

坑 khaŋ (Kienyang) hole, pit.

khaŋ (Amoy) hollow, empty; 山空 suā khaŋ
a cave or hollow in the hills.

3. 窿 luŋ (Canton, Yangchiang) hole, hollow.

luŋ (Hakka) an opening in the earth, mine or
cave, a hole.

laŋ (Amoy) pit, trap, snare: as in khui laŋ 開窿 to set
a trap or a pit (for catching animals, etc.)

ləyŋ (Foochow) an interval, space between.

4. 洞 tuŋ (Peking) hole, opening.

toŋ (Ch'engtu, Kunming, Yangchou) hole, opening.

təŋ (Hofei) hole, opening.

thuŋ (Nanch'ang) hole, opening.

təŋ (Ch'angsha) hole, opening.

doŋ (Shanghai, Soochow, Wenchow) hole, opening.

C. Sino-Tibetan data

klɔŋ⁴⁴ (Wuming) cave, hole.

klɔŋ⁵⁵ (Wuming) beehive.

khɔŋ (Tibetan) hole, pit, hollow, cavity.

khɔŋs (Tibetan) mine, pit.

khjuŋ, gjuŋ from ***khruŋ, *gruŋ** (Old Burmese) armpit.

khroŋ (Old Burmese) windpipe. **a-khɔŋ** (Old Burmese) hollow, cavity.

stɔŋ-pa (Tibetan) empty, clear, hollow.

stɔŋs-pa (Tibetan) to make empty, to be empty.

thủŋ or **lủŋ** (Vietnamese) having a hole.

***dwa:ŋ** (TB) hole, pit.

D. Reconstructions

PC ****khlɔŋ** (2) ~ **khluŋ** (7); ****khljɔŋ** (9) ~ **khljɔŋ** (3) ~
klog (5) ~ **xljɔŋ** (6); ****phlog** (5); ****khlɔŋ** (12, 13) ~
klak (14,15); ****dhlɔŋ** (17,18) ~ **dhluk** (19) ~ **dhlug** (19)

PD ****khlɔŋ** ~ **khloŋ** ~ **glɔŋ**; ****khlɔŋ** ~ **glɔŋ**

E. Remarks and discussion

In Ancient Chinese the character 空 has three tonemes: **ping** tone for the adjective or stative verb 'empty', 'be empty'; **shang** tone for the noun 'a hole', 'an opening', later represented by the character 孔; and **ch'ü** tone for the verb 'cause to empty, empty'. Many modern dialects have kept this triple tonal distinction, but only the noun form reflects an earlier consonant cluster. This is true also for other words studied in this paper. This phenomenon might lead us to think that PC probably had some kind of morphological distinctions among these words. One possibility would be as follows:

1. ****khɔŋ** (**ping** tone) adjective/stative verb
2. ****khlɔŋ** (**shang** tone) noun
3. ****khɔŋ-s** (?) (**ch'ü** tone) causative verb

Here the **-l-** would have served as a nominalizing infix. This would favor Wulff's (1934) and Pulleyblank's (1962-63, 1973) **-l-** or **-r-** infix theory for PC. However, this theory would lead us into difficulties in the interpretation of the Cantonese/Hakka **luŋ** and Amoy **laŋ**. It would be easier to interpret the **luŋ** as a reflex of a PC root ****luŋ** rather than a reflex of an earlier infix + the second half of the PC root ****khɔŋ**. An alternative interpretation would be that the dialectal forms **luŋ** and **laŋ** came from earlier forms ****glɔŋ** and ****glɔŋ** (with the loss of the initial **g-**). If ****luŋ** is a PC root, then the initial ***kh-** would have been a prefix, which is more common among ST languages than an infix **-l-** (see Yang 1972; Benedict 1973). The variants **laŋ** and **khɔŋ** of the Amoy dialect (in the word 'armpit') strongly suggest a PD form ****khlɔŋ**.

Certain Mandarin dialects and a few of the Wu dialects reflect a PD form ****dhuŋ** in contrast with the PD form ****khlun**. We are not sure whether they are cognates or not. If they are, then we would have to reconstruct a PD ****dhlun** to parallel this ****khlun**. Another possible reconstruction of the PC would then be as follows:

1. ****kuŋ** (ping tone) adjective/stative verb
2. ****khlun** (shang tone) and ****dhlun** (ch'ü tone) noun
3. ****khuŋ-s** (?) (ch'ü tone) causative verb

If we assume that ****luŋ** was a root, then the initial ****kh-** and ****dh-** should have been prefixes, and the latter might be a dialectal variant of the former. The coappearance of velar and dental prefixes before the same root is quite common among TB languages (see Benedict 1972:116 *passim*). At any rate, our reconstruction of the PC initial consonant clusters ****KL-** is safe due to other evidence, including the Wuming (Thai) loan-words **kloŋ** from Chinese. If we deny the genetic relationship between ****dhuŋ** and ****khlun** we could then relate ****dhuŋ** to the TB ***dwa:ŋ** (Benedict 1972:45).

Tibetan **stog-pa** and **stogs-pa** might be related to Chinese. We could reconstruct an earlier form ***s-t-roŋ** or ***s-k-roŋ** parallel to the PC ****dhlun** and ****khlun**; however, there is another pair of Tibetan words, namely **khun** and **khungs**, which are closer to the Archaic Chinese ***khuŋ** but without a medial **-l-** or **-r-**. If we relate these to the PC ****khlun**, their proto-form should be either ***khlun** or ***khrun**. Burmese **khuŋ**, **gjuŋ** derived from ***khrun**, ***grun** are probably related to PC ****khlun**. Forrest (1956:16) has reconstructed a TB form ***gruak** for 'empty', citing Chin **ruak** and Lepcha **fok** from ***prak**. We could also reconstruct a hypothetical form **gruan** parallel to the PC ****khlun** or PT ***khlun** or ***khrun**. There is an interesting parallel between TB ***gruak** and PC ****klog** and between Lepcha ***prak** and PC ****phlog**. These are probably reflexes either of earlier dialectal variations or of different prefixes.

The Vietnamese **thủŋ** or **lủŋ** 'having a hole' (borrowed from Chinese?) allow us to reconstruct an earlier form ***thluŋ**, which could be related to PC ****dhlun**.

The binome ***k'iuŋ- *gliông** (9) for ***k'iuŋ** (8) suggests an earlier dialectal form ****khljōŋ** or ****khlōŋ**, still existing at the time of Kuo P'u (276-324 A.D.), who made a commentary on the *Erh-ya*.

Both the written and the dialect data show that in PC there have been vocalic alternations between the back vowels **u** and **a** (as in ****khlun** and ****khlun**), and consonantal alternations between the final velar nasal **-ŋ** and the final velar stops **-k** and **-g** (see PC reconstructions listed under D).

2. Words sharing the meaning 'empty and hollow part of the human body': 'chest', 'breast'

A. Written data

- (20) 腔 (WFC A-215) ***k'iuŋ** / **k'ɛŋ** chest; (SW) empty inside; Li ***khrun**.
- (21) 胸 (GSR 1183 e-f) ***xiuŋ** / **xiuŋ** breast (Meng); Li ***hjuŋ**.
- (22) 膺 (GSR 890 e) ***iəŋ** / **iəŋ** breast (Shih); breast-plate (Shih).
- (23) 椗 (GSR 1172 b') ***k'iuŋ** / **k'ɛŋ** a hollow wooden beaten

instrument of music (Li).

(24) 臆 (GSR 957i) *iək / iək bosom (Lie).

B. Dialect data

心壳郎克 **ɕin khə laŋ** (Liaoch'eng) the lower part of the chest.
肺壳郎子 **fei khə laŋ tsɿ** (Liaoch'eng) chest.
圪廊 **khə laŋ** (Fengch'iu, Mihsien) chest.
呵駝子 **khəʔ laŋ tsə** (N. Shansi) chest.
刻囊 **khə naŋ** < *laŋ (Wenhsih sien, W. Shansi) chest.

C. Sino-Tibetan data

klaŋ (Wuming) the middle. **kləŋ** (Thai) tube.
kluoŋ (Thai) hole, interior. **braŋ** (Tibetan) chest, breast.
mthoŋ-pa (Tibetan) chest, breast. **groŋ** (Miju) chest, breast.
raŋ (Old Burmese) chest, breast.

D. Reconstructions

PC ****khlun** (20,23) ~ **xluŋ** (21) ~ **?ləŋ** < **gləŋ** (22) ~ **?lək** < **glək** (24)

PD ****klaŋ**

E. Remarks and Discussion

The Archaic words (21), (22), and (24) for 'chest' and 'bosom' were probably dialectal variations. Walter Simon (1929) first compared the Chinese (21) ***xiung** with Tibetan **braŋ**. Forrest (1956:13) added Burmese **raŋ** and Miju **groŋ** to this comparison and reconstructed the TB as ***?ryuŋ**. From our dialect data, however, PC forms like ****kluŋ**, ****xluŋ**, and ***?ləŋ** seem to be more plausible. Here again, the velar initials were probably prefixes. The reconstruction of (22) as ***?ləŋ** is parallel to that of 鷹 'eagle', having the same phonetic 鷹. Benedict (1972:72, n. 225) reconstructed its earlier form as ***?liəŋ**, and also a doublet root for ST, ***g-ləŋ** ~ ***g-lək** ('eagle, vulture'). These reconstructions are exactly parallel to the PC ***?ləŋ** < ****gləŋ** ('chest') and ***?lək** < ****glək** ('bosom'), with the alternation between -ŋ and -k.

We could also relate Tibetan **mthoŋ-** to the PC ****khlun** by reconstructing its earlier form as **m-throŋ** or ***m-khroŋ**, parallel to the ***s-troŋ** or ***s-kroŋ** ('empty') discussed above. The Thai words **klaŋ**, **kləŋ**, etc. might be cognate with or loan-words from Chinese.

3. Words sharing the meaning 'emptied pig': 'gelded pig'

A. Written data

- (25) 穀 (SW; KYSH 189) b'āk < *b'ũk and xuk little pig.
 (26) 穰 (KYSH 1024) liu < *gliu and lau < *glu an old sow.
 (27) 穉 (Liu Shu t'ung 六書統) k'āng < *k'ũng fat-free pork.

B. Dialect data

鬮郎子	khə? lan tsə (N. Shansi) adult pig without fat.
猪鬮郎子	tsu khə? lan tsə (N. Shansi) 3 or 4 month old pig.
狷郎	khə lan (Ch'angli, Jehol) lean gelded pig.
刻郎	khə lan (Kaoyang) little pig.
穀囊	khə nan (N.W. Shansi) pig.
狗拉	khə la (Hsienhsien) little pig.
客婁	khə lou (Hsüanhua, Ch'engan) young pig.
猪猪	khə lou (Ansai, Anting, Yülin) little pig.
克穉	khə lou (Michih) gelded little lean pig.
客婁, 可郎	khə lou or khə lan (Loch'uan) young pig.

C. Sino-Tibetan data (not available)

D. Reconstructions

PC **khlan (27) ~ *glug (26) PD **khlan ~ **khlug

4. Words sharing the meanings 'emptied and hollowed objects': 'husk', 'shell'

A. Written data

- (28) 康 (GSR 746 h) *k'āng / k'āng empty husk (Kuliang).
 (29) 糠 (GSR 746 o) *k'āng / k'āng husk of grain (Chuang)
 (30) 窠 (GSR 746 k) *k'āng / k'āng empty (Han text)
 (31) 濼竇 (Fang-yen Commentary) *k'āng-*lāng empty.
 (32) 寮窠 (SW; KYSH 533) *k'āng-*lāng empty room, empty.
 (33) 崖窠 (KYSH 534) *k'āng-*lāng empty mountain.
 (34) 罔窠 (Huai-nan tzu) *k'āng-*lāng empty (wilderness).
 (35) 殼 (GSR 1226 a) *k'ũk / k'āk hollow shell, hollow (Liehtzu);
 Li khruk.

(36) 殼 (KYSH 186) k'uk < *k'uk; k'āk < *k'ūk empty egg-shell, shell; also written as 殼 and 殼 in Chi-yün.

B. Dialect data

壳牢兒 khə lau-r (Liaoch'eng) egg-shell, husk (of sorgum, etc.).
(鞋)窠兒 (pie) khə lar (Peking, Paoting) interior (of a shoe).
空 khaŋ (Amoy) empty; khaŋ-khak hollow, empty.
殼 khak and khək (literary reading) (Amoy) shell, husk.
糠 khaŋ (Hakka) husk, chaff.
殼 khək (Hakka) shell.
糠 hɔŋ (Canton) husk (as of rice).
殼 hək (Canton) husk (as of beans, peas, etc.)

C. Sino-Tibetan data

pluk (Wuming) shell.

lgan-bu or gan-bu (Tibetan) pod, shell, husk; lgan-pa urinary bladder.

*kroy (TB) shellfish, shell.

D. Reconstructions

PC **khlaj (28-34) ~ khlük (35-36) ~ khlak

PD **khlaj ~ khlak

E. Remarks and discussion

The binomes (31-34) are clearly reflexes of an earlier **khlaj. The Tibetan lgan- probably came from *glan- and might be cognate with the PC **khlaj.

The word for 'husk' or 'shell' **khlak in proto-dialect form is reflected in the dialect word khə laur (-r is a modern suffix), following the general pattern of sound change from final -ak to -au. Wuming pluk could be cognate with PC **khlük, with a prefix (?) p-, similar to the PC **phlog discussed above (1.E.); it might be also related to Chinese 剝 (GSR 1229 a) *pük from **plük 'cut, flay, peel'.

5. Words sharing the meaning 'empty space between': 'crack, 'fissure'

A. Written data

(37) 窠 (GSR 787 a) *k'iak / k'ik light through a crevice (SW).

- (38) 隙 (GSR 787 c) *k'ak / k'iak crack, crevice (Tso); space between (Tso); interval (Tso).
- (39) 蟻 (KYSH 188) liak < **gliak: 渠蟻, 蟻蟻 g'iwō-liak Ephemera strigata (SW).
- (40) 谷 (GSR 776 a) *g'iak / g'iak interior of the mouth (SW).
- (41) 罅 (KYSH 988) xa < *xlag crack, hole.
- (42) 虛 (GSR 78a) *k'io / k'iwō abandoned city, ruins, waste (Shih); site (Tso); loan for id. *xio / xiwō empty (Li); Li *khjag; *hjag.

B. Dialect data

- 格喇 kə la (Hsūanhua) crack.
- 吉吉 kə la (Ansai, Anting, Loch'uan, Michih, Yūlin) crack.
- 圪拉 kə la (Ningsiang, Linhsien) crack.
- (腿)合拉 (thui) xa.la (N. Hopei) crotch (between legs).
- 合拉兒 xə la-r (Liaoch'eng) crack.
- 黑癩子 xəʔ la tsə (N. Shansi) space, interval.
- 隙 khiaʔ and khiek (literary reading) (Amoy, Swatow) crevice, aperture, notch.
- 罅 xia (Foochow) crack, to come open.
- 罅 la (Canton) crevice, crack, fissure.
- 罅 la (Hakka) crack, rent, rift, pretext.

C. Sino-Tibetan data (not available)

D. Reconstructions

PC **khlak (37-39) ~ xlag (41-42) PD **khlag ~ xlag

E. Remarks and discussion

The word 'crack' (38) was reconstructed as *khlāk by Pulleyblank (1962-3:113) because of (39) liak, which has the same phonetic as *k'iak. The binomes listed under (39) also confirm this reconstruction. This could be further proved by the comparison of the Chinese word for 'fear': 驚 *xiak with TB *grok ~ *krok or *grāk ~ *krāk 'fear' (Benedict 1972:127). The Chinese character has the same phonetic (37) as in (38).

6. Words sharing the meaning 'low empty space between': 'river', 'valley'

A. Written data

- (43) 江 (GSR 1172 v) *kǔng / kǎng The River (Yangtze); river (Shu);
Li *krung.
- (44) 隴 (SW; KYSH 250) lung < *lung big and long valley
- (45) 豁 (KYSH 8) xung < *xung and xǎng < *xǔng empty valley.
- (46) 谷 (GSR 1202 a) kuk / kuk valley (Shih).
- (47) 溝 (GSR 109 h) *ku / kǎu drain, irrigation canal (Lunyü);
Li *kug.
- (48) 壕 (GSR 1129 y) *g'ôg / Yâu moat (Mo); Li *gagw.
- (49) 鑿 (SW) *gliôg / lieu empty valley; (Kuang-ya) deep, empty;
Li gliagw.
- (50) 澗 (Chi-yün) lâu- < *lôg empty valley.
- (51) 隴 僻 (KYSH 1044) xâu-lâu < *xôg-lôg deep valley.
- (52) 壑 (GSR 767 a) *xâk / xâk moat (Shih); canal, ditch (Meng);
valley (Tso).

B. Dialect data

- 吃場 (略 傍) kə lau (Chinghsien, Hsüanhuá, Ansai, Anting, Loch'uan,
Michih, Tengch'eng, Yülin, Yungshou) valley.
- (山) 谷 落 (suã) kok lok (Swatow) (mountain) valley.
- 山 邊 谷 落 縫 suã pǐ kok phan (Amoy) in deep valley or glen far among
the mountains.
- 山 空 仔 suã lan-a (Amoy) a narrow valley.

C. Sino-Tibetan data

khloŋ (Thai) canal.	khloŋ (Old Burmese) stream.
kroŋ (Muong, Bahnar) river.	kroŋ (Old Mon) river.
gyaŋ (Lepcha) stream.	gyaŋ (Miju) stream.
klun (Tibetan) river.	kroŋ (Kachin) valley, dale.
khyuŋ < *khruiŋ (Bur.) valley.	thuŋ lûŋ (Vietnamese) valley.
luŋ-pa (Tibetan) valley, hollow.	roŋ (Tibetan) narrow passage, valley, ravine.
ldzons < *lyoŋ- (Tib.) large	luŋ-pa (Tib.) valley, furrow.

valley.	luak (Wuming) valley.
grog-po (Tib.) lateral valley	*lan̄ (Proto-Lolo-Burmese) river.
*klu:ŋ (TB) river.	
*gryūk ~ grūk (TB) valley.	

D. Reconstructions

PC **klū̄ŋ (43) ~ glū̄ŋ (44) ~ xlūŋ (44-45)
 **kluk ~ klug ~ glug ~ xlug (46-51)
 **xlak (52)
 **klak ~ klok ~ glug

E. Remarks and discussion

All evidence favors the reconstruction ****klū̄ŋ** for 'river'. Tibetan **roŋ**, **luŋ**, Proto-Lolo-Burmese ***lan̄**, and Archaic Chinese ***lung** indicate that the velar initials ***k-**, ***g-** and ***x-** were probably prefixes. The counterpart of ****klū̄ŋ** is ****kluk** with its dialectal (?) variations ****klug**, ****glug**, and ****xlug**, which are cognate words with the Tibetan **grog-**. Wuming (Thai) **luak** might be cognate with PC ****kluk**. TB ****klu:ŋ** by Benedict (1972:127) corresponds to PC ****klū̄ŋ**.

Modern Mandarin dialect forms favor an earlier form ****klak** for 'valley'. The sound changes from ****klak** to **kə-lau** are similar to ****khlak** > **khə-lau** ('husk', 'shell'), discussed above (4.E.).

II. Summary and conclusion

From this study we may draw the following conclusions: (1) Proto-Chinese cognate words sharing the basic meaning 'empty' and 'hollow' probably have had the common forms **luŋ** ~ **lan̄** and **luk** ~ **lak**; the initials ****kh-** and ****k-** were probably prefixes with a nominalizing function. Other velar initials such as ****g-**, ****x-**, and dental ****dh-** could be dialectal variations of either the same prefix, or different prefixes. If our root theory later proves to be wrong, our reconstruction of the consonant clusters, at least for the nouns, still could be valid because of the large amount of evidence cited. (2) As Karlgren has pointed out in his "Word families in Chinese" (Karlgren 1933), there have been certain "laws of alternations" in Archaic and Proto-Chinese for consonants and vowels among the members of a word family. In our examples, there are vocalic alternations between the vowels **u**, **ü**, and **a**; and alternations between the final velar nasal and final velar stops; **-ŋ**, **-k**, and **-g**, as can be seen from the following groupings of cognate words:

空 khlū̄ŋ (1)		口 khlug (7)
江 klū̄ŋ (43)	谷 klug (46)	溝 klug (47)
腔 khlū̄ŋ (20)	殼 khlūk (35)	[穰] khlug (PD)
胸 xlūŋ (21)		
膺 gləŋ (22)	膺 glək (24)	

康 khlaŋ (28)	陵 khlak (38)	鱗 xlag (41)
峒 dhluŋ (18)	竇 dhlu-k (19)	竇 dhluŋ (19)

(3) If we apply Benedict's (1972:157-9) suffix theory to our cognate words, namely taking ****khlu-** as a root and the final consonant endings **-n** and **-k** as suffixes, we could then have the following possible examples:

□ khlu 空 khlu-ŋ 殼 khlu-k 竇 dhlu 峒 dhlu-ŋ 竇 dhlu-k

We next have to find out the nature and functions of these suffixes. (4) The genetic relationship between the Proto-Chinese ****khluŋ** (and its cognates) and words with similar sounds and meanings among other Sino-Tibetan languages needs further exploration and refinement. One of the questions is whether Proto-Chinese and its related languages had a distinction between medial **-l-** and **-r-**, which would have served as the initial consonants after a prefix, according to our root theory. Li Fang-kuei's reconstructions of Archaic Chinese included both **-l-** and **-r-**, and both of them could be an initial consonant. But he treated them only from the phonological point of view, namely as a part of consonant clusters (**-l-**), or as a medial (**-r-**), without touching upon their possible morphological functions.

To sum up, the purpose of this paper is to point out some of the problems and tentative interpretations involved in the reconstruction of the Proto-Chinese, and to bring to light some interesting but unsolved questions for consideration and discussion. I would appreciate any comments, additional information, and suggestions.

List of Place Names

Ansai (安塞), Anting (安定), Ch'angli (昌黎), Ch'angsha (長沙), Ch'aouchou (潮州), Ch'engan (成安), Chinan (濟南), Fengch'iu (封邱), Hofei (河肥), Hsienhsien (獻縣), Hsüanhua (宣化), Kaoyang (高陽), Kienyang (建陽), Liaoch'eng (聊城), Linhsien (臨縣), Loch'uian (洛川), Michih (米脂), Mishien (密縣), Ningsiang (寧鄉), Paoting (保定), Sheyang (瀋陽), Tench'eng (澄城), Wenchow (温州), Wenhsihhsien (聞喜縣), Wenshuei (文水), Yanchiang (陽江), Yülin (榆林), Yangchou (揚州), Yungshou (永壽).

ARAKANES VOWELS¹

David Bradley

O. Abstract

Burmese and Arakanese share the same orthography, but their vowel and consonant systems have been diverging for many centuries. A fifteenth century Arakanese inscription already shows some of the differences. More recently, there has been variable reconvergence towards central ('standard') Burmese.

The Arakanese system differs especially in the front vowels, and in developments of consonant-final rhymes. It is more regular than Burmese in its treatment of -ñ as /e/, and more symmetrical in its treatment of final -ñ and -k. However there is a near-collapse of front vowel oppositions, with the results partly conditioned by tone. Also, close front vowels in nasal-initial syllables tend to be nasalized.

Many speakers show considerable interference from Burmese, especially in more formal styles, or for more literary lexical items. An Arakanese informant from Bangladesh shows the least tendency towards Burmese, one from northern Arakan shows more, and one from southern Arakan shows the most.

1. Introduction

Arakan has been inhabited by speakers of a dialect of Burmese for a considerable period. Traditional history suggests that the Arakanese arrived in 957 AD. The history of the Arakanese dialect may to some extent parallel later political developments. The breakdown of widespread Burmese authority (the Pagan dynasty) after the Chinese/Mongol invasion of 1287 and during the subsequent "Shan brother" and other dynasties must have led to a lapse of substantial contact between Arakan and the rest of Burma.

In about 1405 the Burmese invaded and conquered Arakan, but the Arakanese dynasty was reinstated by the Moslem ruler of Bengal in 1430; the Arakanese used Moslem and later Portuguese assistance to maintain independence, and in fact to conquer Chittagong about 1500, and the coast of lower Burma about 1600. By 1666, both were lost, but until 1785 Arakan maintained its own independence from the rest of Burma; it was then conquered by the Burmese and presumably subjected to extensive Burmese linguistic influence until the 1825 British

¹ Ono (1966) summarizes early English and other attempts to transcribe Burmese; the spellings found in such sources are cited in single quotes. Okell's (1969) transcription system, which is cited between slashes, is used for Burmese forms. More detailed phonetic transcriptions are cited between square brackets, using IPA symbols, Chao tone letters, and subscript ~ for creaky voice quality. The Duroiselle/Blagden system, indicated by underlining, is used for transliterations except that -s/ are both represented by -m.

conquest. After another thirty years or so of separate development, contact resumed after the British conquered lower Burma in 1852; since then, particularly since the British conquered the rest of Burma in 1884-85, and more so since the independence of Burma, contact has been extensive, with a progressive spread of Burmese along the coast. Without doubt many Burmese speakers in southeastern Arakan are descendants of recent Burmese immigrants (since 1785), but others must be descendants of Arakanese who have assimilated to become Burmese and speak Burmese.

Among the Arakanese there are three main groups: rahkuin [ʁəkhaĩ ʃ] proper, kyokhpuru [caʔpʰu ʃ] and rambre [ʁɛ ʃ bre ʃ]. As the names suggest, the second predominate around Kyaukpʰru, and the third around Ramree Island. The center of the first, the Arakanese proper, is around Akyab, Mrohaung and so on, but Arakanese are found in substantial numbers along the coast in southeast Bangladesh and continue south beyond Sandoway.

A divergent group which reportedly migrated from Arakan between about 1600 and 1800, especially after the Burmese conquest of 1785, is the maramā [maɾəma ʃ]. They live mainly in the Chittagong hills, where they are the largest group; some also live in the Arakan hills. Bernot (1967) reports that according to their clan names many are descendants of Arakanese court attendants. Lack of substantial contact since 1785 has allowed the Marma dialect (with northern and southern subdialects) to diverge substantially from Arakanese in surface realizations of various consonants and vowels, though the underlying similarity remains. In another sense, Marma may in some ways more faithfully represent Arakanese as spoken before the resumption of major contact with and influence from Burmese in 1785, though judging from Towers' (1798) description of Arakanese most differences are due to relatively recent changes in Marma.

One strong unifying factor in the development of dialects of Burmese is the Burmese orthography, originally borrowed from the Mon which in turn was based on a South Indian model. Most men learned this orthography by studies in a Buddhist monastery. It became more or less standardized by about 1600 in a form which no longer reflects the original medial l, but which contains an i vs. e distinction not maintained in Arakanese by 1798 and probably unstable as early as 1495. A few subsequent changes, such as the elimination of -w in -uiw, take place later in Arakanese than in Burmese; Marma and thus perhaps Arakanese after 1495 but before 1798 also uses an additional combination, sy-, to represent [ɕ] (other than those from lyh- and hky- which presumably were not pronounced [ɕ] when this symbol was devised). It is interesting that the orthography as mainly standardized by 1600 is essentially shared by Arakanese and Burmese, suggesting substantial influence from Burmese even during the period of Arakanese independence, perhaps during the occupation of lower Burma.

Arakanese is spoken by a large population, though most are also educated in Burmese and become more or less bidialectal. Hence, interference in Arakanese and convergence with Burmese can be expected to increase. However, non-bilingual Arakanese speakers find it difficult to shed their Arakanese accent, which in fact interferes little with communication, as the most salient differences involve extra consonant oppositions not preserved in standard Burmese. The few vowel mergers in Arakanese discussed below are not made in the orthography, so literate Arakanese speakers should have little difficulty in adjusting to Burmese - and in fact show influence from Burmese in their more formal or literary Arakanese.

I have discussed a number of sources which contain data on Burmese and Arakanese, especially those which can be used as evidence for earlier pronunciation. In particular the most comprehensive early Burmese data are in the Lokahteikpan at Pagan (early 12th century), which have been excellently described and analyzed by Ba Shin (1962); other data such as the "Myazedi" Rajakumar of 1112 AD are less extensive. Miller (1954) makes a useful analysis of some Chinese representations of Burmese originating about 1450 (and later recopied); Nishida (1972) contains a larger quantity of similar material. Carpani and Montegazza (1776 and 1787) provide data on the lower Burma dialect as transcribed by Italians; their observations are discussed in Luce (1914) and Firth (1936). Pe Maung Tin (1922) gives the texts of an interesting Portuguese - Burmese travel document from Rangoon, dated 1783. Buchanan (1798) gives some vocabularies, including Burmese, probably also from lower Burma, and a few words of Arakanese. Further English and other attempts to transcribe Burmese around 1800 have been summarized in Ono (1966).

Arakanese sources are less extensive; the earliest bilingual is the warāntōn inscription of 1495, a Persian-Arakanese inscription. I was given a rubbing of the Arakanese face by Dr. Gutman and discussed the Persian face with Dr. Habibullah of Dacca University. A joint article on this inscription is forthcoming.

This inscription contains various proper names that give hints about the sounds of Arakanese in 1495 and a number of interesting spelling differences that shed light on Arakanese vowel developments. Much more recently Towers (1798) has given an extensive description of the Arakanese/Burmese orthography, with a sample text. His informant was clearly Arakanese; the data are extremely valuable in providing a full set of examples from 1798, even though the transcription is sometimes hard to interpret. Buchanan (1798) gives a few Arakanese words; others can be gleaned from early documents on European-Arakanese contact. Further evidence on earlier stages of Arakanese can be taken from loanwords into Plains Chin analyzed in Stern (1962) and loanwords into Khami, Khumi and Mru analyzed in Loeffler (1960, 1966).

There are many short descriptions of Arakanese from the last 80 or so years, by linguists more familiar with Burmese. Houghton (1897) is the first. Taylor (1921) is rather sketchy. Stern (1962) contains a brief summary of phonology. The best and most detailed is Sprigg (1963), though the data are mainly verbs; his informant was from Akyab. Stern's informant was from Sandoway. Bernot (1965) is a useful summary and comparison with Burmese and Tavoyan. Okell (1971) is a wide-ranging and insightful comparison within Burmish that contains much transcribed Arakanese data. I have not seen Ono (1969). Jones (1970 and 1971) report some forms from a Mrohaung informant. A general book on Arakan, published in Burma in 1976, gives some examples, mostly lexicosyntactic. During 1978, I worked with three informants: one from Sandoway, bilingual in Burmese, and showing substantial Burmese interference; one from Akyab, with a recognizable Arakanese accent in his Burmese, and some Burmese interference in literary or formal style Arakanese; and one from Bangladesh who was less familiar with Burmese, but literate in Arakanese and several other languages.

The Bernots have made very extensive studies of Marma, both linguistic and anthropological: D. Bernot (1958, 1966) on the language, and L. Bernot (1967) on the society, the latter containing also a massive quantity of linguistic data. I have represented these data in phonetic transcription herein. I have

tried to compare the Marma and Arakanese dialect below, in addition to describing the dynamics of Arakanese phonology.

Where relevant, I have cited evidence from other dialects of Burmese such as Tavoyan (data from Taylor (1921), Pe Maung Tin (1933), Okell (1969), Ono (1970), Jones (1970, 1971) and my own informant, 1978-9). I have not used information from other Burmish or Loloish languages, since my intention is internal reconstruction within Burmese. However, for an extensive reconstruction of Proto-Loloish, see Bradley (1979). I hope to proceed on a reconstruction of Proto-Burmish, using Maru (Lawngwaw) and Atsi (Tsaiwa, Szi) data from my informants, 1977 and from other sources; data which I hope to collect on Lashi; and the Hpon data collected by Professor Luce in a forthcoming book. The two groups together form the Burmese-Lolo subfamily of Tibeto-Burman, which has more recently been called Lolo-Burmese by Burling, Matisoff and others. I cite some hypothetical reconstructions of Proto-Burmese-Lolo (PBL) below in passing.

There have been several attempts to work out the earlier system of the Burmese vowels. Pulleyblank (1963) compares Old Chinese and Burmese in his attempt. Sprigg (1963) is purely internal; it uses a prosodic approach. Jones (1976) provides some speculative suggestions.

2. Open-Syllable Vowels

There are numerous vowel nuclei in Burmese, Arakanese and Marma that have orthographic representations without a final stop or nasal; these are the open-syllable rhymes of PBL. There is one 'open-syllable rhyme' written with the level tone as final -y, and another formerly written with final -w, so in fact the open-syllable rhymes may have included some glide finals when the orthography was devised about 1100. These vowel nuclei include a number of monophthongs, and some diphthongs that begin with a lip-rounded onglide written now with subscript -w-; these are discussed in detail below as w-medials. Conversely, the stop- and the nasal-final rhymes include a number of diphthongs with offglides; the development of these diphthongs has been influenced by the features of the following consonant, as described below.

In Arakanese and in Burmese, there are seven monophthongs and three ongliding diphthongs; Marma has six monophthongs and three diphthongs, though in Marma the distinction between one of the monophthongs and one of the diphthongs: [i] vs. [wi]/[yɪ], is neutralized after some consonants. The systems are set out in the following table.

Arakanese		Marma		Orthography	
i	u	i	u	<u>i</u> , <u>ī</u> , <u>e</u>	<u>u</u> , <u>ū</u>
e	o	e	o	<u>e</u> , <u>ay</u> , <u>ai</u> , <u>añ</u>	<u>ui</u>
ɛ	ɔ				<u>o</u>
a	ɒ	a		<u>a</u> , <u>ā</u> (<u>wā</u> ³ Ar. only)	
wi		wi		<u>we</u>	
we		we		<u>we</u> , <u>way</u> , <u>wai</u>	
wa		wa		<u>wa</u> , <u>wā</u>	
Burmese				Orthography	
i /i/	u /u/			<u>i</u> , <u>ī</u>	<u>u</u> , <u>ū</u>
ɛ /ei/	o /ou/	we /wei/		<u>e</u>	<u>ui</u> <u>we</u>

ɛ /e/ ɔ /o/ wɛ /we/ ay, ai o way, wai
 a /a/ wa /wa/ a, ā wa, wā

It can be noted that the Arakanese open-syllable system is unusual in having four distinct back rounded vowels, and an open (low) spread vowel that ranges from fairly front to back, depending on the preceding consonant, but only two front spread vowels. The open (low) back rounded vowel [ɔ] occurs in words spelled with wā³, with heavy tone, as discussed below; this is similar in quality to the nasalized [ɔ̃], in words spelled wā¹, and stop-final [ɔʔ], in words spelled wak. Neither Burmese nor Marma shows this monophthongization of wā³.

A. Front Vowels. The obvious difference between the Arakanese and Marma systems, on the one hand, and the Burmese system, on the other, is the merger of e with [i] or [e] in Arakanese and Marma. [i] is regular for words spelled with i, except after nasal initials. [e] is regular for words spelled with ay or ai and most words spelled with añ; see nasal-final rhymes below. [we] or [ɣe] is regular for words spelled with way or wai. In general, the split of e is conditioned by the tone, with heavy tone favoring the [i], as does high frequency of the word, and informal style. Certain initials favor, and others disfavor, the closer (higher) vowel. Medial w slightly disfavors the [i] alternative, compared to similar syllables without the w. Many words in fact show variation between [i] and [e] realizations, due to stylistic factors, dialect differences, and/or Burmese influence.

Jones (1976) wishes to infer from the lack of e used in its modern function in the earliest inscriptions that the /i/-/eɪ/ distinction in open syllables arose recently in Burmese; but the regular and consistent correspondences for these two vowels in other Burmish and Loloish languages are different, so the early confusion was probably an orthographic problem, and completely separate from the later merger of this vowel with others in Arakanese. Miller (1954) cites four Chinese representations of e, two with 'ei' and two with 'i'; two instances of i both have 'i', and two instances of ay, ai both have 'ai', in the Chinese forms cited. Presumably this implies that the phonetic realization of the vowel in words written with e was between Chinese 'i' and 'ei' of that period - a fairly close (high) [e̞] as it is in modern Burmese. Incidentally, these data also show that at least one of the words written with e or ay, but pronounced with /i/ in modern Burmese was formerly pronounced as written in Burmese: 'foot/leg' hkre, Chinese 'k'o-lèi', but now mostly /hci/. This and other similar examples still show the vowel nucleus expected from the spelling in Arakanese 'foot' [khɔ̃ɛ ɿ] ~ [khwɪ ɿ]; 'laugh' ray Burmese /yi/, Arakanese [ɣe ɿ]; 'barking deer' hkye Burmese /ji/, Arakanese [ɔ̃ɛ ɿ]. This last is now often spelled gyi as pronounced in Burmese; like a number of other Burmese nouns with voiced-stop initials, the corresponding Arakanese form is voiceless, in accord with the earlier spelling. An appendix below gives the forms of e in various words in Arakanese data.

Unlike Burmese, which apart from the few words noted above has entirely maintained the /i/ - /ei/ - /e/ ([i] [e] [ɛ]) opposition, Arakanese seems to have had variation with the vowel represented by e since at least 1495. The 1495 inscription contains five words which are written with e in Burmese: three are written with e, one with i, and one varies.

'still'	<u>se</u>	'day'	<u>ni</u>
'grandchild'	<u>mre</u>	'cause to V'	<u>ci</u> (twice)

'live' ne
 'cause to V' ce

Note that the only one which appears more than once, 'cause to V', shows variation between i (twice) and e; this word varies in the text in Towers (1798) in the same way; and in modern Arakanese the word also varies between [i] and [e]. The spelling of 'day' is also in accord with one modern pronunciation: [ni ɿ] or [neɪ ɿ]. 'Grandchild' and 'live' are also in accord with modern usage, containing [e], but 'still' is now [θi ɿ]. Several words spelled with e in this inscription instead of modern ai are discussed below with the nasal-finals.

The inscription also contains one word, 'know' si, correctly spelled with i; the word 'snake' spelled mri which accords with an earlier stage of its current Arakanese from [mɛɪ ɿ], but not with the Burmese mywei; and three words spelled with wi discussed with w-medials below.

Towers (1798) seems perplexed by the extra orthographic vowel: "by a strange irregularity, (e) is frequently written for i" (p. 150). Thus the developments of front vowels were already similar to those in modern Arakanese. His text shows a number of examples of 'i' for i; 'know', 'big', 'finish', 'lift'; some examples of 'e' for e 'give' and so on; but also some of 'i'; e.g. 'east' arhe¹, 'a'hri', modern [ʔəɰi ɿ] and so on. Some variation in spelling is also found: 'bow to' rhe hkuiw or rhi hkuiw for hri¹ hkui³, Arakanese [ɰi ɿ kho ɿ]; one of the 1798 alternates shows a hypercorrect e spelling. Note also the above mentioned variation of se between 'i' and 'e'.

As Bernot (1965) notes, the realization of the Arakanese [e] is between that of Burmese /ei/ [e] and /e/ [ɛ] in height. So, in effect, the vowel nucleus spelled ay, ai and represented in Miller's Chinese source by 'ai' about 1450 has become a monophthong in all modern Burmese dialects; in Arakanese but not elsewhere e and ay, ai have partly merged; elsewhere the distinction is now one of height, not the monophthong vs. diphthong opposition suggested by the spelling. Towers gives 'e' for all instances of ay, ai in 1798; some words are in fact misspelled with e; 'ten' once che, once chay, strongly supporting homonymy at that date for some words spelled with e and all those spelled with ay, ai.

One major complication of the front vowel pattern is the tendency for the closest front vowel to be nasalized, [ɿ̃], after nasal initials by assimilation to the preceding velum-lowered segment; so such syllables are nasalized throughout. The vowel is slightly opener (lower) than the corresponding oral vowel, and may be diphthongized like the nasal-final vowel nucleus [eɪ̃], written in or im. In the dialect of the informant from Bangladesh, the two are not distinct; the other two informants show a range of variation which includes homophonous and slightly distinct realizations, perhaps influenced by the Burmese differences and the spelling differences. In northern Marma this kind of nasalization after nasals appears to be less frequent, but southern Marma may nasalize more frequently.

There is some danger of imposing the system of one dialect on one's analysis of another; in fact some speakers apparently do so consistently. Sprigg's informant used [ɿ̃] where an /i/ followed a nasal; and [eɪ̃] in words written in or im and pronounced [eɪ̃] in Burmese. Likewise Taylor represents one vowel nucleus as 'ing', and the other as 'ein'; but the velar nasal final

juncture possibility occurs for both sets of words, as indeed for all nasalized vowels. The Marma spellings are useful in this case; Marma often spells [i] phonetically, with i; it also spells [ĩ] with in in some cases, according to the Bernots. This implies an identical realization for in and i after nasals in Marma.

In fact many nasal-initial words vary between oral [i] and nasalized [ĩ], just as many non-nasal initial words vary between [e] and [i]. Others show all three possibilities: [e], [i], or [ĩ] after initial nasals. Some words have variation between oral and nasalized forms, with and without medial [w]/[ʍ]. Only a quantified study of this variation in the Labov model, considering social, stylistic and Burmese contact factors, can account for the range of alternatives in a predictive, insightful way. An appendix presents these data, for oral and nasalized front vowels in words spelled with e and we. Though neither the 1495 inscription nor the 1798 data report this nasalization, the lack of medial we and the i vowel which is the pre-requisite to nasalization are present in 'snake'; and the i vowel is used in 'day', in the inscription.

Contrary to the usual tendency, there are two homophonous words spelled with i in Burmese, and pronounced with /i/; but pronounced with [e] in Arakanese: 'catch fire' and 'mass', both ñhi Burmese /hnyí/, Arakanese [ɲe ʎ]. Perhaps these words, like 'barking deer', have irregular vowels in Burmese, and have been respelled to match their newer Burmese pronunciation.

An example of nasalized [ĩ] after a consonant other than nasal occurs in the extremely frequent word rhi 'be/exist/there is'. This shows a variety of forms, ranging from a Burmese-like form [ɕi ʎ], to a spelling-influenced Arakanese form [ɲi ʎ]. More common in informal spoken Arakanese is [hi ʎ] or most frequently [hĩ ʎ], with voiceless cavity friction and nasalization; rhinoglottophilia strikes again. The Arakanese initial can be compared with the hi form seen in early Burmese inscriptions.

B. Medial W (open syllables). In general the tongue position of the onglide represented by orthographic -w- is conditioned by that of the preceding consonant; a back [w] occurs after velars, labials and [ɟ]; a front [ɥ] (the glide counterpart of front rounded [y] as in French huit) occurs after apicals, alveopalatals and palatals. In turn the vowel quality, particularly that of the open (low) vowel, is affected by the presence and type of medial; so in fact Sprigg's use of prosodic formulae is particularly apt in this case: we have G (grave) syllables, with velar, labial and/or [ɟ] preceding a back glide and a backer vowel; or \bar{G} (nongrave) syllables with other initials and/or [j] preceding a front glide and a fronter vowel. In all cases, the initial consonant is labialized (lip-rounded). With a in syllables with heavy tone and sometimes otherwise, the lips are rounded for the whole syllable.

When w is initial it is back [w] in Arakanese; it has the same effect on following vowel (and stop or nasal if any) as a medial w, except that it remains in initial position even when the medial w is reflected mainly by lip-rounding during a monophthong vowel, e.g. initial w in Burmese 'wear' wat /wu?/, vs. medial in 'free' lwat /lu?/; or Arakanese 'bamboo' wā³ [wɔ ʎ] vs. 'cattle' nwā³ [nɔ ʎ], or 'pig' wak [wɔ?] vs. 'leaf' rwak [ɟɔ?].

There are three diphthongs in open syllables in Arakanese, three in Marma, and three in Burmese; but like the front vowels, they do not match. Burmese has a marginal fourth possibility /wi/ mainly in onomatopoeic words; [wi] or

[ɣi] is one of the regular possibilities in Arakanese and Marma, which is written we, and corresponds to diphthongs pronounced with /wei/ [wɛ] or [ɣɛ] in Burmese. In Arakanese and Marma the diphthong [wɛ] or [ɣɛ] is usually used with words written way or wai and corresponds to Burmese /we/ [wɛ] or [ɣɛ]; or in words written we, corresponding to Burmese /wei/. Thus, the front vowel e splits between [i] and [ɛ] realizations after medial w just as it does without the medial, though the distributions differ, since w is less favorable to the [i] alternative; that is, more words with we can have a pronunciation with [wɛ] than words with e (without medial w) can be pronounced with [ɛ] in Arakanese. The third diphthong in all three dialects is written wa, and realized as [wa] or [ɣa]. In Arakanese only, this combination is realized as a rounded monophthong [ɔ] with heavy tone, and occasionally with other tones; more on this later.

Arakanese forms of words written we are given in the appendix. In Sprigg's data, all instances given show the closer vowel, perhaps again in accord with his informant's intuitions concerning spelling and pronunciation. In Bernot's Arakanese data, as in mine, there is variation. A further complication is the variable realization of some words written without -w with an onglide: 'write' re³ [ɽwi ɣ] or [ɽi ɣ]; Bernot ascribes this to neutralization of /wi/ and /i/ after /r/. One word with [ɽ] variably shows lip-rounding through the entire preceding shwa syllable: are³ 'father's sister' [wɛɽi ɣ] ~ [ɔɽi ɣ]. However with [ɽ] there seems not to be neutralization -perhaps because contrasting lexical items exist: 'in front' rhe¹ [ɽi ɣ] and 'move' rhwe¹ [ɽwi ɣ]; both words also variably occur with [ɛ] initial.

As for [i] and [ɛ] spelled with e, some words vary between closer and opener vowels with we; for those which do not, the main conditioning factor for vowel height appears to be the tone. Heavy tone favors the closer [wi] or [ɣi], though less strongly than without the onglide; with both heavy and creaky tones there is a roughly even split. However with level tone the opener [wɛ], [ɣɛ] alternative predominates very strongly. In effect, the height of the vowel is strongly affected by the pitch of the tone: higher pitch, closer (higher) vowel. The variation is presumably affected by stylistic, literary, and contact factors too.

The early evidence on the we diphthong is very interesting. In the early inscriptions it was written -uy. Tibeto-Burman cognates for many words now written with Burmese uy suggest a proto-rhyme *ul: 'silver' Tb. ngul, Burmese nwe and so on. In fact this diphthong is often pronounced with near-equal prominence on the onglide in modern Burmese, especially in level tone, as Sprigg has pointed out to me; so the shift of the syllable peak is not yet complete. Miller's Chinese representations give 'wei' for this word, and 'shui' for 'gold' rhwe, also formerly written rhuy, but now pronounced [ɣwe ɽ] in Burmese and Arakanese; 'snake' is given as 'mai-lei', with the 'mai-l' representing the initial mr cluster, and the 'ei' for the rhyme. Here, as in the 1495 Arakanese inscription and in modern Arakanese, the medial is absent; though perhaps 'mai-lai-wei' would have struck the authors of the Chinese sources as too much for a one-syllable Burmese word.

The other three relevant words in the 1495 inscription are talankanwi 'Sunday', hkwi 'dog', and chwi 'descendant'. There are no instances of we, though all these words are now written with we; two of them usually have [ɣɛ] in Arakanese, though 'dog' is now [khwi ɣ]. In Towers' 1798 text, the verb particle ɽ is transcribed 'rwe'; it is pronounced /ywei/ in modern Burmese,

and [uwe ɿ] in Arakanese, though of course it is quite literary.

After nasal initials, the entire syllable including glide is nasalized if the vowel is close. The examples in Sprigg's Arakanese both show [wi] after nasals. In my data the glide is variably absent in some words, e.g. 'warm' nhwe³ [nyɛ ɿ], [nyɛ̃ ɿ], [nɪ̃ ɿ]; especially if the initial contains a complex cluster, e.g. 'snake' mrwe³ [mɔwɛ ɿ], [mɔwɛ̃ ɿ], [mɔɪ̃ ɿ]. This latter process seems to be reversed in southern Marma, where words without the glide in other dialects have a glide in Bernot's data, e.g. 'mother' mi [mɔɪ̃ ɿ]. In effect, /wi/ and /i/ are neutralized in Marma after nasals; so [w] may occur in 'mother', 'daughter', 'grandchild', 'bamboo tie', 'younger brother' and so on unlike other dialects; conversely, [w] sometimes does not occur in words that have it in other dialects, so 'bear (child)' mwe³ [mɪ̃ ɿ] or [mɔwɪ̃ ɿ], is thus homophonous with the noun 'fire' mi³ [mɪ̃ ɿ] or [mɔwɪ̃ ɿ].

The open vowel after the glide is also interesting. All words written with wā³, with heavy tone, are pronounced with an open (low) back rounded vowel [ɔ]; the preceding consonant is labialized, so such a syllable is rounded throughout; sometimes there is a slightly closer (higher) onglide, so the result is a vowel nucleus like [ɔ̃ɔ]. My more Burmanized informant sometimes used [wa] in such words; the informant from Akyab consistently used [ɔ] for all such words with heavy tone; conversely the least Burmese-influenced informant used [ɔ] variably also in a few words with creaky or level tone; e.g. 'hoof' hkwa, [khp ɿ]; 'saw' lhwa [lwɔ ɿ] or [lwɔ̃ ɿ]; and even in one form not written with -w- na³ [nɔ ɿ] in 'understand', 'listen', and so on, but not in 'ear'.

With [ɹ] initial, the same informant consistently used [ɔ] in 'village' rwā [ɹɔ ɿ] and 'rain' mui³ rwā [mɔ ɿ ɹɔ ɿ]; the speaker from Akyab used [ɹɔ̃ ɿ] in these two words, but not the one from Sandoway. Another interesting word is the verb 'go', Burmese swā³. Arakanese speaking very formally in their best Burmese style may use [θɔ ɿ] as would regularly be expected; however, as in the case of an equally frequent verb rhi noted above, there is a uniquely Arakanese form [lɔ ɿ], which in rapid speech sometimes is pronounced [lɔ̃ ɿ] and then differs from 'come' lā only in tone.

Initial w acts just like medial w in these vowel developments:

'fat'	<u>wa</u>	[wɔ ɿ]
'yellow'	<u>wā</u>	[wɔ̃ ɿ]
'bamboo'	<u>wā</u> ³	[wɔ̃ ɿ]

parallel to medial

'saw'	<u>lhwa</u>	[lwɔ ɿ]
'be thin'	<u>lhwā</u>	[lwɔ̃ ɿ]
'shield'	<u>lhwā</u> ³	[lɔ ɿ]

On the earlier realization of this vowel nucleus, one example is available in Towers: cwā is transcribed (within a word) as 'jwa'; presumably indicating a diphthong pronunciation.

C. Other Vowels. There is an exact correspondence between the remaining open-syllable vowels of Arakanese, Marma and Burmese:

<u>u</u> , <u>ū</u>	[u]	[u]	[u]
<u>ui</u>	[o]	[o]	[o]
<u>o</u>	[ɔ]	[ɔ]	[ɔ]
<u>a</u> , <u>ā</u>	[a]	[a]	[a]

Almost without exception each syllable with a back rounded monophthong has a nearly identical vowel in the other dialects considered. The position of the /a/ varies from front of central in syllables with level creaky tones, to fairly back in syllables with the heavy tone; note the exceptional nature of Arakanese wā³ as described above.

The values given in the post-1450 Chinese representations of Burmese are 'u' for u, ū (four examples); 'u' twice and 'ou' twice for ui(w) parallel exactly to the corresponding front vowel and thus suggesting exactly the modern Burmese value of a fairly close (high) variety of [ɤ]; 'ao' for o, (one example which appears twice); and 'a' for a, ā in numerous examples.

In the 1495 Arakanese inscription, u and ū are both consistently represented by u; ui(w) by uiw; o and o² by o; and a, ā by a. In Towers' text the standard length (tone) distinctions are used with some mistakes; the vowel transcriptions given are 'u', 'o', 'ao' and 'a' respectively. Taylor (1921) gives 'u', 'o', 'ua' and 'a' as the values of these vowel nuclei; perhaps the third is a misprint, with the vowels transposed; if so the 1798 and 1921 values of o in Arakanese agree with the 1450 value in Burmese, and with the reconstruction in Bradley 1979 of PBL *aw. Thus it paralleled the ay rhyme which however monophthongized far earlier in both dialects. However, all recent observations of Arakanese suggest a monophthong [ɔ] as the realization of this rhyme, with the exception of the Burmese 1976 book, which claims incorrectly that [ɔ] is realized like ui, as [o].

The spelling of words now written with ui was unstable in the earliest inscriptions; o is often used instead, for example in the "Myazedi" Rajakumar; so too are iw, uw as well as the later usual uiw. This modern digraph transliterated ui by convention has been the subject of considerable discussion, most recently by Golovastikov (1978). Based on the universal realization of [o] in all Burmese dialects (as distinct from Burmish languages), and the early Chinese representations with 'u' or 'ou', it seems likely that in early Burmese it was something like [o], exactly parallel to e but back and rounded. This suggestion is supported by the parallel reconstructions of the correspondences which have these Burmese reflexes; for example Benedict's *əy and *əw, in an earlier incarnation *iy and *uw, for Tibeto-Burman; or for that matter my *e and *o in Proto-Loloish. Orthographic conventions such as digraphs need not be assumed to represent the whole by the sum of its parts; who would suggest that o was pronounced as [ea]?

After the earliest inscriptions this vowel nucleus was consistently represented by a trigraph: uiw. As noted, the 1495 inscription and the 1798 text from Arakan are entirely consistent in this respect. Arakanese seems to have lagged behind Burmese in eliminating the w; the 1783 Rangoon document cited in Pe Maung Tin (1922) has uiw in two words and variably in a third: 'military officer' puiw (modern buil) 'kind' amyui¹ and five of ten instances of 'town' mrui¹. The other five instances of 'town', the frequent verb 'speak', the plural particle, and the object particle are all consistently (two to eight instances) written instead with ui. However both dialects now use ui - another sign of Burmese influence on Arakanese.

In addition to the above vowels there is a shwa, a short central spread vowel, on which there is no tonal contrast. This vowel is sometimes written with a - as if it were pronounced [ə ʔ]; for example in the kinship term prefix a [ʔə], or the verb nominalizing prefix of identical form. More often, however, it is written with any of a wide range of rhymes including open-syllable, nasal-final or even stop-final. In these latter cases (and perhaps in some of the former - etymologically correctly [ə ʔ] or respelled according to pronunciation) a syllable containing such a vowel is a reduced syllable. Henderson 1951 and 1965 have shown that there is a Southeast Asian areal tendency for languages to acquire two-syllable word-types with shwa-vowel initial syllables: Thai and Burmese have done so, perhaps in convergence with Mon-Khmer languages, at least some of which seem to have this word-type in native vocabulary because of infixation and vowel epenthesis to break up certain consonant clusters.

The Burmese and Arakanese word can be defined by juncture phenomena as described in Sprigg 1957. Burmese and Arakanese both have numerous words with reduced syllable, one reduced syllable in a two-syllable word; and the first or second, or even the first two in a three-syllable word. Few syllables with etymological/orthographic stop-finals have reduced forms. In many cases the full-syllable form may occur in slower, more formal speech. However the lexical items which contain reduced syllables in Burmese often do not in Arakanese; Arakanese has less tendency to reduce nasal-final syllables than Burmese. So, for example,

<u>cham pañ</u>	'hair'	B.	/hsăbiñ/	A.	[shě ʔ bā ʔ]
<u>cham htum³</u>	'hairpin'	B.	/hsădōuñ/	A.	[shě ʔ thoñ ʔ]
<u>kram³ pui</u>	'bedbug'	B.	/cābdū/	A.	[kə ʔ bo ʔ]

However, many lexical items show similar vowel reductions in both dialects.

<u>kya³ sac</u>	'leopard'	B.	/căthiʔ/	A.	[căθaiʔ]
<u>pa³ cap</u>	'mouth'	B.	/băzaʔ/	A.	[păzeʔ]

And a few even have reduced forms in Arakanese but not Burmese.

<u>lip prā</u>	'butterfly/soul'	B.	/leiʔ pja/	A.	[lăpja ʔ]
<u>min³ mā</u>	'woman'	B.	/mèiñ má/	A.	[məmə ʔ]
<u>muchiū³ ma</u>	'widow'	B.	/məhsò má/	A.	[məshəmə ʔ]

In most cases the unreduced form also occurs as a full word; in some cases it does not, but etymology demonstrates that the vowel spelling was correct before the reduction.

Differences in medial juncture voicing can be noted; as noted below in the consonant section, the unaspirated stops have medial voicing within a word in Arakanese; but not the aspirated stops. Similarly, initials of reduced syllables that are unaspirated may variably voice (more in my more Burmese-influenced speakers), but not those which are aspirated. As in Burmese, complex medials can be simplified in reduced syllables in Arakanese; medial [w] does not occur e.g. 'son's wife' hkrwema [khăwəmə ʔ]. Medial [ʔ] may be present or not: 'toe nail' hkre sai A. [khăə ʔ] or [khăə ʔ].

A number of instances in Miller suggest that syllable reduction was

present in Burmese after 1450. For example, 'ferry' *kutui*¹ represented as 'ka-tou', and 'palace' *sā*³ *to*² *im* as 't'ā-tào-yìn', both suggesting first-syllable reduction. In other cases the reduction was not as advanced as it is now. 'Buddha' *bhurā*³ 'p'ū shua', modern Arakanese [phəwəʎ]. The 1495 Arakanese inscription suggests that reduction had already taken place on the first syllable of 'Sunday' *talaŋkanwi*. Towers' 1798 transcriptions show some reduced forms: 'language' *cakā*³ 'chā gā', modern [səgəʎ] or variably [zəgəʎ]; 'jewel' *ratanā* 'ratana'; and 'one' *ta* 'ta' modern Arakanese [tə]; less frequently voiced [də] than modern Burmese. Of course Towers indicates some syllables that now have [a ɿ] identically; note the first syllable of 'jewel'.

3. Stop and Nasal Final Rhymes

Unlike the vowel nuclei listed above, which I have called open-syllable nuclei, the rhymes written with final stops or nasals do not show much similarity between dialects. In general, features of the consonants move into the preceding vowel. Anticipatory velum lowering spreads nasality into vowels before orthographic nasals. Medial /w/ affects the development of some but not all rhymes in every dialect, in effect fusing into a monophthong which thus becomes lip-rounded. Most of all, position characteristics of written final consonants affect vowel quality; anterior *p* and *t*, *m* and *n* have less effect on vowel quality than non-anterior *c* and *k*, *ŋ* and *ŋ̃*. Of course, the vowel quality effects differ radically between Arakanese and Marma, and more fundamentally between Arakanese and Burmese. The Arakanese and Marma nasal-final and stop-final rhyme systems are exactly parallel to each other, showing mainly similar vowel qualities for similarly written combinations. Burmese is not quite so systematic.

A.	ẽĩ/ĩ ẽĩ ãĩ	ĩĩ ãĩ	õõ ãõ õĩ	ei? ẽi? ai?	wɛ? a?	oɔ? ao? ɔ?
M.	oĩ/ĩ aĩ oĩ	wã oĩ	oũ õũ -	oi? ae? oe?	wa? ao?	ou? oo? -
	<u>in, im</u> <u>an, am</u> <u>uin, aĩ</u>	<u>wan, wam</u> <u>aĩ</u>	<u>un, um</u> <u>on, uan</u>	<u>it, ip</u> <u>at, ap</u> <u>uik, ac</u>	<u>wat, wap</u> <u>ak</u>	<u>ut, up</u> <u>ok</u> <u>wak</u>
B.	ĩ ẽĩ ãĩ	ĩĩ ãĩ	õõ ãõ õĩ	ei? ẽi? ai?	wɛ? a?	oɔ? ao? ɔ?
	<u>aĩ, aĩ</u> <u>in, im</u> <u>uin</u>	<u>wan</u> <u>an, am</u>	<u>wan, wam</u> <u>un, um</u> <u>on</u>	<u>ac</u> <u>it, ip</u> <u>ak</u> <u>uik</u>	<u>wak</u> <u>ak</u>	<u>wat, wap</u> <u>ut, up</u> <u>ok</u>

In modern Arakanese, as in Burmese, positions of articulation for final stops cease to be distinctive; word-finally or in isolation these syllables have glottal-stop final, but before another consonant within the word, the stop has the position of articulation of the following consonant. In this juncture, the following consonant is not voiced.

All the syllables written with nasal finals (and nearly all with i and most with e after nasal initials) have nasalized vowels; in addition word-finally or in isolation these syllables may have a weakly-articulated velar nasal final [ŋ]; before another consonant within the word, there is a nasal homorganic to the following initial consonant. Juncture is also indicated by consonant voicing after nasalized as well as oral vowel finals.

Despite the large differences in the realizations of the Marma rhymes, the vowel categories in the Marma system nearly match those of the genetically closer Arakanese; - note especially the merger of uik with ac, and uin with some añ words; also the parallelism of at and ap with wat and wap, and of an and am with wan and wam - unlike Burmese which has an [ɔ̃] monophthong for the -w- wat wap wan wam.

In no dialect of Burmese (as distinct from Burmish languages such as Maru (Lawngwaw), Atsi (Tsaiwa, Szi), or Lashi) are the labial and apical final stops distinguished in any way apart from the orthography; though presumably they were distinct in Burmese when the orthography was devised about 1100, since the spellings usually show regular correspondence to cognate forms in other BL languages. Unfortunately Chinese (15th - 16th C) evidence does not help here. In fact this lack of distinction manifests itself in a number of 'incorrect' spellings reported by Bernot (1967) in Marma - due to limited contact with the standard over the last two centuries. Words with wap spellings very rarely have good etymologies, so perhaps there were gaps in the system, since filled by analogy or respelling.

Most rhymes with these labial/apical finals have fairly similar realizations in different dialects; though there are systematic differences. The it/ip and in/im rhymes are spoken with [ɛi] vowel nuclei in Arakanese, which unlike the Burmese [ɛi] is closer, not opener, than the oral vowel /ei/ (e or rarely añ in Burmese, sometimes e, all ay, ai and most añ in Arakanese). This rhyme has a range of closer allophones, which often sound like the Burmese [ɛ̃] (añ, some añ) to those more familiar with Burmese; sometimes the diphthongization is slight indeed, and presumably thus represents the earlier vowel sound more faithfully than Burmese; Miller's early Chinese evidence gives 'i' vowels for im and it at least, in 15th century Burmese. The 1495 inscription gives the foreign name Kamaldin as kamatin which suggests that the value of in was similar to its spelling at that time. Towers gives 'i' for Arakanese in 1798; Marma now has [oi] which appears to have diverged from standard Arakanese.

Similarly the ut/up and un/um rhymes have spoken forms with [õ] vowel nuclei in Arakanese ranging to near-monophthong alternatives similar to Burmese [ɔ̃] that begin closer than Arakanese /o/ (ui, formerly written uiw (see above); unlike the Burmese vowel nuclei ([õ] which begins opener than Burmese /ou/ (ui, formerly written uiw). This [ɔ̃] alternative or something like it is suggested in Burmese even by the earliest inscriptions where words now written with wat, wap, wan or wam appear instead with o: 'slave' klon for modern kywan

and so on. However the 1798 Arakanese transcriptions of Towers give 'ai' plus stop in 'wait' wat 'wear'.

Somewhat more different are the Arakanese and Burmese vowels in words spelled with at/ap and an/am. In Arakanese these words now have a vowel [ɛ], rather similar to the vowel in Burmese words spelled with ak, [ɛʔ]. However Towers gives 'ăi', suggesting in 1798 a diphthong similar to but not identical to the one he writes as 'ai' which is now [ai] (spelled with ac, uik, uiñ and some añ in Arakanese); Marma now shows an [aɛ] realization of this rhyme. This is one of the cases where Marma may reflect a more conservative vowel realization than Arakanese; in this case an intermediate, diphthongal stage of the change from an open vowel to a roughly half-open vowel. Buchanan's (1798) only example of a word with this rhyme in Arakanese poses a problem: 'kill' is given as 'sot'; could this be a misprint for 'set'? The Burmese vowel in words thus spelled is usually fairly front [a]; it is thus quite unlike the Arakanese vowel in words spelled with ak, which is a back [aʔ] (slightly fronter with certain consonants preceding) - though those more familiar with Burmese tend to equate Arakanese ak [aʔ] and Burmese at, ap [aʔ]. In this case the Marma data do not show an exact similarity of at and wat, and the other parallel rhymes unlike Arakanese: [aɛ] and [wa] occur, unlike Arakanese [ɛ] and [wɛ], and also unlike Burmese [a] and [aʔ].

The rhymes written with c, ñ, k and ñ show more substantial differences across dialects. The merger in Arakanese and Marma noted above of ac and uik, also uiñ with some words written with añ is one; añ has a range of realizations, perhaps partly conditioned by historical factors, but largely also by stylistic ones. ak and añ, and the corresponding w-medial rhymes wak and wañ show great differences between Arakanese and Burmese too.

Least problematic of the orthographically velar-final rhymes are ok and oñ; in both Arakanese and Burmese these are now realized as [aʊ] and [aʊ] respectively. Towers (1798) gives a number of examples transcribed with 'au'. Marma may be conservative in having [ɔ] in these rhymes, as a number of other peripheral dialects of Burmese such as Tavoyan also have [ɔ]-type realizations. Perhaps the Burmese/Arakanese similarity is due to a convergence of Arakanese towards Burmese. Burmese seems to have had [aʊ] realizations as early as 1450: Miller gives 'chiao' for kyok 'stone', and of course still in 1798, as Buchanan shows ('six', 'stone', 'below', 'drink', 'head', 'arm', 'good').

The uik and uiñ rhymes are pronounced in nearly all dialects of Burmese as [aiʔ] and [aɪʔ]; Arakanese is no exception. It is probably a mistake to connect ui, formerly written uiw, to these rhymes; the similarity may be simply an orthographic convention. Moreover, few if any cognates with non-Burmish TB languages show these rhymes, while many TB cognates have reflexes in Burmese that contain ui. It has been suggested by Luce among others that most words with uik or uiñ were Mon or other loanwords - and certainly not *ik and *iñ as Jones (1976) suggests. Once again, in Marma the realization is different: [ɔɛ]. Marma has backed and/or rounded the first elements of three Arakanese diphthongs:

eɪ	----->	oi	
aɪ	----->	ɔɛ	
aʊ	----->	ɔo	(back already; rounded)

However 'ai' is given for Arakanese by Towers (1798), and for both Arakanese

and Burmese by Buchanan.

ac has been something like [ɨʔ] in Burmese since at least 1450; Miller cites a number of Chinese representations with 'ieh'. In 1783 a Portuguese attempt cited by Pe Maung Tin (1922) used 'it'; so too does Buchanan in 1798. If anything, this is the rhyme which fills the *ik gap; PBL etyma with *ik regularly appear in Burmese cognates with ac - though *ik is not the only source of ac, as Nishi (1974) has demonstrated. However, Arakanese (and Marma) have merged ac and uik rhymes, to [aɨʔ].

The 1495 inscription cited above contains one word, 'eight' that is written rhec; compare the "Myazedi" het, and elsewhere yhat. The value of e at that stage of Arakanese must have been different from i, though the lexical distribution differs from that of Burmese in this inscription as noted above. By 1798 Towers shows this merger already, in many ac words transcribed with 'aiĉ'. The Marma forms of course show [ɔe], as above.

Loanwords in minority languages of Arakan provide useful information on the earlier pronunciation of ac. Stern (1962) gives some Plains Chin examples which suggest an earlier distinction between at, ac and uik, in loans represented by /eʔ/, /ɛʔ/, and /aiʔ/. Loeffler (1960) gives examples of /e/ in a Khami loan from a word with ac. Loeffler (1966) gives examples of Mru loans from Marma which represent ac by 'et' or 'ek'; and several which represent añ by 'en', 'eng' or 'aing'; presumably the latter are the most recent. In general, loans suggest a former value something like [ɛʔ], distinct from at and uik, and rather different from the Burmese value of [ɨʔ] for ac.

añ is a more complex question, since it has a variety of realizations in Burmese: [i], [ɛ], [ɛ̃] and [ĩ]. In modern Arakanese words spelled with añ have differing realizations: usually [e] or [aĩ]. Judson's dictionary suggests that this has been true in Burmese for at least 150 years. Since Judson's dictionary appeared there has been a minor orthographic reform, which spells [ĩ] with /nyáǵáǵlèithaʔ/, and the others, [i, ɛ, ɛ̃], with /nyáǵǵithaʔ/. Moreover, many words formerly spelled with ñ but pronounced mostly with [ɛ̃] are now alternatively spelled as they sound: 'few' nañ³ or nai. Of the three non-nasalized alternatives, [ɛ̃] is by far the least common in Burmese, though it occurs in some very frequent words such as prañ 'country'. Many words vary in their realization, in different stylistic contexts, between [i] (formal, literary) and [ɛ̃] (informal, spoken); words that have [ɛ̃] as their informal form may also have [i] as their formal form. Some very frequent words have almost exclusively [ɛ̃] forms. So the predominant pattern is [i] ~ [ɛ̃], but some words show [i] ~ [ɛ̃], exclusively [i], exclusively [ɛ̃], exclusively [ĩ] (now spelled differently) or even [i] ~ [ĩ]. On the whole the [ĩ] words are Pali or other loanwords, with some exceptions. See Bradley 1978 for similar examples of stylistic alternations; the pattern fits the usual definition of diglossia.

Arakanese has most words spelled with añ pronounced with [ɛ̃]; this is thus one of three ways that [ɛ̃] is spelled in Arakanese. Some words, though fewer than those nasalized in Burmese, are merged with uiñ in pronunciation to [aĩ]. There is no exact correspondence between Arakanese [aĩ] and Burmese /iñ/ from añ; 'neck' lañ is Arakanese [laĩ ɿ], but Burmese /le/; 'avoid' krañ is Arakanese [(ḡaḡ ɿ) kre ɿ] but Burmese /chauñ ciñ/. Many examples have the nasalized vowel in both dialects: 'sour' hkyañ Arakanese [ɕaĩ ɿ] Burmese /chiñ/; 'squirrel' rhañ¹ Arakanese [ɕaĩ ɿ] Burmese /hyiñ/ and so on; there is

some danger of unrecognized Burmese interference here, especially for literate informants. Some clear instances of Burmese interference come through in forms with [i] in Arakanese, sporadically in formal contexts. More puzzling superficially, but potentially very interesting diachronically, are the few instances of Arakanese [eĩ] where Burmese has aĩ; these may represent *i:n vs. *in, reflected in Burmese as in vs. aĩ, or they could be showing irregular influence of initials (most examples have initial ky- or c-: kyaĩ³ 'marrow' [çeĩ ʎ]; caĩ³ 'small granary' [seĩ ʎ] and so on. In the 1495 inscription, aĩ is written in three different ways: meĩ 'name', praĩ 'country', and pre 'full'; all now have Arakanese forms with [e]; the spelling of 'full' appears to be phonetic, of 'name' phonetic and etymological, and of 'country' purely etymological; note the exact parallel of 'eight' and 'name', which is not maintained in modern Arakanese [çai?] and [me ʎ].

Loanwords in minority languages of Arakan are again a useful source of information about earlier Arakanese pronunciations. In Loeffler (1960) Khumi loans show /e/ in a word written with aĩ and now pronounced [e]; but 'eng' for words written with aĩ and now pronounced [aĩ]; and also 'eng' for words written with uĩ and pronounced [aĩ] in both Arakanese and Burmese.

From the point of view of universals, various claims have been made concerning denasalization of vowels; Ruhlen suggests that it is especially mid vowels, and less frequently high vowels (contra Chen) which denasalize first. Since in, im remain nasalized, the development of aĩ to Burmese /iĩ/ is a fairly late one (post-1450, as Miller's data show, but pre-1783, as Pe Maung Tin's data show: he shows maĩ³ 'king' mostly as 'ming' in Burmese). It would seem that aĩ may have had two realizations, such as [ĩ] and [ẽ], possibly in part reflecting different PBL origins, such as *in vs. iŋ - then the high vowel was more likely to remain nasalized after the final ceased to have a distinct position of articulation, and the mid vowel lost its nasalization in all cases, in accord with universal tendencies, and merged with ay, ai or /e/. There are many precedents in Southeast Asian orthographies for under-differentiation; for example the old Shan orthography which can represent a maximum of three tones, for a language with several more. The specialization of [ĩ] to certain words, especially Pali loans, and the superimposing of literary and stylistic variation has confused the distribution still more in Burmese, but Arakanese may have simply split between oral *[ɛ] and nasalized *[ẽ] from aĩ; but regularly had [e?] from ac. Later, *[ẽ] and *[e?] merged with the similar uĩ and uik to [aĩ] and [ai?] in Arakanese.

The simple ak and aĩ rhymes in Arakanese and Marma develop parallel to each other: [a?] and [ã] result in Arakanese. This differs from the Burmese situation, where ak is /e?/ and aĩ is /iĩ/; that is, ak is distinct from ac /i?/, but aĩ is not distinct from those aĩ (relatively few) that are also realized as nasalized /iĩ/. This also results in asymmetry in the Burmese stop-final vowel system with four front vowel nuclei (two of them diphthongized) versus three back vowel nuclei (two diphthongized). This Burmese asymmetry is post-1450 (Miller's data) but had arisen before 1798: Pe Maung Tin (1922) 'king' maĩ 'ming'; Buchanan (1798) 'bird' nhak 'hngaek'; 'hand' lak 'laek'. Again, Marma is similar to Arakanese but appears to have diverged from it: it has [aɔ?] and [aɔ̃] instead of [a?] and [ã] for ak and aĩ respectively.

The development of wak and waĩ rhymes including words with initial w is exactly opposite to wat, wap and wan, wam rhymes. In Burmese, the latter

become monophthongs, but the former retain the [w] or [ɥ] onglide; in Arakanese, it is wak and wañ that monophthongize to [ɔ]. (Jones (1976) reports [ʌ], and Bernot (1965) reports [a], but my observations agree instead with those of Sprigg (1963)), while the others keep the onglide. The one example available in Towers, twañ 'inside', is transcribed 'dwan'. Marma data are not clear on this point; if Marma retains the onglide, then perhaps the modern Arakanese monophthongization of wak and wañ has taken place in the last two centuries. This monophthongization also occurs in open syllables with heavy tone, e.g. 'tooth' swā³ [θɔ ɥ] as noted above. Burmese forms are like the simple rhymes with the additional glide: wak → /weʔ/; wañ → /wiñ/.

Overall, the Arakanese and Burmese vowel systems in stop-final and nasalized syllable types show only very limited parallels; these are probably residual. Most similar are ok, oñ → [aɔ] and uik, uiñ → [aɪ]; other rhymes are slightly or completely different. The nasalized [ɪ̃] forms with nasal-initials in Arakanese are discussed above with the front oral open syllable vowels; basically, this vowel can be regarded as an (allophone of) /alternative to [i] in some dialects; in others, less constrained by contact with Burmese and Burmese orthography, these words simply contain [eɪ̃] varying with [ɪ̃] and with a front oral vowel: [i] or [e], with or without onglide [w], [ɥ].

The Marma stop-final and nasalized syllable types show parallel general developments to Arakanese including mergers, but also a large number of subsequent independent changes.

All of the Marma vowel nuclei in stop-final and nasalized syllables are diphthongs. All these diphthongs begin with a back vowel.

ɔi		ɔu
ʒe		ɔo
aɛ	wa	aɔ

The major rearrangements of these systems result in a rather symmetrical system which is radically different from both Arakanese and Burmese in its surface forms, but nevertheless corresponds regularly to Arakanese.

It is interesting to note the strong constraining effect on sound change of continuing contact between Arakanese and Burmese; perhaps some convergence has even taken place. Despite geographical and group-identity barriers, the two dialects are quite similar - apart from phonological indicators, lexical differences, and some morphosyntactic differences which appear to be fairly surfacy.

4. Consonants and Vowels

The Arakanese dialect is well-known for its realization of r and -r- as [ɹ], usually a frictionless continuant which occasionally has friction before front vowels and close vowels; it also occurs partly voiceless: after aspirated initials, and initially, in some words written with rh. What is not usually pointed out at the same time is that Burmese and Arakanese show either shared or parallel development (or post factum orthography-based convergence) of inscriptional medial l. That is, after velars words with inscriptional medial l merge (along with k before front vowels) to medial -y-; after labials medial l merges with medial r. These developments are fully documented in Okell

(1971) and Nishi (1976), and it is intriguing at least that Arakanese shares them with few exceptions. The exceptions include

'sew'	<u>hkyup</u> ,	Arakanese [khɔʔɔʔ]
'cough'	<u>hkyah³</u> ,	Arakanese [khɔʔɔʔ]
'faded'	<u>mhye³</u> ,	Arakanese [mɔʔɔʔ]

but, contra Taylor (1921), not 'monkey' myok, Arakanese [mjɔʔɔʔ].

This subject is really the topic of another paper, but to some extent it interacts with vowels as well. In particular the initial [ɣ] occurs in words written rh only with creaky and level tones, not with heavy tone, mostly but not always before front vowels. Some words vary between [ɣ] and [ç]. Other words, including all with heavy tones and most with back vowels, and in particular those which etymologically had other than [ɣ] initials such as 'eight', have only the [ç] possibility which is the usual realization of these words in Burmese. It seems that there has been respelling of some such words with [ç] in Burmese with rh.

Another source of [ç] in Arakanese is lyh, which mostly becomes [ç] in Burmese but sometimes [j] as in 'if' lyhañ. A third source of [ç] in Arakanese, Intha and Tavoyan but not Burmese, is hky-; some of the problems raised by Jones (1971) and Nishi (1976) in fact simply reflect interference from Burmese; occasionally hky is realized as [tçh] in more formal, 'Burmese' contexts in these other dialects.

In Marma (and perhaps thus also in an earlier stage of Arakanese orthography) the [ç] not from hky nor lyh are written with sy. This spelling was presumably devised before the s > [θ] shift, which is absent from Towers' and Buchanan's 1798 Arakanese material.

This s > [θ] shift was the beginning of a series of consonant rearrangements in Burmese and Arakanese, with Arakanese undergoing them later, perhaps due to contact with Burmese. The palatals, c, ch, j, jh, have since shifted to [s sh z] in Burmese and Arakanese, though Marma keeps [tç, tçh, dç], presumably reflecting the earlier Arakanese forms suggested by Towers in 1798. Burmese seems to have had alveolar, not alveopalatal affricates [ts tsh dz] judging from Carpani (1776) and Buchanan (1798); in fact two of my informants from Mandalay who are typical speakers occasionally use affricate forms in careful speech. The development of hky to [ç] in Arakanese, Tavoyan and so on can be seen as a further reaction of these dialects, overgeneralizing the change spreading from Burmese.

- | | | |
|-----|--|---|
| (1) | <u>s</u> > θ | Burmese pre-1780; Arakanese post-1798 |
| (2) | <u>ts, tsh, dz</u>
<u>tç, tçh, dç</u> > <u>s, sh, z</u> | Burmese post-1798 (after 1),
Arakanese |
| (3) | <u>kj, khj, j</u> > <u>tç, tçh, dç</u> | Arakanese, Tavoyan etc. post-1798 (after 2) |
| (4) | <u>tçh</u> > ç | Arakanese, Tavoyan etc. post-1798 (after 3) |

In Arakanese as in Burmese, there is juncture voicing of certain voiceless syllable-initials. Sprigg (1956) gives details of the Burmese pattern. In effect, all word-internal voiceless consonants except /hy/ [ç] but including voiceless aspirates have voiced realizations within a word, when the preceding syllable has no final stop: orthographic nasal-final and open-syllable rhymes behave similarly. The less closely-bound words, in slower speech, may show less extensive voicing, especially of nasals and the lateral. Arakanese has more restricted word-internal juncture voicing: the voiceless aspirated stops

remain as such, while the following segments show alternative forms as follows:

[p], [b], voiced bilabial flap	[θ], [ʒ]	[m], [m]
[t], [ʈ], [ɟ]	[s], [z]	[ŋ], [n]
[tʃ], [c], [dʒ], [ʃ]	[h], [ɦ]	[ŋ], [ŋ]
[k], [g], voiced velar flap	[ʍ], [w]	[ŋ], [ŋ]
	[l], [l]	

Within a word a stop-final is homorganic to the following consonant; and if the following consonant is nasal, may also be nasal. When final in the word, such syllables end in glottal stop. Within a word a nasalized rhyme has a nasal stop homorganic to the following consonant; when final in the word, these syllables often have a velar nasal final [ŋ] in slow speech. Within a word before a following nasal initial the distinction between the two syllable types is one of duration (longer on the nasalized rhymes); tone possibilities (three with nasalized rhymes, no opposition in stop-final rhymes); and juncture voicing (following nasalized rhymes, but not following stop-final rhymes).

In summary, the Arakanese initials are as follows. Clusters with [j] and [ɟ] are included, since these operate as part of the initial; but [-w-] is not included, since this medial operates as part of the rhyme or vowel nucleus.

p	pj	pɟ	t	s	tʃ/c	kɟ	k	ʔ
ph	phj	phɟ	th	sh	(tʃh)	khɟ	kh	
b	bj	bɟ	d	z	dʒ/ʃ	gɟ	g	
ɱ	mj	mɟ	ŋ		ɲ		ŋ	
m	mj	mɟ	n		ɲ	ɲɟ	ŋ	
ʍ			θ	l	ɟ			h
w			[ʒ]	ɿ	j	ɟ		[ɦ]

As noted, [tʃh] occurs in words spelled hky where Burmese interference has restored this initial. [ʒ] and [ɦ] occur only in juncture-voicing environments. Even more so than Burmese, the voiced stop initials occur in very few words, though they do occur in certain words that are very frequent. Unlike Burmese, [ʍ] does not occur in a small number of words. The absence of [ɲɟ] may be only an accidental gap.

5. Tones

It is frequently stated that Arakanese tones influence the height of the vowels; this has been demonstrated above for the distribution of [i] and [e] where e is written: heavy tone favors the closer (higher) vowel; creaky tone favors the opener (lower) vowel. Similar patterns occur for stop-final and nasalized [eɿ] and [oɔ]. This may provide some evidence in the controversy concerning tonal interactions with vowel height. Backer allophones of /a/ occur with heavy tone, as in Burmese; with medial w and heavy tone, the vowel is a rounded monophthong as noted above.

The Arakanese tones have similar realizations to those in Burmese: heavy: /˨˨/ high intensity; falling contour, generally fairly high F⁰, breathy phonation; level: /˨˨/ low intensity; level contour, generally fairly low F⁰, normal phonation; creaky: /˨˨/ creaky voicing, slightly falling contour, high F⁰ (stop-final): /˨˨/ short duration; very high F⁰, final stop and no juncture voicing following. Some words have creaky tone in Burmese, but heavy tone in Arakanese, or less frequently vice versa. For example, 'cup' hkwak is usually

realized as [khɔ̃ ɿ], as if spelled hkwã³, in Arakanese. Otherwise the distribution of tones is much as in Burmese.

The synchronic and diachronic status of the tones in Burmese is discussed in some detail in Bradley 1980 and 1982; Bradley 1971 and 1979 and Thurgood 1980 put this situation into a more general Burmese-Lolo perspective. For more details of the acoustic nature of the tones, see Thein Tun 1982.

APPENDIX: Words spelled with e, we

(only the relevant syllable from words with more than one syllable is cited)

<u>e³</u>	'cool'	e	<u>kwe¹</u>	'bend round'	wɛ
<u>kye³</u>	'thanks'	e	<u>kwe³</u>	'bend'	wɛ
	'parrot'	i	<u>kywe³</u>	'feed'	wɛ
<u>kre</u>	'crumbled'	e	<u>krwe</u>	'fall off'	wɛ ~ wi ~ i
				'cowrie'	wɛ
<u>kre³</u>	'copper'	e ~ i	<u>krwe³</u>	'debt'	wɛ
<u>hkye</u>	'sneeze'	e	<u>hkwe</u>	'ring classifier'	wɛ
	'cancel'	e	<u>hkwe³</u>	'dog'	wi
	'barking deer'	e			
<u>hkye³</u>	'feces'	i	<u>hkywe³</u>	'sweat'	wɛ
	'lend'	i			
<u>hkre</u>	'crumble'	e	<u>hkrwe</u>	'cause to fall'	wi
	'foot/leg'	e ~ i ~ ə	<u>hkrwe³</u>	'son's wife'	wɛ ~ e ~ ə
	'bite'	e ~ i			
	'jew's harp'	e	<u>gwe³</u>	'wild apple'	wɛ ~ ə
			<u>gwe²</u>	'red sandstone'	wi
<u>ne³</u>	'absent-minded'	e	<u>nwe</u>	'silver'	wɛ
			<u>nwe¹</u>	'glimpse'	wɛ
<u>ce¹</u>	'shrew'	e			
	'seed'	i	<u>cwe</u>	'rain incessantly'	wi
<u>ce</u>	'cause to'	e ~ i		'shut one eye'	i
<u>che³</u>	'medicine'	e	<u>chwe</u>	'relatives'	wɛ
	'tobacco'	e ~ i	<u>chwe³</u>	'decayed'	wi
	'yeast'	i		(in letter names)	wɛ
	'wash'	e			
<u>jhe³</u>	'market'	e ~ i	<u>twe¹</u>	'meet'	wi
			<u>twe</u>	(plural) (B)	i
			<u>twe³</u>	'think'	wɛ
			<u>htwe</u>	'various'	wɛ
			<u>htwe³</u>	'spit'	wɛ ~ wi
				'parent's younger sibling'	wi
<u>ne¹</u>	'day'	e ~ i ~ eĩ			
<u>ne</u>	'sun'	e ~ eĩ	<u>nwe</u>	'hot season'	wɛ ~ eĩ
	'stay'	e ~ eĩ	<u>nwe³</u>	'warm'	wɛ ~ wɛĩ ~ eĩ
	'keep Ving'	e ~ eĩ	<u>nhwe³</u>	'warm up'	wɛ ~ eĩ
				'lean'	wɛ
				'stretch'	wɛ
<u>pe</u>	'anvil'	e	<u>pwe</u>	'bamboo rat'	wɛ
<u>pe³</u>	'give'	i		'confused'	wɛ
<u>pre</u>	'untied'	e	<u>pwe¹</u>	'support in arms'	wɛ
<u>pre³</u>	'run'	i	<u>pwe³</u>	'black viper'	wɛ
				'seek for'	wɛ
<u>bhe³</u>	'great grandfather'	i	<u>hpwe³</u>	'very white'	wɛ

<u>hpre</u>	'untie'	e	<u>bhwe</u>	'curve of fore-lock'	wɛ
<u>me²</u>	'forget'	eɪ(~ɛ)	<u>bwe</u>	'loris'	wɛ
<u>me</u>	'My God!'	ei	<u>mwe¹</u>	'enjoy sleep'	wɛ
	'May'	e	<u>mwe</u>	'inheritance'	eɪ
<u>me³</u>	'ask'	eɪ(~ɛ)	<u>mwe³</u>	'relic of Buddha'	wɛ
	'test'	wɛ	<u>mhwe¹</u>	'give birth'	wɛ ~ wɛɪ
	'chin'	e	<u>mhwe</u>	'whirl'	wɛ
<u>mhe²</u>	'faded'	e	<u>mhwe</u>	'glimpse'	wɛ
		e	<u>mhwe³</u>	'stir'	wɛ ~ wɛɪ
		e	<u>mhwe³</u>	'annoy'	wɛ ~ wɛɪ
<u>mre²</u>	'decayed'	e	<u>mrwe</u>	'smell good'	wɛ ~ wɛɪ
<u>mre</u>	'earth'	eɪ(~ɛ)		'fur'	wɛ ~ wɛɪ
<u>mre³</u>	'grandchild'	eɪ(~ɛ)		'snake'	wɛ ~ eɪ
		e	<u>we</u>	'distribute'	wi
<u>le¹</u>	'study'	e	<u>we³</u>	'far'	wi(~wɛ)
<u>le</u>	'wind'	i(~ɛ)	<u>lwe¹</u>	'abundant'	wɛ
	'loris'	e	<u>lwe</u>	'dhole'	wɛ
	'belch'	e	<u>palwe</u>	'flute'	i~ɛ~wɛ
<u>le³</u>	'four'	e	<u>lwe³</u>	'feed off land'	wɛ
	'child' (B)	e			
	'bow'	e			
	'heavy'	e			
	'sometime'	i			
	'My God!'	i			
	'Mandalay'	e			
<u>lhe²</u>	'winnow'	e			
<u>lhe</u>	'boat'	e			
	'steps'	e			
<u>lhe³</u>	'sweep/broom'	e			
<u>re</u>	'water'	e~i	<u>rwe</u>	'whittle'	wɛ
	'skin'	i			
	'skirt'	e			
<u>re³</u>	'write'	e~i~wi	<u>rwe³</u>	'select'	wɛ~wi
<u>rhe</u>	'in front'	i(~ɛ)	<u>rhwe¹</u>	'move'	wɛ~wi
		e	<u>swe¹</u>	'dry'	wɛ~wi
<u>se</u>	'die'	i~ɛ	<u>swe</u>	'blood'	wi(~wi)
		e		'go astride'	wɛ
<u>se³</u>	'still' (Pv)	i	<u>swe³</u>	'sharpen'	wɛ~wi
	'urine'	i~ɔ			

PROTO-TIBETO-BURMAN AS A TWO-TONE LANGUAGE? SOME EVIDENCE FROM

PROTO-TAMANG AND PROTO-KAREN

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O. Introduction¹

In his 1972 study "The Sino-Tibetan tonal system", Paul K. Benedict proposed the reconstruction of a 2-tone system at the Proto-Sino-Tibetan (PST) level. In support of this proposal he observed that from two to four tone classes, of which two seemed more basic or more ancient than the others, had been reconstructed independently in several sub-families of Sino-Tibetan (ST). He claimed that regular correspondences across Chinese, Burmese, Karen, Nungish, and (less exactly) Kachin and Kuki justified the reconstruction of these two basic tones at the PST level. The other Tibeto-Burman (TB) tone-systems, he predicted, "will eventually be shown to correlate with this basic TK [Tibeto-Karen] two-tone system." (1972:26)

In a 1973 paper, "Tibeto-Burman tones with a note on teleo-reconstruction", Benedict treated his reconstruction of two tones at the PST level as an illustration of a method he called "teleo-reconstruction", with the gloss "reconstruction based on relatively isolated correspondences at a distance, without the step-by-step reconstruction of one or more intervening links". The method was to be used "as a kind of 'probing' of possibilities", which might lead, as Benedict claimed in the case of the PST tones, to "a 'premature' but firm reconstruction" at the level of the "ultimate proto-language" (in this case PST). Once the PST system had been proposed, it remained to confirm the reconstruction at the lower, Proto-Tibeto-Burman (PTB) or Proto-Tibeto-Karen (PTK) levels.

In the same article, he tried to fit a few additional TB languages into his theory, and claimed that data from the Tamang group² in Nepal showed a good

¹ A preliminary version of this paper was read at the XIIIth Conference on Sino-Tibetan Languages and Linguistics, Charlottesville, Virginia, October 1980. I am grateful to participants for several useful comments and corrections.

Abbreviations for the names of languages follow Jones: BP = Bassein Pho; BS = Bassein Sgaw; MP = Moulmein Pho; MS = Moulmein Sgaw; Pl = Palaychi, T = Taungthu.

² What I call here the "Tamang group" for short is Shafer's "Gurung Branch" of the Bodish Section of the Bodic Division of Sino-Tibetan. I usually refer to it as TGTM (Tamang-Gurung-Thakali-Manangba) from the names of the main languages of the group. It also includes a few as yet undescribed languages

correlation with the PST tones *A and *B, thus strengthening his hypothesis. He was also impressed with typological similarities in the historical development of Proto-Tamang (PT) and Proto-Karen (PK). He concluded from both types of evidence that since PT was far removed from both Karen and Burmese-Lolo (BL), the uncovering of some relationship between its tone system and that of these two other groups suggested that a similar system should be reconstructed for PTB itself.

In the present paper I have undertaken a comparison of Tamang and Karen, to see if the result can be of use in reconstructing the tonal system of PTB (or PTK if one prefers). This seems to me to be in the spirit of Benedict's method of "teleo-reconstruction". The negative result may, however, be an indication that I have fallen into the trap of "uncritical use of teleo-reconstruction", which, Benedict warned, "can lead to linguistic disaster"! (Benedict 1973:130).

I. The typological arguments

Some of Benedict's arguments are typological. Two of these interest us here: 1) He remarks that the Tamang tonal split parallels the Karen tonal split. 2) He mentions the recurrence in TB languages geographically remote and genetically distant on the TB family tree of some phonetic and phonemic features associated with tones derived from PST *B: glottality and high pitch.

1.1 The tonal split

Benedict underlines the fact that Proto-Tamang underwent a tonal split patterning "precisely as in Karen" (1973:135), i.e. a proto-system with two main tones developed allotones dependent upon the initial, with original voiceless producing high allotones, and original voiced low allotones. I am surprised at the weight Benedict seems to give to this fact since this split is paralleled in all the languages of the area: Thai, Chinese, Miao-Yao, and Vietnamese, and is more of an areal feature than a family trait. There are very good phonetic explanations for the correlation of voicelessness with high pitch, and voice with low pitch;³ consequently the recurrence of the diachronic shift from a voicing contrast on the initial to a tonal contrast means little for genetic relationship.

Secondly, the parallel between the Karen and Tamang splits is not very exact. The main point of difference is in the structure of the reconstructed tonal systems. If we can leave aside as marginal the existence in Proto-Karen of a third tonal category on open syllables (Haudricourt 1975), which sets this system apart from the two-tone system of Proto-Tamang, we cannot ignore the fact that Proto-Tamang requires the existence of a tonal opposition on checked syllables (yielding four tones on *checked syllables, as well as on *smooth syllables, after the split) while there is no trace of a tonal contrast on Proto-Karen *checked syllables. Checked syllables are numerically significant in Tamang, and there is no reason to regard them as a secondary development.

1.2 Glottality and high pitch in tones derived from PST *B

spoken in Northern Nepal.

³ Cf. J.M. Hombert, J.J. Ohala and W.G. Ewan, "Phonetic explanations for the development of tones", *Language* 55:1 (1979).

On this point Benedict did not have any Tamang data. It seems at first that my data on the subject confirms Benedict's views.

1.21 Glottality

In the Tamang dialect of Risiangku (Mazaudon 1973:63) I noted an occasional glottal stop (but no creak) on the end of short monosyllables under tone 1 (derived from *B with a *voiceless initial). In Manangba I noted creakiness (but no glottal stop) as the regular realization of tone 3 (*B-voiced). On the other dialects the data available is not precise enough to answer this question.

The association of glottality of one sort or another with reflexes of tone *B could be taken as a residual feature, but we must observe that in each case the glottalized tone happens to be the highest tone in the system synchronically. The phonetic conditioning of creakiness by an excessively high pitch is in no way as universal as the conditioning of low pitch by voiced initials mentioned above, but it is frequent enough that, if we find a link of proto-tone *B with glottality only when the modern reflex is high pitched, we may suspect an independent development of that feature in each case.

We may observe that in Karen the same correlation of synchronic high pitch and creaky voice occurs. According to Jones' description, in all dialects which have creakiness (as opposed to a final glottal stop, which comes from an ancient final occlusive), it is the highest tone in the system which carries it⁴ (see Table §2). This casts doubt on the etymological value of glottality as a feature of tone *B.

1.22 The relative pitch of reflexes of *A and *B

Across Tamang languages, tones 1 and 3 (issued from a PT tone which Benedict identified with his PST *B) are statistically higher than tones 2 and 4 (issued from PST *A). Still, there is so much variation in pitch and melody among these languages⁵, corresponding to a rather shallow time-depth, that I doubt whether such a relationship across the ST family could be anything but chance.

Typological observations can lead to a hypothesis, but the demonstration of the existence of a two-tone system at the PST level depends upon the establishment of a regular correspondence between the tone classes reconstructed for each branch of the family. This is what we are going to consider now. Actually, such a correspondence, if established, would only demonstrate a common origin for the basic tone systems of all ST languages; it would not prove that the distinctive feature was tone in the common language, since parallel development would remain a likely hypothesis. In the following sections I will reexamine Benedict's evidence for establishing a correlation between PT tones and PK tones, adding some more cognate sets of similar standing, show that a correlation cannot be established, and offer some reflections on the reliability of conclusions arrived at through "teleo-reconstruction" of the kind Benedict advocated in his study, and which I have tried to apply here.

⁴ Palaychi is the only dialect which has two creaky tones (transcribed -q by Jones). But in that dialect creakiness is found on reflexes of both *A and *B.

⁵ For phonetic detail see Mazaudon 1978.

Table: Correspondences between the tonal categories of Luce and the reconstructed systems of Haudricourt, Jones, and Burling, with realization in modern dialects

Luce	PK tone	Haudricourt 1946-75		Jones 1961 tone init.	Burling tn. initial	Modern dialects (Jones) ¹					
		tone	initial			Pa-O	MP	BP	Pl.	MS	BS
I	A	level ()	voiced	\'	+asp 3 continuant aspirated	-	-	/	/	-	-
II	A	level ()	voiceless, glottalized	\h	-asp 3 voiceless voiced/?	-	-	/	/	\q	/
III	A	level ()	aspirated	\h	+asp 4 continuant/γ aspirated/s	\	\	/	/	\q	/
IV	B	falling (-')	voiced	/'	+asp 1 continuant aspirated	^	/	/	/	\	\
V	B'	rising (-")	voiceless glottalized	\h	-asp 4 voiceless voiced/?/γ ²	\	/	/	/	\q	/
Va	B'	rising (-")	aspirated		+asp 4 aspirated/s	\	/	/	/	\q	/
VIa	B	falling (-')	voiceless glottalized	/q	-asp 2 voiceless voiced/?	/	/	/	/	\q	/
VI	B	falling (-')	aspirated	/q	+asp 2 continuant aspirated/s	/	/	/	/	\q	/
VII	C	checked (-t)	voiced	\?	+asp γ ¹ continuant aspirated	\?	-?	\?	\?	/	\?
VIII	C	checked (-t)	voiceless glottalized aspirated	/?	+asp γ ² all	/?	/?	\?	\?	\q	-?

¹ "γ" represents "glottal constriction", which Jones considers as the high tone allophone of glottal stop (and transcribes "γ") in the relevant dialects. "q" in Pl is "lenis glottal stop", distinct from glottal stop, which is rare.

² Burling considers the MP tonal reflex of this category and the following one as "irregular".

First let us review the tonal systems reconstructed within the two groups, and the relationship proposed by Benedict between these and his PTK proto-system of *A and *B.

II. Proto-Karen

For Proto-Karen I have followed Haudricourt's latest theory of four proto-tones, two main open tones *A and *B, a somewhat secondary tone which I called *B' (corresponding to Luce's small correspondence set V) and a checked tone *C (or absence of tone on checked syllables).⁶ Here, in tabular form, is the relation between initials, proto-tone categories, and Luce's correspondence sets (roman numerals) as modified by Jones (1971):

		*A	*B	*B'	*C
*aspirated	(high series)	III	VI	Va	
*voiceless unaspirated; *glottalized	(mid series)	II	VIa	V	VIII
*voiced	(low series)	I	IV		VII

For the reconstruction of individual words I have used tentative forms proposed by Haudricourt in a 1975 manuscript, although I have tampered with many of them.⁷ Haudricourt's reconstructions rely on the two dialects of Purser's dictionary (one of Sgaw and one of Pho) and on Luce's data, which covers Southern Karen (Pho, Sgaw, Paku), Bwe (Western: Blimaw and Geba; Eastern: Kayah), and Pa-O (Jones' Taungthu). The Padaung group (on which I have seen no data) and Palaychi (used by Jones) are not included. For words which appear both in Luce's material and in Jones, I have modified Haudricourt's reconstruction in order to account for the additional data. For words which I would not trace in Luce's material, I used Jones' data, and supplied a tentative reconstruction along the lines of Haudricourt's theory.

It should be emphasized from the start that exception is the norm among Karen cognates, and that sets that are regular in tone and segments throughout the sixteen speech forms contained in Jones' and Luce's data are extremely rare. The segmental reconstruction of Karen is far from complete, and the tones may seem to show more regularity simply because the number of possible permutations is smaller.

Still, as far as tone is concerned (except for Luce's small group V)⁸ the

⁶ Cf. Haudricourt 1975, and Mazaudon 1977:14-16.

⁷ I have, among other things, simplified the reconstruction of vowels; Haudricourt's more detailed system was established on the basis of Purser's two dialects, for which it could account, but would have needed reworking to accommodate new data. Rimes including final stops with different points of articulation have to be reconstructed at the PK level. This was out of the scope of this paper. Burling's finals are often contradicted by Pa-O data when it becomes available, so I have preferred to remain vague about the final when Pa-O data was lacking.

⁸ Class V (including Va) was first neglected by Haudricourt, who now proposes a

grouping of individual items into classes by Luce and by Jones (1961), and the reconstruction of the proto-tones by Haudricourt (using Luce and Purser) and by Jones (using his own material) coincide rather well. Classes I, II, and III of Luce, reconstructed with tone *A by Haudricourt, contain roughly the same lexical items for which Jones (1961) reconstructs a *Low tone, while classes IV, VI, and VIa, reconstructed with tone *B by Haudricourt, contain those items for which Jones reconstructs a *High tone (see table).⁹

Therefore I have taken the risk of ignoring some of the details of the reconstruction of rimes and initial clusters, and proceed with the comparison of the tone classes of items which look more or less alike in meaning and segments between the Karen and the Tamang groups.

III. Proto-Tamang

The Tamang side of the comparison is of course less problematic, being located at a much lower level on the family tree. Tones and segments correspond well between the ten speech forms which I use to various degrees for reconstruction.¹⁰ The tonal split has been only two-way with the unmerging series of phonemes (here the aspirate) always siding with the high series (here the voiceless consonants), and there have been no subsequent mergers of tones. Hence, ideally, any one of the modern dialects should suffice to establish the tonal category of a word at the Proto-Tamang level. Here is how the modern tones correspond to the proto-initials and proto-tones:

third proto-tone to account for it, whereas Jones reconstructed V as *low tone with final -h and unaspirated initial, and treated the members of Va as exceptions. We must admit that considering the large number of irregular correspondences which remain even after accounting for V and Va, it may not be worth worrying too much about the dozen or so words of class Va or even for that matter about the thirty-odd members of V and Va combined.

⁹ Burling puts the 6 tones of modern Pa-O back into the proto-language; thus his proto-tones do not correspond one to one either with the *A/*B - *Low/*High reconstructions, nor with the modern tone correspondences as reflected in Luce's classes (as modified by Jones). All of these systems of course easily convert into each other if you also take into account the reconstructed mode of articulation of the initial; except that Luce's set III can not be distinguished from Va in Burling's reconstructions (this involves only 3 items: J.104, J.724, and J.725), and from set V if the initial is *ʃ (e.g. J.223 'hear' which belongs to Luce's class III is reconstructed as *ʃun⁴ by Burling, and J.178, Luce's class V, as *ʃa⁴, with the same tone and the same initial. This last problem could be solved by reconstructing *ʃʷ for class V words, parallel to *ʃw).

¹⁰ Three dialects of Tamang spoken in the villages of Risiangku (my own data), Sahu or Sahugaon (Taylor and Hari), Taglung (my data); three dialects of Thakali, spoken in Tukche (Hari), Marpha, and Syang (my data); one dialect of Gurung (village of Ghachok, data from Glover); Manangba (seems homogeneous, my data); and secondarily, the languages spoken by people of the Nar Valley, and by the inhabitants of Tangbe village. All of these are closely related but the internal family tree is not obvious. For locations, see my 1978 paper (but note that Taglung is misplaced on the map; in fact it is a few km. north of Kathmandu.)

	*A	*B
*voiceless (aspirated or not)	2	1
*voiced	4	3

1, 2, 3, and 4 represent sets of lexical items in regular tone correspondence; I have given the phonetic realization in eight dialects in Mazaudon 1978.

Note that in my own papers on Tamang, where I reconstructed PT tones independently, without consideration of PST, I have called the tone corresponding to modern 2 and 4 PT *B, and the tone corresponding to modern 1 and 3 PT *A. Here I will use Benedict's lettering, as in the table above, for both PT and PTK.

Thus Benedict's hypothesis is that PT *A and PK *A reconstruct to PTK *A, and PT *B and PK *B to PTK *B.

After each reconstructed item in the sets below, I include in parentheses the modern tone category it belongs to, in Roman numerals from I to VIII for Karen (according to Luce's classification as modified by Jones) and in Arabic numerals from 1 to 4 for Tamang. I do this to allow for the possibility of error in the identification of which modern tones derive from a given proto-tone within each subfamily. For example, in Tamang it is certain that 1 and 2 were high allotones derived from voiceless initials, and that 3 and 4 were low allotones derived from voiced initials. It is clear that PT had only two tones; let us call them I and II and say that they were the ancestors of 1 and 2 respectively. But was 3 the low allotone of I or of II? Our only clues are the modern phonetic features of the tones, which are very variable and uncertain. Associating 3 with 1 rather than with 2 is only our best bet for the moment. The same is true of Karen. Even allowing for an error at that level, if a relationship existed between the proto-tones of Tamang and Karen, this should be revealed by the direct comparison of the modern tone categories.

IV. Correspondence sets¹¹

4.1 Sets showing Proto-Karen *A corresponding to Proto-Tamang *A

4.11 Proto-Tamang voiceless initials (tone set 2 of modern languages)

4.111 As showing regular reflexes of PST tone *A, Benedict quotes the following PT words (Benedict's reconstruction): *hle 'tongue', *hna 'sick', tshi 'fat, grease', *cham 'hair', *hla 'moon', *hmwi 'silver', *cha 'pain', *pw[e]i 'chaff/straw', *tshar 'new', *-pra 'ashes', and *thun 'drink'.

¹¹ In the transcription of PK forms I use Haudricourt's tonal marks: *A unmarked, *B marked ', and *B' marked ". I mark *C with -? when I cannot reconstruct the final stop. A final -N means an unidentified nasal final. The rest is according to IPA.

I reconstruct PT forms from more than one dialect. When I have data in only one, I indicate this by the dialect code: Ris for the Risiangku dialect of Tamang, Gur for the Gurung dialect of Ghachok, and by the full name of the village for less often quoted dialects.

In each set the Karen word is quoted with its reference in Jones 1961 (J.) and in Luce's manuscript (L.).

I will first discuss these words from the point of view of the PT reconstruction and of the regularity of their correspondence with their proposed PK cognates.¹²

'tongue'
(1) J.111, L.928 PK *ble(I); PT *hle^A(2) 'tongue'

We may note first that the PK initial is voiced (low series). So this is not a perfect cognate.

Secondly, PK *bl- corresponds variously to:

PT *bl-:
L.1306 PK *bla' (IV) or L.1041 PK *plɛ (II) 'set free'; PT *bla^B (3) 'untie'. J.485, L.1007 PK *phla? (VIII) 'wiggle free' is probably an allofam.

PT *br-:
J.106, L.1329 PK *blai' (IV); PT *bre:^A (4) 'slave'

PT *pr-:
J.568, L.1349 PK *blu' my' (IV-IV) 'betel'; PT *prum/prumo^A (2) 'Zanthoxylum alatum'

PT *hmj-:
J.296, L.1340 PK *bly' (IV); PT *hmjo^B (1) 'insane'
J.297, L.1304 PK *bla' (IV); PT *hmja^B (1) 'arrow'

None of the above correspondences looks any better or worse than the PK *bl- / PT *hl- correspondence found in 'tongue'.

Equally varied correspondences can be quoted for PK labial + /l/ clusters in mid or high initial series (*glottalized, *voiceless unaspirated, and *aspirated initials):

PK *pl- / PT *bj-:
J.644, L.- PK *plɔN (II) 'young'; PT *bjon^A (4) 'young man'

PK *ʔbl- / PT *hl-:
J.550, L.- PK *ʔblai' (VIa); PT *hlej^B (1) 'left over'

PK *ʔbl- / PT *bl-, ml-:
J.445, L.1635 PK *ʔbləN' (VIa) 'to gore'; PT *blo:/mlo^A (4) 'to prick'

PK *phl-, ʔbl- / PT *pl-:
J.202, L.1175 PK *phle (III) / ʔble (II); PT *ple:^B (1) 'slippery'

The uncertainty of segmental correspondences between PK and PT does not invalidate 'tongue' as a cognate set, but it suggests that PK *ble and PT *hle^A are just as likely to be a pair of allofams of regular cognates. This is a serious problem since morphological variation of tone is present in the ST

¹² Benedict's PK reconstructions can be found in the tables of his 1972 and 1973 papers.

family at many different levels in the family tree. Still if we are to try to establish potential correspondences at the PTB level, all we can do, in the present state of our knowledge, is to take an educated guess as to the "best possible" cognate. With this in mind I will consider 'tongue' as a "good cognate set" and count it as an example of the *A/*A tone correspondence. I will not repeat for the following sets (Benedict's or my own) the demonstration of their dubious standing. The assumption (or the hope) of teleo-reconstruction as I see it is that if the same level of confidence is attained for all sets, bad cognates should even out in terms of the hypothesis we are trying to check.

'sick'

From Benedict's tables I gather that the PK form one might pair up with PT *hna^A 'sick' is PK *hna^A 'bewitch'. I cannot trace in either Luce or Jones a set meaning 'bewitch' which would derive from PK *hna^A. But in any case, for meaning, the following looks more satisfactory:

J.93, L.- *hna? (VIII) 'to suffer; PT *hna^A (2) 'be sick'

The Karen reflexes imply proto-tone *C (checked syllable) with an initial of the high series (aspirated). Hence this does not exemplify the *A/*A correspondence, nor is it a counter-example.

Another problem raised by this set is the choice of the proper Tamang cognate since we have two related roots in this semantic area: *hna^A 'sick' and *na:^A (> Ris ⁴na:) 'to bear (suffering)'. Since the PK tone does not match in any case, we won't try to solve that problem.

'fat' and 'hair'

According to Benedict's tables PT *tshi^A 'fat, grease', and *cham^A 'hair' (for which incidentally I see no reason to reconstruct a palatal initial different from the initial of *tshi) have no correspondent in Karen but correspond to Burmese tone *A words. For 'hair' I would propose the following sets:

J.39, L.1666 PK *tshon' (VI); PT *tsham^A (2) 'body-hair'

The Karen cognate turns out to be tone *B rather than *A, and so this set is a counter-example.

'moon'

The Pa-O form l^à (J.379) implies a PK form *hla^A (Benedict's reconstruction), but the tones of Pho show an initial of the mid series. So this set is reconstructed as *ʔla (II) by Haudricourt. In either case the tone remains *A, and the set can be accepted as an example of the *A/*A correspondence.

(2) J.379, L.1020 PK *hla (III)/ ʔla (II); PT *hla^A (2) 'moon'

'silver'

PT *hmwi^A does not seem to have a Karen cognate. The proto-Tamang form

should rather be reconstructed as *mwi^A since out of six dialects where the form was recorded, five have tone 4 (*A-voiced) and only one has tone 2 (*A-voiceless).

'pain'

The PT form *cha^A (in fact *tsha^A) 'to hurt (as a wound)' looks like a perfect cognate for PK *tsha (III) 'to be sick':

(3) J.165, L.1137 PK *tsha (III); PT *tsha^A (2) 'to be in pain'

But note the presence in Risiangku Tamang, alongside the 'good' cognate ²tsha 'to hurt', of the word ¹tshawa 'fever', which reconstructs with tone *B, PT *tshawa^B (1).

This last form does not invalidate, in my opinion, the value of set (3) as an example of the *A/*A correspondence, since disyllabic words in Tamang languages have tones which cannot be predicted in any simple way from the tones of either or both of their syllables when these also exist as free morphemes in the language. As a consequence, no disyllabic word can be compared to a monosyllabic word, and no syllable extracted from a disyllabic word can be used for comparison, particularly of tone. In the Tamang languages, syllable extraction is a particularly serious sin since according to both my own and the SIL analyses polysyllabic words carry word tones, which are not divisible into successive syllabic tones, even synchronically.

Karen has syllabic tone. Even so, Eugénie Henderson (1961, 1973) has shown, on the example of Western Bwe, that tone sandhi modifies the tones of individual syllables when they enter into composition to form a word. Of course some of Jones' polysyllabic Karen entries are phrases rather than single words, and we may hope that the tones have not changed, but here again extreme caution is indicated.

On these grounds I would deny any reality at all to a truncated form such as Benedict's next Tamang reconstruction:

'ashes'

The form PT *--pra^A cannot be reconstructed on the basis of the modern Tamang languages. All Tamang languages have a disyllabic word which reconstructs as *hmepra^B (1). The fact that we may recognize in it the roots for 'fire' and 'ashes' does not allow us to break it up into two words at the Proto-Tamang level.

The same etymon¹³ is found in Ris ²sapra 'earth, soil' from PT *sapra^A. Note the difference in tone, which remains mysterious to me, since the first syllables of these two words, when used as free morphemes, have the same tone: Ris ¹me 'fire' from *hjme^B and Ris ¹sa 'ground' from *sa^B.

'chaff, straw'

¹³ I believe this etymon is the same as (or an allofam of) PT *bra^A (4) 'flour', which must at some point have meant 'dust' or 'powder', and is probably related to Karen J.848 *prau? (VIII) 'dust, powder'. The only other likely allofam of PT -pra is Pa-O phà < *pha^B (III) (J.363) 'ashes'.

On the basis of Gurung and Thakali, I would reconstruct PT *pwi^A (2) rather than *pwei. Note that the first syllable of Risiangku and Sahu Tamang ^lpolua 'chaff' (with a different tone) must also be cognate with the K *phe / T *pwi^A root, while its second syllable is cognate with PK *lau^B 'straw' (J.509, L.1372).

We could also compare the Pa-O form bèphù 'straw' (J.509) with Pa-O phè 'chaff' (J.220), and wonder whether phù is not just as good a match for PT *pwi as phè. This would not change the tone correspondence, but the uncertainty is annoying, unless we want to think of the two Pa-O forms as co-allofams of the same etymon (?). In spite of this objection, I think we can accept the proposed set and count it as number 4:

(4) J.220, L.1174 PK *phe (III); PT *pwi^A (2) 'chaff'

'new'

(5) J.171, L.1236 PK *saN (III); PT *tshar^A (2) 'new'

'drink'

Benedict only claims a Burmese-Lolo cognate for PT *thur^A (2), and I have not been able to trace a Karen cognate for it either.

So we remain with only the following 5 words showing a correspondence between PK tone *A and PT tone *A: 'tongue', 'moon', 'pain', 'husk', and 'new'.

4.112 To this list we could add a few more sets.

a) PK aspirated initials (Luce's tone class III)

(6) J.164, L.1160 PK *tshi (III); PT *tsjui^A (2) 'ten'

(7) J.225, L.1240 PK *hmin (III); PT *hmin^A (2) 'ripe'

(8) J.103, L.1171 PK *hrwe (III); PT *hnis^A (2) 'seven'

(9) J.273, L.1257 PK *hnəm (III); PT *hna:/hna^A (2) 'to smell, sniff'

(10) J.199, L.1263 PK *səm (III); PT *swam/som^A (2) 'three'

'seven', 'sniff', and 'three'

These three words have a Palaychi reflex under the tone which Jones transcribes 'q, which normally derives from a PK tone *B or *B' with an initial of the high series. In Pa-O the tone of 'three' is the regular reflex of *A-high (III); but the tones of 'seven' and 'sniff' are irregular. If we follow the majority of dialects we can accept sets (8), (9), and (10).

'insert/ force into a hole/ thread a needle'

Jones' set J.606 'insert' can be reconstructed as PK *shwi or *tshwi (III) which would match PT *sju^A (2) 'thread a needle'. But Luce has a set which looks very similar in his class Va (*B'-high): L.1441 PK *shwi" / *tshwi" (Va). This classification, and the reconstruction of the set as *B', rely on the tones of Zweekabin Pho and Western Bwe in Luce's data. Since *B' may have a secondary origin, we might want to consider Luce's set as containing forms which are allofams of those derived from *A-toned forms. In this case, the

*A/*A correspondence for this root could remain valid.

On the Tamang side we may note a series of allofams (under tone *B): *sjup^B (1) 'a sheath', Gur ¹tswi <*tswi^B 'to pierce, prick', Ris ³tswi <*dzwi^B 'larding needle'. So we will keep this set with a question mark.

(11) J.606, L.- PK *shwi/tshwi (III); PT *sju^A (2) 'insert in a hole'
'stomach'

(12) J.358, L.1276 PK *phom (III); PT *pho^A (2) 'stomach'

The root appears in compounds in Jones, but as an independent monosyllable in Luce. So this is also a questionable set.

Note that PT *phum^A (2) 'egg' could also be cognate.

'to dry'

(13) J.831, L.1196 PK *su/swi (III); PT *sar^A (2) 'to dry'

The Pa-O form from J.152, L.1247, with the same meaning, might be an even better match for PT *sar^A: Pa-O sɛŋ is likely to derive from PK sɛŋ (III). So we can take our choice between (13) and (13a).

(13a) J.152, L.1247 PK *sɛŋ (III); PT *sar^A (2) 'dry'

'unripe/ raw'

J.-, L.1242 PK *sin/tshim (III) 'green, unripe'; PT *tshɪŋkai^B(2) 'raw'

The PT form is reconstructed on the basis of Ris ²tshɪŋkai, and is certainly cognate with Karen 'green, unripe', but this set should not be counted as showing an etymological *A/*A correspondence because the Tamang word is disyllabic. It might show a tone shift as in the doublet PT *piŋ^B / piŋkai^A 'green'. But we cannot count on it since a doublet like PT *hmlaŋ^A / hmlaŋkai^A 'black' shows no tone shift.

b) PK glottalized or voiceless unaspirated initials (Luce's tone class II)

Besides set (2) 'moon' already quoted, we find the following:

(14) J.142, L.1016 PK *ʔda (II); PT *tʰam^A (2) 'to spread out (esp. manure in Tamang)'

(15) J.381, L.1118 PK *puN (II) 'heap'; Ris ²phun < PT *phun^A 'assembly'

(16) J.-, L.1022 PK *kwi (II) 'lake'; PT *kju^A (2) 'water'

Note that PT *gjo^B(3) 'pond' is certainly a possible cognate too, with the wrong tone.

c) PK voiced initials (Luce's tone class I)

Besides set (1) 'tongue', already quoted, we find only roots which are disyllabic on one side or the other.

So the maximum number of words we can claim to show a correspondence of PK tone *A to PT tone *A-voiceless is 16. We will now list examples of PK tone *A words corresponding to PT tone *A words with a proto-voiced initial (tone set 4 of modern languages).

4.12 Proto-Tamang voiced initials (tone set 4 of modern languages)

4.121 As regular reflexes of PST tone *A words with a proto-voiced initial in PT, Benedict quotes only two words: *dim 'house', and *gway 'bee'.

'house'

This word, Benedict says (1972:29), corresponds in tone to Burmese *im^A*, but disagrees with Karen **hyi[m]^B*. From our point of view here it will have to be counted as a counter-example.

'bee'

This word on the contrary is said to disagree with Burmese but agree with Kuki. It also agrees with Karen, and we can accept the following set as a case of *A/*A correspondence:

(17) J.-, L.1031 PK **kwɛ* (II); PT **gwai^A*(4) 'bee'

4.122 To this set we may add the following:

a) PK aspirated initials (Luce's tone class III)

(18) J.226, L.- PK **hni* (III); PT **ni:^A* (4) 'two'

(19) J.200, L.1198 PK **tshru* (III); PT **ɕu:^A* (4) 'six'

(20) J.617, L.- PK **hlwe* (III); PT **wam^A* (4) > Ris *ɕwam* 'to coax'

The following three seem a little more dubious either because of semantic or phonetic distance:

(21) J.198, L.- PK **hlo* (III) 'spread out e.g. to dry'; PT **lom^A* (4) 'dry over the fire'

(22) J.620, L.- PK **hniN* (III) 'gizzard'; PT **net^A* (4) 'liver'

(23) J.602, L.- PK **shu/tshu* (III); PT **sjop^A* (4) 'pound paddy'

The last possible set:

J.146, L.1270 PK **thəm* (III); PT **tut^A* (4) 'to pick up'

I think we should not count, first because of a rather extreme difference in segments, and secondly because of another possible Tamang allofam **thu^B* (1) 'to pick (flower or fruit)'.
b) PK glottalized or voiceless unaspirated initials (Luce's tone class II)

Besides 'bee', set (17), already quoted, we find:

(24) J.644, L.- PK **plɔN* (II) 'young'; PT **bjon^A* (4) 'young man'

c) PK voiced initials (Luce's tone class I)

- (25) J.117, L.910 PK *rja (I); PT *bra^A/gjar^A (4) < **brgja^A 'hundred'
 (26) J.438, L.- PK *gra (I) / gra (VII); PT *jap^A (4) 'to winnow'

The Karen words for 'winnow' seem to derive from two allofams: Palaychi and the two dialects of Sgaw from an open root under tone *A, the two dialects of Pho from a checked root (tone *C). It is hard to say what is a cognate and what is an allofam in this set.

The above 26 sets are the very best I could find in support of a possible correspondence of PK tone *A and PT tone *A. I believe that at least three or four of them are outrageous and should be dismissed. Let us admit that we have about 20 to 26 valid cognate sets in favour of our hypothesis. Before going on to listing counter-examples, we may point out a discrepancy between Tamang and Karen: note that even for PT words with a voiced initial we find more supposed cognates in PK that have a voiceless aspirated initial than any other initial.

4.2 Showing Proto-Karen *B corresponding to Proto-Tamang *A

4.21 Proto-Tamang voiceless initials (tone set 2 of modern languages)

4.211 As Tamang words under tone PT *A instead of the tone *B which he expected on comparative grounds, Benedict quotes: *-ŋa 'fish', *syiŋ 'wood/firewood', and *hmwi 'body hair'.

'fish'

The word cannot be used because it is disyllabic in all Tamang languages and reconstructs as *tarŋa^A (2).

'body hair' does not seem to have a Karen cognate.

'wood'

This word cannot be dismissed as a counter-example, since the *B > *A tone shift with sibilant initials which is called upon to explain its tonal "irregularity" is in no way systematic in Tamang: cf. the following which remained tone PT *B: *si^B (1) 'to die', *swa^B (1) 'tooth', *sja^B (1) 'meat', to mention but a few.

- (27) J.49, L.1619 PK *siŋ' (VI) 'tree'; PT *siŋ^A (2) 'wood'

4.212 To this set we could add the following:

a) PK aspirated initials (Luce's tone class VI)

- (28) J.39, L.1666 PK *tshɔn' (VI); PT *tsham^A (2) 'body hair'
 (29) J.247, L.1593 PK *tshaN' (VI); PT *tshan^A (2) > Ris ²tshan 'push' (Ris 'with the foot')
 (30) J.40, L.1472 PK *tshra' (VI); PT *sar^A (2) 'star'

Note that in the disyllabic form used in Risiangku Tamang, whose first syllable is the same etymon, the tone is different: ¹karcen (tone *B); cf. Tib. skar-ma.

(31) J.801, L.1200 PK *tshru' (VI); PT *khru^A (2) 'to wash'

The Karen root is wrongly classified by Luce as class III (*A-high). The tone of Sgaw in his own as well as in Jones' data implies class VI (*B-high).

(32) J.110, L.1537 PK *hmai'(VI); PT *hmes^A (2) > Ris ²mes 'mole, wart'

Note the difference in tone with the probable allofam Ris ¹menpo 'scar' (tone *B-high).

(33) J.246, L.1469 PK *kha' (VI) 'jaw'; PT *kam^A (2) 'chin'

The form PT *(g)am^B 'molar', which Benedict derives from PTB *gəm^B 'jaw, molar' (1973:32) has no reality at the Proto-Tamang level. It is extracted from a Tamang disyllable *grampa/u^B (3) 'cheek'. 'molar' in Tamang is a compound 'cheek-tooth' (e.g. Ris ³krampa-¹swa).

(34) J.-, L.1561 PK *su' (VI) 'hide'; PT *sum^A > Ris ²sum 'smuggle'

'saliva'

J.245, L.- PK *tho' (VI); PT *tho^A (2) 'saliva'

cannot be retained because the word is polysyllabic in Karen.

b) PK glottalized or voiceless unaspirated initials (Luce-Jones' tone class VIa)

(35) J.349, L.1598 PK *ʔdaN' (VIa); PT *tha:^A (2) 'to cut'

Note that J.398, L.- PK *daiʔ (VII) 'cut with scissors' is also a plausible cognate for PT *tha:^A, which would in that case correspond to a PK tone *C.

(36) J.151, L.1664 PK *sɔN' (?VI/VIa) 'teach'; PT *hun/hɲon^A (2) 'show'

The tone of Palaychi implies a *B mid series (VIa), but no sibilant is usually reconstructed in the mid series. Since P1 has much unexplained tonal variation, largely morphological, we need not posit a different initial solely on this evidence.

(37) J.337, L.1466 PK *ka' (VIa); PT *khrəŋ^A (2) 'to roast'

The semantic area 'roast, burn, hot, fry, cook' will serve to illustrate the typical problem encountered as soon as we have relatively rich data on the languages we are comparing. This word family boasts a large number of allofams (or are they haphazard near homonymo-synonyms?) on the Karen side as well as on the Tamang side. If we stick to meaning as the main criterion in the identification of cognates, we must propose set (37) as a cognate set. If, remaining in the same semantic neighborhood, we want to adjust segments, we could consider either (37a) or (37b) as the proper cognate for PT *khrəŋ^A:

(37a) J.541, L.- PK *k(h)rəN' (VIa/VI) 'overcook'

(37b) J.627, L.- PK *khrɔN (III) 'scorch'

Note that this last set would exemplify a PK *A / PT *A correspondence while (37) shows PK *B / PT *A.

But Tamang *khrəŋ^A really means 'roast, incinerate', not 'scorch'. The word for 'scorch' is PT *kro(:)^B (1), which is segmentally close enough to the Karen word of the same meaning for the following set to be considered plausible:

(38) J.627, L.- PK *khrəN (III); PT *kro(:)^B (1) 'burn, scorch'

This time we have a PK *A / PT *B tone correspondence!

The next stop on our zigzag path between segmental and semantic resemblance is set (38a):

(38a) J.355, L.1455 PK *kro" (V) 'roast, singe on charcoal'; PT *kro(:)^B (1) 'burn, scorch'

which is segmentally perfect...and illustrates the PK *B' / PT *B tone correspondence.

Slightly further afield we meet PK *go'(IV) 'hot' (J.6, L.1358), identical to the first syllable of PK *go' (IV) -(g)ɾə? (VII) 'to char, burn black' (J.841, L.-) both syllables of which could be compared to PT *kro(:)^B 'burn'.

Finally let us list a few more allofams on both sides: Karen J.517 *grwə' (IV) 'to burn off land', and J.720, L.1216 *khlaN (III) 'to boil', which actually matches rather well Ris ²khwal < *khwal^A 'cook by boiling'; Tamang *ro:^A (4) 'to fry', possibly PT *ŋjo^B (3) 'cook', and, somewhat unlikely, PT *dot (3) 'warmth' (*d- probably from **dr- rather than **gr-).

Conclusion 1) We will not count any set from this series in the checking of our hypothesis.

Conclusion 2) We are much happier about our sets when we have insufficient data... which does not mean of course that they are better.

c) PK voiced initials (Luce's tone class IV)

(39) J.1, L.1419 PK *bɔŋ' (IV) 'burst with a pop'; PT *por^A (2) > Ris ²por 'to pop, of corn' or PT *pho:^A (2) > Ris ²pho: 'to burst'

(40) J.4, L.1415 PK *dɔŋ' (IV); PT *to^A (2) 'to pound grain'

J.524, L.1456 PK *ʔdo" (V) 'beat' (tone *B') is also a possible match for PT *to^A 'pound, beat'. If we accept considering *B' as secondary, we can retain set (40) as valid.

(41) J.503, L.- PK *dzəN' (IV); PT *tsim^A (2) > Ris ²tsim 'extend in a line'

(42) J.-, L.1392 PK *gi' (IV); PT *khi^A (2) 'to tie, bind'

PK *gi' can be posited from Sgaw, Paku, and one dialect of Bwe (Blimaw tone 3 is irregular).

'rise, get up'

J.196 seems to include two roots PK *rɛ (I), accounting for Sgaw, Palaychi, and Moulmein Pho, and PK *(g)rai' (IV), accounting for Pa-O and Bassein Sgaw. The first root seems to correspond well to PT *Hre:/hre:^B (1), and will be listed with the PK *A/PT *B correspondences. The second one could be compared to PT *hrap^A (2) 'be standing up', and would be an example of the PK *B/PT *A tone correspondence.¹⁴

After elimination of the most dubious sets, we come to about 14 words showing a correspondence between Karen tone *B and Tamang tone *A, when the PT initial was voiceless, to be compared to the 16 words showing a correspondence between Karen tone *A and Tamang tone *A, under the same conditions. A rather even score. Let us now check words with a proto-voiced initial in Tamang.

4.22 Proto-Tamang voiced initials (tone set 4 of modern languages)

4.221 Benedict quotes PT *blu^A 'seed' as tonally deviant as compared to Burmese. It is also deviant as compared to Karen:

(43) J.-, L.1420 PK *blɔN' (IV) 'vegetable shoots'; PK *blu^A (4) 'seed'

'house', discussed earlier §4.121, should be listed as an example of PK *B to PT *A correspondence:

(44) J.804, L.1613 PK *hriN' (VI); PT *dim^A (4) 'house'

4.222 Here are some more counter-examples of the same category:

(45) J.-, L.1507 PK *hni' (VI) 'skirt'; PT *ŋjoi^A (4) 'skirt, sari'

(46) J.-, L.1569 PK *phro' (VI) 'pimple'; PT *bro^A (4) 'small-pox'

(47) J.-, L.1662 PK *hmɔN' (VI) 'think of'; PT *man^A (4) 'to love'

This last word is disyllabic in Karen so we have to dismiss it.

b) PK glottalized or voiceless unaspirated initials (Luce-Jones' tone class VIa)

(48) J.-, L.1661 PK *ʔbɔŋ' (VIa) 'plump, fat'; PT *baŋ^A (4) 'strength'

(49) J.-, L.1668 PK *ʔdoN' (VIa) 'to enclose'; PT *dɔŋ^A (4) 'to close'

(50) J.350, L.1530 PK *ʔdwai' (VIa); PT *di^A (4) 'kindle, light a lamp'

(51) J.445, L.1635 PK *ʔblɔN' (VIa) 'gore'; PT *blo:/mlo^A (4) 'prick'

(52) J.335, L.1567 PK *tso' (VIa); PT *ro^A (4) 'corpse'

c) PK voiced initials (Luce's tone class IV)

(53) J.106, L.1329 PK *blai' (IV); PT *bre^A (4) 'slave'

(54) J.107, L.1315 PK *li' (IV); PT *bli^A (4) 'four'

(55) J.108, L.1331 PK *ñai' (IV); PT *ŋa:^A (4) 'five'

(56) J.501, L.1367 PK *glau' (IV); PT *glap^A (4) 'ox'

¹⁴ Note that we have to distinguish at the PT level between voiceless sonorants, which I write here with an h, and "aspirated" ones, probably derived from an initial stop which cannot be reconstructed at the PT level, which I transcribe H. In Risiangku Tamang the result of this alternation is a doublet ¹hre:/¹re: 'to get up'.

(57) J.298, L.1352 PK *dy' (IV) 'to string beads'; PT *ḍup^A (4) 'to sew'

J.203, L.1308 PK *ma' (IV) 'be lost'; PT *ma^A (4) 'lose'

The Karen word is disyllabic, so this set cannot be counted.

(58) J.14, L.1383 PK *lam' (IV) 'place, track'; PT *gjam^A (4) 'road'

This makes a total of 13 or 14 words showing a tonal correspondence PK *B / PT *A, when the PT initial is voiced, as compared to about 10 words showing an *A/*A correspondence with the same initials (§ 4.12). Here again a rather even score. We must admit that we have not been able to establish a correlation of Proto-Tamang tone *A with either one of the tones reconstructed for Proto-Karen. We will try to see now if Proto-Tamang tone *B shows a regular correspondence with either one of the two PK tones.

4.3 Sets showing Proto-Karen *B corresponding to Proto-Tamang *B

4.31 Proto-Tamang voiceless initials (tone set 1 of modern languages)

4.311 As regular reflexes of PST tone *B in Proto-Tamang, Benedict cites the following words (in his PT reconstruction): *kli 'feces', *hmei 'fire' and 'tail', *sa 'tooth', *hñem 'soft', *-hli 'bow', *hmya 'arrow', *-ku 'smoke', *sya 'flesh, meat', *syi 'die', and *hmu 'sky'.

'feces'

PT *kli^B (1) does not seem to have a Karen cognate.

'fire' and 'tail'

Benedict reconstructs these words as homonyms, PT *hmei^B, and compares them with PK *hme^B 'fire' (1973:134) and PK *me^B 'tail' (1972:32). However these words are homophonous in only two Tamang languages. On the basis of six others I reconstruct a difference in both length and vowel quality. The latter is paralleled in Karen, where 'tail' has a more open vowel than 'fire'.

(59) J.109, L.1526 PK *hme' (VI); PT *hmje^B (1) 'fire'

(60) J.20, L.1327 PK *me' (IV); PT *hme:^B (1) 'tail'

'tooth'

In Tamang this word should be reconstructed as *swa^B (1) rather than *sa^B. Benedict reconstructs the Karen cognate with tone *B as in Burmese and Kuki (1973:134). But Luce classes the word in his class III, which is *A-high. Haudricourt (1946:106), using different data (Purser's dictionary¹⁵), also reconstructs 'tooth' with tone *A. In Jones this root is only represented by Bassein Pho Өwà and Palaychi shzùq (J.521). If we take the tone of Pl seriously, which may not always be wise, these two forms leave us the choice between *B (or B')-mid series, and *A-high series. Since Ө is usually an initial of the high series, we might prefer a *A-high reconstruction. Luce's data on Bwe points to the same reconstruction. His Western Bwe form Өo¹me³

¹⁵ Haudricourt cites this work as: W. C. Purser, A Comparative Dictionary of the Pwo-Karen, Rangoon, 1922. I have not used it.

cannot be used as an argument since it may have suffered from tone dissimilation in composition¹⁶, but his Geba form Θu^1 which is monosyllabic, also has tone 1 (<*A) rather than tone 2 (<*B). It seems to me that PK *swa (III) is the most likely reconstruction for 'tooth', and so the correspondence:

J.521, L.1148 PK *swa (III); PT *swa^B (1) 'tooth'

exemplifies the PK *A / PT *B correspondence, and should be counted as a counter-example if anything.

'soft'

In Risiangku Tamang I recorded the form 2nem 'to be soft' which derives from PT *hⁿem^A rather than from a PT tone *B form. I think Benedict's error comes from Pittman and Glover's set 79 which collapses two different words into an extended semantic notion 'to hear, obey, be soft'. 'listen, obey' is PT *hⁿjan^B (1) > Ris 1njan , Sahu 1nen (phonetically [ñem-] in front of the -pa suffix of the present). So the word 'soft' does not agree in tone with Burmese nam^B. I could not trace a Karen cognate for it.

'bow' and 'smoke'

The forms cited are second syllables of disyllabic words. They cannot yield any tonal information.

'arrow'

I believe Benedict only claimed a Burmese match for this word: PT *hmja^B (1), Burm. hmra^B. I have proposed above the following Karen match:

(61) J.297, L.1304 PK *bla' (IV); PT *hmja^B (1) 'arrow'

'flesh/meat'

To PT *sja^B (1) 'meat', Benedict probably only associates a BL cognate since the Karen homophonous roots PK *hⁿna' (VI) 'meat' (J.62) and 'fish' (J.255) hardly look like the perfect cognate for PT *sja^B. The Karen roots recall PT tarⁿja^A (2) 'fish'. However it is obvious that Karen has merged a lot of different proto-material in the palatal area. Thus the Karen correspondence T j / MP j / BP j / Pl z / MS ñ / BS ñ, found in J.62 'meat', does not necessarily reconstruct to PK *hⁿñ-, and can possibly correspond to PT *sj-. See set (68) below.

'sky'

(62) J.18, L.1341 PK *my' (IV); PT *hmu^B (1) 'sky'

Thus we retain the following four or five words as examples of the correspondence between PK tone *B and PT tone *B: 'fire', 'tail', 'arrow', 'sky' and (?) 'meat'.

4.312 To these we may add:

¹⁶ Cf. Henderson 1961:68-69.

a) PK aspirated initials (Luce-Jones' tone class VI)

(63) J.33, L.1470 PK *tsha' (VI) 'fodder'; PT *tsha^B (1) 'to graze (tr.)'

The comparison between a noun and a verb which I propose here makes me uncomfortable because an ancient derivation by tone change may be involved (or an ancient segmental morpheme resulting in a tone change). Thus inside a single language of the Tamang group we find (but unsystematically!) an associated change of tone as in Ris ¹phi: (<*phi:^B) 'bark, peel'; ²phi: (<*phi:^A) 'to peel'. So I will not count set (63).

(64) J.42, L.1468 PK *kha' (VI) 'bitter'; PT *kam^B (1) 'bile'

Note also PT *kampa^B (1) 'bitter', conveniently on the same tone.

(65) J.30, L.1596 PK *thanj' (VI); PT *tho^B (1) 'up'

(66) J.44, L.1588 PK *khanj' (VI); PT *kan^B (1) 'leg, foot'

(67) J.54, L.1487 PK *hla' (VI); PT *Hla^B (1)/ *lapte^B (3) 'leaf'¹⁷

(68) J.545, L.- PK *hjoŋ' (?sjoŋ'/hñjoŋ') (VI); Ris ¹sjoy < *sjoy^B 'stretch legs'

The above would account for Pho and Sgaw. Pa-O and Palaychi imply a form *jjoŋ'(IV) which is *B with a low initial. This set shows the same problematic initial correspondence as 'meat' above (§4.311).

(69) J.553, L.1503 PK *thi' (VI) 'to see'; PT *thai^B (1) 'to hear'

(70) J.205, L.1525 PK *phe' (VI); PT *pin^B (1) 'to give'

(71) J.-, L.1597 PK *than' (VI); PT *thon^B (1) 'to issue'

(72) J.-, L.1665 PK *choN' (VI) 'strong, hard'; PT *cho^B (1) 'fat, stout'

The following three sets all raise some question, and cannot be retained:

(73) J.-, L.1476 PK *gu-hna' (I-VI); PT *hjan^B (1) 'listen'

The word is disyllabic in all Karen dialects.

(74) J.43, L.1638 PK *khuN' (VI) 'to dig'; Ris ¹khwa (*B) 'turn over a field by hand'

Set (74) would be fine if Risiangku Tamang did not have a near synonym-homonym ²kwa 'to dig around plants', which could be the proper cognate for PK *khuN'. In that case we would have tonal disagreement between Karen and Tamang.

(75) J.58, L.1554 *hmy' (VI) 'woman'; PT *hmriŋ^B (1) 'wife'

PT *hmriŋ^B looks like a simple monosyllable, but at a level older than PT we can certainly break it up into two morphemes: *hm- 'woman' and *-riŋ from PTB *sriŋ 'sister' (Conspectus:108, 171), found again e.g. in Ris ³purriŋ < PT *burriŋ^B 'younger sister of a man' (where bu- is cognate with J.2, L.1339 PK *by'(IV) 'younger sibling'). Then PK *hmy' might be cognate with what used to

¹⁷ I would not expect the PTB *s- of *s-la (Conspectus 486) to result in PT *H-. It should rather result in PT *h-. For PT *Hl- I would rather reconstruct a stop initial at a higher level. The cognate blaŋa 'leaf' in the Sala language of Bhutan might suggest *b-.

be the first syllable of a disyllabic word, reduced to *hm- in PT, and the tonal correspondence would be meaningless. I believe such is the case of a number of Tamang words which are now monosyllabic.

b) PK glottalized or voiceless unaspirated initials (Luce-Jones' tone class VIa)

- (76) J.550, L.- PK *ʔblai' (VIa); PT *hlep^B (1) 'surplus, leftover'
(77) J.74, L.1607 PK *ʔam' (VIa) 'eat'; PT *am^B > Ris¹am '(baby-talk noun for eating)'
(78) J.197, L.1494 PK *kri' (VIa); PT *gri^B (3)/kh(r)iti^B (1) 'body dirt'

c) PK voiced initials (Luce's tone class IV)

- (79) J.10, L.1323 PK *re' (IV) 'cane'; PT *hrin/sin^B (1) 'small bamboo'
(80) J.15, L.1404 PK *loŋ' (IV); PT *hjuŋ^B (1) 'stone'

But note PT *hjuŋpa^A (2) also 'stone'

- (81) J.480, L.- PK *mwe' (IV), PT *hmu^B (1) 'to be'
(82) J.296, L.1340 PK *bly' (IV); PT *hmjo^B (1) 'insane'

The number of acceptable sets in this series is around 20 or 22. We will now list examples of the same tonal correspondence PK *B / PT *B when the PT initial was voiced.

4.32 Proto-Tamang voiced initials (tone set 3 of modern languages)

4.321 Benedict quotes here the following Proto-Tamang words:

*dza 'eat' and 'son', *na 'ear', *[g]am 'molar' (already discussed: §4.212 set (33) above), *mi 'man', *li 'heavy', and *bri 'write'.

'eat': should be reconstructed with a voiceless initial PT *t^sa^B (1). It has no Karen cognate.

'son', PT *dza^B (3) could be compared to PK *dza' (IV) 'young' or to PK *sa' (VI) 'offspring', both under tone *B. Note in Tamang the adjective 'small', under the same tone, PT *dzadza^B (3), and the noun 'daughter' under a different tone, PT *dzame^A (4). We could propose either of the following sets as exemplifying the *B / *B tone correspondence:

- (83) J.5, L.1296 PK *dza' (IV) 'young'; PT *dza^B (3) 'son'
(83a) J.249, L.1489 PK *sa' (VI) 'offspring'; PT *dza^B (3) 'son'

'ear'

- (84) J.21, L.1299 PK *na' (IV); PT *na^B (3) 'ear'

I could not find Karen cognates for 'man', 'heavy', and 'write'.

4.322 Some more examples of the *B/*B correspondence could be:

a) PK aspirated initials (Luce-Jones' tone class VI)

(85) J.293, L.1625 PK *hlɛm' (VI); PT *lɛm^B (3) 'to lick'

The Southern Pa-O form from Luce lɛm²/lam² confirms PK final -m.

(86) J.534, L.1648 PK *thoŋ' (VI); PT *do^B (3) > Marpha Thakali ³to 'bag'
(cf. Gur. nedó 'bag')

and (more doubtful):

(87) J.36, L.1622 PK *cheN' (VI) 'sour'; PT *dzju:^B > Ris ³tsju: 'to turn
sour, rancid'

b) PK glottalized or voiceless unaspirated initials (Luce-Jones' tone class VIa)

(88) J.157, L.1556 PK *ʔy'/ʔwy' (VIa); PT *gui^B (3) > Ris ³kui 'rotten
(Ris especially of eggs)'

(89) J.346, L.1550 PK *ʔdy' (VIa) 'abstain from'; PT *du:^B (3) 'mourning
(a period of abstinence)'

The Karen forms are verbs, and the Tamang forms nouns ([to stay in] mourning.)
Hence this set cannot be counted.

(90) J.70, L.1652 PK *kuN' (VIa) 'to plan'; PT *go^B (3) 'to understand'

(91) J.339, L.1645 PK *suN' (VIa); PT *zu(:)^B (3) 'to plant'

The initial PK *s with a tonal correspondence of the mid series raises the same
problem that we have encountered for set (36) 'teach' (§ 4.212).

(92) J.-, L.1578 PK *so' (VI/VIa); PT *ro^B (3) 'friend'

Note the following set, forming a tone pair with the preceding for Tamang, and
showing a contrast in the initial for Karen. I believe differences in the
initial at a level higher than Proto-Tamang might eventually be shown to be the
source of the *A / *B contrast in PT generally.

J.335, L.1567 PK *tso' (VIa); PT *ro^A (4) 'corpse'.

c) PK voiced initials (Luce's tone class IV)

(93) J.13, L.- PK *lai' (IV) 'wide'; PT *ble^B (3) > Ris ³ple 'width of
cloth'

(94) J.17, L.1390 PK *lin' (IV) 'vagina'; PT *mle^B (3) 'penis'

(95) J.23, L.1353 PK *nu' (IV), PT *new^B (3) 'breasts, milk'

(96) J.486, L.- PK *dzɔN' (IV) 'to perch'; PT *dzu^B (3) 'to put or press
the feet on the ground'

(97) J.204, L.1380 PK *maŋ' (IV) 'to dream'; PT *maŋ^B (3) 'a dream'

The word is disyllabic in all Karen dialects for Jones, and in all but one
(Pa-O) for Luce: PK *mi (I)-maŋ' (IV). Since it is a verb in Karen it is not
impossible to etymologize the first syllable as the corresponding verb ('to
dream/see a dream'), which would leave the second syllable as the proper
cognate to PT *maŋ^B. Too much doubt remains for us to accept this set for the
moment.

(98) J.299, L.1414 *dɔŋ' (IV); PT *ɗan^B (3) 'remember, think about'

Two probable allofams could be paired up with the next PT root:

(99) J.300, L.- *dwi' (IV) 'to drag'; PT *ɗut^B (3) 'to pull'

(99a) J.214, L.- PK *thy? (VIII) 'to pull'; PT *ɗut^B 'to pull'

(100) J.-, L.1306 PK *bla' (IV) 'set free'; PT *bla^B (3) 'untie'

But note that L.1041 PK *plɛ (II) 'set free' is also a possible cognate, with the opposite tonal correspondence (PK *A/PT *B); cf. §4.111.

The above includes a maximum of fifteen good sets showing the tonal correspondence PK *B to PT *B, when the PT initial was voiced. Thus the total number of sets, for all initials, which can be claimed to support the hypothesis of a common origin for PK tone *B and PT tone *B is about 35.

We now have to examine the counter-examples, that is words reconstructing with PK tone *A, and with PT tone *B.

4.4 Sets showing Proto-Karen *A corresponding to Proto-Tamang *B

4.41 Proto-Tamang voiceless initials (tone set 3 of modern languages)

4.411 As examples of Tamang words which "shifted" from the original PTB tone *A to *B, Benedict quotes: *syi 'die', *-praŋ 'a fly' (found only as the second syllable of a word), *hmin 'name', and *hna 'nose'.

In the last two examples he cites aspiration as a possible cause of a shift in tone. This is unconvincing, however, because we have several tone *A words in Tamang which correspond to *A words in Karen, and which have a proto-aspirated nasal initial: e.g. sets (7) 'ripe', (8) 'seven', and (9) 'smell' above (§ 4.112). Hence these two words do count as counter-examples.

4.412 So, adding some more sets to the three quoted by Benedict, we can list the following:

a) PK aspirated initials (Luce's tone class III)

(101) J.159, L.1142 PK *pha (III) 'male'; PT *pha^B (1) 'husband'

(102) J.170, L.1166 PK *si (III); PT *si^B (1) 'to die'

(103) J.148, L.1133 PK *kha (III) 'to step'; PT *kha^B (1) 'to come'

(104) J.360, L.1284 PK *thɔN (III); PT *ton^B (1) 'thousand'

(105) J.521, L.1148 PK *swa (III); PT *swa^B (1) 'tooth'

(106) J.403, L.1141 PK *hna (III); PT *hna^B (1) 'nose'

(107) J.374, L.1273 PK *hroN (III); PT *hwɔŋ~ɔŋ^B (1) 'to steam-cook'¹⁸

(108) J.378, L.1241 PK *hweN (III); PT *Hrum^B (1) 'abcess'

(109) J.611, L.- PK *swe (III) 'a chain'; PT *tsho:^B (1) 'a rope'

(110) J.615, L.1212 PK *hlau (III); PT *hlu^B (1) 'to tell a lie'

(111) J.202, L.1175 PK *phle (III)/ɸble (II); PT *ple:^B (1) 'slippery'

(112) J.235, L.1170 PK *khe (III); PT *tsjan^B (1) 'tiger'

¹⁸ I have not distinguished an *r from a *ɣ in the PK forms, but it seems that Burling is right in reconstructing both. In that case 'steam-cook' would be *hɣɔN, and 'salty' set (124) below would be *hɣaŋ, which would make them more similar to their PT cognates.

[for an intermediate form cf. Burmese kja³]

(113) J.-, L.1139 PK *tshra (III); PT *tshai^B (1) 'split-bamboo ties'

(114) J.-, L.1251 PK *khaŋ (III); PT *koŋ^B (1) 'firm, hard, strong'

b) PK glottalized or voiceless unaspirated initials (Luce's tone class II)

(115) J.133, L.1095 PK *tsəŋ (II); PT *tsuŋ^B (1) 'to tie'

(116) J.135, L.1132 PK *kən (?kwan) (II); PT *kwan^B (1) 'to wear'

c) PK voiced initials (Luce's tone class I)

(117) J.125, L.974 PK *min (I); PT *hmin^B (1) 'name'

(118) J.228, L.981 PK *bəŋ (I) 'pot'; PT *poŋ^B (1) 'jug'

(119) J.318, L.- PK *la (I) [all dialects but Pa-O]; PT *hla^B (1) 'god'
*lu (I) or ?lu (II) [Pa-O]; PT *hlu^B (1) 'water-god'

(120) J.324, L.1004 PK *moŋ (I) 'to lead'; PT *hmoi^B (1) 'to plough'

(121) J.330, L.- PK *ñai (I); PT *hnaɪ^B > Gur ɪnaɪ 'fibers'

(122) J.436, L.- PK *jəN (I); PT *sjat^B (1) 'to mention, tell'

(123) J.196, L.- PK *rɛ (I); PT *Hre:/hre:^B (1) 'to get up'

Although some of the above examples are no doubt to be dismissed, it seems we can count about the same number of valid sets in this series (around 20) as we did in the series exemplifying the PK *B/PT *B correspondence § 4.31, both series for PT voiceless initials.

4.42 Proto-Tamang voiced initials (tone set 3 of modern languages)

4.421 As a counter-example to the regular correspondence of PT tone *B with PST *B, Benedict quotes only *riŋ- 'long', whose tone, he says, disagrees with Burmese-Lolo. This word does not seem to have a Karen cognate, unless we want to compare it to J.184 *jɛ? (VII), which would be a proto-tone *C.

4.422 Some more PK *A/PT *B correspondence sets:

a) PK aspirated initials (Luce's tone class III)

(124) J.375, L.- PK *hraN (III); PT *ŋam^B (3) > Ris ʒam 'salty'

(125) J.371, L.- PK *hra (?khra) (III) 'frighten by noise'; PT *rap^B (3)
'make noise, play an instrument'¹⁹

(126) J.614, L.1193 PK *hlu (III); PT *lu:^B (3) 'to pour'

Based on only one form, Pa-O rì, we may have the following:

(127) J.279, L.- PK *hri (III); PT *rit^B (3) 'to request, beg'

but Pa-O rì can also reconstruct to PK *hri^A (V or Va), which would be tone *B', our "secondary" proto-tone.

¹⁹ If the identification I propose here is correct, PK *hra^A 'frighten by noise' is a second example of loss of final PTB -p in Karen. The other one is 'winnow', our set (26) mentioned by Benedict 1979. This new etymology for PK *hra^A would remove Benedict's counter-example to his own rule that "the tonal assignment after loss of final stop from *-t or *-p is *A (two examples only [three with our new convert!]), but from *-k (the bulk of the examples) it is usually *B." (1979:6).

b) PK glottalized or voiceless unaspirated initials (Luce's tone class II)

(128) J.134, L.- PK *tʂɔN (II) 'apex'; PT *dzo^B (3) 'point, summit' or
(128a) J.232, L.1051 PK *tʂu 'point'; PT as above

c) PK voiced initials (Luce's tone class I)

(129) J.326, L.929 PK *me (I) 'cooked rice'; PT *mla^B (3) 'husked rice'
(130) J.488, L.- PK *m̥əN (I) 'to growl'; PT *ŋja^B (3) 'to cry (animals)'
(131) J.313, L.1009 PK *dy (I); PT *do:^B (3) 'to reach, arrive'
(132) J.-, L.1022 PK *kwi (I); PT *gjo:^B (3) 'lake, pool'

This last set was already quoted with set (16), which paired the Karen root with PT *kjui^A (2) 'water'. I think the match with PT *gjo:^B is at least as good, and the two sets will thus even out!

This series of counter-examples to the hypothesis of a regular correspondence between PK tone *B and PT tone *B, when the initial was voiced in PT, yields only 9 sets, as compared to the 15 we counted in favor of the hypothesis (§ 4.32). I do not believe this difference to be significant.

For all initials, there are about 35 examples showing the *B/*B correspondence, and about 30 showing the correspondence *A/*B. Thus it does not seem that Proto-Tamang tone *B correlates with either one of the two basic PK tones.

V. Conclusion

We have considered whether a correlation could be established between the two tones of Proto-Tamang and the two main tones of Proto-Karen. With this question in mind, we have searched for as many cognates as possible to Karen words reconstructed with PST tones *A or *B according to Benedict's hypothesis. We have eliminated from that list words suspected of tonal shift inside each group (mainly due to compounding, or old morphology). For accuracy in the correspondence of segments and meaning between Tamang and Karen, we have only tried to maintain the same standards for examples supporting the hypothesis of a correlation and for those contradicting it. Counting up the sets has given the following totals:

PK *A - PT *A : 26
PK *B - PT *A : 28
PK *B - PT *B : 35
PK *A - PT *B : 30

This result has forced us to admit that a simple correlation between either of the PK tones and either of the PT tones has not been established, and still less a correlation between the two systems globally.

We have not, however, excluded the possibility of such a correlation. This would require the demonstration of a different origin for the two proto-systems, and for the moment we have not explained the origin of either.

I believe we have also shown that the demonstration of a relationship, if it exists, cannot be accomplished with the method we have used, even trying to

be critical about the material. I believe we should reach three intermediate results before this large scale comparison of tone systems be taken up again: 1) a more precise reconstruction of Proto-Karen, 2) the establishment of regular segmental correspondences between Tamang and Karen, and 3) the understanding of morphological variation of tones at the level of each sub-family. Once this is done it remains possible that Benedict's intuition will be shown to be correct. For the moment it has to remain an avenue for future research.

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[Numerical references indicate cognate sets discussed in the text. Words discussed incidentally are cited with the number of the nearest set in parentheses.]

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THE HSIHSIA, LOLO, AND MOSO LANGUAGES

Tatsuo Nishida

The correspondences between Hsihsia and the Lolo-Burmese languages, mainly Written Burmese, were outlined in my book A Study of the Tosu-Chinese Vocabulary Tosu I - YU (1973), and the relationship between Hsihsia and Ch'iang was discussed in a separate paper (Nishida 1976). By concentrating our efforts on the origins of lexical forms in Hsihsia, we gradually bring to light not only the forms which are close to Ch'iang or which are cognate with Tibetan and Burmese forms, but also the nature of the relationship with Tibeto-Burman languages such as Lolo and Moso. At present, however, it is still difficult to present a systematic comparison of Hsihsia and these languages. Therefore, in this paper, I only discuss the major aspects of the problem, focusing on a number of topics.

Hsihsia and Written Tibetan. First, the number of Hsihsia forms which can be considered cognate with those in Written Tibetan is larger than we are inclined to think. Some are clearly loan words, e.g. **lo-tsa-ba** 'translator', and others supposedly reflect widely-distributed areal words, e.g., 'hare'. But, numerous others show non-accidental relatedness.¹

			<u>Wr.T</u>
(R 1-L20-L17)	lu-tsa ^h -va ^h	'translator'	lo-tsa-ba
(R61-R42)	h̄i-yō ^h	'hare'	ri-bong ~ ri-gong
(L93)	tsiər	'doctrine'	chos
(L49)	kōh	'circle'	h̄khor-lo
(R54)	tshə	'make, token'	mtshan
(R52)	liu	'body'	lus
(R33)	te ^h	'navel'	lte-ba
(L33)	mē	'eye'	mig < myig
(L4)	Yuh	'head'	mgo
(R11)	mb ^w ih	'eye-brow'	smin-ma
(R3)	ngiuh	'sinews'	rtsa-rgyus ~ rgyung-ba
(L48)	loh	'to return'	log-pa ~ ldog-pa
(L62)	tēN	'to be full'	ltem-pa ~ ltams-pa

In addition to these individual correspondences, we find pairs of words like the following:

¹ L and R indicate, respectively Level and Rising tones. The numeral given after these indicates the rime number. Hsihsia had 97 rimes for the Level tone and 86 for the Rising.

			<u>Wr.T.</u>
(L83)	kar	'scale'	<u>skar-tshad</u>
(L83)	kar	'to weigh'	<u>skar-ba</u>

Furthermore, some examples enable us to postulate the correspondence Hsihsia ⁿdz-: Wr.T. gr-, kh-, zh-, exemplified below.

(R54)	ndzɛ	'boat'	<u>gru</u>
(R54)	ndzɛ	'to pass'	<u>hgru-ba</u>
(R37)	ndzɛN	'corner'	<u>gru</u>
(R28)	ndzɛ	'to bathe'	<u>hkhru-ba</u>
(R33)	ndzɛf	'other'	<u>gzhan</u>
(R34)	ndze	'to mount'	<u>zhon-pa</u>

Although the Written Tibetan forms have a wide regional distribution, cognates can also be found in other languages of the same family; thus, we can regard them as representative of Tibeto-Burman and be confident that Hsihsia is a member of the TB group.

Hsihsia and Written Burmese. A similar relationship exists between Hsihsia and Written Burmese. As I indicated in A Study of the Tosu-Chinese vocabulary, the two languages show clear correspondences not only in terms of the forms of morphemes but also in word-compounding processes. And, given the forms in Written Burmese, we can in most cases assume the existence of the corresponding forms in the Lolo languages.

Here, I would like to give some examples of the correspondences which can be summarized as Wr. B. l- : Hsihsia l-, ɣ-, hl-; and Wr. B. -ei < -iy: Hsihsia -ɛ-, -ɛ̃-.

			<u>Wr.B.</u>
(L29)	lɪh	'air'	<u>lei</u>
(L29)	lɪh	'verb.particle'	<u>lei</u>
(L32)	lʷɪN	'to be heavy'	<u>lei²</u>
(L69)	hlɛ̃	'bow'	<u>lei²</u>
(L92)	ɬɪr	'four'	<u>lei²</u>

The above examples imply that Written Burmese has merged once distinctive forms.

Loloish Comparisons. Several other correspondences are cited here, along with forms from Lolo languages:

		Wr.B.	Nyi	Ahi	Moso
'stone' (L58)	lu	kyɔk < klɔk	lu 44 ma 44	lu 44	ry 33 (Li)
'worm' (L58)	lu	lɔk	ɬu 44	ɬu 22	liu 55 (Wei)

The rime of the Hsihsia word ^{ㄌㄨˊ} 'to be enough' is unknown, but we can assume it was hlɔ (L 58), based on the correspondence between Wr.B. lɔk 'to be enough' and Nyi-Lolo lu ㄌㄨˊ 'to be enough'.

		Wr.B.	Nyi	Ahi	Moso (Li) ²	Moso (Wei)
'nose'	-nɪf (R12)	hna	na 44 bɪ 33	no 22 bo 21	ɲi 55 maɹ 11	ɲi 55 mɹ-21
'ear'	_hɲi-ufɪ (L3)	na ²	na 55 pɔ 44	no 44 pa 44	hɛ 33	hɛ 33 tsɪ 33
'to listen'	-nɪf (R10)	na-saɲ	na 44 ga 11	no 44	mi 33	kho 55 mi 55

Moso hɛ 33 'ear' is identical phonemically with the head morpheme of hɛ 33 -mɛ 33 'moon'. Bearing this in mind, we note the following correspondences, from which we conclude that proto-forms l-, n-; hl-, hn- were partially merged into h- in the Moso language.

	Hsihsia	Moso	Wr.B.
'moon'	hli (?)	hɛ 33 - mɛ 33	la ³
'ear'	hɲi-ufɪ (L3)	hɛ 33	na ²
'wind'	lɪf (L29)	hɹ-41	lei
'be red'	nef (L36)	hy 21	ni-

The following case is also interesting.

	Hsihsia	Wr.B.	Nyi	Ahi	Moso (Li)	Lolo (Lo)
'thousand'	tɹ (L58)	tac-thɔŋ	thi 11	tɹ 55	to 44	tɹ 11
'wings'	tɹh (R25)	a-tɔŋ	ty 33	le 22	to 22	ndɹ 33
						dɹ 11

The initials of these two words are thought to have shared at a common stage of development the opposition of voiceless: voiced i.e. t- : d-. Hsihsia is like Nyi-Lolo and Ahi-Lolo in that they both went to t-, but Hsihsia differs from the Lolo (Nyi-Ahi), Moso and Burmese languages in terms of vowels. Therefore we can assume the development of these words is as follows:³

	Hsihsia	TB	BL	Wr.B	Moso	Lolo
'thousand'	tɹ	<— *stɔŋ	: *s-tɔŋ	→ thɔŋ	tɹ 11	to 44 high tone
'wings'	tɹh	<— ?	: *dɔŋ	→ tɔŋ	ndɹ 33	to 22 low tone

As a side note, Hsihsia tɹ 'one thousand' should be considered to relate to

² Moso (Li) refers to the reading forms of Lichiang, which are taken from A Dictionary of Moso Heiroglyphics compiled by Li Lin-tsan, phoneticized by Chang Kun, according to the pronunciation of Ho Tsai, Memoirs of National Central Museum, series B no. 2. 1944.

Weihsi or Wei refers to the spoken forms of Weihsi dialect, which are based on Fu Mao-chi (Fu Maoji, 1943). Luquan (Lu) forms are taken from Ma Hsteh-liang (Ma Xueliang, 1948).

³ Another possible interpretation is this: Hsihsia -ufɪ corresponds to Wr.B. -ɔŋ, Hsihsia -ɹ corresponds to both Wr.B. -ɔŋ and -ɹk (e.g. 'worm', 'stone', 'wings', 'thousand' i.e., in Hsihsia some forms which were identical with those which correspond to Wr.B. -ɹk also correspond in part to Wr.B. -ɔŋ. In Hsihsia we find many forms which correspond more directly to Proto-Lolo-Burmese than to Written Burmese.

khɿ 'ten thousand'.

	Hsihsia	Wr. T.	Moso
'one thousand'	tɿ (L 58)	stong	ty 11
'ten thousand'	khɿ (R 28)	khri	ku 11

Here the personal pronouns and the numerals are cited as examples of lexical systems.

Personal pronouns

	Hsihsia	Moso (Li)	Moso (Wei)	Lolo (Lu)	TB
'we'	hngah (R14)	ŋʌ 11	ŋa 21	ŋɣ 55	*nga
'you'	nah (R17)	nʌ 11	no 21	na 11	*na
'he/she/it'	thah (R17)	thw 44	thɿ 33	thi 55	*khi

Numerals

'one'	ləw (L43)	ɬw 33	ɬɿ 33	tha 11
'two'	niN (L32)	ni 33	ni 15	ni 55
'three'	sɔ (L70)	su 11	so 33	sɛ 11
'four'	ɬɿ (L92)	ro 33	lo 33	ɬi 33
'five'	ŋɣah (L27)	wa 33	ɲa 33	ɲu 33
'six'	tshiew (L46)	tshwa 55	tshueN 55	tshu 55
'seven'	ʂa (L64)	ʂar 33	ʂa 33	ʂi 55
'eight'	ʔyar (L82)	ho 55	xo 55	ʔheN 55
'nine'	ŋwɿN (L32)	ngy 33	ŋku 33	ku 33
'ten'	ʂa (R56)	tshɛ 11	tshɛ 21	tshe 33
'hundred'	ʔyir (R72)	ɕi 33	ɕi 33	ʔhuN 11

Although not rigorously verified, except for 'one' and 'ten', there seems to be no problem in assuming the numerals to be cognate. The origins of Hsihsia 'one' and 'ten' are still not very clear.

An initial ʔh- in Luquan Lolo corresponds to Cr-, r- in Burmese.⁴

	Luquan	Wr.B.
'rain'	ʔhuN 33	rwa ² - < *Crwa
'house'	ʔhəN 33	im < *Crim
'horse'	ʔhuN 11	mrang ²
'to stand'	ʔheN 55	rap < *Crap
'eight'	ʔheN 55	hrac < *Crac
'hundred'	ʔhuN 11	ra < *Crya

Other. In addition to these we find some examples in which sbr- and zh- in Written Tibetan correspond to this ʔh- of Luquan Lolo.

⁴ In the Lolo languages there is a general tendency to nasalize final vowels after an initial h-. This tendency seems to be especially strong in the reading of texts of Luquan Lolo in Yunnan and Dading Lolo in Guizhou.

	Luquan		Wr.T.
'cap'	ʔhuN 11		zhwa < *zhu-ba
'fly'	ʔhəN 11 my 33		sbrang-ma, Wr.B. yang < *Crang
There is one special case:			
	Luquan		Wr.B.
'bat (the animal)'	ʔhaN 33 nɔ 33		lang ² -no ³

The Four Seasons. The following examples deal with the four seasons.

	'spring'	'summer'	'autumn'	'winter'
Lolo (Lu)	nɔ 33	ge 33	tghu 22	tshy 33
Moso (Li)	nɔ 11	zo 11	tghy 55	tshu 44
Hsihsia	n ^w ɩ (R28)	n ^t ʂhieN (?)	tshɩ (L68)	tsur (L75)

With regard to these, we notice that the four forms as a whole in each of these three languages show very close relationships to each other, whereas a correspondence between Burmese and Hsihsia is found only in the words for 'spring' and 'autumn' (Nishida 1973:268).

'Fire' and 'Blow'. In the Lolo-Burmese languages 'fire' and 'blow' generally resemble each other.

	'fire'	'blow'
Wr.B	mi ²	hmut
Moso (Wei)	mi 44	mu 21
Nasu	mu 33 tu 44	mu 32
Nyi	m̩ 11 ty 55	m̩ 44
Ahi	m̩ 44 tɣ 55	m̩ 44
Hsihsia	m̩aN (L31)	m̩aN (L31)

'Fire' and 'blow' have the same phonemic form in Hsihsia and Nyi and Ahi Lolo.

However, the vowels -i in 'fire' and -u in 'blow' reflected in both Wr.B. and Moso (Weihsi), are considered to be the original Lolo-Burmese vowels. Cf. Wr.T. me 'fire', h**bu**d-pa 'blow'.

	LB	Wr.B	Moso	Hsihsia	Nyi,Ahi	cf. O.Jap.
'fire'	* mi	mi ²	mi	m̩aN	m̩-	ɸi'
'to blow'	*Cmut	hmut	mu	m̩aN	m̩	ɸuk-ɸu

Luquan Lolo mɔ 33 corresponds to Wr.B. mi² 'fire' and tshɔ 21 corresponds to Wr.B. chi 'oil'.

'Fat', 'ride', etc. Observe other forms whose vowel -ɔ corresponds to Wr.B. -i.

	Wr.B.	Lolo (Lu)
'place'	chi	dʒɔ 11
'to ride on'	ci ² -sañ	dʒɔ 11
'to rise'	khyi ² -sañ	tghɔ 55
'to be big'	kri ² -sañ	ɣwɔ 33 ⁵

⁵ Hsihsia and the Lolo-Burmese languages show the following correspondences for

'woman'	min ² -ma	ʔa 11 mɔ 33
'cloud'	tim	tɔ 33
'tail'	mri ²	mɔ 33

Although it could be argued that Nyi Lolo **tshz** 33 'to be fat; coarse animal oil' corresponds to Wr.B. **chi** 'oils and fats', Ahi Lolo **tsho** 44 'to be fat' to Wr.B. **chu** 'to be fat'. I suggest considering that, except for the cases where -ɔ corresponds to Burmese -i as in Luquan Lolo, there were two stem forms: one with the vowel -i and the other with -u, which contributed to the semantic distinction between ***chi** 'lump of oil' and ***chu** 'to be fat' at the Lolo-Burmese stage.

	Wr.B.	Wr.T.	Hsihsia	Moso (Li)
'oil'	chi	tshil		
'lean'		tshil-med		
'fat, not melted'		tshil		
'fat, greasy'		tsho-ba	tshu (L1)	
'fat'		tshil-can		
'fat-flesh'				tshar 11

As indicated earlier, Luquan **dzɔ** 11 corresponds to Wr.B. **ci²** 'to ride (on a horse)'. Other related morphemes exist.

Wr.T. **hchib-pa** ~ **hchibs-pa** (resp.) 'to mount' corresponds to Wr.B. **ci²**. In Tibetan there is another common form **zhon-pa** 'to ride'; **rta-la zhon-pa** 'to ride on a horse'. Moso (Li) **ndzæ** 44 'to ride (on a horse)' **zwa** 44 **ndzæ** 44 'to ride on a horse' is thought to correspond to the latter forms.

Hsihsia has the following three forms, the last two distinguished by tone. The noun is indicated by a level tone (L) and the verb by a rising one (R).

tʃhiʃ (L29)	'to ride' (on a horse)
ʳdze (R34)	'to ride' (on a horse)
ʳdze (L37)	'riding'

The above form **tʃhiʃ** is cognate with Wr.B. **ci²** and Wr.T. **hchib-pa**. **ʳdze**, which is cognate with Moso **ndzæ** 44, corresponds to Wr.T. **zhon-pa**.

Tonal Differentiation. In Hsihsia we find a few other cases where the tone distinguishes between a noun and a verb.

	Hsihsia	Moso (Wei)	Moso (Li)
'shoulder' (N)	<u>w</u> a (L63)	khui 33 phi 21	
'to carry on' (V)	<u>w</u> a (R56)	mpo 15	mbo 11
'equality' (N)	<u>k</u> aʃ (L17)		
'to equate' (V)	<u>k</u> a (R56)		

'Sun' and 'Day'. In Written Tibetan **nyi-ma** 'sun' and **nyin-mo** 'day' are distinct, but Burmese and Moso have the following forms:

'to be big' and 'to know'.						
	Hsihsia	Wr.B. Nyi	Ahi	Nasu	Luquan	Wr.T.
'to be big'	lɛ (R54)	kri ² -jæ 11	ʔa 21	uɔ 33	ʔwɔ 33	che-ba
'to know'	sɛ (R54)	si ³ -sa 55	sa 55	sə ³ 55	sə ³ 55	shes-pa

	Wr.B.	Moso (Wei)	Moso (Li)
'sun'	nei	ni 33 me 33	ni 33 me 33
'day'	nei ³	ni 33 pua 21	ni 33
'today'	i-nei ³	tshl 33 ni 33	tshu 33 ni 33

Another form bi 33 'sun', known to be an older form, is used in Moso when chanting a sutra.

'Sun' and 'day' are generally distinguished in the Lolo languages.

	Ahi	Nyi
'day'	ni 44, ni 44 pa 11	n 33
'sun'	li 55 tqi 22, tqi 22 (zo 21)	lo 11 tsz 33 ma 33

In Luquan Lolo a distinction is made between tha 11 ni 11 'today' and dzi 11 'day'. The latter form dzi corresponds to Ahi tqi 22 and Nyi tsz 33, while ni 11 in the former is clearly cognate to Ahi ni 44, Nyi n 33.

On the other hand 'sun' is mu 33 tshu 44 in Nasu and ɔ 33 tshɔ 55 in Hani. These forms correspond to Luquan tshu 55 'sunlight' and are thought originally to have had the meaning 'the sun's heat'.

In Hsihsia we find m₁ ~ mb₁ (R7) 'sun', n₁N (L32) 'daytime', neh (L36) 'day', s₁h (R42) 'sun'. M₁ ~ mb₁ corresponds to Moso bi, n₁N to Wr.T. nyin, neh to Wr.T. nyi- and Wr.B. nei and s₁h to Lolo *tshɔ and Moso so 11 'early morning'.

'Tree', 'Wood', and 'Liver'. 'Tree', 'wood', and 'liver' present clearly parallel correspondences.

	Hsihsia	Wr.T.	Wr.B.	Nyi	Ahi	Moso (Wei)	Moso (Li)
'tree, wood'	-s ₁ h (L11)	shing	sac	s ₂ 44	si 44	s ^h 33	s ^h 33*
'liver'	-s ₁ h (R10)	mchin-pa	a-sa ^h	s ₂ 11	ke 22	s ^h 55	s ^h 55 *'brush'

By comparing another example with 'tree':

'tree'	-phu (R1)	sdong-po	sac-pang	s ₂ 44	tse 22	nts ^h 21	ndz ^h 11
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we see that 'tree' in Hsihsia is cognate with Chiang phu (which is related to Wr.B. pang) and in Moso (Li) the original meaning of 'tree' changed to 'brush' and the old voiced form was preserved for 'tree, wood'. The Weihsi dialect of spoken Moso is characterized by the change of this voiced initial into a voiceless one with prenasalization.⁶

Voiced and Voiceless Prenasalized initials. Another morpheme shows an important correspondence between the voiceless prenasalized nts- of Spoken Moso and the voiced prenasalized ndz- of Written Moso: Moso (Weihsi) ntso 21: Moso (Li) ndzo 11 'bridge'. The correspondence in tone is also considered to be regular: Moso (Weihsi) 21: Moso (Li) 11 → Low. Hsihsia son (L50) and Wr.T. zam-pa. These forms also correspond to Luquan ntse 11, a form in opposition to ntsh^h 11 'bridge' and to ntsh^h 33 'to cross (a river)'. It could be assumed that ntsh- in both of these forms were originally voiced and underwent a

⁶ Cf. O. Jap. ki 'tree' : ki-mo 'liver'.

process to make it voiceless i.e. *ndz- > ntsh-, or vice-versa. To ntshe 33 'to cross (a river)' corresponds to Hsihsia ^hdzīah (L21) 'to cross (a river)'. In Lolo there exists gw 55 'to cross', which is cognate with Hsihsia ngīuh (L3) 'to cross'.

Another morpheme which is voiced in Written Moso, Written Tibetan, and Hsihsia (on the one hand), and (on the other hand), voiceless in Spoken Moso and Lolo is: Moso (Li) ndzur 44 : Moso (Wei) ntso 41 Hsihsia ^hzur (R76). (The correspondence in tone is Moso (Li) 44 : Moso (Weihsi) 41 ---> High. The rising tone in Hsihsia might also be a regular correspondence.)

These forms are cognate with Wr.T. zil-pa 'dew, dew-drop', (zil-dkar hoar-frost). On the other hand, in the Lolo languages we find Nyi tsz 55 'dew', tsz 55 z 33 'dew-drop', Ahi tci 55 zo 21 'dew-drop', tci 55 tho 22 'hoar-frost', Luquan tsz 55 'dew', tsz 55 thy 33 'hoar-frost', all cognate with Wr.B. chi² 'frost' (chi²-hng 'dew'). These forms contrast as follows:

Moso (Li) ndzur 44 : Hsihsia ^hzur ; Wr.T. zil-pa TB *dzil ~ *dzur
 Ahi tci 55 : Nyi tsz 55 ; Luquan tsz 55 Wr.B. chi² LB *chi²

Written Moso and the Weihsi dialect display the same kind of pattern for 'snow':

Moso (Wei) mpe 33, Moso (Li) mbz 44 , Hsihsia wi (L67), Lolo
 Luquan vu 33, Ahi wo 21, Nasu vr 21, Wr.B. mo²pwang³.

Compound-formation. It is important in the comparative study of languages to find correspondence between languages not only in terms of morphemes but also in the formation of compounds. For example, in comparing Wr.B. na phu² 'forehead' and Nyi tci 44 phy 22 'forehead', what corresponds is the second morpheme; the first morphemes are different from each other. In contrast, the following example displays a clear correspondence in word-formation as well. Wr.B. na phu² 'the forehead' : Luquan na 2 by 11 (written language for sutras).

The first two morphemes in Hani nɔ 55 xu 33 lu 55 'forehead' are thought to be cognate with the above morphemes, but there is an additional morpheme lu 55 in Hani. This lu 55 is cognate with the first morpheme in Moso (Weihsi) lu 55 pu 21 'forehead' and is supposed to be related to the second morpheme in Hsihsia niē (R68) la (L64) 'forehead'. Hsihsia niē means 'face' and Wr.B. na-, Luquan na²- and Hani nɔ- 55 might also have meant 'face'. (Cf. Nyi-Lolo to 11 ne 44 'eyelid').

Thus compound-formation in each of these languages can be summarized as follows:

'forehead'	Wr.B.	na	phu ²
	Luquan	na 2	by 11
	Nyi-Lolo tci 44		phy 22
	Hani	nɔ 55	xu 33 lu 55
	Moso (Wei)		lu 55 pu 21
	Hsihsia	-niē	la

'Die' and 'kill'. In many of the Tibeto-Burman languages 'to die' and 'to kill' are related to each other.

		Moso	Moso		
	Wr.T.	(Li)	(Wei)	Hsihsia	Wr.B. Nasu Nyi
'to die'	shi-ba < hchi-ba	ɣu 44	ɣl̥ 33	sɿ (L30)	sei-saŋ̃ ɕi 44 sɿ̃ 33
'to kill'	gsod-pa < gsad-pa	sy 55	sy 55	saŋ̃ (L20)	sat-saŋ̃ si 55 xa 11

As is reflected in the Wr.T. forms, both the opposition of initial consonants (**sh-** : **s-**) and that of vowels (**-i** : **-ad**) were originally utilized to indicate the semantic difference, but in many Lolo languages only the vowel opposition remains.

'Medicine', 'color', and 'to dye'. Wr.B. **chi**² 'medicine' has cognates throughout Lolo, including in Moso and Hsihsia.

		'medicine'		'to take medicine'
Nyi		na 33	tshz 11	
Ahi		nou ³ -ts'e ⁴		
Luquan		tshi 33		
Moso (Li)		tshar 44		
Moso (Wei)		tshə ² 55	ɣu 55	tshə ² 55 ɣu 55 thl̥ 21
Wr.B.		chi ²		chi ² ca ² -saŋ̃ (lit. to eat medicine)
Hsihsia		tsɿ (L68)		

Apart from this group of forms, Luquan Lolo has another form **me 22**, corresponding to Wr.T. **sman**. The noun and the verb forms are distinguished by tone in Luquan Lolo. **me 22** seems to be a remnant of the old form which had been preserved in the chanting of sutras.

		Luquan	Wr.T.
'medicine'		me 22	sman
'to take medicine'		me 11	
'to eat medicine'			sman za-ba
'to drink medicine'			sman hthung-ba

For comparison with the Hsihsia form meaning 'medicine', we might note a phonemically-identical form meaning 'color'. We also see a clear correspondence between Hsihsia, Written Burmese and Moso with regard to a related form meaning 'to dye'.

	Hsihsia	Wr.B.	Moso (Wei)
'color'	tsɿ (L68)	chei ²	tshə ² 55 ɣu 55
'medicine'	tsɿ (L68)	chei ²	(za 55) tshər 21
'to dye' ⁷	tshih̥ (L3)	chei ² cho ² -saŋ̃	

Hsihsia has another word **law (L22)** 'to dye'. This leads us to think of the existence of a LB verb ***rɔŋg-saŋ̃** 'to dye', which is associated with Wr.B. **a-rɔŋg** 'color', which would probably be the origin.

'To wash', 'six', 'year', and 'waist'. The well-attested correspondence between Wr.B., Moso and Hsihsia exemplified by 'medicine' and 'color' is not paralleled by 'to wash':

Hsihsia siew (L46) : Wr.B. chei²-saŋ̃ : Moso (Li) tshar 33

⁷ The Wr.B. means 'to dye a color'. Note also that the Hsihsia characters 'color' and 'to dye' share a semantic component.

On the other hand, the Hsihsia numeral 'six' with a level tone 46 rime shows a different pattern:

Hsihsia tšh¹iew (L46) : Wr.B. khɔɔk /tšhau?/ : Moso (Li) tšhwa 55 :
 Moso (Wei) tšhuɛN 55 : Wr.T. drug /ɔuk/ : Nyi khu 22 : Ahi tšhu 44 :
 Nasu tɕu 44 (tɕhu 44?)

The same can be said of the forms meaning 'year' and 'waist', both of which have a level tone 45 rime in Hsihsia.

	Hsihsia	Wr.B.	Moso (Wei)	Moso (Li)	Nasu	Luquan
'year'	kiəw (L45)	khu ³ -hnac	khu 55	khy 55	khu 44	khu 55
'waist'	ndziəw (L45)	kha ²	th ¹ 55	tshu 55	dzu 55	

'Foot' and 'dog': 'open-mouthed' and 'closed-mouth' rimes. The forms meaning 'foot' and 'dog' show the distinction between *kai khou* 'open-mouthed' rimes and *he khou* 'closed-mouthed' rimes.

	'foot'	'dog'
Hsihsia	kh ¹ i (L30)	kh ^w i (L30)
Wr.B.	khrei < khriy	khwei ² < khuy ²
Nyi	tsh ² 11 be 44	tsh ² 11
Ahi	tɕhi 22 bie 22	tɕhi 21
Nasu	tɕhi 44 pha 21	tɕhi 33
Moso (Wei)	khua 33	khua 41
Moso (Li)	khui 44	khua 44

These indicate that many of the Lolo languages have lost the distinction between *kai kou* rimes and *he kou* rimes.

Hsihsia's complicated rime system. It is not entirely clear why Hsihsia has a complicated rime system, but the major reason may lie in the loss of the final consonants from former -VC forms and the creation of new -VV forms. Let us compare some Written Tibetan forms with Hsihsia forms:

	Hsihsia	Wr.T.		
'figure'	-su (R1)	gzugs	-ugs	: -u
'form, character'	-tu (R1)	tshul	-ul	: -u
'to rub'	šiu (L2)	shud-pa	-ud	: -u ⁸
'to be able'	-ni ^h (R10)	nus-pa	-us	: -ih
'to sink'	ni (L67)	nub-pa	-ub	: -i
'pig'	-vaf (L17)	phag	-ag	: -af
'needle'	-yaf (L17)	khab	-ab	: -af
'to take'	-hli ^w if (L11)	len-pa	-en	: -ih
'endless'	-si ^h (L11) ⁹	zin-med	-in	: -ih
	-meh (L36)		-ed	: -eh etc.

⁸ cf. Wr.B. sut-sañ 'to wipe'.

⁹ The following correspondence is observed in expressions accompanied with forms of negation.

	Hsihsia	Wr.T.	Wr.B.
'number'	-ɔziər (R78)	grangs	
'innumerable'	-ɔziər meh	grangs-med-pa	
'continually'	-mi ^h (L11) -pah (R17)		ma-prat

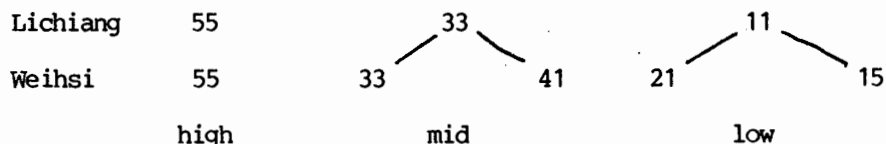
With the examples above, the loss of the final consonants -d, -gs, -l, -b, -n etc. can be dealt with in a simple way. However, examining the correspondences in a wider context, we discover that the change from -VC to -VV in Hsihsia was not a mere series of simple changes; rather, the language underwent a complicated process¹⁰ in which mergers and splits were repeated to form the complicated rime system of the 11th century. This is clearly reflected in the fact that several Hsihsia morphemes which might be expected to have forms identical with those in closely-related languages actually have quite distinct forms.

In contrast to Hsihsia, the Lolo languages lost the final consonants much later and in a rather regular way. This is thought to be the reason why complicated rime systems such as in Hsihsia were not created.

In general terms, the CVC forms in common LB developed into Hsihsia forms in one direction, into Moso forms in another direction and into the forms in other Lolo-Burmese languages in the other directions, according to the peculiarities of the various languages. After several stages of development, Hsihsia had reached the most complicated CVV forms by the 11th century. Thus the problem is to what degree can we establish, through comparing the developmental courses of later stages, the common -VC forms which convincingly explain the realization of the various forms.

In short, to a surprising extent the history of the Lolo languages has been a process of reducing and simplifying phonemic shapes (Nishida 1980).

Moso and Spoken Weihsi correspondences. The reading forms based on the Lichiang dialect of Moso and Spoken Weihsi forms show fairly regular correspondence. The basic pattern of tonal correspondences is as follows:



The voiced consonants with prenasalized initials in Lichiang correspond to voiceless consonants with prenasalized initials in Weihsi.

	(1)	(2)	(3)	(4)	(5)	(6)
Lichiang	mb-	nd-	ŋg-	ndz-	ndz-	ndz-
Weihsi	mp-	nt-	ŋk-	nts-	nts-	nc-

		Lichiang		Weihsi
(1)	'urine'	mbi 33		mpi 33
	'kidney'	mbv 33 lv 33		mpy 33 ly 33
	'snow'	mbɛ 33		mpe 33
	'bee'	mbɹ 33		mpɛN 41
	'mosquito'	mbur 33 tsʌ 11		mpɛN 33 tsʌ 33
	'light'	mbo 33		mpo 41

¹⁰ Such processes are also assumed to have included the combination of a stem and a suffix. 'ear', mentioned above, and a verb form -*ɬh* serve as examples. For a discussion of the B type verb form -*ɬh*, see (Nishida 1976b, 1977).

	'fly'	mbur 33 rar 55	mpɔ 21 lɔ 55
	'to carry on'	mbo 11	mpo 21
(2)	'to fall down'	ndo 55	nto 55
	'foolish'	ndo 11	nto 21
	'drum'	nda 33 kha 11	nta 33 ku 21
(3)	'nine'	ŋgv 33	ŋku 33
	'sinews'	ŋgv 33	ŋku 41
	'thunder'	mu 33 ŋgv 33	mu 41 ŋku 21
	'sick'	ŋgo 11	ŋko 21
(4)	'to eat'	ndzɯ 33	ntsɿ 33
	'to sit'	ndzɯ 11	ntsɿ 21
	'to sing'	ndzʌ 33	ntsʌ 55
(5)	'mud'	ndzɤ 11	ntsɛN 15
	'to brew'	ndzʌr 33	ntsɤ 41
	'to fall'	ndzɔ 11	ntso 21
	'leopard'	ndzɯ 33	ntsɤ 33
	'dew'	ndzur 33	ntsɔ 41
(6)	'to roast'	ndzi 55	ncçi 55
	'to walk'	ndzi 33	ncçi 41
	'vegetables'	ndzo 33	ncçio 33

In the following example it is not clear whether this is an exception to the correspondence pattern or an erroneous description of the sounds.

'to sweep'	bɤ 33	mpɛN 21
'to weave'	da 11	nta 15

In fact, there are a fairly large number of cases where we question the description of sounds. For example, if the correspondence of Lichiang -ur and -o to Weihsi -ɔ and -o, respectively, is regular, represented by

'to write'	pur 55	pɔ 55
'to have'	po 55	po 55
'pig'	bo 11	bo 15
'to see'	do 11	do 21
'knife'	zur 33	zɔ 41

then we are tempted to suspect that the Weihsi dialect forms which appear in 'a comb' Lichiang kv 33 pur 55, Weihsi po 55 and 'fine-toothed comb' Lichiang pur 55 tsa 33, Weihsi po 55 tsɿ 21 might have had pɔ 55 with the more open vowel in their actual form. However, there is no way at present to verify this.

TIBETO-BURMAN COGNATES OF OLD CHINESE *-ij AND *-ij

William H. Baxter III

O. Introduction

Paul Benedict, in his *Sino-Tibetan: A Conspectus* (1972, hereafter *STC*), reconstructs the final *-iy (modified in the footnotes to *-ɔy) for Tibeto-Burman (TB; p. 59-62).¹ He also shows a number of comparisons with Chinese which seem to indicate that TB words with this final generally correspond to Chinese words reconstructed by Karlgren with the finals *-iər and *-iəd in Archaic Chinese (p. 184-186). This correspondence is supported by many convincing examples; but recent research in Old Chinese phonology suggests that it may now be possible to make a more precise statement of this correspondence. In a volume dedicated to Paul Benedict, it seems especially appropriate to follow up in this way on one of the many fruitful hypotheses in Sino-Tibetan studies which he has proposed and investigated.

It has been proposed by Wáng Lì, and widely accepted, that the Chinese words which Karlgren reconstructed with *-(i)ər and *-(i)əd should be divided into two groups: a Zhī 脂 group, having a front vowel, and a Wēi 微 group, having a non-front vowel (Wáng Lì 1937). In a recent paper (Baxter 1980b), I have argued that Wáng's proposal, while basically correct, is in need of revision. I reconstruct two Old Chinese (OC) finals, *-ij and *-ij, corresponding to Karlgren's finals in *-ər, arguing that the *-ij words and the *-ij words are distinguished both in rhyming and in the writing system of Old Chinese, and that both kinds of evidence support my revisions of Wáng's proposal.

This proposal suggests the following questions: Does TB *-iy (= *-ɔy) correspond to both OC *-ij and *-ij, or only one? If only one, which one? The present paper addresses these questions. I will argue that (1) the best-established Chinese cognates of TB *-iy (= *-ɔy) have the Old Chinese vowel *i, not *i -- either in the final *-ij or in the 'suffixed' finals *-it or *-in; and (2) Chinese words with the final *-ij (including those newly reconstructed with this vocalism in Baxter 1980b) have cognates with various other TB finals, mostly with non-front vowels, including TB *-al, *-ar, *-oy, *-ul, and *-ur. Thus the OC distinction between *-ij and *-ij seems to be confirmed by corresponding distinctions in Tibeto-Burman.

The paper will have the following parts. Part 1 will review those

¹ Reference to *STC* will be both by page number and by footnote number, where applicable: e.g. '*STC* p. 57, n. 188' means page 57, footnote 188.

portions of Benedict's TB reconstruction which are most relevant to the present topic. Part 2 will summarize the proposed distinction in Old Chinese between $*-ij$ and $*-i_j$ and give criteria for deciding between them in reconstructing individual words. Part 3 will present proposed Chinese cognates with TB roots in $*-iy = *-ay$, showing that these words generally have OC $*i$ rather than OC $*i$. Part 4 will present possible TB cognates of Chinese $*-ij$. Finally, part 5 will sum up and discuss the implications for Sino-Tibetan reconstruction.

1. Tibeto-Burman reconstruction

The vowel system set up in the text of STC includes the vowels $*a$, $*e$, $*i$, $*o$, and $*u$ (p. 57); this system is expanded in the footnotes to include a vowel $*ə$ (p.57, no. 188). A length distinction is also reconstructed to account for contrasts in Lushei and some other languages (p.170). TB syllables may be open, or may end with semivowels $*-y$ and $*-w$, liquids $*-r$ and $*-l$, nasals, or voiceless stops. Since OC final $*-j$ (roughly = Karlgren's $*-r$, sometimes $*-d$) seems to correspond mostly to TB $*-y$, $*-r$, and $*-l$, it is mostly roots with these endings, or with open syllables, which will concern us. It will help to examine a small subsystem of finals somewhat more closely; see Table 1.

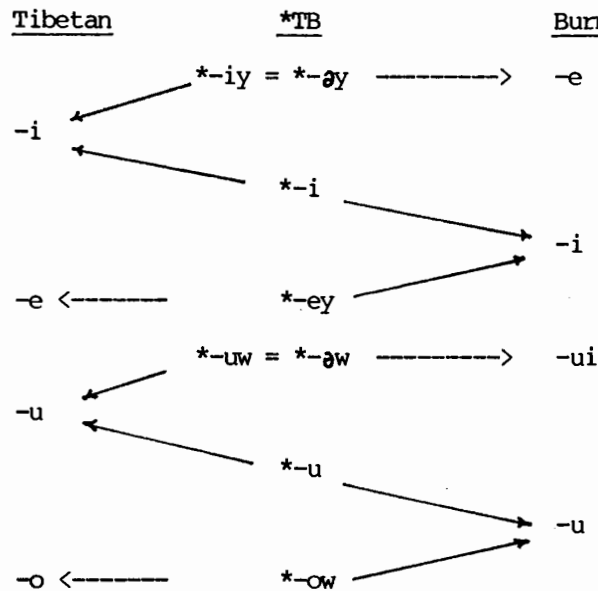


Table 1: Selected TB correspondences

The correspondences in Table 1 seem fairly well established. The finals $*-iy (= *-ay)$ and $*-i$ are distinguished only in Burmese-Lolo; $*-uw (= *-əw)$ and $*u$ are distinguished in both Burmese-Lolo and Nung. When cognates in these critical branches are not available, the notations $*-i(y)$ and $*-u(w)$ are used (STC, p. 59ff.) The reconstructions $*-iy$ and $*-uw$ are used in the text of STC; in the footnotes, $*-ay$ and $*-əw$ are substituted as 'preferable' (p. 57, no. 188), although the reasons for this change are not given in detail. In the reconstruction system for Old Chinese being used here, as we shall see, TB $*-iy (= *-ay)$ corresponds to OC $*-ij$; similarly, TB $*-uw (= *-əw)$ corresponds to OC

*-u (which could perhaps be written *-uw), so the Chinese evidence now seems to agree better with the original reconstructions *-iy and *-uw (see discussion in section 5 below). In this paper, however, I will simply write TB *-iy (= *-əy) and *-uw (= *-əw), leaving the question open.

The final *-iy (= *-əy) also occurs with a preceding *-w-, which is preserved in certain languages, e.g. Burmese (B), and not in others, e.g. Tibetan (T). Examples:

TB *kwiy (= *kway) 'dog' (STC #159): T khyi, B khwê

TB *bwiy (= *bway) 'bamboo rat' (STC #173): T byi-ba 'rat, mouse', B pwê 'bamboo rat'

TB *mwiy (= *(r-)mway ~ *(s-)mway) 'sleep' (STC #196): T rmi-ba 'to dream', B mwe 'sleep, enjoy sleep'

Note that TB *-iy (= *-əy) and *-wiy (= *-way) contrast after labials; cf. the last two examples above with

TB *piy (= *pay) 'grandmother' (STC #36): T ?a-phyi ~ phyi-mo 'grandmother', B ə-phê 'great-grandfather', ə-phê-ma 'great-grandmother'

This occurrence of *w in Tibeto-Burman differs from the situation assumed for Old Chinese, where no independent medial *w is reconstructed; the back rounded medial of Middle Chinese is assumed to come either from a rounded main vowel or from a labialized initial of the form *K^w- (as in Jaxontov 1959-60, Pulleyblank 1961-62, F.K. Li 1971). If a freely occurring medial *-w- existed in the parent Sino-Tibetan language, we must conclude that it was lost in Chinese in certain environments.

2. Old Chinese reconstruction

In STC, comparisons of TB reconstructed roots with Chinese were made on the basis of Karlgren's Archaic Chinese reconstruction (which corresponds to the stage referred to here as Old Chinese), and in terms of this system, Karlgren's *-iəd or *-iər regularly correspond to TB *-iy = *-əy. As noted in the introduction, however, it is now widely agreed that the group of words which Karlgren reconstructed with *-ər and *-əd finals (roughly, the traditional Zhī 脂 rhyme group in the system of Jiāng Yǒugào) should be split into a front-vowel group labeled Zhī 脂 and a back-vowel group labeled Wēi 微. This proposal is supported by evidence from both OC rhymes and phonetic series, and has been incorporated into most other OC reconstruction systems (e.g., Dǒng Tónghé 1948 reconstructs *-ied for Zhī and *-əd for Wēi; F.K. Li 1971 uses *-id for Zhī and *-əd for Wēi). Thus these later reconstructions distinguish among finals which are not distinguished in Karlgren's system. Examples are given in Table 2.²

² Here and throughout the paper, citations of Dǒng Tónghé's Old Chinese reconstruction are based on Zhōu Fǎgōu 1963, which serves as an index to Dǒng Tónghé 1948. Reconstructions in Li's system follow Li 1971 and Li 1976. In some cases I have supplied reconstructions in Karlgren's, Dǒng's, and Li's systems when none were available for particular words; such extrapolations are

Example		Karlgren	Dong	F.K. LI
媿	kjwi:3 'ashamed'	*kiw _{er}	*kiw _{əd}	[*kwjiədh]
癸	kjwi:4 'cyclical sign'		*kiw _{əd}	*kwjid _x
悲	pji ₃ 'grieve, sad'	*pi _{ər}	*piw _{əd}	*pjiə _d
比	pji:4 'compare'		*pi _{əd}	*pjid _x

Table 2: Contrasts between the Zhī group and the Wēi group

The discovery of the distinction between the Zhī and Wēi groups also made it possible to clarify the distinction between the so-called *chóngniǔ* doublets of Middle Chinese. These were pairs of syllables which were distinguished in the Middle Chinese system of the *Qiè-yùn* and in the rhyme tables such as the *Yùn-jīng* (where one type of syllable was placed in the third row of the table and the other in the fourth row). Karlgren overlooked this distinction in his Ancient Chinese reconstruction (= our Middle Chinese, MC) also, which meant that in cases such as those in Table 2, Karlgren not only failed to account for the rhyme and graphical evidence of Old Chinese, but even failed to account for an important distinction of Middle Chinese. (In the MC transcription used in this paper, which is based on Karlgren's, the *chóngniǔ* syllables are distinguished by adding subscripts '3' and '4'.)

Although Wáng Lì's proposal (1973) to distinguish between the Zhī and Wēi groups was a great step forward, many difficulties remained in reconstructing individual words, and some uneasiness has been expressed over this state of affairs (e.g. Li 1971:34-35). I argued in Baxter 1980b that most of these problems resulted from the fact that the boundary between the Zhī and Wēi groups had not been correctly drawn. For one thing, the reconstruction of *chóngniǔ* words in MC -ji₃ and -ji₄ has still been very inconsistent and unsystematic. But the basic error, I believe, was the assumption that MC syllables of the form Tiei and Tji (that is, syllables with no rounded medial and with acute — [+ coronal] — initials) must come from the front-vowel Zhī group rather than from the Wēi group. No such assumption is made for the parallel nasal-final syllables like Tien and Tjěn; all are agreed that such syllables can come from either the Zhēn 真 group (Karlgren's *-ien) or the Wén 文 group (Karlgren's *-ən). Moreover, there are certain common words of the form Tiei or Tji (including 西 siei 'west', 夷 ji 'barbarian; level, even', 私 sji 'private', 遲 dji 'tarry, late', 妻 tshiei 'wife', and words in these phonetic series, to cite the clearest cases) which quite clearly rhyme with Wēi-group words, not only in the *Shī-jīng*, but down to late Hàn and probably even later in certain dialects. Some of these words also occur as loan-words in Vietnamese (presumably earlier than the Sino-Vietnamese stratum) with previously unexplained readings in -ây, e.g. 遲 V chây 'to be late' (Sino-

indicated by square brackets.

Vietnamese (SV) *trì*, 私 V *tây* 'private, personal' (SV *tu*), 犀 MC *siei*, V *tây* 'rhinoceros' (SV *tê*), 西 V *tây* 'west' (for details see Baxter 1980b.) This *-ây* final agrees well with **-ij*, the OC reconstruction I propose for these words.

The reconstruction scheme of which this proposal is a part (developed in Bodman 1971, Baxter 1977, 1978, 1979, 1980, 1980b) assumes the following six-vowel system

*i	*ī	*u
*e		*o
*a		

Words in the Zhī and Wēi groups are assumed to end in the semi-vowel **-j* (which generally replaces the **-r* and **-d* of other systems), preceded by one of the high vowels **i*, **ī*, or **u*. Generally, **-ij* corresponds to the Zhī group while **-īj* and **-uj* correspond to the Wēi group. It is claimed that **-ij*, **-īj*, and **-uj* are all distinguished in OC rhyming and generally in the writing system as well. (The final **-uj* accounts for certain rounded (hékǒu) finals in the Wēi group, in a manner first proposed by Jaxontov 1959-60; this problem is discussed in Baxter 1980b but is outside the scope of this paper.) By the Middle Chinese period, **-īj* merges with **-ij* after acute consonants:

死	*sjij:	>	sji:	'die' (GSR 558 1)
私	*sj̄j	>	sji	'private' (GSR 557b)

A similar merger occurs after medial **r*, even with a grave ([-coronal]) initial; when medial **j* is present, this produces the division-3 chóngniǔ final *-jī3*:

耆	*grjij	>	gjī3	'old' (GSR 552 1)
覿	*krj̄js	>	kjī-3	'to long for' (GSR 548j)

The contrast between **-ij* and **-īj* survived after grave consonants, even in syllables with medial **j*:

比	*pjij:	>	pji:4	'compare' (GSR 566g)
飛	*pj̄j	>	p̄jei	'to fly' (GSR 580a)

Note that **jij* after a grave initial is the only source of MC *-jī4*. The infrequency of syllables like **kjī4* in Middle Chinese is accounted for by assuming that syllables like **Kjij* usually palatalized to MC *ts̄ji* (e.g. the word Zhī 脂 itself, MC *ts̄ji* 'fat' < **kjīj*, in the same phonetic series as 耆 'old' *gjī3* < **grjij* above), as proposed by Pulleyblank (1961-62:98-105, with different notation).

The reflexes of **-ij* and **-īj* in combination with various initials and medials are summarized in Table 3.

Finals occurring with grave initials:

<u>Zhī</u>		<u>MC</u>		<u>Wēi</u>
		- <u>âi</u>	<	*- <u>īj</u>
*-rij	>	- <u>ǎi</u>	<	*-r <u>īj</u>
		- <u>jei</u>	<	*-j <u>īj</u>
*-rjij	>	-ji ₃	<	*-rj <u>īj</u>
*-jij	>	-ji ₄		

(Hékǒu syllables are parallel.)

Finals occurring with acute initials:

<u>Zhī</u>		<u>MC</u>		<u>Wei</u>
*-rij	>	- <u>ǎi</u>	<	*-r <u>īj</u>
*-(r)jij	>	-ji	<	*-(r)j <u>īj</u>
*-ij	>	-iei	<	*- <u>īj</u>

Table 3: Reflexes of *-ij and *-īj

According to the proposed reconstruction, then, we may establish the following criteria for deciding between *-ij and *-īj in the reconstruction of any particular word:

1. Grave-initial words with the MC finals -âi and -jei must be reconstructed with *-īj.
2. Grave-initial words with the MC finals -ji₄ and -iei must be reconstructed with *-ij.
3. Any other word with one of the finals listed in Table 3 (provided it is not in another OC rhyme category) must be reconstructed with *-ij or *-īj on the basis of other evidence, primarily (1) Old Chinese rhymes with known *-ij words or *-īj words, (2) contacts in phonetic series with known *-ij or *-īj words (or sometimes with words having the parallel finals *-in or *-īn), and (3) use as a loan character for a known *-ij or *-īj word, or vice versa.

Several caveats must be observed in applying these criteria: MC readings are sometimes artificial; rhymes are sometimes irregular or influenced by dialect developments; the writing system sometimes reflects the phonology of a later period than that being reconstructed; and Old Chinese texts are sometimes corrupt. For some words there is little reliable evidence of the required types, and the reconstruction must remain uncertain. In many cases, however,

several kinds of evidence point in the same direction.

A further feature of the proposed reconstruction which should be noted is that MC *qùshēng* ('going tone') is assumed to come from an original **-s* suffix. Under this proposal, original **-its*, for example, merges rather early with original **-ijs*, and it is often difficult to determine which reconstruction to choose. (This is parallel to the problem of choosing between final **-r* and **-d* in Karlgren's system.) Since the main concern of this paper is vowel correspondences, most such unresolved questions will be left open.

3. Chinese cognates of TB **-iy* (= **-əy*)

The examples given in this section will illustrate Chinese correspondences with TB **-iy* (= **-əy*). Comparisons are given in the following form: The Chinese character will be listed with a brief gloss, MC reading, and OC reconstruction according to the proposed system. Next will come a reference to Karlgren's *Grammata Serica Recensa* (GSR, which is usually the source of the gloss also), with the reconstructions of Karlgren, *Dǒng Tónghé*, and F.K. Li for comparison (see footnote 2). Where available, the Tibeto-Burman reconstructed form is given next, with gloss and number in STC (where no TB reconstructed form is available, forms from specific languages or subgroups are given.) I have tried to identify the source of comparisons previously proposed by others (e.g. for STC, by citing page and footnote numbers). Finally, I will present evidence, where it exists, for the choice between **-ij* and **-iɰ* in the Old Chinese reconstruction, according to the criteria outlined in section 2. All examples are numbered consecutively within the paper.

Usually I have included only examples which show plausible correspondences between Tibeto-Burman and Old Chinese, not only in vowels but in consonants also. These consonant correspondences have not been worked out in detail, however; although we assume that TB labials can correspond to OC labials, for instance, we do not know whether TB **b* corresponds regularly to OC **b*, **p*, or **ph*. The widespread influence of prefixes makes such details difficult to establish. For these and other reasons, not all examples can be regarded as equally certain; in fact, there are cases where two examples are given which seem to contradict each other. In such cases I simply give both possibilities and leave the question open.

First, we shall examine cognates of TB **-iy* = **-əy* suggested in STC itself:

1. 四 *sji* < **sjijs* or **sjits* 'four' (GSR 518a, K **sɰd*, D **sɰd*, L **sɰd*). Cf. TB **b-liy* (= **b-ləy*) 'four' (STC #410; see STC p. 185).

The vowel **i* is confirmed by the following *Shī-jīng* rhyme ode 53.1 (Yōng fēng: Gān máo) 紉 *bji*₄ 四 *sji*- 異 *pji*₄. The variant 馬 *sji*- 'team of four horses' (GSR 518e) also occurs as a rhyme: ode 222.2 (Xiǎo yǎ: Cǎi shū) 沸 *phji*₃ 噀 *xiwei*- 駟 *sji*- 屈 *kǎi*-. Note that *bji*₄, *pji*₄, and *xiwei*- must all have the vowel **i* by criterion 1 in section 2.

Since this is a *qùshēng* word, it is unclear whether to reconstruct **-ijs* or **-its*. The *Jí-yùn* mentions a pronunciation *sjét* in *Guānzhōng* (i.e. Shaanxi), but this need not necessarily indicate a final **t* in Old Chinese; the *Qiè-yùn* preface remarks that 'in Qín and Lǒng [i.e. Shaanxi and Gansu] *qùshēng* is *rù* (Qín Lǒng zé *qùshēng wéi rù*)'.

There are several possible explanations of the discrepancy of initials, the most plausible of which is that *s- was borrowed from the adjacent numeral 三 sam '3', a common process not only in Sino-Tibetan (STC p. 162) but elsewhere as well (cf. '4' and '5' in Germanic and Italic). There is some evidence within Chinese of a labial element in the initial (e.g., the word 杓 sji-'ladle' (GSR 518f) is defined in Shuō-wén (GL 2548)³ as 匕 pji-4 'ladle, spoon' (GSR 565a) — possibly a sound gloss, a cognate word, or both (see also the discussion in Pulleyblank 1961-62:127). The main vowel correspondence, at any rate, is clear.

2. 昇 pji-4 < *pjijs or *pjits 'give' (GSR 521a, K *piəd, D *piwəd, L [*pjidh]). Cf. TB *biy (= *bəy) 'give' (STC #427; see p. 185).

The MC final of this word requires us to reconstruct it with *i according to criterion 1 above; see also the rhyme in ode 53.1, quoted under example 1. Since Dǒng Tónghé assigns this word differently, let us examine the other words in the same series. The word 澗 phji-3 < *phrjijs or *phrjits and phiei < *phijs or *phits (river name) has the reading -iei which must indicate *i; it rhymes in ode 222.2 (quoted in example 1) and in the following sequence in ode 197.4 (Xiao ya: Xiao bian): 霰 xiwei- 澗 phji-3 屆 kǎi- 寐 mji-4. This sequence also confirms the *i vowel (see example 4 for 寐). The other major word of the series is 鼻 bji-4 'nose', also to be reconstructed with *i, although it does not rhyme in the Shī-jīng. Although Dǒng Tónghé reconstructs these words in the Wēi group, Wáng Lǐ (1937) assigns them, correctly, I believe, to the Zhī group.

3. 死 sji: < *sjij: 'die' (GSR 558 1, K *siər, D *siəd, L *sjidx). Cf. TB *siy (= *səy) 'die' (STC #232; see p. 185).

All the Shī-jīng rhymes of this word (odes 35.1, 52.3, and 110.3 — on the analysis of 35.1 see Baxter 1980b) are consistent with the reconstruction of *-ij. Although the words with which 死 rhymes could be either *-ij or *-ij words from their finals alone, their rhymes with other words show that they are to be reconstructed with *-ij (except for one rhyme with 弟 diei: < *dɨj: — see example 47 below). Also, in Lǎo-zǐ, which seems to distinguish *-ij and *-ij quite consistently, we have in section 6 the rhyme 死 sji: 牝 bji:4, where bji:4 must be reconstructed with *-ij because of its final (see ex. 6 below).

4. 寐 mji-4 < *mjijs or *mjits 'sleep; lie down to sleep' (GSR 531i, K *miəd, D *miwəd, L *mjiədh?). Cf. TB *mwiy (= *(r-)mwəy = *(s-)mwəy) 'sleep' (STC #196; see p. 185, n. 486).

Since this word has previously been placed in the Wei group, let us carefully examine the evidence for a *a vowel here:

First, the fact that this word has the MC final -ji₄ requires *-ij according to my proposal (criterion 1). In fact, a front-vowel reconstruction would be more consistent in the reconstructions of Dong Tonghe and F.K. Li also, where this word's development is exceptional.

Second, it rhymes with other *-ij words in the Shī-jīng — see ode 197.4

³ Shuō-wén references are given by page number in Shuō-wén jiě-zì gǔ-lín (Dǐng Fúāo 1928), abbreviated GL.

(quoted in example 2 above), and the following: ode 30.3 (Bèi fēng: Zhōng fēng) 瞳·iei- 瞳·iei- 寐 mji-4 嚏 tiei-, and ode 110.2 (Wèi fēng: Zhì hù) 季 kjwi-4, 寐 mji-4 棄 khji-4. All these rhyme words are reconstructed by Dong Tónghé and F.K. Li alike with front-vowel finals. The only reason for reconstructing this word with a back vowel seems to be the Shuō-wén's statement that 未 mjwei- (a Wēi-group word) is phonetic (GL 3304). The other evidence, however, clearly indicates *i.

5. 屎 śji: < *hljij: 'dung' (GSR 561d, K *śiər, D [*xied], L [*hrjidx?]). Cf. TB *kliy (= *kləy) 'excrement' (STC #125; see p. 185, no. 486).

Although the evidence on this word is somewhat indirect, it clearly points to the final *-ij. The character 屎 does not occur in the Shī-jīng with the meaning 'dung'; it does occur, however, as a loan character for a word meaning 'groan', normally written 呬 or 呬 and pronounced xji₄. As such it rhymes in a very long sequence of *-ij words in ode 254.5 (Dà yǎ: Bǎn): 憊 dziei 毗 bji₄ 迷 miei 尸 śji 屎 xji₄ 葵 gjwi₄ 賀 tsji 師 śji. Both the pronunciation xji₄ and the rhymes clearly indicate that the word 'groan' has *-ij, and this suggests that 'dung' also has *-ij. Moreover, the word 'dung' is quite frequently written in ancient texts with the character 矢 śji: 'arrow' as a loan character, and 'arrow' also appears to have the final *-ij, e.g. in ode 180.4 (Xiǎo yǎ: Jí rì) and 208.1 (Xiǎo yǎ: Gǔ zhōng). So this example seems well-established.

6. 牝 bji:4 ~ bjěn:4 < *bjij:(~*bjin:?) 'female of animals' (GSR 566i, K *b'iər and *b'ien, D *b'ied, *b'ien, L [*bjidx, *bjinx]). Cf. TB *pwi(y) 'female' (STC #171; see p. 158, no. 428).

Let us discuss the Chinese form itself first. Both the readings bji:4 and bjěn:4 are given in the Guǎng-yùn. Benedict attributes the nasal-final variant to a nasal suffix (STC p. 158, no. 428), which is certainly one possibility. Another possibility is that only the bji:4 reading goes back to Old Chinese, and that the bjěn:4 reading is of more recent origin, perhaps influenced by the frequent collocation 牝牡 'female and male', where 牡 has initial *m-.

At any rate there is no question about the reconstruction of *i in Old Chinese here; both readings clearly have division-4 chóngniǔ finals, as shown by their fǎnqiè spellings and their placement in the Yùn-jīng. A rhyme in Lǎo-zǐ with 死 sjji: < *sjij: was quoted in example 3 above.

We assume that OC had no medial *w, as noted above, except that accompanying labiovelar and labiodental stops. This need not have been the case for Sino-Tibetan, of course; we assume that both TB *Piy (= *Pəy) and *Pwiy (= *Pwəy) can correspond to Chinese *Pjij.

7. 妣 pji: < *pjij: 'deceased mother' (GSR 566n, K *piər, D *pied, L [*pjidx]). Cf. TB *piy (= *pəy) 'grandmother' (STC #36; see p. 185).

This word must have *-ij because of the final -ji₄. It rhymes twice in the Shī-jīng: ode 279 (Zhōu sòng: Fēng nián) is representative: 妣 tsji: 醴 liei: 妣 pji:4 皆(偕) kǎi(:). All these words should be reconstructed with *-ij. The other rhyme is in ode 290 (Zhōu sòng: Zài shān), an almost verbatim repetition of the passage in ode 279. Note: various sources quoted in Shuō-wén jiě-zì qū-lín (p. 5546) point out that many old texts use this word simply to mean 'mother', not necessarily deceased.

8. 涕 *ji* and *thiei-* < **ljij*, **hlijs?* 'mucus from the nose' (GSR 551f, K **diər*, **t'iar*, D **died*, **t'ied*, L [**rid*, **hridh?*]). Also 涕 *thiei:*, *thiei-* < **thij:*, **thijs?* 'weep, tears' (GSR 591m, K **t'iar*, D **t'ied*, L [**thidx*, *h*]). Cf. TB **ti(y)* 'water', also '(nose-water) snot' (STC #55; see p. 168, n. 449).

This comparison is rather uncertain for several reasons: (1) It is unclear whether 涕 and 涕 originally are different words or merely variants of the same word; although ancient commentaries distinguish them by saying that 涕 comes from the eyes while 涕 comes from the nose, there are cases of one character being used for the other; also, the phonetics 涕 and 涕 were easily confused in ancient writing (see Duàn Yúcai's notes to *Shuō-wén*, GL 5101). (2) There is strong evidence that both phonetic series normally indicate the final *-*ij* rather than *-*ij* (see examples 45, 46, 47, and 48 below). (3) The phonetic 涕, at least, generally indicates OC **l* rather than **t*, **d*, etc. (I assume **lj-* > MC *j-*, **hl-* > *th-*, **l-* > *d-*, following Pulleyblank 1961-62:114-117, 1973:116-117; thus the presence of MC *j-* and the absence of unaspirated MC *t-* in a series normally indicate **l-*.) If this comparison with TB is correct, it may be an exception to the pattern I am proposing. At the same time, the word 涕 occurs in a clear *-*ij* rhyme sequence in ode 203.1 (Da ya: Da dòng): 匕 *pji:*₄ 砥 *tsji:* 矢 *śji:* 履 *lji:* 視 *zji:* 涕 *thiei:*. All these words seem to be *-*ij* words (as indicated, for example, by the final of *pji:*₄ and the palatalization in 視 *zji:* < **gjij:*, GSR 553h; cf. 祚 *gjiz* < **grjij* in the same series, example 11 below). So perhaps the correct cognate is 涕, to be reconstructed **thij:* in spite of its phonetic.

9. 二 *nzji-* < **njijs* (or **njits?*) 'two' (GSR 564a, K **hiər*, D **niəd*, L **njidh*). Cf. TB **g-ni-s* 'two' (STC #4; see p. 169).

I know of no direct evidence within Chinese that this word must be reconstructed with **i* rather than **ɨ*, for it does not seem to rhyme in OC poetry.

In addition to the examples above, all proposed in STC, we may cite the following:

10. 鹿 *kji:*₃ < **krjij:* 'muntjac, barking deer' (not in GSR; K [**kier*], D **kied*, L [**kjidx*]). Cf. TB **d-kiy* (= **d-kəy*) 'barking deer' (STC #54).

Although this word does not appear in GSR, it is in *Ēr-yǎ* and *Shuō-wén*. The *Ēr-yǎ*'s form of the word has as phonetic 旨 (GSR 552), a clear indication of *-*ij* rather than *-*ij* because of the palatalization of velars in this series; otherwise, MC -*ji*₃ could come from either *-*rjij* or *-*rjij* in my system.

11. 祚 *gjiz* < **grjij* '(loan for) great, large; numerous' (GSR 553i, K **g'ier*, D **g'ied*, L **gjid*). Cf. Proto-Lolo-Burmese **k-ri*² (Written Burmese *krī*) 'big' (Thurgood 1977:189; see Bodman 1980:167, no. 433).

This word occurs in several places in the *Shī-jīng*. The palatal initials in the phonetic series 示 (GSR 553) support the reconstruction of *-*ij*, as in the 旨 series (GSR 552) cited in example 10 above. Bodman (1980:188, no. 486) also proposes a TB comparison for 示 itself:

12. 示 *dzji-* < **rjis* (< **ryis*) 'sign; signify, show; inform' (GSR 553a, K **diər*, D **g'ied*, L **grjidh*). Cf. TB **riy* (= **rəy*) 'draw, mark; boundary' (STC

#429), T ris 'figure, form, design', ri-mo 'figure, picture'.

Note that $\acute{d}z-$ in Karlgren's MC transcription (followed here with some modifications) actually represents a fricative / $\acute{z}-$ /, while his $\acute{z}-$ represents the affricate / $\acute{d}z-$ / (see Pulleyblank 1961-62:67-68). This comparison assumes a development $*ry- > MC \acute{d}z- = /z-/$, where $*y$ is 'primary yod'; Bodman also gives other possible examples of this development (1980:94, nos. 148, 149, 150, 152).

In view of the fact that the reflexes of TB $*riy (= *r\grave{a}y)$ often carry a meaning implying cutting or scratching, another possible comparison with this root is:

13. 利 lji- $*rjijs?$ 'sharp' (GSR 519a, K $*li\grave{a}d$, D $*li\grave{e}d$, L $*ljidh$), also 犁 liei, lji $< *r(j)ij?$ 'plough' (GSR 519g, K $*li\grave{a}r$, $*li\grave{a}r$, D $*li\grave{e}d$, $*li\grave{e}d$, L $*l(j)id$). Cf. TB $*riy (= *r\grave{a}y)$ 'draw, mark; boundary' (STC #429), as in ex. 12.

Note that much early marking and writing was actually incising. TB $*griy (= *gr\grave{a}y)$ 'copper' (STC #39) could well be from the same root; note the meaning 'knife' for T gri. There may be traces of a velar initial in Chinese also; the word 黎 liei $< *rij$ (or $*g-rij?$), from this same phonetic series (GSR 519), appears as a loan character for 耆 $gji_3 < *grjij$ 'old' in several texts, according to Wáng Yǐnzhī (see the entry in Zhōngwén dà cídiǎn, no. 48,975 and 48,975.46). Karlgren (1964, gloss 430) rejects this suggestion as 'phonetically excluded', but in our reconstruction it is quite plausible.

The problem is that there is no clear evidence from rhymes that these words have $*-ij$ rather than $*-i\grave{j}$. In fact, 黎 appears to rhyme with $*-ij$ in ode 257.2; 利 rhymes in ode 212.3, but it is unclear how this sequence should be analyzed.

Note that Pulleyblank proposed still another cognate to TB $*riy (= *r\grave{a}y)$, namely:

14. 理 lj\grave{i}: $< *rj\grave{i}:$ 'to cut jade according to its veins, fibres; to mark out division in fields' (GSR 978d, K $*li\grave{a}g$, D $*li\grave{a}g$, L $*lj\grave{a}gx$). Cf. TB $*riy (= *r\grave{a}y)$ 'draw, mark; boundary' (STC #429), as above.

This assumes a correspondence of TB $*-iy$ to OC $*-j\grave{i}$, of which there are other possible examples, e.g.

15. 犛 lj\grave{i}: $< *rj\grave{i}$ (also MC mau $< ??$) 'long-haired ox' (GSR 979j, K $*li\grave{a}g$, D $*li\grave{a}g$, L $*lj\grave{a}g$). Cf. T 'bri-mo 'female yak' (Pulleyblank 1961-62:137).

16. 止 tsj\grave{i}: $< ?*krj\grave{i}:$ 'foot; to stop, to rest, remain, dwell, stand', Proto-Coastal Min ki: (GSR 961a, K $*ti\grave{a}g$, D $*ti\grave{a}g$, L $*krj\grave{a}gx?$). Cf. TB $*kriy (= *kr\grave{a}y)$ 'foot' (STC #38); see Mei 1979, Bodman 1980:187, no. 484).

The derivation T\acute{S} $< *Krj-$, of which there are other persuasive examples, follows Li 1976; my reconstruction system generally assumes $*Kr- > MC k-$ instead.

Bodman (1980:165, no. 420) also proposed another possible cognate to TB $*kriy (= *kr\grave{a}y)$ 'foot', namely:

17. 几 kj\grave{i}: $< *krj\grave{i}:$ (?) 'stool, small table' (GSR 602a, K $*ki\grave{e}r$, D $*ki\grave{e}d$,

L [***kjidz**]). Cf. TB ***kriy** = ***kɾay** 'foot' (STC #38); see Bodman 1980:165, no. 420. (Cf. T **khri** 'chair'.)

Here again, as in example 13, it is not clear whether the word has ***-ij** or ***-iɿ** in Old Chinese. Two **Shī-jīng** rhymes seem to indicate ***-iɿ** (ode 160.1, Bīn fēng: Láng bá, and ode 250.4, Dà yǎ: Gōng Liú), while one seems to indicate ***-ij** (ode 246.2, Dà yǎ: Xíng wěi). Words in the **shǎng** ('rising') tone are especially difficult to sort out because their rhyming tends to be irregular; see the discussion below under example 47.

Another problematical comparison is:

18. 地 **dji**- < ? 'earth, ground; position' (GSR 4b', K ***d'ia**; Dǒng gives no reconstruction; L ***diarh**(?)). Cf. TB ***mliy** (= ***mlay**) 'earth, country' (STC #152); see Bodman 1980:99, no. 160.

There are several problems with the comparison. The phonetic series 地 = 它 (GSR 4) clearly indicates initial ***l-** and, normally, the final ***-aj** (Karlgren's ***-â(r)**). Yet the pronunciation in Middle Chinese and in modern dialects is irregular, for MC **d-** does not normally occur with the final **-ji**, and MC **-ji** does not normally come from OC ***(j)aj**. There is, in fact, no known syllable in most reconstructions of Old Chinese which would regularly give MC **dji-**. However, at least there is evidence both for OC ***l-** (the phonetic series and the initial **d-**) and for OC ***-ij** (the MC final **-ji**); and if, as Benedict asserts, the ***ml-** cluster was 'rare' in Sino-Tibetan (STC p. 179, n. 474), this might help to explain the rareness of the MC reading. Benedict proposes instead that TB ***mliy** (= ***mlay**) goes with 泥 **niei** 'mud, mire', 涅 **niet** 'black sediment in muddy water' (ibid.), which is also possible (although 泥 may have ***-iɿ**; see example 24 below). Gong Hwang-chen (1978) proposed to connect this root with Chinese 底 **tiei**: < ***tij**:. For other proposals, see Bodman 1980:99, no. 160.

19. 細 **siei**- < ***sijs** or ***sits** 'small, minute' (GSR 1241 1; K gives no reconstruction; D ***sied**, L [***sidh**]). Cf. TB ***ziy** (= ***zay**) 'small, minute' (STC #60; see Gong 1978:18, no. 88).

Although this word does not seem to occur as a rhyme in Old Chinese texts, its phonetic, according to the **Shuō-wén** (GL 5813) is 囟 MC **sjěn-**, **sji-** 'the top of the head, the skull'. This word is not in GSR, but is itself in the **Shuō-wén**, which says it is also written 脾, presumably with 辛 **sjěn** < ***sjin** as phonetic (GL 4639). Duàn Yucái assigns it to his group 12, i.e. our ***-in** (the Zhēn group). All this supports the reconstruction of 細 with ***i**.

Benedict and others have also suggested a number of comparisons where TB ***-iy** (= ***-ay**) corresponds to OC forms with ***-it** or ***-in**. Such examples are important here because they underscore the correspondence between TB ***-iy** (= ***-ay**) and the OC vowel ***i**. The ***-t** and ***-n** may be explained morphologically, as suffixes (as suggested by Benedict), or phonologically, as Sino-Tibetan elements which were lost in Tibeto-Burman but remained in Old Chinese. (For such words in ***-t** I have proposed a final glottal stop ***-ʔ**, with ***-jʔ** > **-t**; see Baxter 1980:16-17.) In either case, the vowel correspondences are the same as those already illustrated. With ***-it** we have:

20. 日 **nǐjět** < ***njit** < ***njijʔ?** 'sun, day' (GSR 404a, K ***ńiet**, D ***ńiet**, L ***njit**). Cf. TB ***niy** (= ***nay**) 'sun, day' (STC #81; see p. 157).

See Bodman 1980:126, no. 245, for evidence of *-? in Tibeto-Burman forms of this root also.

21. 血 xiwet < *h^wit < *h^wij?? 'blood' (GSR 410a, K *xiwet, D *xiwet, L *h^wit). Cf. TB *s-h^wiy (= *s-hyway) 'blood' (STC #222; see p. 157). See Bodman 1980:126, no. 246 for evidence of *-? in Tibeto-Burman also.

Note that this phonetic series includes some *s- initial words in Chinese, which may be related to the TB *s-, e.g. 恤 sjuet 'solicitude, pity, sorrow, anxiety' (GSR 410e). Cf. also:

22. 刷 sjuet < *sk^wjit < *sk^wijj?? '...loan for "rub, brush"' (GSR 410f, K *siwet, D *siwet, L [*sk^wjit]). Cf. TB *s(y)wiy (= *syway) 'rub, scrape, shave' (STC #180).

Note: Karlgren says this is a 'loan for *swat / suat / su 'rub, brush (Li)', but this reading is phonologically unlikely and probably artificial. The passage in question from the *Li-ji* has the words 刷勿 together; some traditional commentaries take this as a binome, MC suat muat. This is probably the origin of the reading suat. Others divide the text between 刷 and 勿, which seems more probable in light of the phonetic in 刷. (See *Zhōngwén dà cídiǎn*, entries 2916, 2916.1, 2542.)

23. 漆 tshjět < *tshjit < *tshijj?? 'varnish' (GSR 401a, K *ts'jět, D *ts'jiet, L [*tshjit]). Cf. TB *tsiy (= *(r-)tsøy) 'juice; paint; drugs' (STC #65; see p. 157).

Karlgren notes, 'The Seal shows a tree with drops of fluid.'

24. 泥 niet < *nit (<*nij??) 'black sediment in muddy water; to block, stop up' (GSR 404j, K *niet, L [*nit]). Also 泥 niei < *nij? 'mud, mire', niei- < *nijs? 'impeded, obstructed' (GSR 563d, K *niər, D *nied, L *nid). Cf. TB *mliy (= *mløy) 'earth, country' (STC #152; see p. 179).

Since 泥 has 日 (example 20) as phonetic, it seems clear that it has the vowel *i. On the other hand, 泥 could be *nij or *n^hj; this character (with a different meaning) rhymes in ode 173.3 and ode 246.1, but both sequences seem to mix *-ij and *-i^hj. Also, the semantics of this comparison seem questionable to me; see example 18 above for other possibilities.

25. 裙 nźjět < *njit < *njij?? and 裙 njět < *nrjit < *nrjij?? 'a lady's clothes nearest to the body' (GSR 404e, K *niet, D *ńiet, *niet, L [*njit, *nrjit]). Cf. TB *b-ni(y) 'drawers, petticoat' (STC #476). See also Bodman 1980:130, no. 261 for another possible comparison and reconstruction.

26. 姪 diet < *dit < *dij?? and 姪 djět < *drjit < *drjij?? 'nephew, niece' (GSR 4134o, K *d'jět, *d'jiet, D *d'iet, *d'jiet, L [*dit], *drjit). Cf. TB *b-liy (= *b-løy) 'grandchild, nephew/niece' (STC #448; see p. 158, n. 428).

The Chinese phonetic series seems to indicate OC *d- rather than *l-, since there are voiceless unaspirated initials which would normally reflect OC *t- (see discussion under examples 8 above). However, Benedict gives other examples of possible cognates with TB roots in *l- from this series (pp. 171-2, no. 458); one example relevant here is:

27. 輕 tji- < *trjits (<*trjij?-s??) 'heavily weighted down' (GSR 413e, K *tiēd, D [*tiēd], L [*trjičh]). Cf. TB *s-liy (= *s-lay) 'heavy' (STC #95).

28. 擲 tsjət < *tsrjit < *tsrjij?? 'comb' (GSR 399g, K *tsiēt, D *tset, L *tsrjit). Cf. TB *m-si(y) 'comb' (STC #466). The initial correspondences are unclear.

Benedict has proposed an *-n suffix in the following two items (see also example 6 above):

29. 民 mjěŋ < *mjn 'people' (GSR 457a, K *mian and *miěn, D *mien, L *mjn). Cf. TB *r-mi(y) 'man (homo)' (STC p. 107, n. 301; see p. 158, 428).

Karlgren's alternate reconstruction *mian is intended to account for other words in his *-ən which appear to have 民 as phonetic. Perhaps two series have become confused here; at any rate, there should be no doubt about 民 itself, which rhymes repeatedly as *-in.

30. 犬 khiwen: < *k^whin:? 'dog' (GSR 479a, K *k'iwān, D *k'iwān, L [*khwix or *khwenz]). Cf. TB *kwi(y) (= *kway) 'dog' (STC #159; see p. 157, 158).

The OC reconstruction of this word is uncertain; it does not rhyme in old poetry, and its MC reading could also reflect *k^when: (= Dǒng Tónghé's *k'iwān).

I would like to close this section by listing, with a brief explanation, some proposed Chinese comparisons with TB *-iy = *-ay (and *-i(y)) which I do not accept, along with three examples where OC *-ij appears to correspond to TB finals other than *-iy = *-ay. These examples will be lettered, not numbered.

a. 醃 xiei < *he? 'vinegar, minced food in vinegar' (GSR 124i; Karlgren gives no reconstruction; D *xieŋ, L [*hiŋ]).

Benedict (STC #413) compares this with TB *kri(y) 'acid, sour' (see STC p. 178, n. 472). Although Karlgren refrains from reconstructing an OC form here (from lack of evidence, presumably), most Chinese scholars have assigned this to the group which Karlgren would reconstruct with *-ieŋ; the reconstruction *xiər in STC has little basis. The initial correspondence is also problematical.

b. 屣 sjwo < *srja 'foot' (GSR 90a, K *sio, D *saj, L *srjaŋ).

Benedict compares this with TB *kri(y) (= *kray) 'foot' (STC #38; see p. 178, no. 472), but there is little support for the correspondences assumed. The word for 'son-in-law' (see next example), cited as a parallel case of TB *kr-, has initial s- < *s- rather than s- < *sr- in Chinese.

c. 婿 = 婿 siei- < ? 'son-in-law' (GSR 90i, K *sio, D *sieŋ, L [*siŋ]).

Benedict compares this with TB *krwi(y) (= *krway) 'son-in-law' (STC #244; see p. 178, no. 472).

Karlgren's *sio is based on the assumption that 婿 sjwo < *sja (his *sio) in this character is a phonetic element, which seems to be confirmed by the

modern Mandarin reading xù. If such a reading can be reconstructed for ancient times, then a better cognate would be T *sras* 'son, child (respectful)', proposed by Bodman (1980:178, no. 465). The reading xù seems to be of recent origin, however. The *Shuō-wen*, at least, does not take 婿 as phonetic, and notes 婿 ruò 細 (read like 細 MC *siei-* < **sijs*)' (see example 19 above). Neither the *Guāng-yùn* nor the *Ji-yùn* mentions a pronunciation *sjwo*. Many modern dialects agree with the reading *siei-* (e.g. Cantonese *sai* 5, Amoy *sai* 5); even some Mandarin dialects reflect MC *siei-* (e.g. Lánzhōu and Xī'ān, according to Karlgren 1940:675). The Mandarin xù may have arisen by assimilation (and perhaps by spelling pronunciation, influenced by the supposed phonetic) in the expression 女婿 *nǚxū* < **nǚxi* (?). Thus there is little evidence for an ancient pronunciation *sjwo*.

Of course, *siei-* (if it comes from **sijs*) agrees better with TB **krwiy* = **krway* than does *sjwo* as far as the finals are concerned; but *siei-* could also come from **ses* (Dǒng Tóng'hé's **sieg*), and the initial correspondence is a problem.

d. 數 *sju:* < **srjo:* 'to count', *sju-* < **srjos* 'number' (GSR 123r, K **sliu*, D **sug*, L **sljugx,h*).

Benedict compares with TB **r-tsiy* (= *(*r*)*tsrəy*) 'count' (STC #76; see p. 171, n. 457).

The Chinese word is said to have a 'vowel shift after the retroflex initial similar to that found in "foot" and "son-in-law"', but although the TB vowel is the same in all three roots, all three words have different vowels in Chinese (if we ignore the late assimilation mentioned in example c above).

The next example does not involve TB **-iy* (= **-əy*), but might seem to be a counterexample to our hypothesis because of the reconstruction of the Chinese word given in STC:

e. 漿 *zjɿ* < **zrjɿ* 'spittle (of a dragon)' (GSR 1237q; Karlgren gives no reconstruction; D **zəg*, **g'iəg*, L ?).

Benedict compares this with TB **m-ts(y)il* = **m-tsril* 'spittle' (STC #231; see p. 171, no. 457). Benedict reconstructs the Chinese form as **dʒr'iər* / *dʒ'i*, but this is not correct, for the MC reading is not in the 脂 rhyme, as the reconstruction with **-iər* would imply, but in the 之 rhyme, which reflects Karlgren's **iəg*. Karlgren did not distinguish the two MC rhymes in his transcription, but they are distinguished in my notation by writing a barred *ɿ* in the 之 rhyme. The word also appears to be a rare example of the MC initial *z-*, not *dz-* (see Pulleyblank 1961-62:69 for discussion). The portion 漿 is phonetic, according to *Shuō-wen* (GL 4945); the word properly belongs in Karlgren's series GSR 979, which has readings like *ljɿ* < **rjɿ*. (See example 15 above, for instance.) A relationship to TB **m-ts(y)il* (= **m-tsril*) is still possible, but I know of no other examples of TB **-il* corresponding to OC **-jɿ* (Karlgrén's **-iəg*).

Another proposed cognate with TB **-il* is:

f. 脂 *tʃji* < **kjij* 'fat, grease' (GSR 552g, K **tjər*, D **kied*, L [**krjid*]).

Benedict compares with TB **tsil* 'fat' (see p. 168, no. 449). The

difficulty here is that the Chinese graph indicates a velar initial (as in example 10 above).

g. 為 $\gamma j w i \epsilon < * w j a j$ 'elephant?', possibly an obsolete meaning (GSR 27a, K *gwia, D * $\gamma i w a$, L *gwjar); the character is composed of 'hand' and 'elephant'.

Benedict compares this word with TB *m-gwi(y) 'elephant' (STC p. 168, no. 449; see p. 184, no. 484). Karlgren's 'vocalic i' in the final of this word is probably artificial (see Dǒng Tǒnghé's discussion, 1948:94) and is not found in other reconstructions, which accordingly look somewhat less like the TB root. In any case, the word is very likely a loan from Austroasiatic (see Bodman 1980:83).

Finally, here are three examples whose status is uncertain; there seems to be no clear reason to reject them, and yet they appear to contradict the general pattern of OC *-ij corresponding to TB *-iy (= *-ay):

h. 嗜 $\acute{z} j i - < * g j i j s$ 'enjoy' (GSR 552p, K * $\acute{d} i \epsilon r$, D * $\acute{z} j i e d$, L [*grjidh]). Cf. T dgyes 'rejoice, be glad' (see Bodman 1980:182, no. 474).

Normally, Tibetan -e would reflect TB *-ay, *-ey, or *-e; yet the phonetic element in the Chinese word appears to indicate *-ij, because of the presence of palatalized velars and of MC readings like Kiei < *Kij elsewhere in the series.

i. 米 $m i e i : < * m i j ?$ 'rice' (GSR 598a, K * $m i \epsilon r$, D * $m i e d$, L [*midx]). Cf. Bodo-Garo *mey or *may, proto-Karen *may (STC p. 149, no. 408), Proto-Bodo *mai?-rong (Burling 1959:443).

The Middle Chinese final here indicates a front vowel *i for Chinese, and the word 迷 $m i e i$ 'go astray' (GSR 598e), with 迷 as phonetic, clearly rhymes as *-ij (ode 191.3, 254.5). It is not clear whether the Bodo-Garo forms must reflect TB *-ay, or how Karen *-ay relates to TB *ay.

j. 矢 $\acute{s} j i : < * h l j i j : ?$ 'arrow' (GSR 560a, K * $\acute{s} i \epsilon r$, D * $\acute{s} j i e d$, L [*hrjidx?]). Cf. TB *tal 'arrow, bow' (STC p. 168, no. 449).

This word, too, is clearly to be reconstructed with *-ij in Chinese (it is used as a loan character for 'dung', example 5, for instance). If the comparison with TB *tal is correct, this would not fit the pattern under discussion.

To sum up the results of this section, although there remain doubts about particular words, there are enough examples (and possible examples) of TB *-iy (= *-ay) corresponding to OC *-ij (also *-it, perhaps *-in) to establish this correspondence as probably reflecting a genetic relationship. Correspondences of TB *-iy = *-ay to OC *-ij are possible in some cases, but there are few good examples.

4. Tibeto-Burman cognates of OC *-ij

I will begin with words which are generally agreed to belong to the *-ij class -- that is, the wēi rhyme group (see section 2), and then proceed to

words which have previously been assigned to the front-vowel Zhī group, but which I have proposed should be reconstructed with *īj. Examples 31 through 37 are reconstructed with *īj on the basis of their MC finals. (OC *ūj is excluded in these examples because of rhyme evidence.)

31. 飛 pjwei < *pj̄īj 'to fly' (GSR 580a, K *piw̄ar, D *piw̄əd, L *pjəd). Cf. TB *pur ~ *p̄ir 'fly' (STC #398; see p. 172).

Benedict reconstructs an alternation *u ~ *i within Tibeto-Burman itself. An alternative treatment might be to reconstruct something like *p̄ir for Tibeto-Burman (and perhaps Sino-Tibetan), with *ī > u in some languages and *ī > i in others. Note that the u and i forms of such words often show a different geographical distribution; in at least two of the examples of the *u ~ *i alternation, Central Tibetan shows i where other Tibetan has u, including this word: T 'phur-ba, Central T 'phir-ba 'to fly' (STC p. 83). Similarly, Kachin seems to show i rather than u in such words.

32. 回 Yuai < *wīj 'revolve; go round by' (GSR 542a, K *g'w̄ar, D *Yw̄əd, L [*gwəd]). The graph is a picture of a spiral or whirlwind. Cf. TB *wa-y 'whirl, brandish, wave' (STC #90).

Bodman (1980:82, no. 110) cites T 'or (<*war?) 'eddy, whirlpool'. See also some other comparisons involving 回 in Gong 1978:30, no. 171.

33. 尾 mjwei: < *mj̄īj 'tail' (GSR 583a, K *miw̄ar, D *miw̄əd, L [*mjəd̄x]). Cf. TB *r-may 'tail' (STC #282; see p. 192, 193).

Although Benedict regards the Chinese -w- as a trace of *r, in my system there is no evidence for *r, since *mr̄j̄īj: would give MC mji:3 (as in examples 38 and 40 below).

34. 微 mjwei < *mj̄īj 'minute, small' (GSR 584d, K *miw̄ar, D *miw̄əd, L [*mjəd̄]). Cf. Burmese mwe', which Benedict reconstructs as [*mwīy] (= *mw̄ay) (p. 174, no. 463). But note that this root is not otherwise listed in STC, and B -we could equally reflect TB *ūl or *ōy. Burling (1959:443) quotes forms which may be related and which agree well with Chinese: 'small': Atong m̄ar-, Wanang t̄a-m̄ar, Proto-Koch *m̄ar.

35. 火 xuâ: < *hw̄aj: < *hm̄īj:?'fire' (GSR 353a *xw̄ar, D *xw̄ar, L *hw̄arx < *hm̄arx?).

焜 xjwei: < *hm̄j̄īj: 'to burn' (GSR 583e *xmiw̄ar, D *miw̄əd, L [*hm̄jəd̄x]). Cf. TB *mey 'fire' (STC #290). The OC reconstruction of these words is discussed in Baxter 1977:315-316 and 1980:14. See also Bodman 1980:71, no. 71, 72.

36. 違 Yjwei < *wj̄īj 'go against, disobey; oppose; go away, leave; deviate from; err; fault; perverse' (GSR 571d, K *giw̄ar, D *Yiw̄əd, L [*gwjəd]). Cf. T 'gol-ba 'to part, to separate; to deviate, err; error, mistake' (see Gong 1978:30, no. 169).

37. 諱 xjwei- < *hw̄j̄īj: 'avoid, taboo' (GSR 571s, K *xiw̄ar, D *xiw̄əd, L [*hw̄jəd̄h]). Cf. T skyur-ba 'to throw, to cast; to throw away, throw down; to give up, abandon' (see Bodman 1980:62, no. 37).

The next several words have the division-3 chongniu final *-ji3*, which could come from either **-rji3* or **-rji3* in my system; but in each case there is evidence for **-ij*, which has often been overlooked in previous reconstructions.

38. 眉 *mji3* < **mrji3* 'eyebrow' (GSR 567a, K **miar*, D **mied*, L **mjid*). Cf. TB **mul* = **(s-)mul* ~ **(s-)mil* ~ **(r-)mul* 'body hair' (STC #2; see p. 173, 181). Cf. also T *smi-na* 'eyebrow', from the same root.

Although 眉 has sometimes been reconstructed with a front vowel, graphical evidence points clearly to **-ij*; the character is used as a loan for 矍 *mjwei*: < **mjij*: 'vigorous' (GSR 585a). In the *Shi-jing* it rhymes with 矍 *siei* < **s(m)ij* (see example 43) in ode 57.2 (*Wei feng*: *Shi ren*), although the exact analysis of this rhyme sequence is unclear. The OC **r* is necessary to account for the MC final, and may correspond to the **r* reconstructed in Tibeto-Burman.

39. 飢 *kji3* < **krji3* 'famine; be hungry' (GSR 602f, K **kier*, D **kied*, L **kjid*)

饑 *kjei* < **kji3* 'famine, esp. want of grain' (GSR 547k, K **kier*, D **kiəd*, L [**kjəd*]). Cf. T *bkres* 'be hungry, hunger' (see Bodman 1980:166, no. 424). Note that T *-e* could reflect Tb **-ay* or **-ey* (STC p. 62).

In this case there is no doubt about the OC vocalism **-ij*; 飢 rhymes repeatedly with **-ij* words in the *Shi-jing*, and the cognate word 饑 must be reconstructed with **-ij* because of its final.

40. 美 *mji:3* < **mrji3*: 'beautiful, fine' (GSR 568a, K **miar*, D **mied*, L **mjid*).

媿 *mjwei* < **mjij* 'variant of 美' (GSR 584g, K **miwar*, D [**miwəd*], L [**mjəd*]) (cf. example 35 above).

媿 *mjwei*: < **mjij*:, *mji(:)3* < **mrji3*: 'fine, nice' (GSR 583c, K **miwar*, D **miwəd*, **miwəd*, L [**mj(i)əd(x)*]). (Cf. example 34 above). Cf. TB **moy* 'beautiful' (STC #304; see p. 193).

This word has sometimes been reconstructed with a front vowel (e.g. Dong Tonghé's **mied*), but the graphic variants clearly show **-ij*, as does a rhyme in ode 42.2 (*Bei feng*: *Jing nu*): 煒 *Yjwei*: 美 *mji:3*.

41. 歸 *khwi(:)3* < **k^whrji3*: 'isolated, alone (as a lone peak)' (GSR 570g, K **kiwer*, D **kiwəd*, L [**khwjiədh*]). Cf. T **khyur* 'to be separated, divorced' (see Bodman 1980:62, no. 36).

The final **-ij* is confirmed by the phonetic 歸 *kjwei* < **k^wji3* 'return' (GSR 570a).

We now move to items with acute initials, where I assume that **-ij* and **-ij* merged before the middle Chinese stage. On these I differ from previous reconstructions, which generally assume only a single possible vocalism in such words; see section 2.

42. 洗 *siei*: < **sij*:, *sien*: < **sin*: 'wash' (GSR 478j, K **siar*, **siən*, D **siən*, L **siənx?*).

洒 *siei*: < **sij*:, *sien*: < **sin*: 'wash, washed clean, pure', 洒 *sai*: < **srij*:

'sprinkle, cleanse' (GSR 594g, K *siər, *siən, *ser, D *sied, *sien, L [*sidx, *sinx, *sridx?]). Cf. T bshal-ba 'to wash, to wash out or off, to clean by washing, to rinse'; also T sel-ba (pf. bsal, fut. bsal, imp. sol) 'to remove (esp. impurities), to cleanse'.

Note that 洗 and 洒 are clearly the same word, in spite of Dǒng Tónghé's reconstructions; he reconstructed *ə in 洗 but not in 洒 because he did not recognize 洒 as a Wēi-group word.

Benedict reconstructs a TB root *(m-)s(y)il (= *(m-)syil ~ *(m-)syal) 'wash, bathe' (STC #493; see p. 173, 179) which includes T bshal-ba, above, and also the Tibetan respectful word for 'wash': T bsil-ba 'cool, the cool of the day, coolness; to cool, (resp.) to wash'. Since the basic meaning here (as Benedict points out) seems to be 'cool', it is likely that this is a different root from that represented in bshal-ba. T sel-ba may be related instead (or also?) to 揩 sau < *srew (<*srel?), also sjāu < *sjew (<*sjel?) 'eliminate' (GSR 1149x; K *siog; note that Karlgren's MC reading sieu is not found in the Guāng-yūn); see Bodman 1980:141, no. 307.

The *i vowel in this word is confirmed both by rhyming and by the phonetic 先 sien < *sin (K *siən, D *siən, L *siən).

43. 犀 siei < *s(m)ij? 'rhinoceros' (GSR 596a, K *siər, D *sied, L *stid). Cf. T bse (<*b-sey or *b-say) 'unicorn, antelope, rhinoceros' (STC p. 193, no. 491).

The Shuō-wén says that this word has 'ox' 牛 with 尾 'tail' (mjwei: < *mjij:, example 33 above) as phonetic (GL 540). If so, the OC *m might be comparable with the Tibetan b-. This is a clear example of a *-ij word in Chinese; cf. Vietnamese tây 'rhinoceros', presumably an early borrowing from Chinese (with t- regularly for Chinese s-). See Baxter 1980b for further discussion.

44. 遲 dji(-) < *drjij(s) 'to tarry' (GSR 596d, K *d'iar, D *d'ied, L *drjid). Cf. T dal-ba, dal-bu 'slowness, ease, quietness, leisure; quiet, calm (of the mind, water); gentle (of the wind), slow, lazy'.

This word in its present form has 犀 'rhinoceros' (example 43) as phonetic, and the rhyme evidence clearly points to *-ij, as does the Vietnamese loan chây; see Baxter 1980b.

45. 夷 ji < *ljij '(barbarian;) loan for id. level, even; equal; just; ordinary; simple; peaceful; be at rest; pacify; easy; custom, institution; hurt; kill, destroy' (GSR 551a, K *d'iar, D *d'ied, L *rid). Cf. Tibetan dul-ba 'soft (of the skin, etc.); tame; gentle (temp'r); easy (disposition), mild; softness'; 'dul-ba (pf. brul, thul, fut. g-dul, imp. thul) 'to tame, to break in; to subdue, conquer, vanquish; (sometimes even) to kill, to annihilate; to till, cultivate; to civilize (a nation...); to convert; to educate, to discipline, to punish; the taming'.

This word rhymes repeatedly in the Shī-jīng with *-ij words (e.g. odes 14.3, 168.6, 191.5, and others; see Baxter 1980b).

I have quoted definitions at some length in this example because I feel that the best evidence for this comparison is the very similar range of

meanings in Chinese and Tibetan. These meanings, often apparently contradictory (e.g. 'peaceful', 'kill') become comprehensible if one assumes that the basic meaning is 'even, peaceful' (intransitive) and its causative, 'to make even, to pacify'; from 'peaceful' come meanings like 'easy, tame', while 'pacify' is extended to mean 'civilize, convert', and even 'kill, destroy'. A minor problem is that Chinese has *l- rather than *d-, but otherwise the comparison seems quite convincing.

Note that Gong (1978:21, no. 120) connects these Tibetan words instead with 順 *dźjuěn* < *ljuns? 'follow; obey, accord with; submissive, docile' (GSR 462c) and 馴 *zjuěn* < *ljun? 'docile' (GSR 462f). It seems to me that the primary meaning in these words is 'follow' rather than 'peaceful', however.

46. 夷 *ji* < *ljij (another meaning:) 'extend, expose, display'.

俵 *ji* < *ljij 'set out, spread out' (GSR 551d, same reconstructions as in example 45). Cf. T *dar-ba* 'to be diffused, to spread (of influence, power, opinions, diseases)'; *rdal-ba* (<*rdar-ba?) pf. and fut. *brdal*, imp. *rdol*), also *g-dal-ba*, *bdal-ba* 'to spread (sand, stones, manure, esp. if done by means of a stick, rake, shovel, etc.); to extend (a canopy) to cover'.

The Tibetan forms may represent another intransitive/causative pair. For the evidence for *-ij see example 45.

47. 弟 *diei*: < *di:j: 'younger brother; junior' (GSR 591a, K *d'iar, D *d'ied, L *didx). Cf. TB *toy (= *doy ~ *toy) 'younger (youngest) sibling' (STC #309; see p. 192-3, no. 491).

If one looks only at Shī-jīng rhyming, this word is difficult to reconstruct for Old Chinese, for it rhymes quite irregularly. There are clear cases of 弟 rhyming with *-ij words (e.g. with 指 *tsji*: < *kij: in ode 51.1, *Yōng fēng*: *Dì dòng*), and other equally clear cases of rhymes with *-ij words (e.g. with 韓 *Yjwei*: < *wjij: in ode 164.1, *Xiǎo yǎ*: *Cháng dì*, or with 泥 *niei*: < *nij: and 峯 *khâi*: < *khi:j: in ode 173.3, *Xiǎo yǎ*: *Lù Xiāo*). There are other rhymes which could be analyzed either way. There are even some cases where 弟 appears to rhyme with rounded-vowel words which I would reconstruct with *-uj (e.g. with 蒲 *ljwi*: < *rjuj: in ode 71.3, *Wáng fēng*: *Gé lěi*). This irregularity is typical of rhymes in the shang tone, and probably results from the small number of available regular rhymes in this tone category, as Jaxontov pointed out (1959-60:108). This irregular rhyming often makes shǎngshēng words difficult to reconstruct; in fact, in Baxter 1980b I reconstructed (erroneously, I believe) *di:j:.

However, there is other evidence that the correct reconstruction is *di:j:.. The character 弟 was used in the expression 峯弟 or 愜悌 *khâi*: *diei*: 'happy, please', quite plausible a rhyming binome in *-ij:, *khi:j: *di:j:.. In fact, both words written 弟 -- 'younger brother' and 'happy' -- rhyme in ode 173.3 with each other and with 峯 *khâi*:.. Although the rhyme evidence is equivocal, this argument from the binome tips the balance in favor of *-ij. (It is even possible that the few rhymes or apparent rhymes of 弟 with rounded-vowel words are relics of an earlier stage of Chinese where 'younger brother' had a rounded vowel as it does in Tibeto-Burman; but it would require considerable elaboration of my reconstruction to allow this).

48. 梯 *thiei* < *thij (<*hlij?) 'wooden steps, staircase' (GSR 591 l, K *t'iar,

D *t'ied, L [*thid]). Cf. Chepang hlaj? 'ladder' (Bodman 1980:142, no. 174 = 307a).

Here *-ij can be reconstructed on the basis of the phonetic 弟, example 47 above.

49. 姊 tsji: < *tsjij? 'elder sister' (GSR 554b, K *tsiər, D *tsied, L *tsjidx). Cf. TB *dzar 'sister (of man)' (STC #68; see p. 170, no. 455).

This word, like example 47, is in the shang tone class, and it is difficult to decide whether it should have *-ij or *-ij. In its only occurrence in the Shī-jīng (ode 39.2, Bèi fēng: Quán shuǐ), it rhymes with 弟, but also with 涕 (same phonetic) and 柵 niei:. Now the 爾 series (GSR 359, reconstructed by Dǒng with final *-r rather than *-d) seems from its MC readings to be best reconstructed in my system as *-ej (see Baxter 1980a:15); indeed, compare:

迺 nǎj: < *njej: 'near' (GSR 359c, K *niär, D *nier, L ?). TB *ney 'near' (STC #291; see p. 193).

At the same time, words in the 爾 series frequently rhyme with *-ij, or appear to, e.g. in odes 10.3 and 35.2. (See also example 35 for another Chinese cognate with TB *-ey). This fact, together with the rhyme with 弟, gives some indirect support to the reconstruction of 姊 with *-ij.

50. 陞 tsiei(-) < *tsij(s) 'ascend' (GSR 592j, K *tsiər, D [(*tsied], L [*tsid(h)]).

陞 id. 'ascend; steep; raise, promote' (GSR 593p, id.).

陞 id. 'ascend; rising vapours, rainbow' (GSR 593r, id.). Cf. TB *syar (= *sar) 'rise; east' (p. 28, no. 90).

This word rhymes consistently as *-ij in the Shī-jīng (odes 51.2, 129, 151.4, 189.4, and 304.3; see discussion in Baxter 1980b).

5. Summary and conclusions

The preceding sections have presented examples to show that TB *-iy (= *-y) corresponds regularly to OC finals with the vowel *i (including *-ij, *-it, and perhaps *-in) but infrequently to finals having the vowel *i, such as the *-ij whose reconstruction is discussed in Baxter 1980b. OC *-ij, on the other hand, corresponds to a variety of TB finals with vowels other than *i. In terms of Karlgren's reconstruction, TB *-iy (= *-y) corresponds, not to Karlgren's *-iər and *-iəd in general, but to those words in Karlgren's *-iər or *-iəd which have the OC vowel *i according to the criteria stated in section 2. Conversely, those words in Karlgren's *-iər or *-iəd which have the vowel *i have other correspondences not shared by *i words. Some examples seem to violate these patterns, and others are open to more than one interpretation; but the greater number support the conclusions just stated.

What are the implications for further research in Sino-Tibetan? First, the correspondences just stated can serve as a guide to identifying additional cognate words. For example, I have not found any likely TB cognates to 私 sji < *sjij 'private', but since this word is one of the best-supported examples of

OC *-iɟ, the correspondences suggest that it would be most fruitful to look for TB cognates which have vowels other than *i.

Second, the present findings suggest that the substitution of *-ɔy for *-iy in the Tibeto-Burman reconstruction should be re-examined. As the reconstruction now stands, OC *i corresponds sometimes to TB *i and sometimes to *ɔ. OC *ɟ, on the other hand, corresponds regularly with TB *a and sometimes with *u (especially when *u alternates with *i) -- two correspondences which are amply supported in various phonological environments (see Gong 1978) -- but not to the *ɔ of *-ɔy. If we revert to *-iy instead of *-ɔy, the pattern looks much simpler: OC *i corresponds consistently to TB *i.

Of course, if there is evidence within Tibeto-Burman for *-ɔy rather than *-iy, then *-ɔy should be kept; but if one of the reasons for the revision was the correspondence to Karlgren's *-iɟr and *-iɟd, then this reason is now removed, for Karlgren's *ɔ is artificial in those words which are cognate to *-iy (= *-ɔy). Even if *-ɔy is the best reconstruction for Tibeto-Burman, the Chinese evidence points to something like *-iy for the Sino-Tibetan stage.

Third, it is becoming apparent that Karlgren's reconstruction, although brilliant for its time, is becoming obsolete and unreliable as a guide for Sino-Tibetan comparison. At some point, Karlgren's lexicographical works such as GSR, on which we still rely so heavily, will have to be replaced with new comprehensive reference works.

ON QUANTIFIER FLOATING IN LUSHAI AND BURMESE

WITH SOME REMARKS ON THAI¹

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0. This was chosen as a contribution to the Benedict Festschrift because it combines a number of his professional interests: linguistics in a Southeast Asian context, Sino-Tibetan, mainly, but also Thai, and the interaction between language, culture and psychology, thereby drawing upon the three disciplines of linguistics, anthropology and psychology. The paper illustrates the intersection of grammar with a property of human thought.

Since this is part of a larger work on the theory of quantification in linguistics and logic containing an explanation of technical details (cf. Lehman 1979, 1979b), the present paper says little about the formal definition of quantifiers, or about the ultimate motivations for the particular view of logico-mathematical quantification taken here. The immediate object is to account for certain peculiarities of quantifier floating (or, in one case, why it fails to show up at all) in two Tibeto-Burman languages, Lushai (Mizo) and Burmese. In addition Wongbiasaj's work (1980, 1980b) on quantifier floating in Thai was drawn upon where it was needed to broaden the discussion.

1. Quantifiers have fairly clear logical and syntactic properties. They qualify noun phrases, even though in the case of floating quantifiers, they may be syntactically non-contiguous. A quantifier takes as its domain a class or set of entities named by a noun and picks out of that set or class one or more members, about which something is then predicated.

The well-known distinction between ordinal and cardinal can be extended to quantifiers. In order to see how ordinality and cardinality properly apply to other quantifiers, it is best to begin with a consideration of some quantifier words that are obviously somewhat like ordinary numbers in that they refer either to successive positions or to quantity e.g. such words as many, few, some, all, and the like, which are cardinals and a, any, each, every, this, the, which are ordinals.²

¹ This is a revision of a paper originally presented to the XIIth International Conference on Sino-Tibetan Languages and Linguistics, in Paris, in October 1979.

² Only, even, etc. have been left out of this account because of the complicated way they interact with so-called presuppositions. For instance, in

Let us first consider cardinal quantifiers. When one says five books, one clearly refers to any subset of the class of books just so long as such a subset has exactly five members, and five is said to be the size or cardinality of the subset referred to. In a similar way many books refers to a subset of the class of books, just in case the subset has a size or cardinality that is relatively large. It is not necessary to spell out here (but see Lehman 1979, and Cushing 1977) an explicit definition of the notion 'relatively large' in order to show that although many is not a specific number it is defined only over the field of ordinary cardinal numbers. Similar arguments apply to few (a relatively small number) and some (a certain, non-null number, usually understood as greater than one). These cardinal quantifiers once again pick out a particular, possibly arbitrary, subset of a class just in case the membership of the subset is 'relatively large', 'relatively small', 'not less than two', and so on, respectively.

Set theory distinguishes between ordinary sets and power sets. The latter have as members not the individual members of the former but all other subsets of the former, including the empty set (subset of zero cardinality) and the largest imaginable subset, namely, the one with the largest possible cardinality, viz., the whole basic set itself. Now, since quantifiers that are cardinal do not partition the objects that are the members of a set but rather the subsets of that set, I shall take it that cardinal quantifiers partition power sets. It is not, however, necessary to go into the technical reasons for this assumption in the present paper, and for present purposes it may be taken as merely a formal convenience.

Actually, although ordinal quantification commonly operates on ordinary sets, it can also take as its domain power sets, as in such expressions as this five or these five, those few and the like. I need not deal with this any farther except to use it as evidence for some sort of hierarchical relation of ordinal to cardinal quantifiers. Moreover, it is easy to see that all cardinals presuppose ordinals, though not conversely, for cardinals partition power sets. That is, they pick out some subset or subsets among the (arbitrarily) ordered subsets constituting the membership of the power set, and this is the usual ordinal operation even though they additionally refer to the size or cardinality of the subset selected. Indeed, any ordinary cardinal quantifier expression can be naturally paraphrased by prefixing it with some appropriate ordinal quantifier. Thus, for instance, four horsemen seems to mean the same thing as either some four horsemen or any four horsemen. It may

(i) Even John failed.

there seems to be a presupposition that one expects John to have a position in the ordered set of persons beyond some *i*th position, where all the persons up to an including the *i*th are either bound to fail or likely to fail; persons beyond the *i*th position in the list or set are expected not to fail, and indeed this is a limiting condition on the ordering of the set. (i), moreover, asserts that contrary to these expectations the boundary between those likely to fail and those bound to pass must in fact fall beyond John's position in the list (call it the *j*th position). Since, then, these kind of quantifiers deal with *n*-tuples of alternative partitions of the same set, they should be thought of as higher order quantifiers. They appear, actually, to be ordinal in character, but this does not appear to have been proved yet. Cushing 1977 presents a somewhat different view of these logical operators.

even be the case that plural nouns are understood as cardinally quantified. For instance, the plural noun phrase pencils selects from all imaginable subsets of the class an arbitrary subset of size greater than one.

One question remains to be addressed before I can leave the general definition and classification of quantifiers, and that is the question why I have chosen to claim that all is a cardinal quantifier but each and any are ordinals. This question arises because all such words seem, at least on first view, to entail reference to the 'entirety' of the membership of whatever set or class they qualify, and it is not a priori clear how one ought to relate the idea of the entirety of a set (exhaustion of the membership of the set, technically) to the distinction between ordinality and cardinality, in spite of the fact that there is an intuitive connection between set exhaustion and the cardinality of the set itself. Roughly, in any event, any seems to refer to 'the *i*th or *j*th member of some set, where $i \neq j$, and *i* and *j* range disjointly from 1 to *N*.' Here *N* is the size or cardinality of the set, with the membership taken in some possible arbitrary order. This is, I think, the simplest case, the most readily decidable one, and we can see that any has to be ordinal because it does nothing more than pick out the arbitrary member of a set. The reference to *N*, the cardinality of the set, as in the semi-formal expression in quotation marks immediately above, serves merely to define the upper limit of the notion of the arbitrariness of the selection.

Each may be a somewhat less transparent problem. It frequently, at least, seems to entail set exhaustion more saliently, entailing, perhaps, the picking out, even if one by one, the entirety of the membership of the set, something not done by any. In fact (cf. Wongbiasaj 1980, 1980b), in Thai the expression nearest in meaning to English each, namely, tɛɛ la, may well be a proper cardinal quantifier expression meaning something like 'the whole set, but taken one by one only,' or somewhat more technically and precisely, 'all of the subsets of size one, singleton subsets.' Note that this rigidly entails exhaustion of the set.

All has given logicians of natural language an especially hard time, in so far as they have assumed that, having reference to set exhaustion as the definitive criterion, there appears to be no formal, logical distinction between all, on the one hand, and each or every, on the other. For they have for the most part nevertheless felt intuitively that there really is some semantic distinction. The present approach to quantification allows one to confirm that intuition, particularly its common expression to the effect that somehow all makes reference to the set as a unity. We shall say that all picks out that unique subset of a class that has the same cardinality as the set itself whereas each and every pick out individual members without directly referring to cardinality at all, even though empirically the two varieties of quantifier here converge owing to the entailments of set exhaustion.

1.1 Quantifier floating is the phenomenon that allows a quantifier to appear separated from the noun phrase in question, either attached to some other noun phrase in the sentence or attached to the predicate of the sentence as a whole. Thus, we can have:

1. a. Each of the men gave him a dollar.
b. Each man gave him a dollar.
c. The men each gave him a dollar.
2. a. The men gave him a dollar each.

- b. The men gave him each a dollar.

These seem all to mean exactly the same thing. If we suppose that syntactic movement transformations are part of the machinery of grammar, we can suppose that some rule or rules move each from one or other of the positions it can have in (1), where it appears contiguously to the noun phrase it is understood as qualifying, to one or other of the positions it can have in (2). This supposed detachment of the quantifier from its noun phrase of origin is referred to as 'floating'. The matter is complicated by the fact that the constituent structure of (1) and (2) is unclear, and it is by no means clear whether in these three sentences each is immediately in construction with the noun phrase next to it. However, it is in any case necessary to make a categorial distinction between rules that are thought to detach the quantifier from its 'original' noun phrase and rules that move it without so detaching it. To this extent, at least, my statement of how one might classify the rule or rules that might be thought to move this quantifier from or into the different positions it takes in (1) and (2) is nearer in spirit to Dougherty's 1970, 1971 treatment than to Postal 1974, 1976.

If we reject transformational rules in general or the class of rules that includes the proposed quantifier floating rules, and assume the each is base-generated in each of the positions it is found in in (1) and (2), it is still the case that each is understood as partitioning the set of men giving the dollars rather than the set of dollars. And even on this assumption, it is convenient to refer to the fact that each can occur elsewhere than in immediate constituency with the noun it properly qualifies under the heading of 'quantifier floating'.

Quantifier floating has been usefully discussed at considerable length for both French and English by Fauconnier 1971. Indeed, it is he that uses the word 'floating' where Postal, Dougherty and others in fact use different terms for the phenomenon. Fauconnier's treatment, moreover, leads me to conclude that the rules that generate (1a, b and c), be they rules of the base or transformational movement rules, have a great deal to do with the entailment of plurality, indeed of set exhaustion, carried by each, and by French chacun. That is, there is a tendency for subject noun phrases quantified by each to take sometimes singular verb agreement, sometimes plural verb agreement. Thus:

3. a. Each of us has/have a bad cold.
b. Each man has/*have a bad cold.
c. We each have/*has a bad cold.

When the quantifier is floated off its original noun phrase, it appears to leave behind, so to speak, an ordinary plural subject noun phrase that necessarily evokes plural verb agreement. Indeed, having regard to (3c), it is this fact that motivated my expression of doubt as to the classification of the rule producing (1c), even though each, in such cases, is immediately adjacent to the right of the noun phrase it properly quantifies.

With regard in particular to floated quantifiers, that is, with regard to cases like that of (2) and, in view of the immediately preceding remarks, probably (1c) and (3c), there is reason to think that they may never be in immediate construction with the noun phrases they are next to, if any, and that they may rather be in immediate constituency with whole predicates, like adverbials. Notice, for example, that (2) seems to have such paraphrases as:

4. a. The men gave him a dollar one by one.
- b. The men gave him, one by one, a dollar.

Moreover, at least in 4 b, one by one can be replaced by the obvious manner adverb severally or individually. Perhaps, then, after all, the basic distinction is to be made between rules giving us, on the one hand, the partitive and non-partitive versions of each quantification (1a and b) and, on the other hand sentences of the type of (1c) and (2), where each can occur just wherever ordinary predicate adverbs can occur.

In Thai, it is to be especially noted, a floated quantifier can attach, adverbially, to a predicate bare of nominal complements.

5. a. dèk thúk khon (dāi?) pai
- b. dèk pai thúk khon
- 'All the children went/got to go'

where **thúk** means 'all' and **khon** is the classifier for human beings, here going with **dèk** 'child'.

What, then, does the phenomenon of quantifier floating do conceptually or semantically? Intuitively, I suggest it has the effect of highlighting a rather obvious function of the each-type quantifier. That is, each serves to distribute the members of the set it properly quantifies over some other element in the sentence (more exactly, over some other class referred to in the sentence). This is a distributive mapping between sets. For cases like (1) this is only trivially so, since the direct object that is the range of this mapping is singular only. The matter is less trivial, and hence clearer, in a sentence like:

6. The men gave them each a dollar.

On at least one reading of this sentence we understand that some men, taken one by one, gave a dollar -- a different dollar on each occasion, perhaps, but not necessarily -- first to one recipient, then to the next and so on. There are, of course, two sub-cases of this that I need not bother to distinguish for present purposes: either each giver gives, successively, to every recipient, or else each giver gives to a different recipient, presumably with the number of givers equal to the number of receivers.

It is also interesting to speculate why one feels that there were probably as many different dollars given as there were distinct givers and/or receivers. Suppose, in fact, as hinted at earlier, whenever each appears elsewhere than as a left-immediate constituent of the noun phrase it properly quantifies -- partitive (1a) or non-partitive (1b) -- it is an adverbial constituent in the sentence. In that case each is attached to, and hence distributes over, the predicate, i.e., over distinct instances of the class of events named by the predicate as a whole. In that case there seems to be an entailment (probably pragmatic, and so cancelable -- Gazdar 1979) the same set named by a noun phrase within the predicate and different from the noun phrase each properly quantifies will be understood as bearing the burden of the distributive mapping as its immediate 'target'. All other things being equal, the target noun phrase of the distributive mapping over whole predicates will be a direct object, if one exists. Moreover, this can happen even when the noun

phrase each properly quantifies is itself in the predicate. Thus,

7. a. I gave each of them a dollar.
- b. I gave them each a dollar.
- c. I gave them a dollar each.

Here, each properly quantifies the indirect object them, and furthermore cannot be understood as properly quantifying the subject noun phrase, since the latter is singular. Moreover, since the floating phenomenon serves only to highlight a distributional mapping by marking it overtly, and each actually has or produces the effect of such distributional mapping even when not floated, it is not surprising that the (pragmatic) entailment I have just been speaking about may be felt to apply even in the unfloated case, e.g., in (7)a. In the foregoing connection we may say that the distributional mapping inductively partitions the class of events named by the predicate and, by the entailment, the set named by the target noun phrase of the float with the predicate.

Similar considerations apply for the common second reading of (6), where the men is taken as a collectivity; where they are understood as giving the dollars or dollars as a body, and on that reading them is the noun phrase properly quantified by each. In addition, something related to the aforementioned pragmatic entailment from distribution over predicates as a whole to distribution over sets named by target noun phrases in those predicates may well account for a restriction on quantifier floating that applies to English though not, for instance, to Thai. In Thai, as (5)b illustrates, a quantifier can float as far (rightward) into the predicate as possible even when there is no predicate noun phrase to bear the effect of this entailment. But the same cannot be said of English, where, for such cases floating is more constrained. Thus,

- 8.a. Each of us went.
- b. We each went.
- c. *We went each.

we can float to the extent of (8)b but not to the extent of (8)c. This raises a host of interesting problems that cannot be investigated here.

2. Now consider Mizo (Lushai). In this language no each-type quantifier can induce singular verb agreement. In this language the agreement of a verb with the number of its subject is marked by a clitic prefix on the verb.

9. tlaang-vāal tin-tēe in- cōo an- ēi
 boy 'each' ergative they eat
 'The boys each ate (some) food'

This sentence cannot allow the clitic prefix for third singular verb agreement (a- instead of an-). Moreover, neither this nor any other quantifier in Lushai can float. It has to take a position immediately to the right of the noun phrase it properly quantifies, and furthermore is in immediate construction with that noun phrase, as is shown in (9) by the fact that the ergative suffix for subjects of transitive verbs (in-) follows it. In addition this quantifier tin- is invariably plural, since it necessarily takes the plural suffix tēe. These considerations lead me to draw certain conclusions.

In Lushai distributive quantification in the sense I have given it above is effected by an essentially cardinal quantifier. Thus, its domain is a power set of the noun it properly quantifies. Therefore, it is similar to Thai

tɛɛ la, referring to successive subsets of size 1, perhaps or, rather, since it is clearly plural, to the collection of subsets of size 1. If this is correct, then Lushai and English are using radically different conceptual strategies to resolve an inherent ambiguity or equivocation in the meaning or function of distributive quantification itself. I mean that distributive quantification implicates singularity if plural, plurality if singular, as pointed out earlier in connection with (3). In Lushai this is resolved in favor of plurality by having the distributive quantifier be a cardinal quantifier.

Thai follows a somewhat different conceptual strategy. In Thai only cardinals can occur other than on the noun phrases they quantify (Wongbiasaj 1980a, 1980b). Wongbiasaj purports to show that this apparent floating of cardinal enumerative expressions (quantifier + numeral classifier) is a consequence of general rules of Noun Phrase Complement Extraposition and the like in Thai, which allow complements of noun phrases to be 'moved' rightward towards the end of the clause or sentence. In Thai, a verb-medial language (SVO), noun phrase complements are linked to their head nouns by classifiers and follow the head nouns when not extraposed. If a complement is extraposed, or moved, the classifier travels with it, so that, at least generally, there is some overt clue as to which noun phrase in the sentence the floated complement properly qualifies. And in Thai quantifier phrases in the narrow sense of enumerative expressions are included in the class of noun phrase complements. Complements, numbers in particular, that precede the classifier are quite generally cardinal, while those that follow the classifier, number words again, but also demonstratives, relative clauses and so on, are ordinal (Lehman 1979b).

It is easy to imagine taking a plurality of entities and distributing them over some different plurality of entities; or, at a limit, taking each of the first plurality and pairing it separately with the same target entity. It is therefore not surprising that in general cardinals float in some languages. However, there is in fact one Thai cardinal quantifier that cannot float, tɛɛ la, the previously mentioned 'each-type' cardinal. Wongbiasaj argues cogently that it cannot float because it strictly entails ordinal singularity; although it is a cardinal quantifier it entails an ordinal set-theoretic operation. Indeed, etymologically, it means something like 'setting (things) aside (up to) completion', where tɛɛ, as in its more ordinary meaning as 'but', refers to setting aside, and la is the usual contraction of léew, 'finish' or 'complete'. Since Thai ordinals of strictly numerical character, nearly alone among noun phrases in Thai, cannot float, neither can tɛɛ la if it strictly entails a numerical ordinal operation.

On the other hand, there is one numerical cardinal that in fact can float, namely, nàng, 'one', 'first' when it follows a classifier. Thus dèk khon nàng means, approximately at least, 'a child' or 'some child', an essentially ordinal expression equivalent to 'a certain child' (the *ith* child). dèk nàng khon means simply 'one child' in the sense of cardinal enumeration. It is reasonably clear that ordinal, post-classifier nàng strictly entails singular cardinality.

The facts thus described suggest the hypothesis that truly distributive quantifier floating is invariably associated only with ordinal quantifiers. It amounts to taking, successively, the first, second, ..., *ith*, *jth*, ...*nth* members of some class or set and pairing them, perhaps in the given order perhaps not, with the members of some other set I call the 'target' set. On this hypothesis, Lushai does not possess an ordinal quantifier of the requisite distributive sort, and hence it has not quantifier floating. Thai had something like quantifier floating, but it is actually a proper part of the very different phenomenon of noun phrase complement extraposition. I claim that,

nevertheless, when cardinals are subject to the latter operation it serves, by a pragmatic implicature in the sense of Gazdar 1979, the function of distributing the members of one set over the membership of another, as does true quantifier floating. As it were then, Thai, having chosen to use only cardinals and noun phrase complement extraposition to accomplish this, has somehow specially excluded just ordinal enumerative quantifiers from the domain of noun phrase complement extraposition.

Although this hypothesis remains tentative, a cursory but fairly wide survey of reasonably well-described languages tends to support it. It seems that no language accomplishes the intended distributive mapping by subjecting cardinals to a process that is floating in the strict sense. However, it is notoriously difficult to ascertain the necessary facts even for comparatively well described languages, and particularly hard to be sure which quantifiers are cardinals and which are ordinals, because one has much of the time to rely on free English glosses. For instance, in even quite sophisticated work on Thai *thúk* and even *tê la* (when it is mentioned at all) are glossed as 'each' or its equivalent in some standard European language. Should the hypothesis be in any way confirmed by more thorough investigation, we should have a compelling instance of a constraint upon possible syntactic rules motivated by the clearest kind of formal, logical considerations, considerations suggestive at least of the possibility that grammatical phenomena may be constrained by the most general sort of cognitive processes.

3. Burmese presents us with yet another problem. In Burmese quantifier floating, again irrespective of whether we regard it as a movement rule or not, is obligatory. If it is not a movement rule -- or in a grammatical theory without transformations -- some rule of interpretation will ensure that the each-type quantifier, which appears in the syntax always on the 'target' of the distributive mapping, is associated with the noun phrase that it properly quantifies.

There are, however, two apparent qualifications to my statement that quantifier floating is obligatory in Burmese. First, the statement is meant to apply to Standard colloquial Burmese only. There are dialects, like the Tavoyan dialect, in which, at least on occasion, an each-type quantifier may appear simultaneously on the noun phrase it properly quantifies and on the target expression of the intended distributive mapping. Since my work on this dialect is far from complete I shall not say more about it here. Secondly, there are expressions loosely translatable as 'each' which are never involved in quantifier floating.

10. *nei. taing:* 'each day/ every day'
day extent

means literally 'the full measure, or extent, of days' and *taing:* is a head noun in genitive construction with *nei.* ('day'), and is derived from the verb meaning 'to measure' or 'to compare' and is not a quantifier at all. The head noun here is to be understood as designating a whole class and as neither singular nor plural (see Lehman 1979b). In spite of the traditional English glosses, such expressions do not really bear upon the subject under investigation in this paper.

In Burmese true numerical quantifiers always involve the use of a numeral classifier, whether they be ordinals or cardinals; the exception is in the abstract counting-recitation of bare numbers. On this criterion the each-type

quantifier will be seen to be a true ordinal. Examples of quite ordinary numeral expressions are

11. lu thoun: yauk three persons
person 3 classifier
12. thoun: yauk (myauk) lu third person
3 classifier participle person

Note that ordinal expressions precede, and cardinals follow, the head noun. In 12 the parenthesized (optional and literary) word myauk is of some interest. Numerical ordinals, except for adjectival ordinal words for the lower integers borrowed from the Pali language, are followed in this register or style of Burmese by myauk, which is the bare root of a verb meaning 'to raise to a certain position'. Since relative clauses, usually but not at all invariably followed, in this verb-final language, by an inflected verb-final, or tense, ending, precede the head noun, we may surmise that ordinal enumerative expressions are based upon relative clauses. Moreover, the larger class of logical ordinal expressions that include numerical ordinals, i.e., relative clauses and also demonstratives, agrees in preceding the noun head, whilst cardinal expressions follow it.

The Burmese quantifier that really means 'each' is si, derived from the verb meaning 'to take one after another, successively'. It can never appear next to, or in construction with the noun phrase it is understood as properly quantifying.

13. ?ayaung ?amyou: (?a)soun tamyou:si tamyou:si wehnainte
pattern kind whole 1 kind each [redup] can buy
classif.
'I'll buy one of each kind' (Cornyn and Roop 1968:374)
14. tayauk hnakyat si we
1 classif. 2 Kyats each distribute
IO DO
'Distribute two Kyats to each person' (Okell 1969: 407)
15. tahtat hma hcawk hkan: si hyi.te
1 storey loc. 6 room each exist
'There are six rooms on each floor' (Okell 1969:407)
16. tahtat si hma tahkan: hyi.te
'Each room is on a separate floor'
17. lwe: ?eik taloun: si ne. thwa:lei-ye.
shoulder bag 1-classif. each with go
'They each went with a shoulder bag' (Okell 1969:407)
18. thu-dou. tayauk si tayauk si thwa:te
they 1 classif. each [redup] go
'They each went. They went one-by-one'
19. cundo hou lu-dei kou tayauk si myin-te
I that persons to 1-classif. each see
'I saw each of them'

But,

20. lu taing: thu.kou takyat pei:te
person 'each' he-to 1-Kyat give
'Each person gave him one Kyat'

Notice the si can appear in the foregoing sentences only where it in fact appears. If the intended readings are to be preserved. That is why I said, earlier, that floating is obligatory. Example 20 needs no particular comment, but the rest of the sentences, 13 - 19 are worth further discussion.

13 makes it especially clear that si is not attached even to the classifier expression of the noun phrase it properly quantifies. ?asoun ('whole') is an enumerative-cum-classifier expression belonging to the head noun meaning 'pattern', and taken together they mean 'a kind of pattern'. si is attached, however, to the reduplicated enumerative expression meaning 'one kind'. Furthermore, the reduplication of the form here strongly suggests that it is a manner adverbial, and since time or place adverbials, for instance, can intervene between ?asoun and tamyou:si, I conclude that si is floated into a predicate adverb meaning 'kind-by-kind'.

14 is straightforward. si ('each') is attached to the expression meaning 'two Kyats' (the Kyat is the unit of Burmese currency), and this attachment is shown by the fact that the initial of si is voiced in these cases (voicing over internal juncture within the word). Nevertheless, si is understood as qualifying 'person'. The floating is from the direct onto the indirect object, and this way of stating the case can be taken as informal rather than as a claim that a transformational movement rule of floating really exists. The floating, then, is downward in the supposed hierarchy of grammatical relations, as one might expect, and I know of no case where quantifiers float freely up this hierarchy. In English example (7 c), floating is from the indirect object not onto the direct object, which would be indeed upward, but downward onto the predicate as a whole, namely outside the domain of grammatical relational terms altogether. The apparent counter example in 15, where the floating seems to be upward from indirect to direct object, I dispose of below, in section 4.

Apart from the question of the direction of the floating, example (15) is transparent. Examples (16) and (17) illustrate the principle that where a postposition governs a noun phrase, the classifier expression belonging to that noun phrase is to the left of, within the scope of, the postposition. This provides clear evidence that si is indeed attached to the noun phrase it is next to. On the same principle we can tell that in (19) si is not attached to the noun it properly quantifies, and indeed a time or place locative adverbial could acceptably come between kou and si in (19). I again conclude that si is attached here to a manner-adverbial enumerative expression.

In both (18) and (19) there is no overt target noun phrase for si to be floated onto. Example (18) might well, in fact, be questioned as a perfectly acceptable sentence, and it is certainly not in the best style; it has an intransitive verb, hence no direct object to receive a floating quantifier, and the reduplication unquestionably marks the enumerative-plus-si expression as a manner adverbial, as in (19) also (there without reduplication). Elsewhere, in Lehman 1979b, I deal with the source of classifier expressions without heads.

In any case, in Burmese, so long as there is an available overt noun phrase downward in the supposed hierarchy of grammatical relations from subject through direct object to indirect object and then to adverbials and other non-terms, si is attached to such a noun phrase exists to receive it. In this, Burmese is very different from Thai, Lushai, English or French, because in the latter languages, to the extent that quantifier floating is defined for them it can be argued that floating is always onto a predicate adverbial. The latter situation raises no real analytical problems. After all, even unfloated each has the function of the intended distributive mapping, and therefore in a sentence such as

21. Each man left.

we understand a distributive mapping from the set of men onto something, and that something has got to be something other than an overt target noun phrase. That the implicit target is realizable as a manner adverbial is at least suggested by the fact that (21) is readily paraphrased by replacing each by the and adding one-by-one at the end of the sentence.

Notice in particular that the presumption that there were separate instances of leaving is far from automatic in the case of

22. All the men left.

as I pointed out earlier; they may have left in a body, collectively.

Burmese, by making floating obligatory, highlights or makes maximally explicit the distributive mapping function of si, not only because floating is in itself obligatory but also because it is, as much as possible, necessarily onto a particular target noun phrase, and the sort of (pragmatic) implicature that is needed to distribute a floated quantification over a target noun phrase in the predicate in such instances as examples (7) and (8) is not in general needed in Burmese.

4. It seems to me that Burmese provides good evidence for the proposition that each-type quantification involves the intended sort of distributive mapping function. That mapping points up the relations between cases or grammatical relations among arguments of a common predicate, and it is constrained by the apparent natural hierarchy among those grammatical relations (see Cole 1977: passim). It is surely not accidental that quantifiers float more readily off of subjects than off of other noun phrase arguments.

As for the generalization that quantifier floating is always downward in the relational hierarchy, exceptions such as are seen in (15) are easily disposed of. In that sentence si properly quantifies the locative phrase but is in construction with hcauk hkan: ('six rooms'), which is a term of higher order, a subject or predicate nominative of the existential verb hyi. ('to have', 'to exist'). However, in (15) the locative phrase is preposed. In a more 'neutral' order, with hcauk hkan:si coming before the locative phrase tahtat hma, the sentence would be unacceptable precisely because of the presence of si on the higher ranked term. Burmese is a topic-comment language (see Lehman 1973), and in such a language it seems that a phrase preposed left of the grammatical subject co-opts the sentential topicality ordinarily associated with the subject. Therefore it may be that this apparent counter-example of si floating upwards rather than downwards in the relational

hierarchy is accounted for, if not really explained away, by the tendency of sentential topicality to overrule subjecthood.

It is also no accident that quantifier floating is constrained within a single clause, that is, no quantifier can float into a higher or a lower clause than that of the noun phrase it properly quantifies. This restriction I doubt is explained altogether by the principle that movement to the right is upward bounded, limited, that is, to the clause within which the supposedly moved item starts out (for a discussion of counter-evidence for this principle see Subbarao 1978). Rather it seems to me that the explanation may be simply that the distributive mapping functions to relate arguments of a common predicate.

4.1. Now, in section 1.1, I claimed, with regard to some Thai examples, that the extraposition of cardinals serves only weakly, by a mere pragmatic, cancelable implicature, to induce the intended distributive mapping. I subsequently argued that this mapping function is inherent in each-type quantifiers whether they are actually floated or not. I went on to claim that in a language like English, where the quantifier seems always to float into a predicate adverbial position, the construal of the distributive mapping as being over, say, an object noun phrase within the predicate is also the result of a cancelable implicature only. There is no contradiction here. What is direct and uncancelable about the distributive mapping in the case of ordinal each is the way it necessarily partitions the predicate as a whole into several instances of the action or state named by the predicate. This is so even when, say, the quantifier is unfloatable owing to the fact that the noun phrase it properly quantifies is as far down as possible in the hierarchy of grammatical relations.

23. There are three storeys in each house.

Here each is already in a prepositional phrase, in particular in a low-level predicate adverb, to begin with, and so we can hardly expect to get

24. *There are three storeys in the houses each.

Yet the predicate three storeys in the house is clearly understood as applying serially or severally to the houses under discussion. Moreover, it cannot be argued that this is due to the peculiarities of 'there are' sentences, where some argument other than there is the logically understood subject, for my claim applies equally to such sentences as

25a. I saw three storeys in each house.

b. *I saw three storeys in the houses each.

However, in a language like English, when each is floatable, it is generally understood by a pragmatic implicature only to partition an available noun phrase within a predicate-as-a-whole that is in fact directly, uncancelably partitioned or distributed over. In Thai, on the other hand, with 'floated' (actually, extraposed) cardinals, even the distributive partitioning of the predicate-as-a-whole is a matter of only pragmatic implicature.

5. Quantifier floating, viewed as a movement rule at least, is what Emonds 1976 calls structure-preserving. That is, the output of floating has the constituent structure of an ordinary noun phrase as base generated with a

following cardinal enumerative expression followed by a qualifier. An example of an unarguably base-generated maximal noun phrase of this type is

26. lu tayauk hte: only one person
person 1 class. only

where, moreover (see note 1) the qualifier is also a quantifier of a sort. Since *si* in Burmese is invariably found on a target noun phrase, even if only a headless adverbial one, and since the resulting structure is a kind that has to be generated in base structure anyhow, what is called the Extended Revised Standard Theory of generative syntax (see Culicover, Akmajian and Wasow 1977), and particularly the version of Bresnan 1978 that especially rules out movement rules that are structure preserving could not countenance a movement rule to account for the phenomenon under investigation. A rule of interpretation would then be needed to associate the 'floated' quantifier with the noun phrase it is understood as properly quantifying, and no difficulty arises from the fact that, in some sense, the distributive mapping is going in reverse, because with the distributive mapping relation being inherent in each-type quantifiers anyway, the directionality is at best a trivial consideration.

There is also no problem in extending the no-movement, interpretative treatment to quantifier floating quite generally; or even in extending the interpretative treatment of the distributive mapping function to quantifier floating in general and to the sort of pseudo-floating that we have encountered in the way Thai extraposes cardinal noun phrase complements. The only apparent difficulty arises from the fact that the quantifiers in the latter case 'float' together with their proper classifiers. This gives us such sentences as

27. dèk sū̃ nang-sǎ̃ sǎ̃ng khon
child sell book 2 classif. [+human]
'The children both sold a book'

At first sight it appears that the 'floated' quantifier expression is attached to the object noun phrase, and such a situation could not be base generated because the classifier *khon* is inappropriate for books. However, as I have already suggested, the floated or extraposed expression is very likely attached to a dummy pronominal head noun in a predicate adverbial position. Since, presumably, any classifier whatever is trivially compatible with such a lexically and semantically empty head noun, there is nothing to prevent the 'floated' classifier from being base generated in that very position, and whether the resulting sentence is acceptable or not is determined by the interpretative rule that has to find an appropriate antecedent for it, in this case the noun phrase that the quantifier properly quantifies.

5.1. An interesting restriction on 'floating' or extraposition in Thai has a bearing on the foregoing proposal. A sentence such as unacceptable

29. *raw hây nang-sǎ̃ (sǎ̃i lêm sǎ̃ng khon)
we give book 4 classif. 2 classif.
('We each/both gave four books')

is completely ungrammatical. Wongbiasaj 1980b demonstrates that this is because *hây* strictly requires the presence of an indirect as well as a direct object. Thus, in (29) *sǎ̃ng khon* ('two persons') will unavoidably be understood as somehow applying to a phonologically null pronoun in the position

of an indirect object of the verb 'give', even if only by the suggested implicature associated with floating the quantifier in general onto a predicate adverbial.

I have obviously taken as uncontroversial that Thai, like Burmese and many languages, has pronouns that are phonologically null and work more or less equivalently to de-stressing unfocused pronouns in English.

In any case, the implicature in question will necessarily match the 'floated' quantifier with the nearest available noun phrase with the appropriate [+human] specification, and this will always be the dummy head of the indirect object in this case, and in a language like Thai with a fixed word order: verb, direct object, indirect object. So powerful is this implicature that a sentence like (29) will invariably be understood as though it were not an instance of 'floating' or noun phrase complement extraposition; as though sɔ̃ng khon had been base generated on the indirect object noun phrase.

This strongly motivates accepting the no-movement account of floating, or at least of noun phrase complement extraposition in Thai. For to treat it as a movement rule would have the intolerable consequence, in this case, of a rule of logical interpretation wiping out all evidence of the application of an otherwise unimpeachable transformation. Such a proposal amounts to postulating invisible rule applications, and such claims are necessarily unverifiable, and hence unempirical claims altogether.

Alternatively, one might propose an arbitrary constraint on the otherwise free operation of the structure-preserving floating or extraposition rule: floating (or extraposition) is barred when the verb is hây or some other double-object verb. There is something unsatisfactorily circular about any such proposal, because its intended function is to block a misinterpretation arising from an implicature, or rather to avoid a situation in which one could not know, because of the implicature-based misinterpretation, that the rule had ever operated at all. Moreover, such a constraint would in any case be strictly redundant, since we should still require the rule of logical interpretation in order to motivate the constraint in the first place.

I therefore conclude that the simplest and best proposal for handling the phenomenon under examination is the no-movement-rule proposal.

6. Up to this point I have written as though quantifier floating were strictly limited, at least in English, to ordinals, in fact, to each. However, English floats such cardinals as all and both (see Postal 1974, 1976). Thus,

- 30a. All of us gave him a present.
- b. We all gave him a present.

Of course these cardinals float only incompletely; never cease to be adjacent to if not in construction with the noun phrases they properly quantify, so that the following two sentences are unacceptably bad:

- 31a. *We gave him all a present.
- b. *We gave him a present all.

It is this difference between the floatability of each, on the one hand, and all and both, on the other, that forced Postal to conclude that floating to the

end of a clause is a separate rule he called Each Shift.

My own view is that in English at least quantifiers like all and both have a special or privileged relation with ordinals like each: the latter entails the former and conversely, also. This seems to be what motivates the at least partial floatability of the cardinals all and both. The effect of full floatation would of course be to induce a distributive mapping over complements of the predicate, and this consequence would be intolerable. In fact floating these privileged cardinals out of adjacency with the noun phrases they properly quantify would be to highlight or emphasize the possibility of the distributive mapping over the predicate-as-a-whole in the case of quantifiers that simply are not distributive in their meaning in spite of their privileged relationship with the distributive quantifier. Furthermore, the consequence would be odd indeed: an incorrect uncancelable distributive mapping over the predicate appearing to be induced just by way of a pragmatic, cancelable implicature to distribution over a complement of the predicate suggested, in the first place only by the possibility of the distributive mapping over the predicate. This is quite intolerable circularity.

A PRELIMINARY REPORT ON THE PAANGKHUA LANGUAGE

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The Paangkhua form a small ethnic group in the middle and northern part of the eastern side of the Chittagong Hill Tracts, Bangladesh. Older sources mention them as "Kuki" or "Panko". Shafer (1955) classifies "Pankhua" together with "Bom" under the Lushai unit, where "Bom" is not to be identified with present day Bawm (Bunjogi), classified in the Central Chin (Lai) unit, but stems from a word list for two languages (called "Bunzoo" and "Kuki", i.e. Paang and Bawm) of the Chittagong Hill Tracts, published by Barbe in 1845, full of mistakes and corruptions, with (indigenous) "Bom" entered for (English) "Bunzoo" in what looks like the Paang list, though the heading gives "Bunzoo" (i.e. Bawm) again.

From the vocabularies and grammar data now at my disposal it would seem that Paang is no closer to Lushai than it is to Bawm, but to be distinguished from both, and more allied to the Old Kuki group, by the preservation of certain prefixes, viz. ma- and ra-. There seems to be quite a number of loan words from Lushai in Paang; still, these loans are clearly identifiable only in those cases where original cognates differ from the Lushai forms either in their initial or their final (including tone).

Since 1965, the Chittagong Hill Tracts have been inaccessible to foreigners. However, people from the interior can visit the plains district without restrictions. For a long time, Lushai missionaries have been active among the Paang, who, for their education, might also attend boarding schools in the Bawm area. I employed two informants, one Paangkhua who used Lorrain-Savidge's dictionary of 1899, replacing English by Paang - this source will be referred to as the LP-dialect, and a Bawm, who used the Bawm-English dictionary (on which I have been working from time to time since 1965) - these data will be called the BP-dialect. In case of near synonyms, with a cognate either in Lushai or Bawm, the LP as a rule shows the cognate of the Bawm word, while BP on the contrary shows the word also to be found in Lushai, i.e. each informant tried to establish Paang as a language different from that used for questioning. Judging from a rough count of 100 items, the number of Bawm-Paang cognates not to be found in Lushai, and that of Lushai-Paang cognates not to be found in Bawm, seems to be approximately the same. However, on ethnohistorical grounds it would be more likely that Bawm borrowed from Paang than vice-versa.

The drafting of both dictionaries (LP and BP) was done in the interior, with the informants working according to my instructions. Unfortunately, the Paang informant, after a few pages, dropped the notational system proposed by me, and reverted to his own way of (occasionally) marking the high tone by a circumflex (so that it is clear that, e.g., âi stands for ái, while, however, ûn may stand for uun, ũun or ún). The Bawm informant, on the other hand, gave

tone marks throughout, but apparently had difficulties with the fact that in some cases Paang has exactly the opposite tone sequence than Bawm, while in other cases the tone sequence noted comes close to that of Lushai. Thus, more than often the interpretation of tones must remain mere guesswork; but I also have some tape recordings of Paang texts, partly transcribed and tone marked by myself in collaboration with my Paangkhoa informant. In short, the material available up to now is not yet sufficient for a reliable dictionary, but it can serve for a preliminary report, especially for a comparison with Lushai.

A. Phonemes and tones

p	t	ts	*tl	k	*kr
ph	th		tlh	kh	
b	d			*g	
*f	s				h
v	z				
m	n			ng	
	r	*hr			
	l	*hl			

[phonemes only occurring in loans are marked with an asterisk /*/]

Excluding loans, Paang shows the following set of initials: k, kh, ng, h; ts, s, z; t, th, tlh, d, n, r, l; p, ph, b, m, v. In loans (most probably from Lushai) we find in addition: tl, hl, hr, f, and in loans from Bengali and English also g and kr. The vowel system seems to be the same as that of Lushai (whether Paang differentiates between aai/ai, ooi/oi and uui/ui needs to be checked); also the finals are the same as in Lushai, except that (apart from loan words) no glottal stop appears behind laterals and glides. After plain vowels, cognates of Lushai glottal stopped syllables show, as a rule, a low falling tone, practically indistinguishable from the reflexes of the low tone (2), which in its turn can be followed by a weak glottal closure (both BP and LP give occasionally forms like sâh < thâ, ziah < zîa). To be set off against this tone is a low, short, weakly glottalized or breathy tone, appearing with certain particles only, which would have tone 4 (high-falling) in Lushai and which are sometimes also realized with the normal reflex of that tone in Paang, viz. an unshortened high tone.

The Paang tonal system shows mainly two tones, high and low; the high tone corresponding to Lushai tones 1 (high) and 4 (high-falling), and the low tone to Lushai tones 2 (low) and 3 (rising). In addition, Paang has three secondary tones, 1) an emphatic tone, rising above the normal high level and followed by a clearly audible pause before the onset of the next syllable. (In most cases this tone is used for syllables for which we should expect the low tone, e.g. tām-tāk < tām-tāk (*32), many; zōng#zōng or zōng-zōng (*22), all; but also ěem#ěem or ěem-ěem# (*44), very much: tūu#pōu/ (*24), whoever; ról-cēm# or ról#cēm# (*11), biggest); 2) the allotone of the high tone (*4) mentioned above, to be met with certain particles as e.g. tã/tãa (connecting particle), (ma)tsù/(ma)tsúu (demonstrative particle), Bawm tone 2, Lushai tone 4, the prefixed form being used before, the unprefixed form after the nominal; 3) a

high-falling tone used in certain exclamations and terms of address only. For the present purpose the tones will be marked as follows: \acute{v} =high, \check{v} =high-rising, \hat{v} =high-falling, \check{v} =low or low-falling, long, \grave{v} =low short/breathy; prefixes will be left unmarked. In general, high-toned syllables tend to show a greater time length than low-toned syllables, explaining the use of the circumflex for high-toned syllables by the Paang informant. A peculiar phenomenon of Paang (otherwise well-known from African tone languages) is the appearance of a mid tone instead of the high tone in second or later position: this tendency may spread over the whole sentence leading to a repeated lowering of the pitch level.

Paang seems unique in showing the same pitch contour for tones 1 and 4, the latter even including lexemes which show a final glottal stop after nasals and glides in Bawm; otherwise in Bawm, too, tones 1 and 4 became indistinguishable, but this only after tones 3 and 4 had merged, a merger also to be found in the other Lai languages as well as (following Weidert 1979) in Thadou, Kom and Anal (Old Kuki). While for Bawm the assumption of an original 3-tone system would be sufficient to explain the variation in verbal forms (except for those with open vowel), we need 4 tones to explain the tonal interchange of Paang verb forms in predicative and attributive usage, viz. high/low (1/2), low/high (2/4 < ?), low/low (3/2), high/high (4/4). In original open vowel verbs Paang probably has $\acute{v}v/\acute{v}t$ (1), $\check{v}k/\check{v}k$ (2), $\hat{v}v/\hat{v}t$ (3), $\acute{v}vk/\acute{v}vk$ (4) - notice the addition of -k in both, from I and II, or former tone 2 and 4 verbs.

In the following lists I give a few examples for Paang ts- < *tr- and s < *tsh-, *trh- and *f-. For the sake of an easier comparison, I shall not use the Lushai (and Bawm) standard alphabet, but replace aw by /o/, o by /ou/, c by /ts/, t by /tr/ and final h by /ʔ/; length will be expressed by vowel doubling. Lushai tones will be marked \acute{v} =high, \grave{v} =low, \check{v} =rising, \hat{v} =falling. Bawm tones are given in the form they take after pronominal particles.

Paang	Bawm	Lushai	
tsàng	tràng	trǎng	'dry'
tsàng-púi	tràng-púi	trǎn-púi	'to aid, to help'
àn-tsám	àn-trám	ǎn-trám	'turnip'
tsáp	tráp	trǎp	'to cry'
tsám	trám	trám	'hungry'
tsli	triʔ	triʔ	'to fear'
antsit	(triʔ)	trií/trít	'be afraid'
tsial	trial	trǎl	'be striped, spotted'
ratsial	riál	thriál	'to chew, gnash teeth'
tsuan	truan	truan	'to work'

Bawm, too, has *tsh- > s-.

ansaà	sàʔ	tshǎʔ	'be thick'
sám	sám	tshám	'to lack'
sàn-suak	sán-suak	tshǎn-tshúak	'to rescue'
masín	sínʔ	tshlín	'to close'
síng-sià	síngsíaʔ	tshín-tshǎaʔ	'to mark'
sím	sím	tshím	'south'
siat-sám	siat-sám	tshǎa-tshám	'to take an oath'
sung	sung	tshúung	'inside'
masun	súnʔ	tshún	'to spear'

sùn	sùn	tshùn	'noon'
sùm	sùm	tshùm	'fog'
masùl	sùl	tshùul	'womb'
masúi	súi?	tshùi	'to kick'
séem	séem	tshéem	'to kindle, blow'

*trh- has become th- in Lushai and standard Bawm; in the Northern Bawm villages, being in close contact with Paangkhoa, th- becomes s- (and t- > c-) like in Paang (all /s/ are slightly palatalized).

saà	trhá	trhàa	'good'
sáal	trháal	trháal	'hot season'
masíi	trhii	trhii	'bead'
maseè	trhè?	trhè?	'to offer, to give'
masèn	trhén	trhén	'to divide'
súi	trhíit	trhúi	'to sew'

(The Bawm form is regular, since Bawm a) changes ui > ii, and b) uses form II for transitive verbs, with c) form II in tone 1 verbs taking final -t).

sapaà	fapá	fapàa	'son (fâa-, child)'
savaang	favaang	favaang	'autumn (*fâa-, rice)'
sing	fing	fing	'clever'
ansiim	fim	fim	'clear'
masúu	fuu	fuu	'sugar cane'
sung	fung	fung	'rod'
sùn	fún	fún	'wrap up'
sùur	fúur	fúur	'rainy season'
sèi	fèi	fèi	'spear'
masèep	fèep	fèep	'to suck'
síang	fíang	cíang	'clear'
ársii	àrfi	ársli	'star'
úi-sòm	úi-sòm	úi-fòm	'mantis'

(The last three forms show irregular correspondences in Lushai and Bawm; Paang has also tsíang besides síang). As there are no tsh- and th- in Paang, s- is apparently substituted for them also in loan words (LP, however, gives some th-), f-, on the other hand, is retained as such, and in both of my vocabularies the number of f:s correspondences only slightly exceeds that of f:f correspondences) (13:10 and 14:12) with the Bawm-Paang dictionary giving fapàa, fim and fèi instead of the forms with s- quoted above. As the BP dialect comes closer to Lushai and Bawm also by retaining fewer prefixes (see below), Paang f- instead of s- in the above mentioned cases may represent a kind of restitution in a largely bilingual milieu. With regard to *tl-, on the other hand, BP has tlh- throughout, while in LP tl- appears in nearly one third of the cases, t- appears both in LP and BP but only in two or three words.

B. Prefixes and morphophonemics

Excluding sa-, to be derived from *sâa 'animal', *fâa 'child', or *sâa 'rice', Paang has three kinds of prefixes, viz. ra-, ma- and an-, the latter of which appears to be used only with verbs (and a few deverbals). (Otherwise an- serves as a kind of prefix for trees and plants, but is probably identical with àn (3) 'edible greens'). Before verbs, an- serves as a reflexive marker (Lushai in-, Bawm a-), but is much more common than in Lushai or Bawm, since it

regularly also serves to distinguish intransitive from transitive forms, the latter often marked by the prefix *ma-*. After *ma-* and *an-*, verbs seem to appear in form II, cf. in the samples given above: *tsī* (tr.) 'to be afraid of', *antsit* (intr.) 'to feel afraid'. As the personal pronoun prefix (*ka-*, *na-*, *a-*) fuses with the reflexive prefix, the attributive (adjective) form and the predicative form of the third person singular would be indistinguishable but for a change in tone in the predicative form, cf. *anlāa* 'far' (low tone from unprefix form in tone 1, cf. Lushai *hlāa*) but *anlāa* 'he is far' (tone 2); *antōu* 'sitting' (low tone from unprefix form in tone 1, cf. Lushai *tōu*), *antōu* 'he sits' (tone 1). There is, however, no reversal from form II to form I, so that tone 1 in the predicative forms is probably not to be regarded as a "restitution", but as the result of a secondary tonal switch, also to be found in Bawm with all reflexive verbs. However, more reliable material will be necessary before a definite statement can be made.

Prefix *ma-* serves, as already mentioned, to distinguish transitive from reflexive forms, and it functions as a causative marker as well. As such it is even added when the main word is followed by the causative verb *tīir* 'to let, cause to', cf. *makāl-tīir* 'to let go along' (*kāl* 'to go'), *masèn-tīir* 'to redden' (*sèn* 'red'), *masual-tīir* 'to adulterate' (*sual* 'faulty').

In a few cases we also find *ra-* as a verbal prefix. It appears to be used before transitive verbs only. In the BP dialect, *ra-* is sometimes replaced by *ma-*, *an-* or is just left out. As a prefix *ra-*, like *ma-*, commands the verbal form II, and it can in fact be dropped without loss of information - unless the basic (intransitive) verb is in tone 3 or 4, in which case form II (tone 2 or 4) would have the same pitch in Paang, cf. the following examples:

LP	BP	Lushai	Bawm	
<i>rakèek</i>	-	<i>kèek/kè?</i>	-	'to separate'
-	<i>rangaa</i>	<i>hngat/hngà?</i>	<i>ngà?</i>	'to lay down'
<i>rasil</i>	<i>masil</i>	<i>sik/si?</i>	<i>sik/si?</i>	'to pinch'
<i>rasuuk</i>	<i>masuuk</i>	<i>suu/suuk</i>	<i>suk</i>	'to wash'
<i>rasua</i>	<i>masua</i>	<i>tshuak/tshua?</i>	<i>sua?</i>	'to release'
<i>raput</i>	<i>put</i>	<i>puu/put</i>	<i>put</i>	'to carry on shoulder'
<i>rabaat</i>	<i>anbaat</i>	<i>baat/ba?</i>	<i>ba?</i>	'to throw over shoulder'
<i>rakaan</i>	<i>makaan</i>	<i>kāan</i>	<i>kān?</i>	'to cross over'
<i>rakuai</i>	<i>kuai</i>	<i>kuai</i>	<i>kuai?</i>	'to pull down'
<i>rakhuu</i>	<i>rakhuu</i>	<i>khū?</i>	<i>khū?</i>	'to cover'
-	<i>rakhung</i>	<i>khung</i>	-	'to imprison'
<i>rakhool</i>	<i>khool</i>	<i>khool</i>	<i>khòl?</i>	'to stock'
<i>rangaaai</i>	<i>rangaaai</i>	<i>ngaaai/ngai?</i>	<i>ngaaai(1)</i>	(1) 'to love'
			<i>ngaaai(2)</i>	(2) 'to listen'
<i>ratsaa</i>	<i>ratsaa</i>	<i>tsa?</i>	<i>tsa?</i>	'to send on commission'
<i>ratsan</i>	<i>tsan</i>	<i>tsan/tsan</i>	<i>tsan</i>	'to cut up'
<i>ratsiil</i>	<i>tsiil</i>	<i>tsiil/tsiil</i>	<i>tsiil</i>	'to trample, tread'
<i>ratsuum</i>	<i>tsuum</i>	<i>tsuum/tsuum</i>	<i>tsuum?</i>	'to punch'
<i>ratsial</i>	<i>tsial</i>	<i>trhial/trhial</i>	<i>rial</i>	'to chew, gnash teeth'
<i>rasil</i>	<i>ansil</i>	<i>sil/sil</i>	<i>sil</i>	'to wash (body)'
<i>rasial</i>	-	<i>sial/sial</i>	<i>sial</i>	'to cut (a road)'
<i>ratlhàng</i>	-	<i>tlhàng/tlhàng</i>	<i>tlhàng</i>	'to choose, to select'
<i>radjil</i>	<i>djil</i>	<i>djil/djil</i>	-	'to ask for'
<i>rapil</i>	<i>pil</i>	<i>pil?</i>	-	'to take off (coat)'
<i>razoon</i>	<i>anzoon</i>	<i>zoon/zoon</i>	<i>zoon?</i>	'to carry between'

ralàm	lám	lám/lám	lám	'to summon'
ravei	(an)vèi	vèi/vèi	vèi	'to labour (childbirth)'
ravuan	-	vùan/vôn	vùan?	'to grasp, seize'

The tendency to drop the prefix and to use the stem form II for transitive verbs, observable in the BP dialect, recalls the peculiar fact that Bawm transitive verbs show form II throughout: it seems now possible to explain this by a process similar to that in the BP dialect. The difference between Bawm and Paang is, however, that Bawm shows the glottal stop in what would be glottal stop or tone 4 in Lushai, while Paang uses the high tone without any shortening of the vowel or final glottalizations found both in Lushai and Bawm. Again, both Bawm and Paang have in common that, unlike Lushai, the velar nasal final of form I does not change into a dental nasal in form II, but retains its velar quality.

The process of prefix dropping in the BP dialect can be seen even more clearly with nouns. Unlike verbs, nouns do not seem to change their tone when prefixed. (In the following list ra- will be in parenthesis if not recorded in BP: the list contains only those items for which I have both BP and LP recordings and a cognate in Lushai.)

(ra)kíi	kíi	'horn'
(ra)kíl	kíl	'corner'
(ra)kùaa	kùaa	'hole'
(ra)kúang	kúang	'coffin'
rakhúup	khúup	'knee'
rakhuái	khuái	'bee'
rangáa	ngáa	'five'
rangál	ngál	'skin'
rangúl	ngúl	'rod'
(ra)tsàan	tsáang	'finger-joint'
-(ra)tsíng	-tríng	'soot'
rasum	súm	'mortar'
ratúng	túng	'post'
(ra)tháa	tháa	'strength, sinew'
ratlháa	tlháa	'ghost'
(ra)tlhàn	tlhàn	'sweat'
ratlhíng	tlhíng	'marrow'
(ra)tlhúak	tlhúak	'brain'
ranuù	hnúu	'breast, milk'
(ra)páa	páa	'mushroom'
rabaal	búl-báal	'tube, bulb'
(ra)búu	búu	'nest, book'
rabúng	búng	'banyan tree'
(ra)mái	mái	'pumpkin'
ramáng	máng	'dream'
ramíng	hmíng	'name'
(ra)mít	mít	'ankle'
razáa	záa	'hundred'
razáa	záa	'wild goat'
(ra)zlik	zlik	'new shoot'
(ra)láng	hláng	'bier'
(ra)líng	hlíng	'thorn'
(ra)lúng	lúng	'maggot'
(ra)vàan	vàan	'sky'

ravàam	vàam	'potash'
(ra)vùt	vùt	'ashes'
ravòt	vàt	'land-leech'
(ra)huù	hùu	'steam'
rahòl	hòl	'charcoal'

It would seem that the prefix is normally dropped when the main syllable is followed by another one, but is kept when another syllable is preceding it, cf.

ìn-ratsíng	in-tríng	'(house)-soot'
sarazáa	sazáa	'(animal)-wild goat'
tsáng-rakèel	tsáng-kèel	'wild plantain'
áar-raláa	áar-láa	'pullet'
bàng-ratúng	bàng-túng	'wall perpendiculars'
kut-ratsàan	kut-tsàang	'finger-joint'
mèi-rahòl	mèi-hòl	'(fire)-charcoal'

But:

ratháa		'(sinew)'
tha-záam	thà-záam	'veins'
tha-rùi-nèi	thà-hrùi-nèi	'strong'
rakhuái		'(bee)'
khuái-dáang	khói-dáang	'wasp'
khuái-palít	khói-hlíi	'boil'
khuái-zúu	khói-zúu	'honey'

But also:

rakhuái-tlháar	khuái-tlháar	'honey-comb'
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In a number of cases the prefix ra- may be the remnant of a former full noun, as e.g. in ravàam < rúa-vàam 'bamboo-ashes', cf. ranàal < rúa-nàal, L. rónaal 'a species of bamboo'; perhaps also rangúl < rúa-ngúl 'bamboo-rod'; LP rapaà < rúa-paà, BP máu-paà 'bamboo-mushroom'; moreover, rakhuái < ràu-khuái (?) 'swarm bee'; rathláa < ràu-thláa (?) 'spirit-ghost' cf. L. thláa-ràu; in others it is definitely an old TB prefix, as in ratháa < *ər̥saʔ, cf. WT rtsa (< rsa) 'sinew, strength'; razaà < *ər̥-ya, cf. WT brgya (< bər̥-ya) 'hundred'.

A similar picture of prefix depletion in BP appears with nouns prefixed by ma-. I add a few comparisons with Lakher, which has pa- for Paang ma- (but Ø for Paang ra-).

LP	BP	Lushai	Lakher	English
ma'ír	-	ír		'breast'
makáa	káa	káa	pakah < pakaʔ	'mouth'
makàl		kàl		'kidney'
makòk	makòk	tsàkòk		'fern'
makòt	makòt	kòt		'in front of house'
mangàl	rangàl	hngàl	ngia < (ra)ngal	'wild boar'
matsáng	tsáng	tráng	chia < treng	'twig'
matsál	tsál	tsál		'male'
matsìl	tsìl	tsìl		'salt'
matsíl	matsíl	tsíl	pachi < patsil	'spittle'
matsèek	tsèek	trèek	pachi < patreek	'thunderbolt'
matsùap	tsùap	tsùap	pachao < patsuap	'lungs'

(khùm)-masáa		(khùm)-fâa		'bed-bug'
masíi	masíi	trhíi	pachhi < pathri	'bead'
sùul-in	masuul	tshùul	chhi < tshuul	'womb'
matái		tái	patia < patai	'waist'
matíit	tíit	tíi		'muscle'
antiit		tíit	pai < patiit	'centipede'
matìn	tìn	tín	pato < patin	'nail, hoof'
mathìn	mathìn	thìn	pathi < pathit(?)	'liver'
mathòu	mathòu	thòu	mathyu < mathou	'fly'
	matlhà	tlhàa	mathlaw < mathlaa	'wing'
matlhaak	tlhàak	tlhà?		'offspring'
matlhùung	tlhùung	tlùung	pathlò < pathluung	'ridge pole'
madáng	dáng	dáng	da < dang	'palate'
manáak	manáak	naák		'side of body'
(há)-maníit	(há)níi	(há)hníi	(ha)pano < panii	'gums'
mazáa	záa		pazah < paza?	'palm, sole'
mazúu	mazúu	sazúu	pazu < pazuu	'rat'
mazùun	zùn	zùn	pazô < pazun	'urine'
maraa	raa	ra?		'fruit'
	maráng	(B:) táng	para < parang	'father's sister's husband'
marúul	rúul	rúul	pari < paruul	'snake'
malaà	malaà	lâa	pala < pala?	'cotton'
maláa	maláa	lâa	chalaw < calaa	'spleen'
(òok)malám	(òok)-lém	(òok)-lém	ao-pala	'eclipse'
			< ook-palam	
malúng	lúng	lúng	palô < palung	'heart'
maléi	maléi	léi	palei (tone 1)	'tongue'
malíang	malíang	(líang)	palai < paliang	'shoulder'
malòk	malòk		(Khumi) paleo?	'net'
			< palok	
malóng	lóng	lóng		'boat'

For mathòu 'fly', and makòk 'fern', also Bawm shows prefix ma-; for matsáng 'twig', Bawm has, like Lakher, *treng; in the word for 'ridgepole', mathluung, Bawm also shows aspiration; and finally, Bawm also has a long vowel in the word for 'urine', mazùun. For 'centipede' the informant first entered matiit and then replaced it by antiit; this may just be to distinguish it from the homonym matiit 'muscle' (Bawm mè?-tíit). LP iit for Lushai -íi is also to be found in maniit/hníi (Bawm: -nii) 'gums' and would be normal in verbs (form II). Note that Lakher has unaspirated *pani, although it otherwise has hn-(as well as hm-, hl, hr-) after prefixes, too. This is to suggest that Lushai h-before nasals and laterals may also be derived from a prefix other than s-, probably *r-; cf. also Lakher la < -laang, Lushai: hlâang, Paang ralàang 'bier'; Lakher mo < -ming, Lushai hmíng, Paang ramíng 'name'; but there is also Lakher hlo < hling, Paang ralíng 'thorn'; cf. Lakher lo < ling, 'to prick', suggesting a certain variability in prefixes. In some cases Lakher has no prefix ('palate', 'womb', 'branch', 'boar'), in one case Lakher has a prefix while Paang has none, viz. Lakher parei < parial, LP ríal, Lushai ríal 'hail'. Still, a more detailed study of prefixes will require comparative material from Khumi/Khami, for which sufficient data are not yet available.

VERB CONCATENATION IN AKHA

Inga-Lill Hansson

The verb phrase in Akha consists more often than not of a concatenation, which for Akha can be defined as a string of verbs (and verbal auxiliaries which can be preceded by the negation 'mà' and followed by a verbal or sentence particle (VP/SP). The negation has to be placed in front of the concatenation, and can never be moved inside it, as is often possible in other Sino-Tibetan languages.¹

The definition of a single verb is the same as that for a verb concatenation, i.e. it can occur in the frame: mà...(VP/SP). One of the verbs in the concatenation functions as the verb-head (V_h), and the other ones are placed before and/or after the V_h in a subordinate relationship to it. In this paper I'll try to describe which positions the various verbs can have inside a concatenation, the semantics involved, and the verbal auxiliaries that can intervene in the concatenation.

The following tables are attached to the paper:

1. A list of restricted versatile verbs, occurring after one verb-head only.
2. A list of restricted versatile verbs, occurring after several verb-heads.
3. Examples of some frequent restricted versatile verbs.
4. A list of non-restricted versatile verbs.
5. A list of some frequent restricted and non-restricted versatile verbs with their meanings when functioning as verb-head and as versatile verbs respectively. Examples when functioning as versatile verbs.
6. A list of the same verbs as Table 5 but with examples when functioning as verb-heads.
7. A list of post-head verbal auxiliaries.
8. A chart of the internal order between the post-head non-restricted versatile verbs and verbal auxiliaries.
9. A semantic grouping of Table 8.
10. A list of the pre-head verbal auxiliaries.

The basis for tables 1-10 is an analysis of the possible functions of 356 Akha verbs and verbal auxiliaries. These verbs have not been especially

¹ This paper is based on my notes from fieldwork done in Thailand during 1977 and 1978. My files on verb concatenations cover so far about one-third of my material in the vernacular Akha language. The paper was presented at the 13th International Conference on Sino-Tibetan Languages and Linguistics, Charlottesville, Virginia, 1980.

selected, but are the ones of which I so far have filed enough examples to give a clear indication of their functions in various positions. The following terminology is needed:

	Positions before V _h			Positions after V _h			
	2	1	V _h	1	2	3	4
1)			x				
2)			x	x			
3)			x	x	x	(x)	(x)
4)				x			
5)				x	x	(x)	(x)
6)	(x)	x					

- 1) Only as verb-head: V_h (203 verbs)
- 2) As V_h and in the first post-head position only: restricted post-head versatile verb; V_{vr} (99 verbs)
- 3) As V_h and in more than one post-head position: non-restricted post-head versatile verb: V_v (26 verbs)
- 4) Not as V_h (i.e. it does not fulfill the criteria for verbhood) but only in the first post-head position: restricted post-head verbal auxiliary: V_{auxr} (8 verbal auxiliaries)
- 5) Not as V_h but in more than one post-head position: non-restricted post-head verbal auxiliary: V_{aux} (16 verbal auxiliaries)
- 6) Not as V_h but in one or two pre-head positions: pre-head verbal auxiliary, auxV (4 verbal auxiliaries)

The more specific a verb is as to its meaning, the less are its functional possibilities. This will be clearly seen in Tables 1, 2, and 3, where the versatile verbs have been extracted from the basic list. So far almost all the verbs, that only function as verb-heads, are able to concatenate with other verbs. Information about verbs which do not have this possibility will be added to the final list, when all my material has been filed.

Tables 1, 2, and 3

Tables 1 and 2 list those verbs that, apart from their function as verb-heads, can occur in the first post-head position, but which also are restricted to that one only. The V_{vr}'s in Table 1, occurring so far only after one V_h, are indeed not very versatile, but still can't be regarded as disyllabic verbs, as each one of them can in their turn occur as V_h. As e.g.

dʒ	jɛq	'drink to drunkenness'
mà	jɛq	'not be drunk'
dʒ	hɔ	'try to drink'

where it can be seen that neither does 'jɛq' always have to be preceded by 'dʒ', nor does 'dʒ' have to be followed by 'jɛq'.

In Table 2 those V_{VR} that can follow several V_h 's are listed. All these restricted versatile verbs often have quite specific meanings, as e.g. 'divide', 'pregnant', 'graze', 'count', 'sleep', 'comb', 'borrow', 'win', etc. Adjectives also occur in this position, as e.g. 'wet', 'clean', 'bad', 'afraid', 'black', 'red', 'sharp', etc. Some frequent verbs denoting direction, as e.g. 'up', 'out', 'away', 'in a circle' are among the restricted ones. See Table 3 for some example sentences.

Tables 4, 5, and 6

The non-restricted versatile verbs, Table 4, are very frequent and often enter into lengthy concatenations, also with other V_V 's and V_{aux} 's. See also Tables 5 and 6 with examples of versatile verbs which change their meanings when functioning as V_h and V_V respectively. We will look more closely at the two most frequent ones.

An analysis of the V_V 's í 'go down', and lá 'come up'

Of the non-restricted versatile verbs and verbal auxiliaries, 'í' is the one that most frequently concatenates with other V_V 's and V_{aux} 's. It can occur both before and after other V_V 's and V_{aux} 's, and of course also directly after the V_h or $V_h + V_{VR}/V_{auxr}$. Does í then change its meaning in its various positions? Let's look at the following examples:

1. í as V_h
 - a) náa àjɔq já-ye í V_h 'then he went down to the fields'
 - b) já-ye í kəq náa $V_h V_V$ 'when he reached the fields'
2. í as V_V
 - a) í-tjúq xɔq í ɔ́ $V_h V_V$ 'go down to draw water'
 - b) pjhú phá baq là í nà djé $aux V_h V_V V_V$ 'furthermore went to fetch money carrying'
 - c) phá lɔ́ í $aux V_h V_V$ 'further topples over'
 - d) sjhý í $V_h V_V$ 'go yellow, wither'
 - e) búq í $V_h V_V$ 'go rotten'
 - f) baq dze í $V_h V_{VR} V_V$ 'carry away'
 - g) tshɔ́ tsəq í $V_h V_V V_V$ 'jump across' (a river)
 - h) oq xɔq í $V_h V_{aux} V_V$ 'go to pick up' (seeds that have been sown)
 - i) ɔq í mɔq lá $V_h V_V V_{aux} V_V$ 'start to want to go back'
 - j) dəq í nja $V_h V_V V_V$ 'can go to cut'

When functioning as V_h í means 'go down, go downslope'. As post-head versatile verb it has three meanings:

1. 'go down to $V_h(V_{vr}/V_V V_{aux})$, as in ex. a, b, h, j.
2. ' V_h down, V_h in a downward direction, V_h away', as in ex. c, f, g, i.
3. 'become V_h ', as in ex. d, e.

As can be seen from the examples $\acute{í}$ does not mean 'go down to V_h ' when following a $V_h(V_V)$ denoting a motion, like 'topple', 'away', 'across', 'return', but just shows that the motion is in a more or less downward direction. When the V_h is an adjective, as in ex. d) and e), $\acute{í}$ means 'become V_{adj} '. The meaning of $\acute{í}$ doesn't change according to its position inside the concatenation but according to the semantic contents of the verbs and auxiliaries which it concatenates with.

This is also true of ' $\acute{l}\acute{a}$ ', which has the same pattern of occurrence as ' $\acute{í}$ ', and is the second most frequent one from the point of view of its concatenation possibilities.

- | | |
|---|--|
| 1. $\acute{l}\acute{a}$ as V_h | |
| a) $\acute{l}\acute{a}$ $\acute{í}$ | 'come up' |
| b) $\acute{a}\acute{l}\acute{s}$ $\acute{l}\acute{a}$ $\acute{d}\acute{o}\acute{q}$ $\eta\grave{a}$ $\acute{d}\acute{j}\acute{e}$ | 'a snake came up' |
| | V_h V_{vr} |
| 2. $\acute{l}\acute{a}$ as V_V | |
| a) $\acute{d}\acute{j}\acute{o}$ $\acute{l}\acute{a}$ | 'come to rob' |
| | V_h V_V |
| b) $\acute{g}\acute{u}$ $\acute{l}\acute{a}$ $\acute{n}\acute{j}\acute{a}$ | 'can come to shout' |
| | V_h V_V V_V |
| c) $\acute{o}\acute{q}$ $\acute{l}\acute{a}$ | 'return up' |
| | V_h V_V |
| d) $\acute{m}\acute{a}$ $\acute{n}\acute{o}$ $\acute{d}\acute{o}\acute{q}$ $\acute{l}\acute{a}$ $\acute{n}\acute{j}\acute{a}$ | 'can't figure out' |
| | V_h V_{vr} V_V V_V |
| e) $\acute{d}\acute{e}\acute{q}$ $\acute{l}\acute{a}$ | 'become alive, come to life, sprout' |
| | V_h V_V |
| f) $\acute{s}\acute{h}\acute{i}$ $\acute{n}\acute{j}\acute{a}$ $\acute{l}\acute{a}$ | 'start to understand' |
| | V_h V_V V_V |
| g) $\acute{j}\acute{e}\acute{q}$ $\acute{l}\acute{a}$ | 'to blossom' |
| | V_h V_V |
| h) $\acute{d}\acute{o}\acute{q}$ $\acute{í}$ $\acute{m}\acute{d}\acute{q}$ $\acute{l}\acute{a}$ | 'start to want to return' |
| | V_h V_V V_{aux} V_V |
| i) $\acute{g}\acute{a}\acute{q}$ $\acute{d}\acute{o}\acute{q}$ $\acute{n}\acute{j}\acute{a}$ $\acute{l}\acute{a}$ | 'start to be able to come out grazing' |
| | V_h V_{vr} V_V V_V |
| j) $\acute{b}\acute{j}\acute{a}$ $\acute{l}\acute{a}$ | 'to dawn' |
| | V_h V_V |
| k) $\acute{l}\acute{a}\eta$ $\acute{l}\acute{a}$ | 'become hot' |
| | V_h V_V |
| l) $\acute{s}\acute{h}\acute{i}$ $\acute{l}\acute{a}$ | 'to bud' |
| | V_h V_V |

Thus, $\acute{l}\acute{a}$ can mean:

1. 'come to $V_h(V_V)$, as ex. a) and b).
2. ' V_h (V_V) up', in a concrete sense, as ex. c) 'return up', or more abstract

as ex. d) 'figure out'.

3. 'start to V_h , become V_h , develop towards V_h , get to the state of V_h ' as ex. e-1.

When lá follows a V_h or a V_v showing motion/direction, lá just adds the notion of 'coming in an upwards direction'.

The boundaries between the meanings in 3) are not very strict. After adjectives lá has more the notion of 'become', as 'become hot, alive', after intransitive verbs 'get to the state of, develop towards', as 'blossom, bud, dawn', and after potential or attitudinal versatile or auxiliaries 'start to', as 'start to know, start to want'. Note the difference between:

V_h lá nja 'can come to V_h ', and V_h nja lá 'start to be able to V_h ' (ex. b) and i).

Table 7

In Table 7 the 24 post verb-head verbal auxiliaries are listed with their possible positions marked. As can be seen from the list, 8 of these are restricted to the first post verb-head position. They can be followed by other non-restricted auxiliaries or versatile verbs, as e.g.:

sjhí daj nja V_h V_{auxr} V_v	'can die instead of'
dəq dɔq í V_h V_{auxr} V_v	'go to cut first'
dɛ mə í V_h V_{auxr} V_v	'go down to make as if beating'
shí tjhə lé V_h V_{auxr} V_{aux}	'go up to insert to hang up'

These 8 V_{auxr} 's are quite specific in meaning and have a low frequency of occurrence.

The remaining 16 are not restricted to the first post verb-head position. Most of them are highly abstract in meaning and occur very frequently in lengthy concatenations with both restricted and other non-restricted versatile and auxiliaries. They can be grouped together according to their semantic contents as follows:

<u>Specifics:</u>	djəq ha xəq	'well cooked' 'take, bring' 'back to original state'
<u>Benefactive:</u>	nə nəq	'for non-first person' 'for first person'
<u>Directive:</u>	ləq ləq lé	'towards non-first person' 'towards non-first person' 'go up'

	le	'come down'
<u>Attitudinal:</u>	məq	'want'
	nán	'dare'
	phə	'dare' (negated)
	shá	'at ease' (negated)
<u>Potential</u>	tjhó	'able (mostly negated)
	xhm	'allow' (negated)
<u>Temporal:</u>	lùq	'continue' (doesn't concatenate with any other Vaux)

When we arrange them according to their internal concatenability we get the following result:

	Specific	Benefactive	Directive	Attitudinal	Potential
Specific	X	X	X		
Benefactive			X	X	X
Directive				X	X
Attitudinal					
Potential					

This means that a specific may precede another specific, a benefactive, or a directive:

Spec.-Spec.	xòq ha	'take back'
Spec.-Ben.	ha nè	'take for non-first person'
Spec.-Dir.	xòq làq	'back towards first person'

A benefactive precedes a directive, an attitudinal, or a potential:

Ben.-Dir.	nèq làq	'for towards first person'
Ben.-Att.	mà..nè phə	'not dare to V _h for non-first person'
Ben.-Pot.	mà..nè xhm	'not allowed to V _h for non-first person'

A directive precedes an attitudinal and a potential:

Dir.-Att.	lé məq	'want to go up to V _h '
Dir.-Pot.	mà..lé tjhó	'not able to go up to V _h '

This internal order shows that the more abstract the meaning, the farther away the auxiliary is placed in relation to the verb-head.

Table 8

V_v's and V_{aux}'s may concatenate with each other, and their possible internal order is marked in Table 8. Most of them occur predominantly either before or after another V_v or V_{aux} according to the following summary of Table 8. The number after each item means how many V_v/V_{aux} it can concatenate with:

Predominantly in 1st position Occurs (+) or Not (±) in 2nd position Semantic

thà 'keep'	(11)	+		
lé 'go up'	(11)	+		Motion
ně 'for non-first person'	(10)	+		Ben.
xòq 'back'	(10)	+		
kəq 'arrive'	(8)	+		
ú 'into'	(8)		±	Dir.
án 'in'	(7)	+		Dir.
hǔ 'see, try'	(5)	+		
dzà 'eat'	(3)		±	Spec.
ha 'take'	(4)	+		
kha 'down'	(3)		±	Dir.
là 'fetch'	(3)		±	Spec.
bjəq 'disappear'	(2)		±	Spec.
tseq 'across'	(2)		±	Dir.
něq 'for first person'	(1)		±	Ben.
djaq 'well-cooked'	(1)		±	Spec.
dzá 'over'	(1)		±	Spec.
xəq 'hard'	(1)		±	Spec.

Predominantly in 2nd position Occurs (+) or Not (±) in 1st position Semantic

í 'go down'	(19)	+		Motion
lá 'come up'	(11)	+		Motion
nja 'can'	(11)	+		Pot.
dji 'all'	(10)	+		
ləq 'towards non-1st per.'	(8)	+		
le 'come down'	(7)	+		Motion
mǔq 'want'	(6)	+		Att.
ʎe 'away'	(6)	+		
phà 'ought'	(5)		±	Att.
sjhá 'please'	(5)		±	Att.
tjhǒ 'able' (neg.)	(5)		±	Pot.
lǔq 'continue'	(3)		±	Temp.
phǎ 'dare' (neg.)	(3)		±	Att.
dzě 'more'	(2)		±	
náj 'dare'	(2)		±	Att.
shá 'at ease' (neg.)	(2)		±	Att.
bě 'first'	(1)		±	Temp.
xhǐ 'allow' (neg.)	(1)		±	Pot.

Equally often in both positions

Semantic

lǎq 'towards 1st person'	(8)		
ʎǎ 'finish'	(4)		
jaq 'leave behind'	(4)		
xhǒ 'stealthily'	(4)	Spec.	

gà 'long'

(2) Spec.

The semantic contents of those V_V 's and V_{aux} 's that predominantly occur in the first position are within the range of specific/benefactive/directive/-motional/. The ones that can only occur in the first position, i.e. they can't be preceded by another V_V or V_{aux} ' are those with most concrete meanings and thereby less versatile, as 'eat', 'fetch', 'disappear', 'well-cooked', etc. The ones that predominantly occur in the second position, i.e. they can be preceded by another V_V or V_{aux} ' denote mainly motion/attitude/potentiality temporality. Ten of them can't be followed by any other V_V or V_{aux} ' and four of them are almost always negated. Some examples of each of these ten:

Attitudinal:

phà 'ought to'

bi pjaq kha lèq phà 'ought to cause them to pick down for me'
aux^V V_h V_V V_{aux} V_V

mà tshà phà 'probably not right'
neg. V_h V_V

sjhá 'please'

é mè nèq làq sjhá 'please tell and instruct me'
V_h V_{VR} V_{aux} V_{aux} V_V

gy ú sjhá 'please recite into'
V_V V_V V_V

phə, 'dare' (negated or interrogative)

mà tjháŋ nè phə 'not dare to lead to you'
neg. V_h V_{aux} V_{aux}

mà lòq lé phə 'not dare to go to guard'
neg. V_h V_{aux} V_{aux}

náj 'dare'

ð náj 'dare to come'
V_h V_{aux}

ðq í náj 'dare to return down'
V_h V_V V_{aux}

shá 'at ease' (negated or interrogative)

mà í shá 'not feel at ease working'
neg. V_h V_{aux}

mà ɔ doq shá 'not feel at ease about coming out'
 neg. V_h V_{vr} V_{aux}

Potential:

tjhó 'able' (almost always negated)

mà the mí.tjhó 'not able to chase and reach'
 neg. V_h V_{vr} V_{aux}

mà dja djí tjhé 'can't tell it all'
 neg. V_h V_v V_{aux}

xhì 'allow' (negated)

mà gəq xhì 'not allowed to use'
 neg. V_h V_{aux}

mà é nè xhì 'not allowed to tell'
 neg. V_h V_{aux} V_{aux}

Temporal:

lùq 'continue, be Ving'

dzàŋ lùq 'be wearing a turban'
 V_h V_{aux}

mà ye nja lùq 'can't go on doing'
 neg. V_h V_v V_{aux}

bɛ 'first, for the first time' (mostly repeated)

djáŋ bɛ bɛ 'do first'
 V_h V_v

shə làq bɛ bɛ 'lead towards us first'
 V_h V_{aux} V_{aux}

Special case (can't so far be put into a group with others)

dzè 'more (denotes comparativity)'

gáŋ dzè 'more clever'
 V_h V_v

shì nja dzè 'able to know more'
 V_h V_v V_v

Table 9

In this table I have grouped as many V_v's and V_{aux}'s together as possible

in semantic groups (see lists above) with twelve items remaining, which so far refuse to be systematized, to show more clearly how they interrelate with each other. The basis for this summary is Table 8. The semantic order turns out to be the same as the one shown for the verbal auxiliaries only (cf. above): specific - benefactive/directive - motion -potential/attitudinal - temporal. The twelve special V_v 's and V_{aux} 's mostly follow specific/benefactive/directive, can occur either before or after motion, but always before potential/attitudinal/temporal. These twelve concatenate with each other and almost all of them can be both preceded and followed by some other V_v 's and V_{aux} 's. I'll give some examples of the most frequent one in all its versatility:

thà

1. as V_h 'to keep'
 $dzar-jó$ thi paq ja $thà$ m' 'they must keep half of the hen's breast'
 aux^V V_h
2. as V_v ' V_h to keep, V_h so it stays'

 - a) ja $jú$ $thà$ 'must take and keep'
 aux^V V_h V_v
 - b) dja $ú$ $thà$ 'tell into so it stays' (Dir. + $thà$)
 V_h V_v V_v
 - c) $dəq$ $thà$ $jəq$ 'cut and leave so it stays behind'
 V_h V_v V_v
 - d) $tsəq$ $thà$ $lé$ 'go keeping in mouth' ($thà$ + motion)
 V_h V_v V_{aux}
 - e) $jú$ $dəq$ $thà$ 'take out and keep' (Dir. + $thà$)
 V_h V_{vr} V_v
 - f) dze $thà$ $ʎe$ 'throw away so it stays'
 V_h V_v V_v
 - g) oq $thà$ nja 'can remember' ($thà$ + Pot.)
 V_h V_v V_v

Occasionally more than two V_v 's and V_{aux} 's occur together, as e.g.

- $é$ $mè$ $nəq$ $ləq$ $sjhá$ e 'please tell and instruct me'
 V_h V_{vr} V_{aux} V_{aux} V_v SP
- $khú$ $xəq$ $ləq$ $kəq$ dji 'all have been called back and arrived'
 V_h V_{aux} V_{aux} V_v V_v
- $phá$ $ʎə$ $xəq$ ha $nè$ dji 'further drag taking all back to them'
 aux^V V_h V_{aux} V_{aux} V_{aux} V_v

The internal order between each two of them is as in Tables 9 and 10.

Table 10

The pre-head position can be filled by four auxiliaries only, none of which can occur as V_h . They are listed in Table 10 with a summary of their internal order. Looking at them from a semantic point of view they can be said to have the same tendency as the post-head versatile and auxiliaries with regard to their position in relationship to the V_h , i.e. the most abstract of them can occur farther away from the V_h than the concrete ones: *phá* 'furthermore' - *ja* 'must' - *bi* 'cause somebody to V_h ' - *laq* 'cause the object to be V_h '. Some examples:

bi

bi dʒó aux ^V V_h	'let stay'
mà bi jùq neg _{aux^V} V_h	'not let sleep'
bi é mòq aux ^V V_h V_{aux}	'want to cause somebody to talk'

laq

laq à aux ^V V_h	'make wet'
laq bja nja aux ^V V_h V_v	'can make bright'
laq tsòq aux ^V V_h	'cause to be joined'

ja

ja dɿ aux ^V V_h	'must beat'
ja là lé aux ^V V_h V_{aux}	'must go up to fetch'
mà ja tjàq dʒí neg _{aux^V} V_h V_v	'mustn't cook all'
phá ja thó aux ^V V_h	'furthermore must recite'
ja bi dʒó í aux ^V V_h V_v	'must cause to go to stay'

phá

phá bì dzɛ aux ^V V_h V_v	'throw away again'
--	--------------------

mà phá òq òq lá nja
neg auxV V_h V_{vr} V_v V_v

'can't return out up again'

phá bi lòq
auxV auxV V_h

'furthermore cause to guard'

Work to be done

The rest of the material will be filed and added to the lists. Special attention will be devoted to the semantic contents of the various groups and the interrelationship between them. Information as to the main function of each verb will be added to the basic list, especially noting which verbs never concatenate. The restricted versatile verbs in Table 2 will be checked to see if they really only can occur after one V_h. The two pre-head causative auxiliaries will also be more thoroughly investigated. Finally, the structure of verb concatenations in Akha will be compared to other Sino-Tibetan languages, where descriptions are available.

Table 1

List of restricted verbs (V_{vr}) occurring after one V_h only

V _{vr}		Can occur after:	
à	'wet'	dɛ à	'wet being hit (by rain)'
bí	'divide'	dè bí	'split to divide'
bìq	'give'	thàn bìq	'pour to give'
bú	'clean'	pùq bú	'wash one's face'
dè	'clear (land)'	pyq dè	'burn to clear'
djan	'believe'	mjòq djan	'lie to make believe'
djà	'pregnant'	djò djà	'stay to get pregnant'
djò	'in a circle'	ga djò	'swirl around'
dòq	'into'	njèq dòq	'catch to put into'
dzé	'left over, not entirely Ved'	pyq dzé	'left over from burning'
dzo	'to addiction'	dó dzo	'smoke to addiction, drink to addiction'
dó	'evil'	djan dó	'do evil'
gaq	'graze'	thé gaq	'drive to graze'
gm	'together'	bò gm	'discuss together'
guq	'out of fright'	tshò guq	'jump out of fright'
gy	'count'	tjhò gy	'urge to count'
jèq	'drunk'	dó jèq	'drink and get drunk, smoke and get high'
jòq	'strip off'	kaq jòq	'strip hair off combing'
jùq	'sleep'	djò jùq	'sleep on stomach'
kaq	'comb'	dè kaq	'push to comb'
li	'complete'	djan li	'make complete'
mè	'teach'	é mè	'tell instructingly'
mjan	'long (time)'	djò mjan	'stay long'
mjan	'stick on to'	njèq mjan	'take to stick on'
mjàq	'to fainting'	dì mjàq	'beat to fainting'
mjàq	'lick'	thò mjàq	'touch to lick'
naq	'black'	thò naq	'touch so it gets black'
né	'red'	yoq né	'make red-hot'

njɛq	'catch on fire'	dzaŋ njɛq	'burn so it catches fire'
ŋà	'borrow'	sjhà ŋà	'ask to borrow'
pàq	'tight'	nò pàq	'trample tightly'
phàŋ	'bury'	dù phàŋ	'dig to bury'
phý	'get free, open'	dəq phý	'cut to get free'
pjaq	'fall down'	nò pjaq	'trample down'
pjəq	'become'	thú pjəq	'cut to become'
poq	'roll over'	lɔ poq	'cut so it rolls'
pyq	'roast'	thɛ pyq	'squeeze to roast'
ʎə	'be friendly'	djɔ ʎə	'stay and get friendly'
shɛ	'sprinkle'	mjm shɛ	'take water in mouth to sprinkle'
shì	'know'	nà-hà shì	'listen to understanding'
sjhà	'to distress'	nò sjhà	'think in distress'
taq	'sharp'	shì taq	'sharpen'
tàq	'be related'	mjàŋ tàq	'be related in name'
tjhì	'lift up'	láj tjhì	'enclose by lifting up (a fence)'
tjhǒ	'cut through'	bì tjhǒ	'throw to cut'
tsɛq	'keep in mouth'	tjhì tsɛq	'lift up to keep in mouth'
tshà	'correctly, well'	mòq tshà	'weed well'
tshì	'wash'	lɛq tshì	'wash by rubbing'
tsoq	'into, penetrate'	bəq tsoq	'shoot into'
tsəq	'stab through'	shǒ tsəq	'stick into a hole'
xəq	'pass time'	djɔ xəq	'stay on'

Table 2

List of restricted versatile verbs (V_{VR}) occurring after several V_H

V _{VR}		Can occur after e.g.:
àŋ	'sell'	bàq 'carry', xɛq 'break'
bɔ	'have'	jú 'take', sjhà 'marry'
daq	'up'	òq 'return', tjɛq 'run', njɛq 'catch', dzɔ 'sit around', tjhǒ 'hasten'
dɛq	'to satisfaction'	dɔ 'drink, smoke', dzà 'eat'
dɪn	'wear, cover'	sjhə 'put on', ʎə 'pull', njɛq 'dress'
doq	'out, its time out'	thé 'announce', tjhì 'lift', nò 'think', tjɛq 'run', thɛ 'chase', le 'go up'
dòq	'start a fire'	bɔ 'blow', ʎoq 'pick up'
dze	'away'	bàq 'carry', bì 'divide', thú 'fell', ga 'fall'
dú	'look like'	ŋə 'be the case', dzà 'eat'
gà	'hear'	ɛ 'say', tsàq 'report'
gán	'thoroughly, clearly'	bò 'discuss', nò 'think'
gaq	'cold'	dɛ 'beat', pyq 'burn'
gəq	'accept, pretend'	djɔ 'stay', djaq 'make', tjhu 'raise'
hý	'big'	sha 'feed', tjhu 'raise'
jà	'just, happen to'	djɔ 'stay', ɔ 'come'
láj	'surround'	tsoq 'build', ʎə 'pull'
lɛq	'off'	ʎə 'pull', ga 'fall', djɔq 'swing'
lɛq	'rub'	thò 'touch', tjhǔ 'blow', tjhɛ 'defecate', ʎə 'pull'

lòq	'enough'	m̄	'work', sjhá 'take', tjuq 'smooth'
l̄s	'topple over'	thú	'fell', t̄əq 'chew'
lòq	'sun, dry in the sun'	shə	'drag', ʎə 'pull'
m̄əq	'hungry, crave'	b̄əq	'carry', zə 'fly', d̄ó 'drink'
mi/mí	'reach, catch up with'	th̄e	'chase', nj̄əq 'catch'
mjà	'in plenty'	lá	'come', d̄əq 'alive'
m̄ó	'see, try'	le	'go up', h̄ə 'look', poq 'search', d̄i
			'beat', d̄ó 'drink'
m̄y	'good, well'	pjàq	'peel', dj̄əŋ 'do', juq 'sleep'
n̄à	'hold back'	ʎə	'pull', d̄i 'stop'
nig-ʎa	'for fun'	dja	'tell', é 'say'
n̄j̄ò	'get infected, sick'	dj̄s	'live', tsh̄ò 'jump'
ŋ̄ə	'get stuck'	d̄e	'topple', bu 'float', mj̄òq 'swallow',
			t̄əq 'jump'
paq	'break'	d̄e	'beat', d̄əq 'cut', d̄i 'beat'
p̄əq	'make a hole'	b̄ə	'blow', ga 'fall', b̄əq 'shoot'
ph̄a	'change'	th̄əŋ	'pour', dja 'tell', là 'marry'
phaŋ	'open'	ʎə	'pull', b̄ə 'scoop'
ph̄u	'meet'	th̄əŋ	'meet', t̄j̄əq 'run', í 'go down'
pjh̄ó	'turn around'	tjh̄i	'lift', ŋ̄ə 'move'
ʎ̄à	'win'	dja	'talk', ʎ̄ 'laugh'
ʎ̄ò	'cover'	k̄əq	'bind', dj̄ò 'cover'
s̄əq	'to death, very much'	d̄i	'beat', bz̄ò 'make a hole', ga 'fall',
			k̄əq 'bite', d̄əq 'cut', b̄əq 'shoot'
sjaq	'to pieces'	n̄ə	'trample', ʎə 'pull'
th̄e	'tightly'	nj̄əq	'catch', ts̄əq 'hold hands'
thú	'upright'	tsh̄ò	'jump', k̄əq 'tie'
tjh̄ò	'ask'	gú	'shout', ŋ̄è 'talk'
ts̄əq	'connect'	k̄əq	'bind', tsh̄ò 'jump'
ts̄òq	'join'	b̄əq	'carry', paq 'divide'
xh̄ò	'spread out'	d̄e	'roll', t̄j̄əq 'split'
ý	'together'	le	'go up', lá 'come up', ɔ̄ 'come down'
z̄ə	'buy'	n̄à-h̄à	'ask', sh̄à 'ask'

Table 3

Examples of some frequent restricted versatile verbs

1. daq 'up' ja-tjiq nj̄əq daq làq ɔ̄
'a chicken is caught up to us' (caught and carried into the house to be sacrificed)
tsh̄ó-m̄ò phá dz̄ò daq lá dj̄i ɔ̄
'the elders have furthermore all come up to sit around (the table)'
xh̄ó-z̄á áŋ dj̄i dj̄i lé m̄ó m̄ó é tjh̄ò daq l̄əq náa
'when (the chipmunk) had hurried up away on the post screaming "dj̄i dj̄i"'
2. doq 'out' jú doq th̄à ɔ̄
'take out to keep' (opium)
é n̄è ʎ̄à náa, í doq ŋ̄à dj̄é
'when she had finished telling them, she went out (of the village)'
h̄ò ʎ̄à sjh̄à doq l̄əq ɔ̄ n̄e
'that one was led out away' (out of the jungle)

- hỳ lá núa, jò-ha jò-ha gaq doq nja lá núa
'when they have grown and can start to graze out (of the village) by themselves'
3. **dze** 'away' phá bàq dze í ố
'they furthermore carry (the sticks) away down (the path)
ga dze le ñà djé hỏ
'she fell over down' (= died)
thú dze má lé é ố ne
'we'll fell it, they said and then...'
4. **mố** 'see' hỏ gá àjđq ỏ phjủ phàn bi dỉ mố lá
'let him come here to beat to see his money holes'
hỏ phjả ỷe poq xỏqỉ mà poq mố nja míc
'that family also searched but as they couldn't find it...'
àli hỏ ỷà tshố-hà hỏ dỏ áñ hỏ mố nja ỷe, tshố-hà hỏ
dỏ àli hỏ ỷà áñ mà hỏ mố nja
'while that boy could see that group of people, that group of people could not see that boy'
5. **ñà** 'get stuck' bu ỷe núa, mì-tjhữ ỏ já-khủ khủ tjhe áñ bu ñà ña djé
'floating along, he floated and got stuck at a broken Shan fence'
pjaq dzà ố ne ỏ, hỏ gá khủ-bjàn áñ mjòq ñà ña djé
'having picked and eaten (the fruit), he swallowed it so it got stuck here in the throat'
àmy-khủ-tseq à, tẻq tẻq é tẻq ñà djé, thì tẻq tẻq, ùtsỳq khản áñ tẻq ñà á
'the grasshopper went jumping, jumped one jump and jumped so it got entangled in a cluster of wild grass'
6. 'sẻq' ná-hà sẻq míc
'to death, because he kept on asking'
'very much' àjđq bú sjhủ-thỏ ne sjhỏ sẻq ñà lé é a lé é mứ djé
'they say that you pierced their daughter to death with an awl, she said'
ñàq ỏ àbố tshố-mỏ bi ga sẻq lỏ á
'if my old grandfather is caused to fall to death..'
tshố-hà kỏq sẻq thà ố
'the person was bitten to death and..'

Table 4

List of non-restricted versatile verbs (V_v)

V _v	Examples when followed by other V _v and V _{aux} :
áñ	áñ 'down into', mà..áñ tjhỏ 'can't V _h into', áñ í 'go to V _h into'
be	'first' (mostly repeated), ±
bjan	'fully' ±
bjoq	bjoq í 'disappear, away'
djỉ	djỉ tjhỏ 'can V _h all', djỉ thà 'V _h all so they are kept', djỉ nja 'can V _h all'

dzà	dzà í	'go to V _h for a living', dzà lé	'go to V _h to eat'
dzè		'more' ÷	
dzé	dzé nja	'can V _h over'	
gà	gà lá	'start to long to V _h '	
hə	hə í	'go to V _h to see', hə nè	'try to V _h for', hə sjhá
		'please try to V _h ', hə xhǝ	'V _h to look stealthily'
í	í nja	'can go down to V _h '	
jàq	jàq í	'go to V _h to leave behind'	
kəq	kəq nja	'can V _h to arrival', kəq le	'V _h arriving down', kəq djí
		'all have V _h to arrival'	
kha	kha lèq	'V _h down away', kha le	'V _h coming down'
lá nja	lá nja	'can start to V _h '	lá phà 'ought to V _h up'
là	là í	'go down to V _h fetching', là lé	'go up to V _h fetching'
nja	nja lá	'start to be able to V _h ', nja lùq	'can continue to V _h ', nja
	dzè	'can V _h more'	
phà		'ought to' ÷	
ɣà	ɣà djí	'finish V _h all'	
ɣe	ɣe lèq	'V _h away toward non-first person'	
sjhá		'please' ÷	
thà	thà lèq	'V _h to keep away', thà jàq	'V _h to keep behind', thà lé
		'go up keeping V _h ', thà le	'come up to V _h to keep'
tsəq	tsəq í	'cross over', tsəq thà	'keep crossed over'
ú	ú thà	'V _h into to keep', ú lé	'V _h up into', mà..ú phè
		'to V _h into', ú lèq	'V _h into away', ú nja
		'can V _h into'	
xəq	xəq lá	'start to V _h hard'	
xhǝ	xhǝ í	'go to V _h stealthily', xhǝ le	'come to V _h stealthily down'

Table 5

A list of some frequent restricted and non-restricted versatile verbs with their meanings when functioning as verb-head and versatile verbs respectively. Examples when functioning as versatile verbs.

	V _h	V _v	Ex. of V _v
án	be part of, be in, enter	into	ga án ɣe 'fall into' (a lake) òq án í 'go back into' (house) bòq án 'write into'
bɛ	create	first	sjhí bɛ bɛ 'first to die' dàq bɛ bɛ 'first to cut'
bjan	fill up	to a full extent	tsəq bjan 'pluck enough' pàq tɔq bjan 'tie tightly everywhere'
daq	go up	up	bàq daq thà 'carry up to keep' tjəq kaq 'run up' (a ladder) tjhǝ daq lèq 'hurry up away'
djí	complete	to the end, V _h all the 0	dján ɣà djí 'finish doing all' nmq djí 'stuff all into one's mouth' tjàq djàq djí 'boil all well' khú xòq làq kəq djí 'all have been called back and arrived' mjà djí thà 'clear all'

djò	walk around, sit around	in a circle	ga djò	'whirl around'
dm	wear (clothes)	cover	sjhə dm	'put on to cover'
			ʎə dm	'pull to cover'
doq	come out	out	the doq	'chase out'
			tshò doq	'jump out'
			jú doq thà	'take out to keep'
			nò doq lá nja	'can figure out'
dzé	be left over, not entirely be at the side Ved		pyq dzé thà	'left not being entirely burnt'
dze	throw	away	bəq dze	'carry away'
			phá bì dze	'again throw away'
			djè dze djí	'rub all away'
			jím dze	'use up, spend'
guq	be afraid	out of fright	tshò guq í	'jump out of fright'
hò	see, look at	V _h to see, try to V _h have ever Ved (neg.)	phá the hò í shì	'go again to chase and see'
			mà mò hò	'have never seen'
			mà za hò	'have never got'
			mà kha hò	'have never planted'
			mà bì bò hò	'not let try to blow'
lá	come up	come to V _h , V _h up, start to V _h	òq lá	'come back up'
			ú lá	'enter up'
			djò lá	'come to rob'
			shì nja lá	'start to know'
			mó nja lá	'can start to see'
			tshè lá	'start to shine'
le	go up	come down to V _h V _h down	zaq kha le	'descend'
			dze le	'come down to throw'
			dèq le	'be born'
lèq	take out, pull off	off, out	ʎ' lèq	'pull out'
			bì djyq lèq	'cause to swing off'
lòq	be enough	V _h enough	mà m' lòq tjhó	'can't do enough'
mjà	increase, be plenty	V _h in plenty	lá mjà	'come in plenty'
			dèq mjà le	'come to life in plenty'
sèq	kill	V _h to death, V _h very much, V _h insistently	dì sèq	'beat to death'
			bəq sèq	'shoot to death'
			ná-hà sèq	'ask very much'
			kha sèq	'very heavy'
thà	keep	V _h so it stays, keep Ved	dja ú thà	'tell into to keep'
			phi thà	'put one's load down'
			jú doq thà	'take out to keep'

thè	squeeze	tightly, V _h and hold on to	tsàq thè 'hold hands tightly' de thè 'lean and hold on to'
tsàq	hold hands	connect	tshè tsàq 'jump to connect' kàq tsàq 'bind together'
ú	enter	into	dja ú thà 'tell into to keep' ò ú 'enter into' tjɛq ú lé 'run into'
xaq	be strong	V _h in a definite way, in a hard way	jùq xaq 'sleep' dó dzɔ xaq 'be very addicted to smoking'
xhò	steal	V _h stealthily	ná-hà xhò í 'go to listen stealthily' pjaq áq xhò 'stealthily pick and put into'

Table 6

A list of the same verbs as Table 5 but with examples when functioning as verb-heads.

1. áq 'be part of,
be in, enter' nòq ə njm à, njm è dá-khò mà mỳ ə áq míɛ
'as for your house, as there is wood that is no
good in the house'
ù-dù jɔ-tseɣ tɛqé áq ɲa djé
'there were only fish with heads cut off in (it)'
2. bɛ 'create' àtjhè mí-tshà bɛ ɔ̀ m̀ bɛ ɔ̀ ne à, tshɔ̀-hà mà bɛ mìɛ
'he created earth and then created heaven, not
yet having created people'
3. bjaŋ 'fill up' ámjaq i bjaŋ thm̀ djé
'how many in all, he says'
4. daq 'go up' àsjhaŋ-sjhánj ábɔ̀ ù-dù daq ə dè áq tɛqé djò ná djé
'she saw asjhaŋ-sjhaŋ climb to the top of the
tree'
5. djí 'complete' djí mɛ
'it's complete'
6. djò 'sit around,
walk around' djò djò é djò náa
'sitting around the table'
hò gɔ̀ àbɔ̀ ù-dù daq ə dè áq tɛqé djò ná djé
'it walked only around the tree there which the
group had climbed up into'
7. dm 'wear' mjò-tjhè xòqì jú ə mà dm ə bə lé
'even though he took the clothes he didn't wear
them'

8. doq 'come out' à ʎòq thì khán doq lá ɲà djé
'a needle came out'
9. dzé 'be left over' àbú thì ʎà tɛqé dzé lá ɔ́ nɛ ɛ̀
'only one daughter was left over'
10. dzɛ 'throw' shì-puq shì nɛ dzɛ lé
'throw shi-puq fruits'
zà-nàɲ dzɛ ɛ̀
'have a miscarriage'
11. guq 'be afraid' lɔ́-bà áhɣ i hý xòqì mà guq ɛ̀ ɲá è
'however big the river is, they aren't afraid, are they'
12. hɔ́ 'see, look at' zàq-phì phá hɔ́ ɔ́
'furthermore looks at the pig's liver'
mà hɔ́ xhù ɛ̀ bə
'we are not allowed to look'
13. lá 'come up' lá ɔ́
'come up!'
14. le 'go up' gá-ma jò khán jò le ɛ̀ lé à, mà le nja
'as for going up on another road, you can't go'
le le ɛ̀ le náa, gá-daq-òq-ʎm le kəq náa
'going on up and then reaching the top of the road'
15. lɛq 'take off' àmɔ ʎà, pjhá-xhàɲ lɛq ɔ́ nɛ ɛ̀
'his father-in-law took off his shirt'
16. lòq 'be enough' àda tɲìq-mjèq àkhý pyq ɛ̀ mà lòq mɛ́
'won't be enough for father to scorch goat's feet'
17. mjà 'increase, be plenty' thə míne xhà-là mà mjà ɛ̀
'because of this there are not many tigers'
18. sèq 'kill' àzàq thì mɔ́ sèq ɛ̀
'kill one pig'
19. thà 'keep' djòq-paq xhó thà ɛ̀ à
'as for the half flank which they keep'
20. thè 'squeeze' xhó thè pyq náa bi dzà á
'when they have roasted it on skewers they give it (to the spirits) to eat'
21. tsàq 'hold hands' làq tsàq tsàq thè ɔ́ nɛ ɛ̀
'holding each others' hands tightly'
22. ú 'enter' ànjò mɔ́-né àkhý àzàq dɔ́-tɔq-ù gó ú djí ɲà djé
'the buffaloes, cows, dogs, and pigs all went in'

there'

23. xaɣ 'be strong'

ʎà jɔ-dý é xaɣ á bə lé
'his strength is great'

24. xhò 'steal'

nó tshú xhò xhò ɲá
'you are stealing'

Table 7

List of post verb-head auxiliaries (V_{aux})

		1	2	3	4
day	'replace, instead of'	x			
djàɣ	'well cooked'	x	x		
dɔ̃ɣ	'be first'	x			
ha	'take, bring'	x	x		
khà	'cover'	x			
làɣ	'towards 1st person'	x	x	x	x
lé	'go up, up'	x	x		
le	'come down, down'	x	x		
lèɣ	'away from first person'	x	x	x	
lùɣ	'continuously'	x	x		
mɔ̃	'pretend'	x			
mɔ̃ɣ	'want'	x	x	x	
náy	'dare'	x	x		
nè	'for the benefit of non first person'	x	x		
nèɣ	'for the benefit of first person'	x	x		
phə	'dare' (neg.)	x	x		
shá	'at ease' (neg.)	x	x		
thò	'keep up'	x			
tjhə	'hang up'	x			
tjhu	'in piles'	x			

tjhó	'able' (mostly neg.)	x	x	x
tòq	'tight'	x		
xhm̀	'allow, permit' (neg.)	x	x	
xòq	'back to original state'	x	x	

Table 10¹

List of pre-head verbal auxiliaries

<u>bi</u>	'cause somebody to V _h ' Can be followed by 'laq'. Can be preceded by 'ja' or 'phá'
<u>laq</u>	'cause the object to be V _h ' Can't be followed by another aux ^V . Can be preceded by 'ja' or 'bi'.
<u>ja</u>	'must V _h ' Can be followed by 'bi' or 'laq'. Can be preceded by 'phá'.
<u>phá</u>	'furthermore V _h , V _h again' Can be followed by 'bi' or 'ja'. Can't be preceded by another aux ^V .

Summary of the internal order between the aux^V:

	bi	ja	laq	phá
be			x	
ja	x		x	
laq				
phá	x	x		

¹ Tables 8 and 9 are out of numerical order for typographical reasons but follow immediately below.

Table 9

	Spec.	Ben./Dir.	Motion	Pot./Att.	Temp.	djɿ	dzɿ	ha	ho	jaq	kəq	ləq	ləq	ɣà	ɣɛ	thà	xòq
Spec.	x	(x)	x	x	x	x											
Ben./Dir.	(x)	x	x	x	x			(x)	x	x	x	x	x	x	x	x	x
Motion			x	x	x												
Pot./Att.		(x)	(x)	(x)	(x)												
Temp.																	
djɿ						x											x
dzɿ																	
ha		(x)	x														x
ho		x	x						x								
jaq			x						x								
kəq			x						x								
ləq			x						x								
ləq																	
ɣà																	
ɣɛ																	
thà			x														
xòq		(x)	x														

(x) = an exceptional occurrence

PERFECTIVITY IN MANDARIN¹

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0. Introduction. The concept of perfectivity plays an important role in the grammar of Chinese, as it does in that of many other languages². In this paper we would like to (1) contrast the way the perfective aspect manifests itself in Mandarin with the way it is used in the grammars of other languages in which it has been described, and (2) show that certain facts about perfectivity in Mandarin can be predicted on the basis of universal considerations of transitivity.

Before we can discuss the ways in which the semantic category of 'perfective' differs in Mandarin from its use in other languages, we must explicitly show how it is manifested in Mandarin.

I. A 'bounded' event

Perfective aspect is typically taken to be that aspect category used when an event is viewed in its entirety without reference to its internal temporal constituency (see Comrie (1976), for example). One circumstance in which an event is viewed in its entirety is when it is bounded, either temporally, spatially, or conceptually, and it is this notion of boundedness which seems to play a central role in defining perfectivity in Mandarin.

There are essentially four ways in which events can be bounded: when the event is (i) a 'quantified' event, (ii) a definite or specific event, (iii) inherently bounded because of the meaning of the verb, (iv) the first event in a sequence. We will show below that the use of -le, the perfective aspect marker in Mandarin, can be understood in terms of boundedness. We will discuss each of the four types of boundedness in turn.

1. A 'quantified' event. Sentences in which an event is limited by explicit phrases specifying the amount of time an event took or the number of times an event happened will typically occur with -le. For example.

¹ This paper contains some material from Chap. 7 of Li and Thompson (1981), but presents it in terms of more general issues of aspect in Universal Grammar.

² The imperfective member of the opposition is manifested by a pair of morphemes zhe/zài, the former used for states, the latter for actions. For discussion, see Teng (1979) and Li and Thompson (1981).

- (1) tā shuì - le sān - ge zhōngtóu
3sg sleep - PFV three - CL hour
S/he slept for three hours.
- (2) wǒ zài nàlǐ zhù - le liǎng - ge yuè
I at there live - PFV two - CL month
I lived there for two months.
- (3) yǐjīng rěn - le zhèna duō nián, wǒ huì rěn - xiàqù
already endure-PFV that many year I likely more endure-continue
I have already put up with it for so many years, I can go on enduring it.
- (4) wǒ bǎ gǒu dǎ - le yī - dùn
I BA dog hit - PFV one-CL
I gave the dog a beating.
- (5) wǒ bǎ mén tī - le sān - jiǎo
I BA door kick - PFV three-foot
I gave the door three kicks.
- (6) dírén wàng hòu chètùì - le èr - shí - lǐ
enemy toward back retreat - PFV two - ten - mile
The enemy fell back twenty miles.
- (7) nǐ gāo - le yīdiǎn
you tall - PFV a:little
You've gotten taller.
- (8) tā zuótiān lái - de wǎn - le yīdiǎn
3sg yesterday come-NOM late - PFV a:little
Yesterday s/he came a little late.
- (9) jīntiān gǔpiào hángshì dī - le yīdiǎn
today stock market lower-PFV a:little
The stock market fell slightly today.

Sometimes the quantified event is a state whose limits are set by a phrase expressing the extent to which the subject is in that state. Sentences (10) and (11) are illustrations of bounded states:

- (10) zhèi - ge dìfang bù cuò, jiùshì chǎo - le yīdiǎn
this - CL place not bad just noisy - PFV a:little
This place is OK, it's just a little noisy.
- (11) tā niánji bǐ wǒ dà - le jǐ - shí - suì
3sg age COMP I great-PFV several-ten-years
S/he was/is older than I by a few decades.

The following are examples each of which can have two interpretations, depending on whether the adjective describes a process or a state:

- (12) a. (Discussing how a friend has changed since his/her last visit)
tā pàng - le yīdiǎn
3sg fat - PFV a:little
S/he's gotten a little fatter.
- b. (Talking about candidates for our volleyball team)
tā pàng - le yīdiǎn
3sg fat - PFV a:little
S/he's a little (too) fat.
- (13) a. (Talking about a laundry mishap)
zhèi-jian chènshān xiǎo - le sān cùn
this-CL shirt small - PFV three inch
The shirt got smaller (i.e., shrank) by three inches.

b. (Trying on clothes)

zhèi-jian chènshān xiǎo - le sān cùn
this-CL small-PFV three inche
This shirt is (too) small by three inches.

Sentence (14) provides a good illustration of the contrast between just "naming" an event and presenting it as a unified whole by "quantifying" it:

- (14) Zhāngsān zài bówùguǎn ménkǒu děng Lǐ-sì, děng - le sānshí fēnzhōng
Zhangsan at museum entrance wait Li-si wait - PFV 30 minute
Zhangsan waited for Li-si at the entrance to the museum for 30 minutes.

The first mention of děng 'wait' is not presented as an event viewed in its entirety but simply names the event; it cannot take -le. The second mention of the verb, however, quantifies the waiting and presents it as a whole event with boundaries; here -le is required.

Similarly, an event with a specified quantity of the direct object will also typically occur with -le because the quantified direct object serves to bound the event. For illustration, consider sentences (15) - (22) in which the quantified direct object is underlined:

- (15) tā shuō zuì jìn dàxué gài - le bu shǎo xīn sùshè
3sg say most recent univ. build-PFV not few new dormitory
S/he said that the university had recently built many new dormitories.
- (16) nèi - ge jǐngchá duì wǒ xíng - le yí - ge lǐ
that - CL policeman to I perform-PFV one - CL salute
That policeman saluted me.
- (17) tā jīntiān mǎi - le hěn duō shū
3sg today buy - PFV very many book
S/he bought a lot of books today.
- (18) tā zài miànbāo - shang mǒ - le yídiǎn niú - yóu
3sg at bread - on spread-PFV a:little cow - oil
S/he spread a little butter on the bread.
- (19) wǒ fá - le tā wǔ kuài qián
I fine - PFV 3sg five dollar money
I fined him/her five dollars.
- (20) tāmen fá - le wǔ - shí - fèn qǐngtiē
they issue-PFV five - ten - CL invitation
They sent out fifty invitations.
- (21) zhèi - cì kǎoshì wǒ dé - le bā - shí fēn
this - time exam I obtain-PFV 8 - 10 point
I got 80 points on this exam.
- (22) qiáng-shang guà - le yí - fú huà
wall - on hang-PFV one - CL - painting
A painting (was hung/had been hung) on the wall.

(23) is an interesting and very typical example with -le in which the amount of time spent is expressed grammatically by quantifying the direct object of the verb-object compound tán-tiān 'discuss-universe = chat':

- (23) wǒmen tán - le yí - yè de tiān
we chat PFV one-night NOM universe
We talked all night.

where the message being communicated has to do with bounding an event by naming a specific quantity of the direct object. But it is crucial to notice that speakers can differ in their judgements about how much a quantified direct object serves to bound an event. For example, with a sentence such as (24), some native speakers feel that -le is not necessary, i.e. they don't feel strongly that the quantified direct object, yí - ge hěn kě - ài de xiǎo māo 'a very lovable little cat' renders the event bounded, while some native speakers feel that when -le is used, (24) represents the beginning of a sequence of utterance about the small cat; in other words, they view the event as bounded not because of the quantified direct object but because of the event being the first in a sequence (see I.4 below). Of course, many native speakers feel that sentence (24) is fine as it stands, i.e., they view the event as bounded because of the quantified direct object.

- (24) tā jiā yǎng - le yí - ge hěn kě - ài de xiǎo māo
 3sg home raise-PFV one - CL very can-love NOM small cat
 His/her family had a very lovable little cat.

A recent experiment makes this point nicely.³ A story containing the following sentence was presented to 62 Mandarin-speaking subjects. The author of the story had written the sentences with the -le, but only 1/3 of the subjects thought it was necessary:

- (25) hūrán zǔfù xū - le yì kǒu qì
 suddenly grandfather heave-PFV one-mouth air
 Suddenly, grandfather took a breath.

What this example shows is that speakers can have different views about how bounded an event is, and this will determine whether or not they decide to use -le in certain situations. Those who would use -le in sentence (25) feel that it is important to the message conveyed by the sentence that what grandpa did was to take "one" breath, while those who wouldn't use -le here feel that the fact that he took a breath is more important than the breath itself.

2. A definite or specific event. An event will also often qualify as bounded if the direct object is a definite noun phrase, that is, if the noun is a name or a pronoun, or is preceded by certain modifiers. Once again, whether or not -le is used depends on the extent to which the event is judged to be bounded. Here is an example showing each of these types of definite direct objects:

- Name
 (26) wǒ pèngdào - le Lín Huì
 I run:into - PFV Lin Hui
 I ran into Lin Hui.
 (where the important information in the context is who you ran into)

- Pronoun
 (27) nǐ huǐ - le nǐ zìjǐ
 you ruin-PFV you self
 You destroyed yourself.

³ See Spanos (1977), (1979) for extensive discussion of speakers' variation in the use of -le. Example (20) is taken up on pp. 61-64 of Spanos (1977).

Genitive Modifier

- (28) tā ráo - le tā - de dírén le
3sg spare - PFV 3sg-GEN enemy CRS⁴
S/he spared his/her enemy.

Demonstrative modifier

- (29) wǒ xiǎng - chū - lái le nèi - ge zì
I think - out - come-PFV that CL-character
I remembered that character.

Relative Clause Modifier

- (30) a. nǐ zěmma zhīdào Shànghǎi yǒu yí - qiān - wàn rén?
you how know Shanghai exist one-thousand-10,000 person
How do you know Shanghai has 10 million people?
b. yīnwèi wǒ kàn - le xīn - de zīliào
because I see - PFV new - NOM material
Because I have seen the new figures.

Here is another example from Spanos (1977:45), which shows another way in which -le signals the specificity of an event.

- (31) tā wèn wǒ zuótiān wǎnshàng zuò (-le) shénme?
3sg ask I yesterday evening do - PFV what
S/he asked me what I did last night.

In this sentence, out of 39 speakers asked, only 7 thought the -le should be there, while 32 felt it should not. But once again, speakers' judgements on this question depend crucially on the nature of the message they imagine the sentence is conveying. With -le the event is viewed as bounded, and thus as specific; the subject of the sentence, tā, was asking for a specific list of activities the speaker of the sentence engaged in, as if tā were a nurse in charge of making sure the speaker didn't do too much. Since this is a rather unusual speech context, it is no wonder that only 7 people out of 46 thought -le should be used. Without -le, on the other hand, the sentence is quite neutral and implies that tā was just making casual conversation. Since this latter case corresponds to a very natural situation, it is reasonable that the majority of speakers would think of this as the most natural context for this sentence and would judge that it should have no -le.

The "rule" concerning the use of -le in sentences such as those we have been discussing, then, can be seen to depend on what the speaker judges to be the important information the sentence is conveying in the context in which it is used. The reason that speakers disagree when they are presented with sentences in isolation is because they have to imagine what the real conversational situation might be, and they might come to different conclusions on this point. The rule that they actually use in talking to each other is simply this: When the overall conversation makes it important to emphasize the information in the definite direct object, either because you want to go on talking about it or because it contrasts with some other possible item which could have been mentioned, -le must be used.

3. Verbs with inherent bounded meaning. Some verbs represent specific, bounded events by virtue of their very meaning. One such verb is sǐ, 'die',

⁴ "CRS" = "Currently Relevant State". See Li and Thompson (1981) and Li et al (1982) for discussion of sentence-final le.

which has its end point built into its meaning. Another such verb is wàng 'forget':

- (32) tā qùnián sǐ - le
3sg last:year die-PFV
S/he died last year.
- (33) wǒ wàng - le tā - de dìzhǐ
I forget-PFV 3sg - GEN address
I forgot his/her address.

We should notice that the inclusion of the "end point" in the meaning of such verbs as sǐ and wàng 'forget' is a language-specific fact of Mandarin, not a universal feature of all languages of the world. For example, the English verb "die" does not have the end point of dying included in its meaning, and, therefore, it is possible to use the verb in a durative aspect as shown in (34):

- (34) S/he is dying.

Because of the inclusion of the end point of dying in the meaning of the Mandarin verb, sǐ 'die', it cannot occur in the durative aspect, and sentence (35), the Mandarin counterpart of sentence (34), is unacceptable:

- (35) *ta si - zhe
3sg die - DUR

For the same reasons, the English verb, 'forget', may, and its Mandarin counterpart, wàng, may not occur in the durative aspect as shown by the acceptable English sentence (36) and the unacceptable Mandarin sentence (37):

- (36) S/he is forgetting his/her French.
- (37) *tā wàng - zhe tā - de fǎwèn
3sg forget - DUR 3sg - GEN French

We now understand why verbs such as sǐ 'die' and wàng 'forget' always occur with the perfective aspect marker -le.

Further examples in which the inherent meaning of the verb specifies its own end point are given in sentences (38) - (41). Such verbs require some mark of perfectivity:⁵

- (38) huǒ miè - le
fire go:out-PFV
The fire went out.
- (39) gàizi diào - le
lid fall:off-PFV
The lid fell off.
- (40) zhèi - ge yǐzi huài - le
this - CL chair broken-PFV
This chair broke.

⁵ Except when they occur in irrealis modes, as in

- (i) tā yào sǐ
3sg want die
S/he wants/wanted to die.

- (41) zhàdàn zhà - le
 bomb explode-PFV
 The bomb exploded.

4. **First event in a sequence.** Sometimes an event is bounded by being the first event in a sequence, where what is important is that after one event has taken place, another one happens. In such cases, the first event is of interest as an unanalyzed whole: the speaker signals that its occurrence is bounded by the subsequent event. In these instances -le is used, and the sentence can often be translated with 'after', 'when', or 'now that' in English.

- (42) wǒ chī - wán le nǐ chī
 I eat - finish - PFV you eat
 After I have finished eating, then you eat.
- (43) wǒ kàn - wán - le bào, jiù qu shuì
 I read-finish paper then go sleep
 When I finish reading the paper, I will go to sleep.
- (44) tā shuō de hěn qiǎomiào, ràng rén tīng - le bu huì shēngqì
 3sg say EXT very skillful, let person hear-PFV not likely angry
 S/he talks very skillfully so that when people hear him/her they don't get angry.
- (45) zěmma pèng - le bēizi yě bu hē?
 how bump - PFV glasses also not drunk
 How come after have touched glasses, you still don't drink?
- (46) chū - le zhèi - ge jiǎncháshì, wàitou jiù yǒu yínháng guǎitai
 exit - PFV this - CL customs:area outside then exist bank counter
 When you go out of this customs area just outside there is a bank counter.
- (47) yǒu - le nèi - ge rìguāng - dēng, chúfáng jiù liàng duō le
 exist-PFV that-CL florescent-light kitchen then bright much CRS
 Now that (they) have that florescent light, the kitchen is much brighter.
- (48) tā kāi - le mén, nǐ jiù jìnqu
 3sg open-PFV door you then in-go
 When/If s/he opens the door, you go in.
- (49) wǒ pào - le chá hē
 I brew - PFV tea drink
 I made some tea to drink.
- (50) wǒ-de yǎnjīng yǒu máobīng, kàn-duō-le shū, jiù bu shūfu
 I-GEN eye exist trouble, see-much-PFV book then not comfortable
 I'm having trouble with my eyes; after I've read a lot they don't feel good.

Sentences (43), (45), and (48) show that the direct object doesn't need to be quantified in the first event in a sequence for -le to appear. But this raises an interesting question: there is often something strange and "unfinished" about a sentence containing -le and a simple unquantified object noun. So, by themselves, sentences like

- (51) wǒ lǐ - le fǎ
 I cut - PFV hair
 I had a haircut.

- (52) ʔwǒ hē - le chá
 I drink-PFV tea
 I drank tea.

seem incomplete and difficult to interpret. The reason for this is not hard to understand: a simple unquantified noun object is non-definite and non-specific, and normally a simple verb phrase with such an object is not bounded. That is why such sentences need to be bounded by the addition of (i) a following clause or (ii) a le at the end marking 'Currently Relevant State'. So, for example, (51) becomes perfectly acceptable in contexts like the following where (53) provides a following clause, and (54) has the sentence-final particle le signaling 'Currently Relevant State' added to the original clause.

- (53) wǒ lǐ - le fǎ jiù qù sànbù
 I cut- PFV hair then go take:walk
 I had a haircut and then went for a stroll.
 (54) wǒ lǐ - le fǎ le
 I cut-PFV hair CRS
 I had a haircut.

Sometimes, in the right context, an adverbial expression can serve the function of bounding the event. For example, in a situation where the issue is when he got a haircut, sentence (55) could be used; similarly, if it is known that he got rich, but the issue is where, then sentence (56) would be appropriate:

- (55) tā zǎoshang lǐ - le fǎ
 3sg morning cut-PFV hair
 S/he got a haircut in the morning.
 (56) tā zài jiāzhōu fā - le cái
 3sg at Calif. issue - PFV wealth
 S/he got rich in California.

The important point to be drawn from this discussion is that understanding the grammar of a sentence always involves understanding how that sentence relates to the context in which it occurs; whether a sentence expresses a bounded event or not depends to a certain extent on the nature of the conversation of which that event is a part.

So far we have seen that the conditions for the use of -le are quite straightforward: -le is used when an event denoted by a sentence is perfective, or bounded, and an event is bounded if (i) its temporal or spatial limits or its direct object is specified, or (ii) it is followed by another event.

5. Transitivity. All of these four types of expressions of boundedness can be explained in terms of a universal theory of Transitivity (see Hopper and Thompson (1980)). According to this theory perfectivity is one of the marks of foregrounded material in discourse, including main story-line events in narrative, and other action-oriented clauses in conversation. In such clauses languages tend to show grammaticized correlations between perfectivity, highly individuated objects (including specific and definite ones), punctual actions, and highly potent agents. Thinking of Transitivity as a continuum, we could regard such clauses as being very high in Transitivity. In universal terms, then, we can explain the obligatoriness of the perfective -le (or a perfectivizing expression (see Section II.1 below)) with quantified objects and

amount/extent phrases with punctual verbs whose inherent meaning includes boundedness, and the use of -le in sequential clauses, as in:

- (57) wǒ chī - le jiù zǒu
I eat - PFV then leave
I'll leave after I eat.

as well as the implication that a clause like (58) is not complete by itself:

- (58) wǒ hē - le chá ...
I drank-PFV tea ...

The explanation is that foregrounded clauses in discourse tend not only to be perfective, but also tend to represent events in the order in which they happen in our experience, hence the use of a marker of perfective aspect as a signal of the sequentiality of events.

In these terms, too, we can also characterize the use of the 'object marker' bǎ: the more definite the object and the more perfective the verb, the more likely bǎ is to be used. That is, bǎ tends to be found, with the perfective, in highly Transitive clause types. Thus, clauses such as those in (59) - (64) are exemplary bǎ sentences; all have perfective verbs and definite objects:

- (59) kuài yidiǎn bǎ zhèi - ge ròu ná - zǒu
fast a:little BA this - CL meat take - go
Take this meat away quickly!
- (60) tā yòu bǎ tā - de yìsi jiǎng - chu - lai le
3sg again BA 3sg - GEN meaning talk - out- come CRS
S/he again explained what s/he meant.
- (61) tā bǎ fàntīng shōushi - gānjīng LE
3sg BA dining:room tidy:up clean PFV/CRS⁶
S/he tidied up the dining room.
- (62) wǒ bǎ yǐzi pèng-le yíxià
I BA chair bump-PFV once
I bumped into the chair.
- (63) wǒ jīntiān bǎ sān-běn shū dōu mài LE
I today BA 3-CL book sell PFV/CRS
I sold all three books today.
- (64) tā bǎ shénme dōu chī-guāng LE
3sg BA what all eat-empty PFV/CRS
S/he ate up everything.

Clauses with indefinite and non-specific objects ((A)) or with non-perfective verbs, ((B)) on the other hand, generally do not take ba:

- (A) (65) *tā bǎ Rìběn-huà shuō LE
3sg BA Japan-talk speak PFV/CRS
(S/he speaks Japanese.)
- (66) *tā bǎ liǎng - ge rén shā LE
3sg BA two-CL person kill PFV/CRS
(S/he killed two people.)

⁶ In sentence-final position, a LE morpheme may be a haplologized realization of both the perfective -le and the CRS sentence-final le. Such cases are spelled LE and glossed with both glosses, as shown in (61).

- (B) (67) *táo-shù bǎ huā kāi LE
 peach-tree BA flower open PFV/CRS
 (Peach trees put forth blossoms)
- (68) *tā bǎ xiǎo māo ài
 3sg BA small cat love
 (S/he loves the kitten)
- (69) *tā bǎ nǐ hěn xiǎng
 3sg BA you very miss
 (S/he misses you very much)
- (70) *wǒ bǎ nèi-jian shìqing liǎojiě
 I BA that-CL matter understand
 (I understand that matter)
- (71) *tā bǎ Zhāngsān kàn-dào LE
 3sg BA Zhangsan see-arrive PFV/CRS
 (S/he was able to see Zhangsan)
- (72) *tā bǎ nèi-ge xiāngzi xǐ - de - gānjìng
 3sg BA that-CL chest wash - can - clean
 (S/he can wash that chest clean)

These claims are confirmed dramatically by a study of bǎ sentences in colloquial essays, stories, and speeches.⁷ Out of 83 bǎ sentences, there were none whose verbs were reduplicated, and only one whose verb was followed by -zhe. On the other hand, 33 of the 83, or 40%, ended with a directional suffix such as xià 'down' or qǐ-lái 'come up', as in:

- (73) nǐ kuài qù bǎ tāmen jiào - qǐ - lái
 you fast go BA they call - up - come
 Go quickly to rouse them up.

and 23 of the 83, or 28%, contained a directional expression, as in:

- (74) Lǐsì bǎ Lúsù qǐng dào chuán-lǐ
 Lisi BA Lusu invite to boat-in
 Lisi invited Lusu inside the boat.

Thus, a total of 68% of the bǎ sentences in this sample occurred with a 'perfectivizing expression' (again, see II.1 immediately below).

In an even more dramatic way, the results of the study correlate with what we have said about the definiteness of the object: all of the 83 bǎ sentences had definite objects.

The numbers arrived at in this study of bǎ in real contexts provide striking confirmation of the two factors which we have said control the use of bǎ: the more specific or definite the object is, and the more strongly the sentence expresses perfectivity, the more likely the message is to be expressed in the form of a bǎ construction.

II. Perfective contexts with no -le

1. Perfectivizing expressions. Often the conditions for the use of perfective -le would appear to be satisfied, yet no -le appears. For example, here are four sentences expressing bounded events viewed in their entirety, yet none has -le:

⁷ This study was carried out by Grant Goodall.

- (75) tā cóng fángzi - lǐ zǒu dào Zhāngsān nàr
 3sg from house - in walk to Zhangsan there
 S/he walked from his/her house over to Zhangsan's place.
- (76) wǒ bǎ shǒubiǎo fàng zài chōuti - lǐ
 I BA watch put at drawer - in
 I put the watch in the drawer.
- (77) wǒ jì gěi tā yì - fēng xìn
 I send to 3sg one - CL letter
 I sent him/her a letter.
- (78) wǒ xiào de zhàn - bu - qǐ - lái
 I laugh EXT stand - not - up - come
 I laughed so hard I couldn't stand up.

Why do these sentences have no -le?

The answer is that each of these sentences contains another element which does the job of 'perfectivizing' the verb. That is, each of the underlined morphemes or phrases in the above sentences performs the same function that -le does signaling that the event is to be viewed as a complete whole. The difference between -le and these underlined elements is that the latter perform their perfectivizing function by virtue of their inherent meanings. In (75) - (77) their perfectivizing expressions are the directional phrases dào Zhāngsān nàr 'to Zhangsan's place', zài chōuti-lǐ 'in the drawer', and gěi-tā 'to him/her', which put boundaries on the events of walking, putting and sending by specifying their spatial limits. In (78) the perfectivizing expression is the extent phrase de zhàn-bu-qǐ-lái 'so much that I couldn't stand up'.

2. -le in imperatives. Most of the time, imperatives do not have -le:

- (79) ná nǐ - de wàiyī
 take you-GEN coat
 Get your coat!
- (80) nǐ shāo zhèi - dùn fàn
 you cook this - CL meal
 You make the meal!
- (81) dì gěi wǒ nèi - ge tiáogēng
 hand to I that -CL spoon
 Hand me that spoon!

In negative imperatives, with bié 'don't', it is also normal not to find -le, as (82) - (84) show:

- (82) bié guān mén
 don't close door
 Don't close the door.
- (83) bié jiā jiāngyóu
 don't add soy sauce
 Don't add the/any soy sauce.
- (84) bié dào chá
 don't pour tea
 Don't pour tea.

However, there is one type of situation which -le must be used in a negative imperative, and that is when the imperative is a "warning" to the listener:

- (85) bié pèng - le lúzi
 don't touch - PFV stove
 Don't touch the stove!
- (86) bié zhuàng - le gǒu
 don't run:into-PFV dog
 Don't run into the dog!
- (87) bié tūn - le niú'nǎi
 don't swallow-PFV milk
 Don't swallow the milk!

The contrast can be seen clearly if we look at pairs of negative imperatives with and without -le:

- (88) a. bié qiān - míng
 don't sign - name
 (You) don't (need to) sign your name.
- b. bié qiān - le míng
 don't sign - PFV - name
 Don't sign your name (I'm warning you!)

(88)b. means 'watch it, something bad will happen if you sign your name'. Similarly, in :

- (89) a. bié xuǎn nà - táng kè
 don't select that-CL course
 Don't take that course (= I wouldn't bother if I were you).
- b. bié xuǎn - le nà - táng kè
 don't select-PFV that-CL course
 Don't take that course (you'll be sorry if you do).

Now, why is it that -le has the effect of making the negative into a warning? The reason has to do with the sequencing function of -le, which we have discussed above in Section I.4. An event in a negative imperative by itself is not a likely candidate for a bounded, or perfective, event, since the speaker is actually urging that it not happen. So we should expect never to find -le in negative imperatives. When -le does occur, however, we know that, since the event can't be bounded in and of itself, it must be bounded by a following event, which may or may not be expressed, but which is always understood. So, to take (89)b., for example, a possible following clause, which could be expressed or assumed, might be:

- (90) bié xuǎn - le nà - táng kè, nǐ yòu gēn - bu - shàng
 don't select-PFV that - CL course you again keep - cannot - up
 Don't take that course; you won't be able to keep up again.

The same is true for all the other examples of bié imperatives with -le: they are always incomplete, and must be understood in terms of a following clause giving the negative consequences if the warning in the bié clause is not heeded, and this clause is either assumed or actually present. In many cases, the negative consequences are obvious enough that they don't need to be mentioned, as in the earlier example (85):

- (85) bié pèng - le lúzi
 don't touch - PFV stove
 Don't touch the stove!

Here, since the natural setting would be one in which the stove is too hot to touch, it would generally be unnecessary to add the information in a following clause that you would be burned otherwise. The implication is still 'or else—', but the hearer can fill in the rest. When it is not so clear why the warning is being given, then the following clause becomes more necessary. For example, if the warning is not to answer the phone, the reasons might not be clear. In such a case, the following clause specifying the consequence is more likely to occur:

- (91) bié jiē - le diànhuà, yòu tīng - bu - dǒng
 don't answer-PFV telephone again hear-cannot-understand
 Don't answer the phone; you won't be able to understand what you
 hear, (just like last time)

So we see that the use of -le in warnings follows very naturally from its use to signal the first event in a sequence. The second event which serves to bound the first one is often understood and therefore not explicitly stated in natural speech context.

III. The perfective in Mandarin from a typological perspective

Sections I and II have presented an overview of the way the Perfective aspect is manifested in Mandarin. There are three properties of this aspect category in Mandarin which deserve mention. In one of these properties, the Mandarin perfective is similar to other languages with a perfective aspect, but in the other two it is different.

1. 'Bounded' is not 'completed'. In every language with a perfective/imperfective distinction known to us, it seems true that 'perfective' includes but is not co-extensive with 'completed' (see Comrie (1976)). Mandarin is no exception; typically, of course, an event which is bounded is also complete, but it need not necessarily be. Example (2) and (3) which we considered at the beginning of this paper provide excellent illustrations of events which may be bounded (in this case, by the quantifying time phrases), but which are by no means complete:

- (92) tā shuì - le sān - ge zhōngtóu le
 3sg sleep - PFV three-CL hour CRS
 S/he has been sleeping for three hours.
 (93) wǒ zài nàlǐ zhù - le liǎng - ge yuè le
 I at there live - PFV two - CL month CRS
 I have lived there for three months now.

2. **Perfectivizing expressions.** One respect in which Mandarin perfective differs from that found in other languages is that in most of these, such as Russian, French, Swahili, Armenian, Hebrew, Georgian, and Ejaghaw (Bantoid), morphology expressing exclusively perfectivity is essentially obligatory for perfective messages. In Mandarin, however, as we have seen, the perfective morpheme -le is not found in the presence of a perfectivizing expression (see examples (75) - (78)). As we have suggested, these perfectivizing expressions seem to serve the same function as -le does, as verbal 'extensions' which signal by their inherent meanings that the event is bounded by naming the result or the spatial, temporal, or conceptual 'end point'.

3. **Quantified complements.** The second peculiarity of Mandarin with regard to perfectivity can be understood in terms of the notion of Transitivity introduced above in I.5. There we pointed out that many languages show a strong correlation between perfectivity and individuated objects; Mandarin is typologically unusual in having generalized this correlation to all quantified verbal complements. Thus, whereas in Russian, a sentence such as "I stood there for an hour" can be expressed either in the imperfective or the perfective, in Mandarin, it must occur with a -le:

- (94) wǒ zài nàr zhàn - le yī - ge zhōngtóu
 I at there stand-PFV one-CL hour
 I stood there for an hour.

That is, any mention of amount of time, distance, or specific direct object involved will generally elicit a -le in Mandarin. What is noteworthy about the following sentences is that the amounts mentioned are all very non-specific, yet they generally must occur with -le:

- (95) zhuōzi - shàng duī - le hěn duō tú
 table - on pile-PFV very much dust
 A lot of dust has piled up on the table.
 (96) wèi nǐ niàn - shū, nǐ fùqin huā - le duōshǎo qián!
 for you study-book you father spend-PFV how:much money
 Your father has spent so much money for you to study!
 (97) tā wèi zhèi - jian shì fèi - le bu - shǎo de xīn
 3sg for this-CL matter expend-PFV not - little NOM heart
 S/he put a lot of thought into this matter.
 (98) tā gāo - le yīdiǎn
 3sg tall - PFV a:little
 S/he has gotten a little taller.

IV. Summary

The semantic/discourse category of perfectivity, signaling that an event is being viewed in its entirety, figures prominently in the grammars of a number of languages. Mandarin is like them in that its grammar has the morphological means for signaling this category, the use of which correlates strongly with a concomitant signal of boundedness (a quantified verbal complement, inherent bounded meaning, or a predicate conveying a subsequent event). Mandarin differs from most other languages in two interesting ways. First, to signal perfectivity, either a perfective verbal suffix, which has no other meaning, or a 'perfectivizing expression' with its own semantic content may be used. Second, while in many aspect languages, the mere presence of a quantified verbal complement need not elicit perfective morphology, in Mandarin, a quantified verbal complement strongly tends to co-occur with perfective morphology.

PERSON IN AUSTRO-THAI:
COMMENTS ON THE PRONOUN PARADIGM IN
BENEDICT'S AUSTRO-THAI LANGUAGE AND CULTURE¹

A.L. Becker

I. Introduction: Describing and Explaining

Paul Benedict's extended explorations of the relations between Southeast Asian language groups continue to pose for us the most provocative questions about the nature of these languages and the kinds of changes they have undergone and continue to undergo. For one who is primarily a synchronist and has strong doubts about the comparative method and particularly the notion of a proto-language, Benedict's work is still very important in several ways: 1) since direction of change is part of the present reality of any language, synchronists need information from comparativists about the attested range of variation among related languages, variations revealing the potentialities for change within similar systems, and 2) since every language contains puzzling residues from the past, it is necessary to see the systems these residues reflect, often dimly, in their fuller elaboration in a related language. As Kenneth L. Pike has put it, "One cannot begin to see, with certainty, the driving principle or pattern or rule until one has a more complicated or a more developed instance of that rule. I have a strong conviction", Pike continues, "that one cannot expect to understand a principle with assurance, even when it is a universal unless one first sees it in a language where it is highly developed."² It is in this spirit, and with these goals, that I approach Benedict's work. Even if half of Benedict's details prove to be wrong--and I doubt that they will, there is still the fact of clear likenesses between Thai, Kadai, and Austronesian languages. These likenesses in all aspects of language (phonology, lexicon, grammar, syntax, semantics, pragmatics, textbuilding strategies, and mythologies, i.e. prior texts which serve as sources of form and substance for current texts), pose for us two questions: 1) what, in as much detail as possible, are these likenesses? and 2) how did the likenesses come about?

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The author wishes to thank James Matisoff, William Gedney, David Strecker, and Talmy Givón for comments, criticisms, and added information--though none agrees with all that is said here.

² Kenneth L. Pike, On Describing Languages (Lisse: The Peter de Ridder Press, 1975) pp. 11-12. See also Charles N. Li "Synchrony vrs Diachrony in Language Structure", Language 51:4 (1975).

Surely these likenesses have several sources. As James Matisoff has observed, some are coincidental chance correspondences, while others occur within the general constraints of all human language (i.e. language universals). Surely some are borrowings, to be expected in an area where cultural exchange has lasted for millenia, and surely some likenesses are the result of convergences, mixed languages which are the result of the pervasive bilingualism in Southeast Asia.³ We may never be able to be very precise about how a linguistic fact happened, due to the overdetermined, non-linear nature of language change.

We can, however, describe likenesses as fully as possible. It has always seemed to me that as a descriptive method the hypothesis of a proto-language is not illuminating, however powerful and attractive it may be as an explanation. This is not the proper time and place to argue the merits of the comparative method, its strengths and weaknesses as a strategy in modern grammars. Suffice it to say that resemblances do not presuppose common origins, only shared constraints.⁴

Between members of a single language family, the set of shared constraints is very large and very particular. In cultural areas like Southeast Asia, the set of shared constraints is larger than the set shared with languages outside that area, and it is constantly shifting due to language contact and bilingualism. Indonesian/Malay is one of the most deviant Austronesian languages today because of its long contact with Indo-European languages.⁵

Benedict's Austro-Thai Language and Culture describes, via the technique of hypothesizing a proto-language, chiefly lexical correspondences between the languages under consideration. However, he does describe also some features of the stress system, some notions about word order, a residue of affixial forms, and three paradigms: the numeral paradigm, the kinship paradigm, and the pronoun paradigm. It is here that the systemic nature of the relationship between the language families can best be observed, I feel. I would like to examine the pronominal system of Austro-Thai in order to illustrate several basic shared constraints that help us define that relationship.

³ All linguists who have worked for a time in Southeast Asia will have encountered real mixed languages. For the author the most striking instance was Sasak as spoken in a shadow play performed in Lenek in 1970. Examining the tape recording of the performance, I found that about half the vocabulary and half the grammar was Indonesian. (This was not due to differences in social register.) Sasak words had even taken on the meaning of their Indonesian cognates. This is an instance of an interlanguage, the language of a bilingual.

⁴ The notion of description as the identification of constraints on randomness is most clearly explicated in Gregory Bateson, "Cybernetic Explanation" in Steps to an Ecology of Mind. See also Pike's On Describing Languages (footnote 2) for a closely related philosophy of language.

⁵ See William Foley, "Notes Toward a Comparative Syntax of Austronesian, or Whatever Happened to Malay?" Paper presented at the First International Conference of Comparative Austronesian Linguistics, January, 1974. Foley writes, "it is not necessary for the morphemes which express various syntactic relations in different languages to be cognate in order for the syntactic systems to be", an assumption shared here.

I. The Austro-Thai Pronoun System

The pronominal system--or as I would prefer to call it the person system, since only one of its functions is noun substitution--is particularly important to study in detail, I think, since it is one of the most basic in human language. The polarity of person, in the words of Emile Benveniste, "is the fundamental condition in language, of which the process of communication... is only a mere pragmatic consequence. It is a polarity, moreover, very peculiar in itself, as it offers a type of opposition whose equivalent is encountered nowhere else outside of language."⁶ That is, person systems characterize individual languages and affect other grammatical systems far more deeply than, say numeral or kinship systems. While, as we shall see below, pronominal forms are freely borrowed, pronominal systems appear to have great stability over time, with new forms merely filling old cells in old paradigms. English you, for instance, has been borrowed into both Thai and Indonesian, yet it behaves within the constraints of Austro-Thai system of the person. The system of person, furthermore, is highly elaborated in Austronesian and Thai. In many Austronesian languages personal pronouns are inflected with temporal and deictic systems, become affixed to nouns and verbs, and develop into complex focus systems.⁷ In modern Thai there are about 17 first person forms, 19 second person forms, and 10 third person forms, involving complex grammatical, syntactic and pragmatic constraints.⁸ In both language families person systems are elaborate and interconnect with many other morphological systems.

Some of the complexities of these person systems are reflected in the irregularities of Benedict's Austro-Thai pronoun paradigm, as revised in the light of Dyen's paper, "The Proto-Austronesian Enclitic Genitive Pronouns".

⁶ Emile Benveniste, "Subjectivity in Language," in Problems in General Linguistics (Coral Gables: University of Miami Press, 1971) p. 225.

⁷ For descriptions of person systems in Austronesian, see Isidore Dyen, "The Proto-Austronesian Enclitic Genitive Pronouns", A.L. Becker and I. Gusti Ngunah Oka, "Person in Kawi: Exploration of an Elementary Semantic", and Asmah Haji Omar, "The Possessive Phrase in Six Western Austronesian Languages" - all papers from the First International Conference of Austronesian Comparative Linguistics, January, 1974. See also Renward Brandstetter, "Common Indonesian and Original Indonesian" in An Introduction to Indonesian Linguistics (London: Royal Asiatic Society Monographs, 1916) pp. 110-113. Brandstetter writes, "The following forms can be shown to be common IN: aku, "I", kaw, "you", ia, 'he', kami, "we", kamu, "you"; in the pronoun of the third person plural only the nucleus ra is common IN, the attendant articles vary, they are chiefly, i or si, thus forming ira or sira (pp. 110-111). As we will argue, Brandstetter's glosses are probably wrong.

⁸ The elaboration of the Modern Thai pronominal system is described in Angkab Palakornkul, A Socio-Linguistic Study of Pronominal Strategy in Spoken Bangkok Thai, Ph.D. Dissertation, University of Texas, 1972. See also Joseph R. Cooke, Pronominal Reference in Thai, Burmese, and Vietnamese. University of California Publications, Linguistics 52 (1968), and Thomas W. Gething, Some Aspects of Semantic Structure in Standard Thai, Ph.D. Dissertation, University of Michigan 1966.

	<u>Proto-AT</u>	<u>Proto-KD</u>	<u>Proto-MY</u>	<u>Proto-Austronesian (Dyen)</u>	
s. 1.	*wa(ng)ku	*ku ~ *kaw	*w[ang]	*waku	*ku ~ ngku
2.	*[a]møy[u]	*mai < *mayə	*mwei < *mw[əy]	*kaw	*Su ~ *mu
3.	*na(/n) *[i]ya(/n)	*na (Li) *nan *yen	*n[a]n		*ña < *n/iva
p. 1e.	*ami	-	-	*kami	*(m)ami
1i.	*[i](n)ta	*da	-	*ki(n)ta	*ta ~ *nta
2.	*[i](h)śu	*nta (KS) *su	*nəw < *əhu < *[i]h[ś]u	*kamu	*mu ~ *miu
3.	*ts[i]dra(/n)	*dran *thran < *s[]dran	-	*t'ida	*da *dya

Table I: PAT Pronominal System

(From Comment (Paul K. Benedict) on I. Dyen, "The Proto-Austronesian Enclitic Genitive Pronouns", handout at The First International Conference of Comparative Austronesian, Honolulu, Hawaii, January, 1974)

I will not try here to restate the evidence and arguments for these paradigms, but rather comment on what appear to me to be possible errors. When these corrections are made, the basic dimensions of the paradigm become much clearer.

III. Inflexional Residues in the Paradigm

First of all, the first and second person forms *ku and *møy (with striking uniformity in both families) are the most convincing forms in the paradigm. Benedict correctly, I feel, sees these and the other pronouns as morphologically complex forms. That is, certain regularities in the paradigm suggest that these forms contain the residues of affixes (or what Pike calls matrix formatives and Firth and Sprigg called prosodies⁹). All of the forms isolated below have been shown to be affixes in Old Javanese (Kawi), which has one of the most highly inflected person systems in Austronesian.

1) ka or -k- The -k- prosody or formative is common in

⁹ See Kenneth L. Pike, "Dimensions of Grammatical Constructions" *Language* 38:3 (1962); J.R. Firth, "The Use and Distribution of Certain English Sounds" *Papers in Linguistics* 1934-51, pp. 34-46; R.K. Sprigg "Prosodic Analysis and Phonological formulae in Tibeto-Burman Linguistic Comparison," *Linguistic comparison in South East Asia and the Pacific* (H.L. Shorto, ed.) pp. 79-108. See also K.L. Pike and A.L. Becker "Progressive Neutralization in Dimensions of Navaho Stem Matrices" *IJAL* 30:144-154, (1964). In this article the author (with K.L. Pike) first applies paradigmatic techniques to problems of historical morphology.

Austronesian deictic systems, with a general meaning of motion to or motion toward.

- 2) -i- The widespread i formative (combined to form si-, ri-, and di-) is found in Austronesian deictic systems, with the general meaning of static location in or at.

These first two formatives make up the Austronesian motion-stasis system, a basic semantic opposition in Austronesian grammar.

- 3) n (or N) a widespread "ligature" found throughout Austronesian in various modifier-head relations, identified sometimes as an article (Becker and Oka), a genitive marker (Dyen and others), a verb prefix (Brandsteter), and a relative clause formative (Keenan).¹⁰
- 4) si or sa This is a personal definite article, probably related to the AN word for 'one' (Dempwolff's *ət 'a 'one')
- 5) ri or ra More distant personal definite article, probably related to the AN for 'two' (*duwa)

The two formatives above (4 and 5) are part of a system in which numerals elaborate person-deixis systems not for number but for degrees of distance from the speaker.

- 6) i(n)- A possible infix. In several AN languages pronouns are inflected as verbs. This formative may reflect a reversal of deixis. That is, this infix, which elsewhere marks

¹⁰ Foley constructs an implicational hierarchy of modifier-head relations in Austronesian in which the ligature appears. This is a clear instance of the importance of a single formative in several grammatical systems and the use of these formatives in defining family-wide constraints. The "boundedness hierarchy" in Foley (1976) is:

Articles + NOUN
Deictics + NOUN
Interrogatives + NOUN
Quantifiers/Indefinites + NOUN
Adjectives + NOUN
Participles + NOUN
Relative Clauses + NOUN

This hierarchy predicts the distribution of the ligatures in the following way: whenever a category is full (i.e. requires a ligature between adjunct + NOUN (constructions), all categories below it also require a ligature. Here Foley provides us with a new technique for comparison of linguistic systems (as apart from forms).

oblique focus in the predicate, indicated that the hearer's perspective is dominant, so that "here" becomes close to the hearer, not the speaker. There is a common politeness rule in AN and Thai which might be formulated as follows: to maintain deictic anchorage in oneself is rude when speaking to a higher ranked person.

Removing these affixial formatives from the Austronesian paradigm greatly simplifies it and makes clearer the shared Austro-Thai paradigm:

1. *ku *mi
2. *məyu *ta
3. *a ø

TABLE II: Austro-Thai Person Paradigm

IV. Person and Deixis

Benedict remarks, in discussing third person roots, "All five roots (*na(/n), *[i]ya(/n), *tsidra(/n), [i]())tu, and *[l]wa) show a range of meaning from 'he/she' and/or 'they' to 'that', indicating that the basic development in AT was along these lines via 'that one.'" (ATLC p. 210). In his comments on Dyen he wrote: "The Kadai evidence strongly indicates a deictic origin ('That/that one') for the third person pronouns." I believe Benedict to be correct here, but I would not limit the deictic origin to third person alone, at least from the AN perspective. The basic deictic form in AN, as has been mentioned, is -k- (~t, a variation that is not yet clear) with various prefixed and suffixed formatives. Old Javanese (Kawi) shows the system in full elaboration:

ø	ø	i		i u	ø	
			k		i	ng
sa	ma	ng		a	a	
one	stative	def-loc.		person ₁	person ₂	ligature

Table III: Elaborated Old Javanese Person-Deixis Inflexion

Examples:

1. samangkā (sa-ma-ng-k-a-a) 'at that one time then'
2. mangkā 'thus'
3. iki (i locative -k) 'deictic base - i first person'
 'this, here, near speaker, I'

4. iku	'that, there, near hearer', you'
5. ika	'that yonder, over there, near neither speaker or hearer, he/she'
6. iking, ikung, ikang	'this the', 'that the', 'that other the'
7. ike (i-k-a-i)	'that relating to speaker which happened in the past'
8. iko (i-k-a-u)	'that relating to hearer which happened in the past'
9. ikana ~ ikā (i-k-a-a)	'that relating to neither I nor you which happened in the past'
10. ngka (ngke, ngko, ngkana)	'then' with personal inflexion

(Plus all other combinations possible in the table, with predictable meanings)

I do not mean to claim here that this paradigm represents a proto-Austronesian system. What the Old Javanese paradigm does is help us to see the meanings and functions of the paradigm formatives (or prosodies) in their most elaborated form. These same formatives appear in the verb paradigm as well, as is explained in Becker and Oka (see footnote 7). The resultant forms play a role in textual coherence which is similar to the role of tense in Western languages. The inflexion for person which is clear in the Old Javanese paradigm (i,u,a) has its correspondences in other AN languages in either living or frozen inflexional systems.¹¹

I know of no such elaborated system in Thai, and I have not yet begun to explore the person systems of Miao-Yao languages. The parallel in Thai languages, I suspect, is the widespread pronominal apposition to mark performative perspectives. The following examples are from Angkab (op. cit. p. 52):

	3	1	2	3	
a)	phaa	<u>man</u>	kaw	maag.	'cloth-it old very much'
	4	<u>1</u>	2	1	
b)	chan	<u>man</u>	yaag	pay	'I-he want go'

It seems but a short distance from John-he went to John he-went, from apposition to personal inflexion on verbs. This direction of thought, far more

¹¹ At one of the deepest levels of languages may be phenomena which up to now have been called sound symbolism. Certainly the step from paradigm formatives or prosodies to sound symbolism is a small one, though almost certainly dangerous. I. Fonagy has argued that sound symbolism is physiologically constrained, but recent work by William Cooper and John Ross suggests it may be cultural as well. (See Cooper and Ross, "World Order" in Functionalism (Chicago: Chicago Linguistic Society, 1975). In a cline from self to other, the following very tentative constraints seem to hold in the Austro-Thai pronominal paradigm:

1. High vowel is closer to self than low vowel (i,u/a)
2. Back consonant is closer to self than front (k,m/ t,n,s)

The process of person-deixis inflexion is illustrated in the present with the current third person distant form mereka, from: ma-("stative prefix") + ra-, +ika. (Indonesian-Malay).

elaborated in Foley (1976), suggests that archaic Austronesian languages were much more like Thai than, say, Tagalog or Malay, in which the development of verb inflexion has led to complex focus systems.

V. The Question of Plurality

The dimensions of the Benedict Austro-Thai pronoun paradigm, though not necessarily the basic forms, may be wrong. What are the kinds of semantic or pragmatic contrasts between the pronouns? In comparing systems (not individual lexical items) the paradigm itself--and not the forms within it--is extremely important. As we have seen, it is the Austro-Thai system, not the individual forms, which is stable over time.

One dimension of that system is person-deixis, as has been argued above. That is, the paradigm distinguishes I-here-this, you-there-that, and he/she-yonder-that other. The other dimension has long been assumed to be singular-plural, even though plurality is not a part of any other Austronesian or Thai paradigmatic system. I think we must question the positing of a singular-plural opposition as a basic Austro-Thai constraint and put in its place a system of status relationships which might be called familiar-formal. The paradigm then looks like this.

	familiar	formal
Speaker		
Hearer		
Other		

TABLE IV: A familiar-formal pronoun paradigm

Numbers (though not "number") do occur frequently in AN pronominal systems, particularly oceanic systems which mark so-called dual and trial forms. We have seen the formatives for one and two (sa~si, ra~ri) in the discussion of hidden affixes above. Many writers have assumed that these numbers which appear combined with pronouns mark the quantity of the speaker(s), hearer(s), or other(s). In my experience, however, they are much more likely to mark what might be called the quality of the relationship of speaker to hearer and speaker to what he is talking about. That is, the numbers mark degrees of familiarity or formality. It was a surprise for me to learn years ago that Malay/Indonesian kami does not mean 'we' exclusive most of the time, as I had been led to believe in textbooks and grammars, but rather first person formal, with number unmarked. Then I learned that nowhere in Old Javanese literature do kami or kita signify either plurality or exclusive/inclusive. This was the case for every Austronesian language I have been able to ask people about (as opposed to searching through grammars). The same appears to be true of those Tai languages I have been able to ask about. So-called plural forms are just as often used to indicate formality of relationship or respect. I suspect that the elaboration of Thai pronouns, like the elaboration of AN pronouns, marks quality of relationship, not quantity. Here, too, there is parallel metaphoric substitution within the paradigm (head or hair speaks to foot or even dust beneath the foot) which also suggests that quality of the relationship rather

than quantity of participants is the dimension that separates the pronouns in the paradigm.

VI. Conclusion

All of the revisions in Benedict's pronoun paradigm have the effect of removing awkward variations and greatly simplifying the paradigm. These revisions include:

1. Removing affixial residues, i.e. ligatures, deictic formatives, numbers, and other inflexional forms.
2. Recognizing the deictically based semantics of one dimension of the paradigm.
3. Substituting status for number in the other dimension of the paradigm.

Of course the revision has been chiefly from the direction of Austronesian. Future work on Thai, Kadai, and Miao-Yao person systems will hopefully help clarify some of the remaining problems, which include:

1. The initial consonant of the second person familiar form, *mu, which varies among m, n, and s.
2. The semantics of the second person formal form, *ta, with the infix **(n)* formative—perhaps an oblique or deixis-reversing form. Is this related to a widespread root for 'people'—ta, tou, tau, or is it a residue of another prosody, the *t /k* prosody?

I feel sure that further study of Austro-Thai syntax will help us explain the relationship between apposition and inflexion of person markers, and several other syntactic constraints which seem interesting but which it has been impossible to discuss here, in part because we have so little detailed syntactic data for these languages. For example, reduplication is a common grammatical process in Thai and Austronesian languages, marking something like indefinite iteration: why don't pronouns reduplicate in Austro-Thai languages? Closely related is the fact that pronouns are not used generically in Austro-Thai languages.

Finally, in the very few studies of Austronesian or Thai discourse that have appeared,¹² textual coherence seems to be built around the person-deixis systems of these languages, rather than temporal systems. Only with the careful study of texts will the most interesting syntactic, semantic, and lexical constraints on these systems be revealed.

To summarize, then, we can say that the nature of the relationship between Austronesian and Thai can be partially defined by the following constraints:

1. In both families the person system and the deictic system overlap in form and function.
2. In both families person forms are redundant (in apposition and inflexion) in sentences, though often not redundant in discourse.

¹² These studies include Becker and Oka (op cit), Vichin Panupong, "Inter-sentence relations in Modern Conversational Thai (Bangkok; The Siam Society, 1970)", and Mary Zurbuchen, "Cycle, Event, and Evaluation: Kawi Discourse Structure" in *Rackham Journal of Literary Studies* (February, 1976).

- (That is, there is "zero" anaphora in discourse, but pronominal apposition/inflexion in sentences).
3. In both families number and gender are secondary developments of person-deixis systems.
 4. In both families pronouns are inherently definite.
 5. In both families a distinction between psychologically close and distant forms for each person is maintained, though the forms change frequently. Metaphoric pronominal forms reflect this status distinction.

These constraints are part of the set of shared constraints we can call Austro-Thai. It remains to show the interaction of these constraints--tentatively generalized from one paradigm--on other Austro-Thai constraints, particularly those reflected in the m/b ~ p prosody (m- stative/ p- causative). If we narrow our focus, and set aside for the moment metaphors of history which explain things in terms of mythological origins, the reality of Austro-Thai becomes clearer, not as a proto-language, but what seems to me far more interesting: a set of deep, widely shared ideas about person in nature which constrain everyday linguistic choices in two contiguous groups of languages.¹³

¹³ For details of Austroasiatic pronouns, see H.-J. Pinnow, "Personal Pronouns in the Austroasiatic Languages: A Historical Study" in Indo-Pacific Linguistic Studies Part 1. (G.B. Milner and Eugenie Henderson, eds.) (Amsterdam: North Holland, 1965), pp. 3-42. The presence of number and inclusive-exclusive contrasts may well be Austroasiatic innovations. Pinnow also sees inflexion as a secondary development: "In proto-Munda...the pronouns properly were independent, isolatable free focus. The affix character of the pronouns, which were incorporated into the verb complex as subject or object respectively, is of more recent date." (p. 183). In order to see that most of the constraints listed above for Austro-Thai do not hold for all Southeast Asian languages, see James J. Bauman, Pronouns and Pronominal Morphology in Tibeto-Burman, 1975 Ph.D. Dissertation, University of California, Berkeley). See also A.C. Graham, "The Archaic Chinese Pronouns" in Asia Major 15:17-61 (1969-70), and Paul K. Benedict, Sino-Tibetan: A Conspectus (Cambridge, 1972) p. 93. Tibeto-Burman pronouns, unlike Austro-Thai, do not appear closely related to deictic systems, do not mark speaker status paradigmatically, are marked for plural with a separate morpheme, are not inherently definite (and can be reduplicated), and are not distinguished by high-to-low vowel gradations.

SOME EXAMPLES OF PRENASALS AND

*S-NASALS IN SINO-TIBETAN¹

Tsu-Lin Mei

This paper will present several new etymologies for the words 'head', 'lord, master', 'together with', 'pregnant', 'cord', and 'to cast (metal)' in Sino-Tibetan. What these words have in common is that they all illustrate a theory recently developed by Betty Shefts Chang and Kun Chang (1976, 1977) which asserts: (1) the Written Tibetan "a-chung" in pre-initial position was a pre-nasal N- at the time of the invention of the Tibetan script; (2) the two prefixes *s- and *N- in Pre-Written Tibetan can form a sequence *s-N- and occur before a root; (3) Pre-Chinese also has *s-, *N-, and *s-N-; (4) PC *sm- > OC *xm-, PC *sng- > OC *xng- and PC *sn- > *hn- where *hn- is the voiceless n-. It should perhaps be mentioned that (1) was first proposed by Li Fang-kuei (1933), and (4) was mentioned by Yakhontov (1960).

Several of the Sino-Tibetan comparisons to be proposed include Chinese doublets or triplets which differ considerably in their phonetic shape. What I am doing here is not suggesting several alternative Chinese cognates to a Tibetan form in the hope that one of them may turn out to be right, though I must confess that this motive is not entirely absent. The general point I wish to make via these examples is that OC has many dialects in which the same Pre-Chinese form undergoes divergent development--in the initial as well as in the final. This thesis, if accepted, has an interesting implication for Sino-Tibetan comparative studies.

In recent years a great deal of emphasis has been placed on finding regular rules of correspondence between Chinese and Tibetan. No one would wish to dispute the desirability of the neogrammarians' goal. The question is when and how we can reach it. The fact that we had some success in establishing regular correspondences means that sometimes we manage to hit upon the matching

¹ Abbreviations used in this paper are: STC: Paul Benedict, Sino-Tibetan: a Conspectus; GRS: Karlgren, Grammata Serica Recensa; LHT: Li Hsiao-ting 李孝定 甲骨文字集釈 (A compendium of the analyses and interpretations of oracle bone script); OB: Oracle bone inscriptions; WB: Written Burmese; WT: Written Tibetan; EOC: Early Old Chinese; LOC: Late Old Chinese; PC: Pre-Chinese.

Old Chinese is transcribed according to Li Fang-kuei's system (Li 1971, 1976); where I prefer another reconstruction, the preferred reconstruction is placed in parentheses. Middle Chinese is transcribed according to Karlgren, with modifications as recommended by Li (1971). A linguistic form preceded by a single star "*" is Li's OC; my own reconstruction of PC is preceded by two stars "**".

items in the standard language of OC and Written Tibetan. However, there are equally valid comparisons whose phonology is in some sense "irregular". The most likely explanation is that a dialect word is involved. For example WT sbrang 'fly' has been compared to both 𪛗 *mrang 'gadfly' and 𪛗 *rəng 'fly' (Li 1976b). One of the vocalic correspondences, WT a : OC a and WT a : OC ə, must be irregular. Now, if we are comparing a form in Proto-Chinese to a form in Proto-Tibetan, each capable of accounting for all the descendents in its branch, then there is every reason to insist upon regular correspondence. The internal variations, say, in Chinese would have been disposed of by rules linking the proto-form with the forms in various OC dialects. In my own estimate, we are several generations away from the millennium. At the present state of our knowledge, we will have to accept the non-uniqueness of Sino-Tibetan comparisons.

- (1) WT mgo < *b-N-go 'head'
 'go-pa (N-go-pa) 'headman, officer'
 CH 元 *ngwjan (*ngjon) < **N-gon or **N-kon 'head' (Shu) (K257 a-c)
- (2) WT mgon < *b-N-gon 'master, lord, protector'
 CH 君 MC kjuən < *kwjən (*kjun) 'lord, prince' (K459 a-c)
 尹 MC jwən < *gwrjən (*grjun) 'director, governor' (K1251 l-n)
- (3) WT 'go-pa (N-go-pa) 'headman'
 CH 后 *gug (*gu) 'sovereign, lord' (Shih) 'queen' (Tso) (K112 a-b)
 侯 *gug (*gu) 'feudatory prince' (Shih) (K113 a-d)

Betty Shefts Chang gave a derivation of WT mgo as follows: *b-N-go > *m-N-go > m-go. The first step assumes that oral stops (i.e. *b-) change to nasals before nasals; the second step assumes that non-initial "a-chung" (here written as "N") is lost (B. Chang 1971: 752-753; Li 1933). She also observed that N-go is attested in some compounds, e.g. N-go-pa ('go-pa) 'officer, headman'. I assume that mgon-po 'lord, master' is cognate to go-pa 'headman', and the above analysis of mgon is based upon that assumption.

The graph for *ngwjan occurs in the OB; it is the picture of a man with a stroke marking the head (LHT 0011). The word was still used in its original, literal sense of 'head' in LOC: 狄人歸其元 "The Ti people returned his head" (Tso-chuan, 僖 year 33); 勇士不忘喪其元 "The brave officer never forgets that he may lose his head" (Mencius, 滕文公下).

That 元 *ngwjan 'head' has **N-g- or **N-k- as the initial segment in Pre-Chinese is supported by two pieces of evidence. First, in the phonetic series K257 headed by 元, a. to l. have the initial *ng-, and m. to u. have *g- except for a single case of *k-; 圆 'round' (K257p) has multiple readings *g- and *ng-. Additional support comes from the following S-T comparison proposed by Chang and Chang (1976b: 352).

- (4) N-khrud-pa, bkrus 'to wash (clothes or hands, face)
 澆 *gwan (> *N-kwan or *N-gwan) 'to wash clothes' (K257 o)
 澆 *gwan 'to wash' (K140 m)
 澆 *kwan 'to wash hands' (K161 a-c)

Note that 澆 belongs to K257 headed by 元.

The correspondence between WT -o- and OC *-wa- or *-ua- (in Li's

transcription) is supported by many examples; see Gong 1978:30-31. In the Baxter-Bodman system of OC, Li's *-ua- is reconstructed as *-o-, which works very well for this word (Baxter forthcoming, Bodman forthcoming). Yakhontov (1970, 1960) proposed the same reconstruction.

The only difference between Chinese and Tibetan for 'head' is the presence of *-n in Chinese. Two explanations are possible. *-n may be a suffix, already present in the Sino-Tibetan root; cf. WT mgon 'master, lord', go-pa 'headman', and mgo 'head'. Chang and Chang remarked that ST *N- may be a suprasegmental feature, capable of nasalizing the whole syllable; their key example is WT N-thug-pa 'thick': Ch. 濃 *nung (CC's *nəung), 稠 *djəgw (CC's *djəug). They also offered a slightly different explanation; where we find nasal/oral alternation in both the initial and the final consonant, the cause may be the delayed articulation of the pre-nasal *N-. So for 'head' in Chinese: **N-go > *ngjō > *ngjon.

Yakhontov (1970 (1960)) noted that 寇 has 完 as the phonetic; the latter belongs to K257 headed by .

(5) WT rkun 'thief'

rju-ba 'steal'

CH 寇 *khug (*khu) (<**khun) 'to rob, robber, bandit'

Here the -n/-∅ alternation between the phonetic and the phonetic compound is reflected in the Tibetan cognates.

For (2) WT mgon 'lord' : Ch. 君 *kjun 'lord, prince', 尹 *grjun 'director, governor', Chang and Chang (1972) would reconstruct 君 as *kjaun, and Baxter (forthcoming) *kjun. I follow Baxter in this instance. 尹 *grjun is a makeshift reconstruction of an exceedingly difficult word.

In the examples presented above, there are several varieties of vowel correspondence.

WT -o- : OC -o-	'head'	mgo : N-gjon (Li's ngjuan)
WT -o- : OC -u-	'lord'	mgon : *kjun, *grjun (Li's kwjən, gwrjən)
WT -u- : OC -u-	'robber'	rku : *khu (Li's khug)
WT -ru- : OC -o-	'wash'	N-khrud : *gon (Li's *gwan)

This phenomenon of multiple correspondences has been discussed by Gong (1978), who listed many examples paralleling the ones shown above. While I admire Gong's paper, I find his discussion of this topic not very convincing. For one thing, he assumes that Li's system for OC is valid for Sino-Tibetan, while I am not sure it is valid beyond LOC. To play the devil's advocate, I will propose an alternative explanation. Let us suppose ST -o- : WT -o- : PC -o- and ST -u- : WT -u- : PC -u-. Let us further suppose that OC has two dialects; in one **ko > *ku, and in the other **ko > *ko; raising of back vowels after velars at different rates is a widespread phenomenon among modern Chinese dialects. When these OC dialects become mixed, the result is WT -o- corresponding to both OC -o- and -u-. It is also possible that in the Chinese words for 'head' and 'lord' we have a case of ablaut as a morphological process. As to WT -ru- : OC -o-, this may be due to the centralizing effect of *-r-. I hasten to add that I am as little convinced by my simple explanation as by Gong's more elaborate effort. The truth probably lies elsewhere.

(6) WT 'krid (N-krid) 'bring along with, with'

CH 皆 *krid 'all'; 偕 *krid 'together' (K599 a-b) 偕, 瞿 *ngjən (>

**N-krid) 'all' (Zhu and Qiu 1979:43)

It is well known that 皆 *krid is a collective or distributive adverb in OC. It remains to add that 偕 *krid, its cognate, is also used in the sense of 'to go along with, to accompany', which is even closer to the sense of the proposed Tibetan cognate: "The state of Chao sends the Lord of P'ing-yüan to seek help from its ally Ch'u. An arrangement is made for twenty brawny retainers, skilled both in courtly and martial arts to accompany him 約與食客門下有勇力文武備具者二十人偕 (Shih-chi 平原君傳).

The fact that 皆 *krid has a doublet *ngjən was noted by Zhu De-xi (Chu Te-hsi) and Qiu Xi-gui (Ch'iu Hsi-kuei) in their exegesis of an inscription on a square drinking vessel discovered in the tomb of the King of Chung-shan. The date is around 308 B.C. The inscription says that the Son of Heaven did not forget the King of Chung-shan's great service, sent a gift via an elder, and "諸侯膚 (*ngjən) 賀 the various lords all congratulated him." Below I translate Zhu and Qiu's discussion of the word 膚 *ngjən; the OC reconstructions are of course mine.

The oracle bone inscriptions have the graph 𪛗, sometimes simplified to 膚. The graph 膚 on the drinking vessel must also be the simplified form of 𪛗. The Shuo-wen says, "𪛗, the sound of two tigers fighting; a compound ideograph with 𪛗 and 日 as the components; to be read as 𪛗 *ngjən (K1251 b)". This must be the graph under discussion. The decree of the 26th year of the First Emperor of Ch'in (221 B.C.) unifying the weights and measures says "皆明壹之 they should all be explicitly made uniform". The word 皆 *krid 'all' is written as 𪛗 on the remnants of plaques along ancient highways (容庚, 金文續編 Jung Keng, Chin-wen hsi-pien 4.2). The word 皆 has initial 見 *k- and belongs to the OC 脂 *-id category. The word 𪛗 has initial 疑 *ng- and belongs to the OC 文 *-ən category. The 文 *-ən category is the nasal counterpart to the 脂 *-id category. Therefore 𪛗 *ngjən and 皆 *krid can be used interchangeably. The graph 膚 *ngjən on the drinking vessel should also be read as *krid 'all'. (Zhu and Qiu 1979:43)

My only quibble with the above passage concerns the statement that 𪛗 is attested in oracle bone inscriptions. This is the opinion of Lo Chen-yü 羅振玉 expressed half a century ago. Li Hsiao-ting (LHT: 0425-6) pointed out that the graph Lo identified as 𪛗 is OB 𪛗, whose scribe (隸) form should be 𪛗. In the OB graph for 'tiger', 𪛗, the tail is always turned upward, in a direction opposite to the mouth; in the form cited by Lo, the mouth and the tail of the purported graph for 'tiger' are turned in the same direction. Zhu and Qiu may have seen the OB graph 𪛗 in a context which makes the identification certain, or they may have seen a graph with two unmistakable 'tiger'. Until such evidence is produced, the issue remains in doubt.

The rest of their argument I find entirely convincing. *-ən and *-id are not exactly nasal/oral counterparts. But in the Book of Odes there are several instances of the 文 *-ən category rhyming with the 眞 *-in category, the exact nasal counterpart of *-id. This example also seems to show that the prenasal *N- is a suprasegmental feature.

I will now present a set of etymologies.

	WT	ST	OC		MC
(7) 'fly'	sbrang	s-N-brang (s-N-brəng)	𧈧 𧈧	x-mrang mrəng > rəng	məng jiəng
(8) 'pregnant'	sbrum	s-N-brum	孕(脛) 身,娠 妊,妊	mrəng > rəng hnjəm > hnjən njəm	jiəng sjiən hɛjəm
(9) 'cord'	'phreng	N-phrəng	繩 縉	mrjəng (?) mjən	dʒjəng mjən

The common denominator on the Tibetan side is the presence of *s-N-b- (> WT sb-) or N-ph-. On the Chinese side, the phonetic 繩 is present in each of the proposed comparisons. Pulleyblank (1962:137) already recognized that 繩 is the phonetic of 'fly' and 'cord'. As we will see, there is philological evidence indicating that 孕 'pregnant' has a variant graph 脛 or 縉. 脛 *mrəng 'toad' occurs in the oracle bone inscriptions as a pictograph (LHT, 3945). In the Book of Odes, it is to be read as *mjən when serving as a loan for 勉 *mjian 'to exert oneself'. In view of the proposed etymologies and the values of the phonetic 繩, it is likely that at least some of the phonetic compounds were formed at a time when the compounds still had **m-r-. That is, **m-r- > *r- occurred later.

(7) 'fly' has already been discussed by Li Fang-kuei (1976b) and Chang and Chang (1976: 601). Li also connects OC *rəng, *mrang 'fly' and *mrəng 'toad' to Siam. ma-leəng < *ml/r- A2 'insect' and Siam. meəng 'insect', used also in some aquatic vertebrates.' What I would like to add is a few words about the vocalic alternation in *rəng and *mrang. According to the Fang-yen, the word 蠅 *rəng 'fly' is pronounced 羊 *rang in Eastern Ch'i (present Shantung). The following doublets also show that the alternations *-ag/-əg and *-ang/-əng are widespread among OC dialects.

(10)			
(a) 'islet'	泚 *tjəg (Shih, K961h)	渚 *tjag (Shih, K454k)	
(b) 何其=何居	其 *giəg	居 *gjag	
禮記檀弓鄭注			
(c) 'subord. suffix'	之 *tjəg	者 *tjag (see Lü (1943))	
(d) 'perfect tense'	曾 *dzhəng (Shih, K884a)	嘗 *djag (Lunyu, K725f)	
(e) 'class, category'	等 *təng (Yi, K961i')	黨 *tang (Lunyu, K725r)	
(f) 登時=當時	登 *təng	當 *tang	

The word 蠅 *rəng 'fly' is first attested in the Book of Odes, and 脛 *mrang in the "Ch'u-yü" section of the Kuo-yü and the Chuang-tzu. While this information is insufficient to identify the dialects involved, we can be reasonably sure that these two words are dialect doublets in OC.

Gong (1978) points out that the Burmese cognate of this word is WB yang 'housefly'. He also gives two sets of vocalic correspondences, each supported by a number of convincing examples.

	ST -ə-	WT -a-	: WB -a-	: OC -ə-
Gong:		sbrang	yang	*rəng
	ST -a-	WT -a-	: WB -a-	: OC -a-
Mei:		sbrang	yang	*mrang

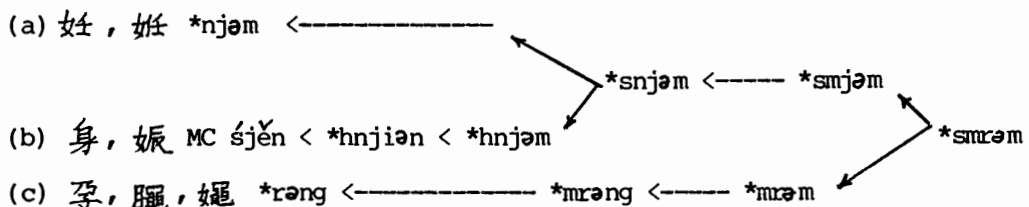
By selecting *rəng as the OC cognate, Gong comes to the conclusion that the ST word for 'fly' has the *-ə- vocalism. It seems to me just as valid to select *mrang as the OC cognate, in which case Gong will have to conclude that the ST word for 'fly' has the *-a- vocalism. As far as I know, there is as yet no criterion for making the choice.

Many Chinese names for insects have a prefix ma, for example 蚂蚁 ma-yi 'ant', 馬蟻 ma-hsien, 馬由 ma-yu 'millipede', 馬螞 ma-t'iao 'cicada', 馬蟻 ma-huang 'leech'. Several of the above are attested in Han texts such as the Fang-yen or the Erh-ya. In the Chinese lexicographic tradition, the prefix ma in names of insects is usually explained as a term denoting large size; thus ma-t'iao is the "larger variety among cicadas". I believe the etymon is *mrang, which, in addition of the specific sense of "fly" also has the generic sense "insect" as in Thai. If OC *mrang 'horse' corresponds to WT rmang and WB mrang, then PC *mrang 'fly, insect' can easily yield the insect prefix *mrag > ma.

In Chang and Chang's (1976) treatment of this word, they pointed out that the Lepcha word for 'fly' is sūm-bryon, which implies that the reconstructed *s-N- for WT sbrang was at one time pronounced as full syllables. They also noted that the phonetic series K742 containing 蟻 *x-mrang has initials *m- and *xm-, and that 亡 *x-mjang is both the phonetic and the cognate of 喪 *s-mang. Hence 蟻 has *x-mrang, and *x-m- is the reflex of PC *s-m- < ST s-N-b. In what follows I will try to show that the Chinese cognates of WT sbrum 'pregnant' underwent an analogous development.

(8) WT sbrum < *s-N-brum 'pregnant'

CH **s-N-brum > *smrum > *smrəm



The derivation given above need not take place exactly in the order shown, but some of the steps are intended to be sequential. I will now try to justify (a).

(11)	WT -uP		: OC -əP	
	WT gsum	'three'	: OC 三 səm	'three' (K648a)
	WT 'gum	'kill'	: OC 戕 khəm	'kill' (K651v)
	WT nub	'to sink, to set'	: OC 入 njəp	'to enter' (K695a)
	WT sbrum	'pregnant'	: OC 姪 njəm	'pregnant' (K667k)

These examples show that the dissimilatory change of PC -um > OC -əm is independent of the type of initial preceding ******-um.

For ***-r-** > ***-j-** see Chang and Chang 1976. Especially convincing are their examples WT mkrang 'solid' : Ch. 堅 *khjin, *khrin, 堅 *kin, and 擊 *khin, *khrin 'solid', and WT N-phreng 'cord' : Ch. 緝 *mjien.

****smj-** > ***snj-**. In Tibetan there are doublets which reflect this change: WT snyug-ma, smyug-ma 'rush, reed' (OC 弱 *njauk; Chang and Chang 1976:606); WT s-nyen-ba, r-myen-ba (< *s-myen-ba) 'to stretch one's self, to yawn'. We assume a similar change in Chinese. Simon (1975) in proposing the comparison WT sbrum, rum : OC *njəm 姪, 姪, speculates that OC -nj- comes from an earlier ***mj-**. Here we assume that ****s-** is a necessary condition for ***mj-** > -nj-; or more formally -m- > -n-/s-j-. ****s-** is present in WT sbrum, and also as ***h-** in *hnjən 身, 娠 'pregnant'. The alternative assumption of ***mj-** > ***nj-** is rejected because under that assumption either all syllables with ***mj-** would have become ***nj-** or there would be many doublets alternating between ***mj-** and ***nj-**. Neither seems to be the case. ****smr-** > ***snr-** > ***snj-** is another possibility.

The question may be raised why PC ****s-N-brang** (: WT sbrang) did not undergo ***smj-** > ***smr-** > ***snr-**? The answer is it did. There is a word *njang 蟻 with the 'insect' radical which occur primarily in compounds such as 螳螂 'mantis' 蝗 蝗 'locust(?)'. This is the same insect affix as ****mrang** > ***mrag** > ma discussed above. So we have

WT sbrang: OC mrang, njang : : WT sbrum: OC mr ng, nj m.

(b) 身, 娠 MC sjěn < *hnjiən < *hnjiəm < *smrəm

The word 娠 *hnjiən 'pregnant' is clearly a doublet of 姪, 姪 *njəm 'pregnant'; hence we may assume ****hnjiəm** > *hnjiən. GRS 386a gives the meaning of 身 shen as 'body, person'. But there is good reason to believe that its earlier meaning is 'pregnant'. The bronze form of 身 shen is 𠂇, the pictograph of a pregnant woman with a protruding belly; in Ode 236 we find the line 大任有身, 生此文王 'T'ai Jen became pregnant and bore this Wen Wang' (Karlgren's translation), and the word 身 shen is used in its original sense 'being pregnant'. Meng K'ang 孟康 (3rd century) in commenting on the Han-shu said, "娠 shen is to be pronounced 身 shen 'pregnant'. Nowadays there is a tendency to use 娠 to write 身. They are interchangeable." I should mention that our reconstruction of 身 shen 'body' as *hnjiəm 'pregnant' implies a rejection of Benedict's ST etymology, i.e. Ch. 身 MC sjěn : TB *sa 'meat, flesh' (STC, p. 158, note 428).

hnj-** > MC sj- is Li's proposal, the only graph with 身 as its phonetic is 𠂇 *diən > MC dien (K386d). ***hnj-** : ***d-** makes the relation between the phonetic and the phonetic compound intelligible. As a further step, I will suggest that ***hnj-** comes from *snj-**.

Pulleyblank (1963:236-237) has noted that ***-m** sporadically assimilates to ***-n** after a front vowel: 林 *gljəm 彬 *pjien; 天 *thin, 忝 *thiəm, etc. This may explain why 娠, 身 has the final ***-iən** instead of ***-əm** as in 姪, 姪. Another possibility is ****um** > ***-iən** after labial initials.

(12) WT 'bum 'tomb, sepulchre' : OC 墳 *bjən 'tumulus'

sbrum 'pregnant' : OC 娠 *hnjən 'pregnant'

I am unable to decide between these two possibilities.

There is another word *tjən > MC tsjĕn 娠, 慶 'pregnant' (K455 q, s) which is obviously related. Most likely they were misread according to the phonetic.

(c) 孕, 媿, 媿 *rəŋ < *mrəŋ < *mrəm < *smrəm < **s-N-brum

The word 孕 *rəŋ has two graphic variants 媿 and 媿, neither of which is recorded in the GRS or the Shuo-wen. The graph 媿 occurs in the Kuan-tzu, 媿婦不銷弃 "the pregnant woman would not have premature birth or take a fall," and the commentary says 媿 is an old graph of 孕 *rəŋ. The graph 媿 occurs in the T'ai-hsuan-ching (太玄經, a Han text) "媿其膏 impregnate her fatty substance". The fact 孕 has these two graphic variants has been noted by Tuan Yü-ts'ai and Chu Chün-sheng.

The oracle bone form of 媿 also exists (LHT, 3707). But the two pieces of OB containing it do not provide sufficient context to determine the meaning of the graph. If this graph does mean "pregnant" then its EOC value is almost certainly **mrəŋ.

According to some lexicographers the graph 孕 has 乃 as its phonetic; it is so analysed in the GRS, in Tuan Yü-ts'ai's commentary to the Shuo-wen, and in Chu Chün-sheng's Shuo-wen t'ung-hsün ting-sheng. This erroneous analysis evidently derives from a version of the Shuo-wen cited in the Yi-ch'ieh-ching yin-yi — 切經音義 by Hsüan-yin 玄應. But according to Hsu K'ai 徐鍇, one of the leading scholars of the Shuo-wen during the T'ang, 孕 is a pictograph. His opinion is confirmed by the OB form for 孕 (𠄎), which is the drawing of a person with a child inside (LHT 4315). In terms of graphic origin, 身 shen 'body, person' (K386a) and 孕 yün 'pregnant' (K945j) are the same word; they are both pictographs of a person with a child inside (LHT 2719). The part of the OB graph representing the body 𠄎 is deformed into 乃, which contributed to the confusion.

Karlgren reconstructs 孕 as *djəŋ > jəŋ (K945j). This is incorrect. This word has a 4th Division 以 ji-initial in MC, which goes back to *r-. It is difficult to see how 乃 *nəŋ can serve as the phonetic of 孕 *rəŋ. What probably happened is sometime between OC and MC, 孕 was zjəŋ and 乃 was nzjəŋ, and the phonetic similarity at a much later stage made the erroneous analysis plausible.

Ode 8 蓂莢 has an expression 蓂莢 *bjəŋ-*rəŋ (K999i, 976g) 'Plantago', which, according to Mao's Commentary, promotes pregnancy. Wen I-to (1948, II, 121) rightly observed that the practise of women gathering Plantago, the theme of this poem, is based upon the belief in homeopathic magic—that *bjəŋ-*rəŋ promotes pregnancy because it is homonymous with a term with such connotations. And he connects it with 胚胎 *phəŋ-*thəŋ 'foetus'. However, the word 胚 *phəŋ did not seem to exist in the Pre-Ch'in period, and even if it did, it is doubtful whether during the period of the Odes 胚胎 *phəŋ-*thəŋ was a ready-made compound, and thus recognizable as a near synonym to *bjəŋ-*rəŋ. As an alternative explanation, I would propose that *bjəŋ-*rəŋ is the disyllabic form

of *b-ræg, which in turn is the denasalized version of *mræng 'pregnant'. If this argument is accepted, then during the period of the Odes, *mrang still, had a pre-nasalized variant *N-bræg.

'Pregnant' and 'fly' underwent the same evolution in the initial segment.

**s-N-br- > *s-mr- > *mr- > *r- 蠅, 孕, 脛, 媿 *ræng.

For the final, we saw earlier that **smrum > *smrəm by dissimilation, and after the loss of *s-, the result is *mrəm. At this stage another process of labial dissimilation takes place, triggered by a preceding labial or labiovelar initial.

- (13) 'wind' 風 pjəm > pjæng > pjung (K625h)
 'phoenix' 鳳 bjəm > bjæng > pjung (K625j)
 鵬 bəm > bæng > bæng (K886j, Chuang-tzu)
 'bear' 熊 gwjəm (?) > gwjæng > jung (K674a)

(Cf. WT dom, WB wam, Proto-Min *him)

'pregnant' 孕 mrəm > mræng > ræng (K945j)

The irregular development of 孕 MC jiəng into Peking yŭn [Yŷn] offers further evidence indicating that 孕 once had a rounded vowel. It's prehistory is either **mrum > mrun > run > ruən > MC jiuən > Peking yŭn, or **mrum > rum > *run > Peking yŭn.

(9) WT N-phreng 'cord'

CH 緇 *mjien (K457x)

MC dźjəng > *mrjəng (?) < **N-phreng (K892b)

(Cf. STC, p. 176, footnote 469 Nungish: Metu ambring 'cord')

The Metu form cited by STC offers further evidence that "a-chung" was a pre-nasal. For 緇, I assume that when the phonetic compound was formed, its value was *m-rjəng, and the phonetic 媿 was *mræng. The MC initial dźj- ~ źj- is not easy to derive. There are two possibilities. (1) *rj > MC zj- is regular. One assumption is that *m- is lost first, *rjəng > MC zjəng, and 緇 MC dźjəng is a dialect variant of MC zjəng. (2) If we assume *mrjəng > MC dźjəng, this would constitute an apparent counter-example to Li's (1976b) assertion that OC did not have *mrj- clusters.

媿 has multiple readings *mræng and *mjiən (K1252d); the latter is identical with 緇 *mjiən 'cord'.

In examples (7) 'fly', (8) 'pregnant', and with less certainty in (9) 'cord' we see that **m-r- sometimes retains the nasal feature, and sometimes loses it. This is probably a dialect phenomenon.

(14) WT lugs, ldugs-pa 'to cast, to found metals'


CH 鑄 *tjugh (< *tlugh (?) < *dlugh (?) 'to cast' (K1090 a')

(Cf. WT N-chu 'to ladle, to irrigate, to water' : Ch. 注 *tjugh 'to conduct water, to pour'; 料 *tjugx 'to ladle')

Chang and Chang (1977:238) posited a pre-nasalized *l- as the source of WT ld- and OC *dj-:

(15)

Ch. *dj- : 舐 *djig 'lick'

*N-l- --> *N-d-l- --> *dl- 

WT *ld- : ldag 'lick'

The alternation of l- and ld- in WT for "to cast" calls for a similar treatment: *N-l- > ldugs, *l- > lugs. The voiceless initial *tj- of 鑄 does not entirely fit the derivation given above. I assume, tentatively, that the PC initial of 鑄 was **dl- which underwent devoicing and became *tl-.

PC initial **l- for 鑄 is another possibility and it is interesting to note that Vietnamese has a word for 'to cast' probably borrowed from Chinese. In the interpreter's handbook *An-nan-yi-yü* 安南譯語 of the Ming dynasty, Chinese 倒金 'to pour gold' is given in Chinese transcription of Vietnamese as 六罔 ljuk vâng, and 鑄銅 'to cast bronze' is given as 路董 lu dông (Chen 1966-68: 176-177).

Two general observations will conclude this paper.

First, the comparative study of Chinese and Tibetan is integral to the study of OC dialects. As we have seen, cognates and dialect doublets which are difficult to relate within Chinese become relatable through their Tibetan cognates. Conversely, in time we should be able to sort out Chinese doublets according to their dialect origin. Then we can reconstruct older stages of Chinese by the comparative method on the basis of LOC dialects.

Second, the prenasal *N- is known to have a morphological function in Tibetan. It converts so-called adjectives into intransitives, and is sometimes called the "non-causative". *s- and *s-N- are also known to have morphological functions. It would be interesting to find out whether these prefixes serve similar functions in Pre-Chinese.

THE FUNCTION OF QUSHENG IN EARLY ZHOU CHINESE

Alex Schüssler

The Ancient Chinese (AnC) qusheng (or "falling tone, departing tone") has long been recognized as a derivational device in the Chinese language. For Archaic Chinese (ArC), later qusheng is symbolized in Li Fang-kuei's system of reconstruction (1971) by *-h, but we follow Pulleyblank (1962:216-225) and others in writing final *-s.

How qusheng is reconstructed in ArC is by and large immaterial to the inquiry into its meaning and function. Among the many scholars who have given attention to the morphological role of qusheng are Karlgren (1949:94-95), Wang Li (1958:213-217), and, in more detail, Downer (1959), Zhou Fagao (1963:5-96), and most recently Mei Tsu-lin (1980). Karlgren and Wang Li showed with a few examples from Classical Chinese (CC) texts that qusheng effects changes in word class, such as formation of verbs from nouns, verbs from adjectives, and the like. More systematic in their procedure were Downer and Zhou who established categories which cover all CC qusheng derivations. Here are Downer's categories, with Zhou's in parentheses:

- A. Basic form verbal -- derived form nominal (Zhou no. 2)
- B. Basic form nominal -- derived form verbal (Zhou no. 1)
- C. Derived form causative (Zhou no. 5)
- D. Derived form "effective"
- E. Derived form restricted meaning
- F. Derived form passive or neuter (Zhou no. 6)
- G. Derived form adverb (Zhou no. 8)
- H. Derived form used in compounds.

Basically, Zhou's categories are similar to Downer's, except that he distributes Downer's categories D, E and H differently, while adding these:

- No.3 Basic form adjective -- derived form verb (and vice versa)
- No.4 Basic form word of location -- derived form verb (and vice versa)
- No.7 Derived form completed action.

These neat categorizations cannot hide the fact that qusheng's role is so general as to lead Downer himself to conclude: this tone is "simply ... a system of derivation and nothing more. When new words were needed, they were created by pronouncing the basic word in [qusheng]" (1959:262). So far, then, these descriptions and conclusions have left room for the question if there might not lie beneath these functional categories one or a few more fundamental meanings whose discovery may not only simplify the description of the tone's

functions, but also lead to a deeper understanding of Chinese morphology.

Perhaps in searching for a deeper core meaning of qusheng, Cikoski (1970:59-60) injected a new idea into the discussion when he indicated that this tone is involved in the direct/ergative morphology which he postulated for CC. Most recently, Mei Tsu-lin (1980) reduced the semantic categories of qusheng to three: (1) Qusheng marks an "introvert/extrovert" distinction; (2) it marks a switch from verb to noun. (3) A later development is the derivation of verbs from nouns. As can be seen, in addition to his categorical simplification, Mei also recognizes that CC consists of historic layers.

The present paper's objective is to attempt once more to isolate the earliest meaning of qusheng. To accomplish this, we turn to the earliest texts in order to extract all non-qusheng/qusheng minimal pairs. Because most qusheng words share the same graph with their non-qusheng counterpart, we must rely on early commentaries which distinguish the various readings of a graph. Naturally, there are no such glosses on Western Zhou (1045-771 B.C.) bronze inscriptions and Shang oracle bone inscriptions so that we must be content with the earliest classics Shujing (Shu) and Shijing (Shi) whose language we call here Early Zhou Chinese (EZ).¹ Lu Deming's Jingdian shiwen is a collection of reading glosses for the classics, including Shu and Shi, so that we will rely heavily on this work.

From Shu and Shi I have extracted over 90 EZ minimal pairs.² Two kinds of minimal pairs are not included in our corpus: (1) sets whose members are written with the same graph, and whose non-qusheng/qusheng distinction is not commented on by Lu Deming and his sources. An example is cóng 從 'to follow' which, according to philological tradition, should be read zòng when meaning 'follower, retinue.' We have no choice but to interpret the silence of commentators to mean that this word was always read cóng in Shu and Shi, even in the meaning 'follower.' This is interesting because a qusheng derivation meaning 'follower', rather than 'followed one, leader', goes counter to the conclusions of this investigation, a reading zòng is thus irregular. (2) We disregard a small number of sets the modern conventional reading of whose members is, again, clearly distinguished, but whose graphs seem to be interchangeable in pre-classical texts. Take the set dá < *təp < *twəp 答 'to respond, answer' vs. duì < *twəps 對 'to respond, answer.' The bronze inscriptions (according to Zhou Fagao's Jinwen gulin) and Shi do not know the graph 答, it occurs only rarely in Shu, and there in contexts which indicate interchangeability with 對, e.g. 用答揚文武之光訓 Shu 42, 24 "...and thus (respond to) gratefully extol Wen's and Wu's brilliant instructions." Compare: 對揚王休 Shi 262,6 (and frq. in bronzes) "(In response:) Gratefully he extolled the king's grace."

答曰 Shu 42, 25 "(The king...) answered saying..." Compare:
對曰 Shu 26, 17 "He answered saying..."

After disregarding these two types of inconclusive data, we are left with 87 sets of minimal pairs which fall into two groups: (1) The function of qusheng is to invert the attention flow (see below); (2) residue. The sets in

¹ In other studies, I include the Western Zhou bronze inscriptions in this term EZ.

² Mei supplies 36 examples for CC (inc. EZ), many of which are not minimal pairs.

this latter group do not contradict the definition of qusheng's function in the first, but they are residue by default because the semantic relationship within the sets is not yet clear to me. Hence it seems likely that in EZ the derivational device qusheng had but one single function.

All the qusheng derivations in the corpus below (except, of course, the residue) share one meaning which variously manifests itself as either passive, or ergative, or reflexive (or rather as something like Classical Greek "middle voice"), while the basic form (non-qusheng) can be labeled "direct". Passive, ergative, and middle voice all contrast with direct in one respect: the attention flow is not direct, but inverted. ("Attention flow" and "invert, inversion" are terms borrowed from DeLancey 1981).³ The following English illustrations, though not strictly valid because ergative and middle voice are not grammatical categories in this Western language, may nevertheless convey some idea of what is involved (some of these sentences are from Lyons 1968:352):

- (a) Direct: 'John moved the stone.'
(b) Passive: 'The stone is moved. The stone is moved by John.'

In the direct statement (a), John initiates the action which results in the movement of the stone. The linguistic attention flow (subject to object) agrees with the natural attention flow (agent to patient). In the passive statement (b), the natural attention flow is inverted: the stone (the patient) is placed first; the agent, if mentioned at all ('by John'), is placed later in the sentence.

- (c) Ergative: 'The stone moved'.

The attention flow is inverted as in passive: the grammatical subject, the first element in the statement, is the patient. "Ergative" is customarily defined as the subject of an intransitive verb which corresponds to the object of the verb's transitive counterpart.

- (d) Middle voice: 'The stone moved (by) itself'.

In Classical Greek, middle voice marks a verb whose agent is also its patient, a situation which is in English expressed with the help of reflexives. It is evident that the attention flow is here also inverted. In EZ, qusheng (*-s) marks any of the above types of inversion. That inversion (what goes against natural attention flow) is marked (qusheng) while congruence of linguistic with natural attention flow is unmarked, seems to agree with universal linguistic experience.

The following corpus of EZ sets of minimal pairs demonstrates, I believe, that this tone (*-s) is an inversion marker. All sets are numbered

³ The first version of this paper (completed in May 1980) was partially inspired by Cikoski's (1970) and Dixon's (1979) discussions on ergativity. This line of inquiry was not as profitable, though, as DeLancey's (1981) concepts which have been more helpful for defining the basic function of qusheng in this revised version than the adoption of two of his terms may suggest.

Recently, also Mei's study appeared in print. His conclusions go far in the direction which this present investigation is pursuing, although our conclusions are not identical with his.

consecutively, each divided into a non-qusheng (A) and a qusheng member (B). For each word, we give the pinyin spelling, then AnC according to Karlgren (1957) as amended by Li Fang-kuei (1971), finally the reconstructed ArC form based on Karlgren, Li and Pulleyblank (1962-1963; see also Schuessler 1974a and b; 1975). We add, furthermore, the graph, the traditional word-class (N = noun; V = verb; ST = stative verb), and an English gloss. Then we quote, for words other than concrete nouns, a few typical or relevant textual examples to illustrate the word-class assignment and meaning. These quotations are arranged according to the various uses of the word in the sentence: Nom. = nominal; Tr. = transitive; Intr. = intransitive; Adv. = adverbial; Adj. = adjectival. These textual examples are, of course, taken out of their contexts and kept very brief. The context can be verified with the source quotation: Shu refers to the chapter number of the Shangshu concordance, after the comma follows the paragraph (e.g. according to Karlgren 1950); Shi is quoted by ode and stanza.

The first example (no.1) illustrates the inversion effected by *-s very clearly because our Western Sprachgefühl immediately recognizes the qusheng form (1.B) as "passive" (cf. Downer' category F; Zhou's no.6):

- (1) A. WEI < ?jwei < *?ywəl v. 'to awe, scare' 威. Tr. (a) 威之 Shu 5,14 One overawes them. Intr. (b) 惟威 Shu 29,18 (The officials) are terrorizing. Nom. (c) 天動威 Shu 26,18 Heaven has set in motion its (terrorizing:) terror.
- B. WEI < ?jwei < *?ywəls v. ('be awed, scared':) 'to fear' 畏. Tr. (d) 予畏上帝 Shu 10,2 I fear Shangdi. Intr. (e) 周不祇畏 Shu 26,7 All revered and feared him. (f) 天明畏 Shu 27,9 Heaven is bright and majestic. Nom. (g) 天畏棗忱 Shu 19,6 Heaven's (fearsomeness:) majesty is not to be relied on.

Traditionally, one reads 威 in pingsheng (even tone) wei, and 畏 in qusheng, wei. Mattos (1971) has studied tonal anomalies in Shi and concluded that in 96% of all rimes in the Guo feng section (songs 1 to 160) we find tonal congruence, only in 4% tonal disagreement. He suggests therefore that most if not all of the irregular rimes might in fact have been regular if we assume that certain words (47 graphs all told) were read in Shijing times either also with an alternate tone, or with a different tone altogether. The probability for different tones varies, however, within these 47 syllables. Mattos divided them into three groups: A. comprises words which rime two or more times consistently with words having a specific different tone, e.g. 予 yu rimes without exception with rising tone words, so do 偕 jie, 狩 shou and 顧 gu; 饗 xiang, 夢 meng, 信 xin and perhaps also 命 ming rime only with pingsheng words. Hence these words should in all likelihood be reconstructed with that ArC tone which is suggested by the rimes. B. comprises words which rime only once, and with a tone which goes counter to later philological tradition. It is risky to reconstruct a different ArC tone on that slim a basis, and also on the basis of just two, albeit consistent, rimes under group A. Group C includes all words which show rime contact with two tones. Among these we find 畏 wei (see our paradigm) which rimes three times with pingsheng words, only once with a qusheng word. Mattos' study strongly suggests, therefore, that 畏 was also read in the even tone in these three rimes, in spite of the fact that 畏 everywhere clearly means 'to fear', not 'to awe'.

Here is now an obvious problem: either we should, according to Mattos' study, read the word 'to fear' as wei, which would fly in the face of the

tradition which points to a tonal distinction between 'to awe' and 'to fear'. Or, conversely, if the morphological distinction between these two words existed in the Shijing language, then we must assume violation of tonal rime patterns. The issue boils down to this choice: which is less drastic: to assume occasional tonal incongruence in Shi, or to reconstruct, on the basis of little or contradictory evidence, alternate or different tones also for words in Mattos' B and C groups (including 畏)? It is impossible for us to ascertain whether or not all rimes were, in Shi, tonally regular. Because of this uncertainty, it seems less drastic to accept occasional tonal irregularities in rime, than to change the reconstruction of tones for certain ArC words. As a result of these considerations, we are inclined to proceed with our discussion on the meaning of qusheng with the assumption that 畏 represents a word in *-s already in EZ.

Examples (c) and (g) of set no. 1 show that a verb can be used as a noun by being placed into nominal slots in the sentence (e.g. subject, object; see Schuessler 1982) without morphological change. The opposite also happens in EZ and CC: nouns are used in the verbal slot, e.g. 君子不器 Lun 2, 12 "A gentleman is not (implementized:) treated like an implement."

Not only can nouns be employed in the verbal position, and vice versa, but nouns can also be derived from nouns, also without morphological change. Cikoski (1976:42) drew attention to the derivation of the abstract noun ren 仁 'humanity' from the ArC homophonous concrete noun ren 人 'man'. Consider the following sentence: 其人美且仁 Shi 103, 1 "That man is beautiful and (acting human:) kind." Here, 仁 is simply 人 used as an intransitive (stative?) verb, similar to 器 in the Lunyu passage quoted above. Putting 仁 back into a nominal slot would yield the original meaning 'man.' However, 仁 happens to have developed an identity as a verb (due to frequent usage as a verb?), so that it has apparently split away from the noun 'man' and established itself as a member of the word-class verb; this new verb used as a noun naturally acquires the meaning 'humanness, humanity,' just as wei 'to awe' in set 1 can be used as a noun 'terror.'

The derivations discussed so far can be tabulated in this fashion:

<u>Word-class</u>	<u>Nominal use</u>		<u>Verbal use</u>		<u>Nominal use</u>
N	器 implement	----->	用 use/be treated like an implement		
N	人 man	----->	仁 act like a human being, be humane, kind		
				(change of word-class)	
V			仁 be humane, kind	---->	humanity
V			威 to frighten	---->	terror, the 'frightening'

It follows from these considerations that Chinese does not require any morphological process for these common kinds of word derivation. Consequently, *-s (qusheng) does not mark such changes in word-class or subclass. Such changes which have been observed in conjunction with *-s (Downer's categories A, B and F) must be highly suspect of being coincidental phenomena which actually have nothing to do with the core meaning of this *-s. Consequently, qusheng's role in the nominalization of the following examples (2-20a) is secondary at best; the primary function of *-s here is to invert the attention flow so that the EZ derivations, without exception, are passives of the basic form: e.g. ex.5 'to mount' -- qusheng derivation 'what is mounted' (not: 'Who/what is mounting'). There is not a single case in this EZ corpus in which the "derived noun" is not inverted (passive). Such cases do occur, however, later in CC, e.g. cóng 'to follow', vs. zòng 'follower' (not, as should be expected in EZ, 'who is followed, leader'). In short, *-s in the following nouns is the same morpheme as in ex. 1 above.

Starting with ex. 3.B, we find that the semantic range of many *-s derivations is narrower than the original, a phenomenon we will comment on after ex. 24.

- (2) A. BĒI < pək < *pək n. 'North' 北. Tr. 分北三苗 Shu 2,38 He separately (northerned:) sent to the north the Sanmiao. Nom.
- B. BÈI < puài < *pəks n. ('What is northerned, turned north' -- in China one orients oneself to the south, "faces south":) 'the back (of body), backquarters' 背. Nom.
- (3) A. BǐNG < pjwɛŋ < *pyǎŋ v. 'To hold, grasp' 秉. Tr. 右秉白旄 Shu 22,1 In the right hand, he held a white oxtail flag. 秉哲 Shu 30,9 They held on to wisdom. Nom. 彼有遺秉 Shi 212,3 There are some unharvested bunches.
- B. BÌNG < pjwɛŋ < *pyǎŋs n. ('What is grasped':) 'a handle' 柄 [semantic scope narrowed compared to A.; subsequently indicated by the word 'narrowed']. Nom. 西柄 Shi 203,7 The western handle (of constellation).
- (4) A. CǎI < tshâi < *tshəʔ v. 'To gather, pluck, cull' 采. Tr. 左右采之 Shi 1,4 To the right and left we cull it (the plant).
- B. CÀI < tshâi < *tshəs n. ('What is plucked':) 'vegetable' 菜, 'appanage' 采 [narrowed]. Nom.
- (5) A. CHÉNG < dzjəŋ < *ljəŋ v. 'To mount, ride' (animal, boat) 乘. Tr. or intr. (?) 若乘舟 Shu 16,23 It is like riding in a boat. 王乘于舟 The king rode in a boat (麥尊).
- B. SHÈNG < zjəŋ < *ljəŋs n. ('What is mounted':) 'chariot, team of four horses' 乘. Nom. 乘乘馬 Shi 78,1 He rides in a carriage with four horses.
- (6) A. DĪ < diéi < *dɛlʔ . (*dləlʔ?) n. 'Junior, younger brother' 弟. Nom.
- B. DÌ < dièi < *dɛls (or *dləls?) n. ('Juniorized, who is made a junior':) 'younger secondary wife' 媵. Nom.
- (7) A. FÉNG < bjwɔŋ < *byuŋ v. 'to sew' 縫. Tr. 可以縫裳 Shi 107,1 (The

hands) can sew a shirt.

- B. FÈNG < bjwòŋ < *byuŋs n. ('What is sewn':) 'a seam' 縫 [narrowed].
Nom.
- (8) A. GŪ < kuó < *ka? st. 'Old' 古. Adj. 古人 Shu 22,5
The ancients. Adv. 古我先王...Shu 16,7 Anciently, our former
kings...
- B. GÙ < kuò < *kas n. ('Antiquated, having become old/antiquity'—Karlgren
(1960:139): 'anterior, ci-devant, premise, cause':) 'old, reason' 故.
Adv. 故天棄我 Shu 19,3 Therefore, Heaven rejects us. Nom.
君之故 Shi 36,1 For the lord's sake. 不寔故也 Shi 81,1 Do
not brusque an old friend.
- (9) A. GUĀN < kuān < *kwan v. 'To watch, observe' 觀. Tr. 予若觀火 Shu
16,8 I am as if watching a conflagration. Intr. 爾克永觀省 Shu
30,7 If you can constantly observe and scrutinize (yourself).
- B. GUÀN < kuàn < *kwans n. ('What is watched':) 'a sight' 觀. Nom.
- (10) A. LÌ < liek < *rek (*rlek?) v. 'To calculate' 歷. Tr. 歷象日月
Shu 1,3 To calculate and delineate the sun, the moon... Adj. 有歷年
Shu 32,17 So that we have so and so many years.
- B. LÌ < liè < *reks (*rleks?) n. ('What is calculated':) 'number;
refinement' 麗. Nom. 莫麗 Shu 42,5 (They...) set forth their
refinement. 其麗不億 Shi 235,4 Their number, was it not a
hundred thousand!
- (11) A. LIÀNG < ljáŋ < *ryaŋ? n. 'A pair, two' 兩. Nom.
- B. LIÀNG < ljàŋ < *ryaŋs n. ('What is paired' — i.e. wheels:) 'carriage'
兩 [narrowed]. Nom.
- (12) A. NÀ < nâp < *nâp < *nwâp v. 'To put into, bring in, introduce' 納.
Tr. 賦納總 Shu 6,33 (The area) brings in as revenue bundled grain with
straw. 乃納冊于金匱之匱中 Shu 26,11 Then he put the tablets into the
metal-bound coffer. Intr. 納于百撥 Shu 2,13 He was introduced to the
general management. 納于大麓 Shu 2,13 He was sent into the great
foothill forest.
- B. NÈI < nuài < *nwâps n. ('What is entered into':) 'the interior, inside'
內. Nom. 畢門之內 Shu 42,21 Inside the last gate. 內史 Shi
193,4 The (interior:) private secretary
- (13) A. SHÀN < zján < *djan? st. 'Be good, be good at' 善. Tr. 叔善
射忌 Shi 78,2 Shu is good at archery. Intr. 無敢不善 Shu 49,2
Do not dare not be good. Nom. Shu 16,16 Goodness. Adj. 善人 Shi 254,5
The good man.
- B. SHÀN < zjàn < *djans n. ('What is made good, made ready':) 'cooked
food' 膳 [narrowed]. Adj. 膳夫 Shi 193,4 Master of the Royal Table.
- (14) A. SHǎNG < zjáj < *djaŋ? v. 'To rise' 上. Intr. 下上其音 Shi

28,3 Falling and rising are their voices.

- B. SHÀNG < zjàng < *djans n. ('What is risen to:') 'the height, above'
上. Nom. 文王監在上 一大豐殿 Wen Wang is watching
(on high:) from above. Adj. 上天 Shi 209,1 The high Heaven.
- (15) A. SHŌU < sjəu < *sjəw? v. 'To guard' 守. Tr. 守文武大訓 Shu
42,6 To (keep:) adhere to Wen's and Wu's great instructions. Nom.
有守有為 Shu Shu 24,11 Have activity, have self-control.
- B. SHŌU < sjəu < *sjəw? n. ('What is guarded:') 'territory under one's
guard' 守 [narrowed]. Nom. 巡守 Shu 2,19 Inspection tour of the
fiefs.
- (16) A. TIĀN < dien < *den (*dlen?) n. 'Field' 田. Nom.
- B. DIĀN < dièn < *dens (*dlen?) n. ('Area which is fielded, turned into
fields:') 'domain' 甸; ('cause to be turned into a field' -- verbal
use of the noun:) 'to cultivate, till' 田畋甸. Nom. 甸服 Shu
6,33 The imperial domain. Tr. 無田甫田 Shi 102,1 Do not till
too large a field. 奄甸萬姓 Shu 39,5 Extensively cultivate the
people.
- (17) A. YĪN < jién < *len? v. 'To lead on' 引. Tr. 勿替引之 Shi 209,6
(May sons and grandsons) without interruption continue it. 上
帝引逸 Shu 34,5 Shangdi would guide the idle-sportive. 引養
Shu 31,3 He leads them on to nourishment.
- B. YĪN < jièn < *lens n. ('What is led with:') 'trace' (part of harness)
鞅 [narrowed]. Nom.
- (18) A. YŪ < jiwok < *luk v. 'To desire, want' 欲. Tr. 民罔弗欲喪 Shu
19,4 Among the people are none who do not desire your ruin. Intr. (or
tr.?) 我尚不欲 Shu 50,5 I rather will not have them (these men).
Nom. 匪棘其欲 Shi 244,3 He did not alter his (wish:) plans.
- B. YŪ < jiù < *luks n. ('What is desired:') 'opulence' 裕 [narrowed].
Nom. 成裕 Shu 33,10 To achieve opulence. 有裕 Shi 223,3 They ...
are indulgent. Tr. 若德裕乃身 Shu 29,5 A compliant virtue will
make opulent your person.
- (19) A. ZHĪ < tje < *tye (*trye?) v. 'To know' 知. Tr. 知人 Shu 4,2 To
know the people. Intr. 文王罔敢知于兹 Shi 39,14 Wen Wang dared not
take any cognizance of them.
- B. ZHĪ < tjè < *tyes (*tryes?) n. ('What is known:') 'knowledge, wisdom'
知智. Nom.
- (20) ZHĪ < tšjak < *tjak v. 'To weave' 織. Nom. 休其蠶織 Shi 264,4 They
have to abide by their silkworm work and their weaving. Adj. 織女
Shi 203,5 The Weaving Lady.
- B. ZHI < tši < *tjaks n.? 'Woven', ('what is woven:') 'woven material'
織 [narrowed]. Adj. or nom. 織文 Shu 6,5 Patterned woven (stuff); or:
woven material and patterned material.

(20a) A. CĀN < tshân < *tshan v. 'To eat' 餐. Intr. (Tr.?) 使我不能餐兮
Shi 86,1 But it makes me unable to eat. Nom. 叙咸時 (Kang
Wang 麥傳) At the time the (eating:) meal was over...

B. CĀN < tshân < *tshans n. ('what is eaten':) 'food' 餐. 遷予授
子之餐兮 Shi 75,1 And promptly, I will serve you your food.

The following numbers (21-24) exemplify that, as in ex. 1, the inverted form must not be a noun.

(21) A. JĪN < dzjén < *dsyen? v. 'To exhaust, do to the utmost' 盡 (variant
reading tsjen < *tsyen?). Tr. 盡之 Shi 209,6 Doing everything to the
utmost. Adv. 禾盡偃 Shu 26,16 the grain (on the fields) was
completely laid low.

B. JĪN < dzjèn < *dsyens v. or st.? 'Be exhausted, destroyed' 燼.
Intr. 貝禍以燼 Shi 257,2 They are all struck by calamity and
destroyed.

(22) A. SHĪ < sjäk < *sjäk v. 'To put away' 釋. Tr. 抑釋擲忌 Shi 78,3
Now he lays aside his quiver. 開釋無辜 Shu 38,11 They set free
the innocent. 王釋冕 Shu 43,36 the king took off his cap. Intr.
天不庸釋于文王受命 Shu 36,6 Heaven does not therefore annul the
mandate received by Wen Wang.

B. SHĪ < sjà < *sjaks v. ('Be put aside':) 'be pardoned' 赦 [narrowed].
Intr. 管災肆赦 Shu 2,22 Offenders by mishap are pardoned. Nom.
刑茲無赦 Shu 29,16 Punish these without pardon.

(23) A. WĒN < mjwən < *mywən v. 'To hear' 聞. Tr. 我聞其聲 Shi 199,3
I hear his voice. Intr. 予聞 Shu 1,12 I have heard about him.
冒聞于上帝 Shu 29,4 It was seen and heard by Shangdi.

B. WĒN < mjwən < *mywəns v. 'Be heard, famous' 聞聞 [narrowed]. Intr.
聲聞于野 Shi 184,1 The voice is heard in the wilds.
聞于四方 Shi 259,8 He is renowned in the states of the four
quarters. Nom. 令聞 Shi 235,2 Good fame.

(24) A. È < ?ək < *?rek n. 'Yoke, collar; part of yoke' 厄. Nom.

B. ĀI < ?àl < *?reks ('Yoked':) 'narrowed, narrow' 隘. Adj. 隘巷 Shi
245,3 A narrow lane.

At this point we might pause to confirm that for EZ the following alleged distinctive functions of *-s have no basis in reality: Downer's categories F (passive) and A (nouns) are manifestations of one and the same function of *-s; his categories E and H (restricted meaning or environment, i.e. narrower meaning of the derived form) also reflect only a secondary phenomenon as generally the semantic scope of a derivation tends to be narrower than that of the base. Hence his groups E and H fall also under our definition of "inversion".

Of the above derivations (exx. 1-24), only nos. 1, 16 and 18 are attested in transitive usage. No. 1 does not appear to be causative (it probably is,

though, see the discussion after ex. 36), but exx. 16 and 18 clearly are, as is the next one:

(25) A. Bǐ < pjǐ < *pyǎl? v. ('To put together, put next to each other:') 'to compare' 比. Tr. 比予于毒 Shi 35,5 You compare me to poison.

B. Bì < pjì < *pjǎls v. ('Be put together, put next to each other:') 'to join', (caus. :) 'to assemble' 比. Intr. 其比如櫛 Shi 291,6 The stacks are (put next to each other:) are closely-arrayed like a comb. 胡不比焉 Shi 119,1 Why (aren't you joined:) don't you join company with me? — Note that, in spite of the English translation, the subject is affected by the action (as in passive). Tr. 洽比其鄰 Shi 192,12 They assemble their neighbors. 人無有比德 Shu 24,10 Nobody will (cause his power to be put together with those of the others:) take conspiratory action.

We can derive bì 'assemble' from bǐ 'put together' only via the intransitive 'to join' and its subsequent causative usage 'make join > assemble'. Therefore, we will propose the working hypothesis that, as a rule, the *-s derivation is intransitive which means that it is automatically causative when used transitively. This hypothesis is not only supported by exx. 16, 18, and 25-31 which all include intransitively or nominally used inverted forms, but also allows us to identify the *-s in exx. 37-74 as the same inversion marker despite the fact that no intransitive usages are attested for these nos. in EZ.

(26) A. DÀO < dǎu < *dǎw? n. 'Way, road' 道. Nom.

B. Dǎo < dǎu < *dǎws v. ('Be wayed:') 'be lead along a way, be conducted' 導道. Intr. 九河既道 Shu 6,4 The nine He (branches) were conducted. 導墨水 Shu 6,22 He (was lead:) travelled along the Hei river (the last two words are not the direct object, but the verbal complement). Tr. 導荷澤 Shu 6,14 He (caused to be conducted:) conducted the water of the Ge marshes.

(27) A. DUÒ < dǎk < *dǎk v. 'To measure, plan' 度. Tr. 惟荒度土功 Shu 5,17 I extensively planned the land works. Intr. 禮儀卒度 Shi 209,3 the rites and ceremonies are entirely according to rule. 究爰度 Shi 241,1 He investigated and measured.

B. DÙ < duò < *daks v. 'Be measured, regulated; (cause. :) cause to be measured, to regulate' 度宅. Intr. 三危既宅 Shu 6,18 (The country of) Sanwei was regulated. 天命自度 Shu 35,4 By Heaven's command he measured himself. Tr. 度乃口 Shu 16,17 Regulate your mouths. Nom. 正法度 Shu 16,5 He determined the laws and regulations. 非度 Shu 20,2 Unlawful things. 美無度 Shi 108,1 Beautiful beyond measure.

(28) A. Jǐ < tsjǎk < *tsyek v. 'To accumulate' 積. Tr. 汝有積德 Shu 16,10 You have accumulated virtue. 積之 Shi 291,6 They heap it (the harvested grain).

B. Zǐ < tsjè < *tsyeks v. 'Be heaped' 積. Intr. 有實其積 Shi 290,6 Richly it (the grain) is heaped up. Tr. 迺積迺倉 Shi 250,1 He collected, he stored (with implied object?).

- (29) A. JĪA < ka < *kral v. 'To add to' 加. Tr., intr. (not in Shu and Shi; only attested in Lunyu).
- B. JĪA < kà < *krals v. ('Be added to, attached to:') 'be yoked', ('cause to be yoked:') 'to yoke' 駕 [narrowed]. Intr. 式車既駕 Shi 167,4 The war chariots are yoked. Tr. 駕彼四駱 Shi 162,5 I yoke those black-maned white horses. 夙駕 Shi 50,3 Early he yoked (his carriage —implied object).
- (30) A. JĪNG < kjeŋ < *kyeŋ st. 'Be scared, attentive' 驚. Intr. 徐方震驚 Shi 263,3 the country of Xu was shaken and scared. 御不驚 Shi 179,7 the footmen and charioteers are not attentive. Tr. 震驚朕師 Shu 2,36 They agitate and (cause to be scared:) alarm my multitude.
- B. JĪNG < kjeŋ < *kyeŋ v. ('Be made attentive:') 'be cautious'; 'to take care of, respect' 敬. Intr. 敬哉 Shu 29,6 Be careful! Tr. 敬民 Shu 18,5 To take care of the people. 敬典 Shu 29,19 To respect the rules.
- (31) A. ZHǒNG < tsǐwǒŋ < *tjjuŋ? n. 'Seed' 種. Nom.
- B. ZHǒNG < tsǐwǒŋ < *tjjuŋ v. ('Be seeded:') 'be sown'; ('cause to be sown:') 'to sow' 種. Intr. 實種 Shi 245,5 It was sown. Tr. 種之 Shi 245,5 He sowed it.
- It becomes apparent that Downer's category C (causatives) captures only a coincidental semantic aspect of qusheng, one which flows naturally from its intransitive character. Therefore, qusheng's primary function is not at all the creation of causatives.
- The next sets 32-36 also agree with the inversion function of *-s, but the derived form is "reflexive" or, especially no. 36, perhaps somehow "ergative".
- (32) A. JĪĀN < kam < *kram v. 'To see, observe' 監. Intr. 何用不監 Shi 191,1 Why do you not make a scrutiny? — All other occurrences in Shu and Shi have either no commentary on pronunciation, or both *kram and *krams are indicated.
- B. JĪĀN < kām < *krams v. 'To mirror oneself' 監. Intr. 人無于水監 Shu 30,12 Men should not mirror themselves in the water,...
- (33) A. Qŭ < khjwǒ < *khyas? v. 'To put away, eliminate' 去. Tr. 去其螟螣 Shi 212,2 We remove the noxious insects from the ears and leaves.
- B. Qŭ < khjwǒ < *khyas v. ('To remove oneself:') 'to go away, leave' 去. Intr. 鳥乃去矣 Shi 245,3 Then the birds went away. Tr.(?) 逝將去女 Shi 113,1 It has gone so far that we will leave you.
- (34) A. RĀNG < nǐzjaŋ < *njaj v. 'To remove, steal' 攘. 攘之 Shi 241,2 They cleared them (the trees). Nom. 寇攘 Shi 255,3 Robbers and thieves.
- B. RĀNG < nǐzjaŋ < *njajs v. ('To remove oneself:') 'to cede' 讓. Tr. (?) 讓後人 Shu 36,20 Accede to the successors. Intr. 克讓 Shu

1,1 He could be (ceding:) modest. 讓于稷 Shu 2,28 He ceded (his position) to Ji.

(35) A. SHĚ < śjá < *? v. 'To put away, let off, leave' 舍. Intr. 舍拔 Shi 127,2 When he lets off the arrow... Tr. 舍猎牛馬 Shu 49,3 To let loose hobbled oxen and horses. 舍其坐 Shi 220,3 They leave their seats.

B. SHÈ < śjà < *? v. ('To put oneself away':) 'to rest, stop' 舍 [narrowed]. Intr. 亦不遑舍 Shi 199,5 You yet have no time to stop at night.

(36) A. SHĒNG < śjəŋ < *śjəŋ v. 'Be equal to on's task, capable of' 勝. Intr. 鞀鼓弗勝 Shi 237,6 The drums could not keep pace (with the work rhythm).

B. SHÈNG < śjəŋ < *śjəŋs v. 'To vanquish, conquer' (i.e. the object lets the subject be equal to its [subject's] task — see comment below) 勝. Tr. 勝殷 Shi 285 He conquered Yin.

This last set no. 36 calls for a discussion of the causative uses of *-s forms. Shèng 'to vanquish' is, in a way, the causative of sheng 'be capable of'. In which way? Normally, causative means that the subject causes the object to act or be in a given state. If the last sentence shèng Yin were causative in this sense, we should translate "he caused Yin to be equal to him (the attacker)", i.e. Yin would win this battle. But the sentence means "He conquered Yin", literally: "He was being caused (pass.) to be equal to Yin". Here, the causative is inverted, the object causes the subject to act or be in a given state — Yin, the object, is the reason or occasion for the subject to be equal to its [subject's] task — while in an ordinary causative the subject causes the object to act.

Glancing back through the *-s derivatives presented so far, we uncover further cases of this "inverted causative": set no. 1b "I fear Shangdi" can be paraphrased: Shangdi (object) is the reason that makes me (subject) awed/scared. No. 23 wen could include 'to ask' 問 (see Karlgren 1960:139 — I have omitted 'to ask' in set no. 23 because the meaning 'be heard' sufficiently illustrates the argument). Karlgren calls wen "a kind of causative [of wen 'to hear']": 'to cause to hear', (let me hear =) 'to ask' (1960:139). This "kind of causative" is our inverted causative: the object is the occasion/reason or person that lets the (asking) subject hear. No. 30 敬民: the subject does not cause the people to be careful, but the people are the reason which makes the subject take care. No. 33 去女 "we will leave you": either 'you' is not the direct object, but the verbal complement, in this case the place which is left; or we have here another reversed causative: you are the reason which makes us leave. No. 34 "accede to the successors": the successors (object) are the reason that makes the subject cede. Normal causatives occur, however, also with *-s derivatives, see nos. 16, 18, 25, 26, 29, and 31. It is significant, though, that the inverted causative seems to be possible only with *-s forms. This reversal of the attention flow towards the subject testifies once more to the postulated inversion function of qusheng.

All the qusheng forms listed so far occur, among others, either intransitively or nominally. Among the remaining sets below, transitive occurrences of these forms are the norm. But we believe that their transitive

uses can all be linked to the basic form via a hypothetical intransitive, just as English "wooded area" or "three-legged" are derived from "woods" and "leg" via a nonexistent "to wood" and "to leg" respectively. We have noted above that the causative connotation of the inversion forms results from the transitive employment of these primarily intransitive derivatives.

In presenting the material from set no. 37 on, we will omit textual quotations. As these helped us up to now in tracing the regular semantic connection between the base form and the various uses of the *-s type derivation, such quotes would add little to our understanding of the following material:

- (37) A. ĀN < ?ân < *?an st. 'Be peaceful' 安.
 B. ÀN < ?ân < *?ans v. ('Be pacified, stopped'; caus. :) 'Cause to be stopped, to stop' 按 [narrowed?].
- (38) A. BĪN < pjien < *pjen n. 'Guest' 賓.
 B. BÌN < pjièn < *pjens B. ('Cause to be gusted':) to receive as a guest' 賓.
- (39) A. CHĒNG < tshjəŋ < *thjəŋ v. 'To lift; set forth' 稱.
 B. CHÈNG < tshjəŋ < *thjəŋs v. 'Be lifted to, be equal to/worthy of something' 稱 [narrowed].
- (40) A. CHŪ < tshjuət < *thjwət v. 'To come out, go out' 出.
 B. CHÙ < tshwì < *thjwəts v. 'Be made to come/go out: 'to bring something out' 出.
- (41) A. È < ?âk < *ak n. (or st.?) 'Evil' 惡.
 B. WÙ < ?uò < *aks v. (The obj. causes the subj. to be evil/hateful:) 'to hate' 惡. (See discussion after no. 86).
- (42) A. ĚR < níí < *njə? n. 'Ear' 耳.
 B. ÈR < níì < *njəs v. 'Cause to be eared: to cut off someone's ears' 耳. This graph has been suspected of being a variant of 剔 'to cut off legs', though. [Narrowed].
- (43) A. FĒNG < pjuŋ < *pyum (?) n. 'Wind' 風.
 B. FÈNG < pjùŋ < *pyums (?) v. 'Cause to be winded: to criticize' 風 [narrowed].
- (44) A. FÙ < phjuk < *phyəwk v. 'To overturn, turn over; to the contrary' 覆.
 B. FÙ < phjàù < *phyəwks v. 'Be turned to, cause to be turned to: to revert to someone, attend to someone; to cover someone/something' 覆.
- (45) A. JĪĀ < ka < *kra n. 'House, family' 家.

- B. JIA \langle kà \langle *kras v. 'Be housed: to marry (of girl)' 嫁 [narrowed].
- (46) A. JUÉ \langle kāk \langle *krawk v. 'Be conscious' 覺. Attested in Lunyu, not Shu, nor Shi.
- B. JIAO \langle kau \langle *krawks v. 'Make oneself conscious, be made conscious: to awake' 覺.
- (47) A. IAÍ \langle lâi \langle *rə v. 'To come' 來.
- B. LAÍ \langle lâi \langle *rəs v. 'Be made to come: encourage' (?) 勸; 'cause something to come to someone: to reward/present someone with something' 賚 [narrowed].
- (48) A. NŪ \langle njwó \langle *nya? n. 'Woman, wife' 女.
- B. NŪ \langle njwò \langle *nyas v. 'Cause to be wifed: give a wife' 女 [narrowed].
- (49) A. QŪ \langle tshjú \langle *tshyu? v. 'To take' 取.
- B. QŪ \langle tshjù \langle *tshyus v. 'Cause a wife to be taken: take a wife' 取 [narrowed].
- (50) A. RĒN \langle nǎjəm \langle *njəm v. 'To load (a wagon); carry on the shoulder' 任.
- B. RĒN \langle nǎjəm \langle *njəms v. 'Cause to be burdened: to charge someone with something; manager' 任 [narrowed].
- (51) A. SĀNG \langle sāj \langle *sāj \langle *smaŋ v. 'To mourn, burial' (lit. 'to let disappear') 喪. (Derived from 亡 'disappear').
- B. SĀNG \langle sāj \langle *sajs \langle *smajs v. ('To let oneself disappear':) 'to die'; ('cause to die/perish':) 'to destroy; to lose' 喪.
- (52) A. SHÍ \langle dǎjək \langle *ljak v. 'To hit/aim at' (with bow and arrow) 射. Only in Lunyu, not Shu, nor Shi.
- B. SHĒ \langle dǎjə \langle *ljaks v. ('Cause to be hit':) 'to shoot' 射.
- (53) A. SHÌ \langle dzí \langle *dsryə? v. 'To serve, do service, take office; officer, gentleman' 仕, 士.
- B. SHÌ \langle dzì \langle *dsryəs v. 'Be served; cause to be served: to serve someone; ('what is served':) 'service, affair' 事.
- (54) A. SHÌ \langle sjək \langle *sjək v. 'To use, use as a model; model, pattern' 式.
- B. SHÌ \langle sí \langle *sjəks v. 'Be used against a model, be tested'; ('to make someone be used against a model':) to test, try' 試 [narrowed].
- (55) A. SHÒU \langle dǎjəu \langle *djəw? v. 'To receive' 受.
- B. SHÒU \langle dǎjəu \langle *djəws v. ('Cause to be received':) 'to give' 授.

- (56) A. WÁNG < jwɑŋ < *ʃwɑŋ n. 'King' 王.
 B. WÀNG < jwàŋ < *ʃwɑŋs V. ('Consider the obj. to be kinged = have a king':) 'be king over' 王.
- (57) A. XIÀ < ʃá < *graʔ n. 'Lower part, below' 下.
 B. XIÀ < ʃà < *gras v. ('Be lowered':) 'to fall' 下.
- (58) A. XIĀNG < sjɑŋ < *syɑŋ 'each other' 相.
 B. XIÀNG < sjàŋ < *syɑŋs v. 'to help, assist' 相.
- (59) A. XUÉ < ʃák < *grawk v. 'To learn' 學.
 B. XIÀO < ʃàu < *grawks v. ('Cause to be learned':) 'to teach' 教.
- (60) A. YĀN < ʔjam < *ʔyam st. 'Be content, tranquil' 厭.
 B. YÀN < ʔjàm < *ʔyams v. ('Cause to be made content':) 'to satiate, tire of, abundant' 厭.
- (61) A. YǎNG < jián < *laŋʔ v. 'To nourish, feed, bring up' 養.
 B. YÀNG < jiàn < *lans v. ('Cause to be nourished':) 'to keep, support' (parents) 養 [narrowed].
- (62) A. YÍ < ŋjie < *ŋyal v. (or st.?) 'Be in order, proper, ought; to get into order' 宜, 儀.
 B. YÌ > ŋjiè > *ŋyals st. ('Be ordered, righted':) 'be proper, righteous' 義 [narrowed].
- (63) A. YĪ < ʔjei / ʔyəl n. 'Clothes' 衣.
 B. YÌ < ʔjeì < *ʔyals v. ('Be clothed':) 'to wear' 衣.
- (64) A. YĪN < ʔjəm < *ʔyəmʔ v. 'To drink' 飲.
 B. YÌN < ʔjàm < *ʔyəms v. ('Getränk't werden, be given a drink':) 'to give a drink, trānken' 飲.
- (65) A. YĪN < ʔjəm < *ʔyəm n. 'Shade, cloud; northern slope' 陰.
 B. YÌN < ʔjàm < *ʔyəms v. ('Cause to be covered':) 'to shelter' 陰.
- (66) A. YŌNG < jiwŋŋ < *luŋ v. 'To use' 庸.
 B. YÒNG < jiwòŋ < *luns v. ('Cause to be used, be made to use':) 'to use, obey' 用.
- (67) A. YǒNG < jwéŋ < *ʃwǎŋʔ st. 'Be long' (time, place) 永.
 B. YÒNG < jwèŋ < *ʃwɑŋs v. ('Be made long':) 'to chant, sing' 詠 [narrowed].

[narrowed].

- (68) A. YÒU < jǎú < *ǃwa? n. or v.? 'The right side: to turn to the right' 右.
B. YÒU < jǎù < *ǃwas v. ('Be righted: be put at someone's right side':) 'to assist someone' 右, 佑, 又 [narrowed].
- (69) A. YŮ < jú < *ǃwa? v. 'To rain; rain' 雨.
B. YÙ < jù < *ǃwas v.? ('Being rained':) 'falling' (snow) 雨.
- (70) A. YUǎN < jwén < *ǃwǎn? st. 'Be distant, far' 遠.
B. YUǎN < jwèn < *ǃwǎns v. ('Cause to be "distanced"':) 'to keep at a distance, keep away, go far away from' 遠.
- (71) A. ZHÍ < tsǐjǎp < *tǐjǎp v. 'To hold, grasp' 執.
B. ZHÌ < tsí / *tǐjǎps v. 'Be grasped, seized' 執.
- (72) A. ZHŪ < tsǐjuk < *tǐjǎwk n. 'Prayer, invoker' 祝.
B. ZHÒU < tsǐjǎù < *tǐjǎwks v. 'Be prayed for, curse' 祝.
- (73) A. ZĪ < tsí < *tsya? n. 'Son' 子.
B. ZÌ < tsì < *tsyas v. ('Cause to be considered a son':) 'to treat like a son' 子.
- (74) A. ZUǒ < tsǎ < *tsal? v. (or st.?) 'To turn left, left' 左.
B. ZUǒ < tsǎ < *tsals v. ('Be lefted: be put at someone's left side':) 'to help someone' 佐. Cf. no. 68. [narrowed].

Among the above sets we encounter derivations which are connected with the basic form in a rather tortuous way around two corners (inversion, then causative). We should remember, though, that, for example, in Classical Greek the middle voice had massively invaded the realm of the active, particularly the active voice of the future tense was expressed often by middle endings. Experience tells us, therefore, that mushrooming of *-s forms into semantic fields which theoretically and with more logic could have been filled by the base form is not unusual.

Finally, we list sets which are tentatively considered residue. Items in this group cannot be shown to fit the *-s pattern for several reasons: lack of illuminating examples, specialized grammatical function (which obliterates the semantic connections with the basic form), or perhaps forms are unrelated. In any case, that we cannot positively explain these sets in terms of inversion is due to default.

- (75) A. CHÁNG < zǐjǎj < *dǐjǎj v.(?) 'Be used to, constant' 常.
B. SHÀNG < zǐjǎj < *dǐjǎjs 'Still, continue to, (not...) any more, may' 尚.

- (76) A. FÙ < bjuk < *byawk v. 'To return, restore' 復.
 B. FÙ < bjàu < *byawks 'Again' 復. In Lunyu et alia this word means 'to repeat' of which 'again' is merely an adverbial usage. Thus, fu means literally: 'cause to be returned, let be returned: repeat, again'.
- (77) A. Hǎo < xáu < *? st. 'Be good' 好.
 B. Hào < xàu < *? v. 'To love' 好 (Cf. no. 41; see discussion below).
- (78) A. Hé < Yuâ < *gwal v. (or st.?) 'To harmonize, be harmonious' 和.
 B. Hè < Yuâ < *gwals v. (?) 'To join with someone' (in singing) 和.
- (79) A. Lǎo < lâu < *raw v. 'To toil' 勞.
 B. Lào < lâu < *raws v. 'To reward' 勞.
- (80) A. Liè < ljät < *ryat v. 'To broil; be sharp; be blazing, bitterly cold; brilliant' 烈.
 B. Lì < ljài < *ryats v. 'Be cruel' 厲; 'to sharpen' 礪; 'energetically' 勵.
- (81) A. Wǎng < mjway < *myaŋ v. 'To disappear, die' 亡.
 B. Wàng < mjway(\) < *myaŋ(s) v. 'To forget' 忘. Semantically, this derivation was regular ('Cause to be "disappeared": let disappear') if Shi, Zhanguo and Han rimes did not consistently indicate that 'to forget' was read with the equivalent of the even tone (see QIU 1979).
- (82) A. Wù < mjuət < *mywət 'Don't' 勿.
 B. Wèi < mjwei < *mywəts 'Not yet' 未.
- (83) A. Wéi < jwe < *Ywal 'To function as, be make' 為.
 B. Wèi < jwe < *Ywals 'For' 為.
- (84) A. Zhāo < tsjǎu < *tjaw v. 'To shine, enlighten' 昭.
 B. Zhào < tsjǎu < *tjaws v. 'To shine on, make visible' 昭照 (lit.: 'cause to be shined onto?').
- (85) A. Zhēng < tsjǎŋ < *tjeŋ v. 'To march, march against, attack' 正, 征. 'To attack' is clearly a specialized application of the basic meaning 'to march' (on the basis of the word's usage in Shu and especially Shi). Consequently, it is difficult to establish a semantic link between this word and:
 B. Zhèng < tsjǎŋ < *tjeŋs st. 'Be straight, to correct; government' 正, 政.
- (86) A. Guǎng < kwǎŋ < *kwaj? st. 'Be extensive, wide' 廣.

B. GUǎNG < kwǎŋ > *kwǎŋ st. (?) 'Be extensive' 橫, 光.

Perhaps a few of these residual sets can be removed from this group. I suspect that, contrary to traditional assertions, no. 85 B is not derived from 85 A. No. 76 might fit the inversion function of *-s. It seems rather far-fetched to derive ex. 77 B 'to love' from 'good' by way of the inversion marker, but this set should be considered together with no. 41 'bad' vs. 'to hate', and no. 1 'scare' vs. 'to fear'. The last derivation 'to fear' posed no problem for our theory and helps shed some light on the other two. All three derivations are verbs of emotion in which the object evokes the emotions of fear, hate and love in the subject. Thus we can argue that not only in 'to fear', but also in 'to hate' and 'to love', the attention flow is reversed as the object influences the subject, whereas the subject does not act upon the object. This consideration not only makes us more comfortable including wù 'to hate' among the regular inverted forms, but also allows us to add hào 'to love' to the regular derivations. Thus it seems possible to shrink the residue pile down to nine sets.

The preceding thoughts suggest that gusheng is an inversion marker also in a word which does not contrast with a non-gusheng basic form, i.e. jiàn < kièn < *klans 見 'to see' which is similar to the above verbs of emotion in that its object is the occasion for the subject of perceive, 'see': the subject is receptive, the natural attention flow originates with the object and proceeds, in inverted order, to the subject, hence *-s. Jiàn is nearly synonymous with ex. 32 A jiàn < *kram 'to see'. While the latter is "direct" and implies active participation in the seeing process by the subject and therefore also tends to mean 'to observe, supervise', jiàn 見 is never "active" in this sense, only "passive". This illuminates also a specialized meaning of jiàn 見: 'to see a superior, have an audience with'. For the subject, the importance of an audience lies in being noticed, 'seen', by the object (superior), not the other way around.

There might be more gusheng words without a basic form in which the *-s is the inversion marker, e.g. ming < mjwɛŋ < *mywǎŋ 'to order; order, mandate' 命. Shaughnessy (1981:62) has pointed out that in the Shang oracle bone inscriptions and in EZ, ming is sometimes used "passively": 'Y is ordered to...', besides the common construction: 'X (causes Y to be ordered;) orders Y to...'

In this article we have proposed that the different functions which have been associated with gusheng (*-s) in CC can be traced back to a single one in EZ⁴: namely that of inverting the attention flow. This basic purpose of *-s has been captured by Mei in his "introvert-extrovert" category, by Downer's categories F and D, and by Zhou's no. 6. Since many of the inversion derivations in *-s are nouns ("passives") the Chinese in the post-EZ period

⁴ This should be emphasized: our data lead us to assume one semantic core for gusheng where other scholars see later in CC many functions. We do not necessarily claim that the phonological feature gusheng has only one phonological origin. Furthermore, postulating an *-s origin for this derivational device gusheng does not preclude the possibility that under certain conditions a final *-s led to different phonological developments. Benedict (1979:17-19) has plausibly suggested that in some Sino-Tibetan roots in *-s, this final phoneme is reflected by the ArC dental stop *-t.

must have felt that nouns can be created with qusheng so that also direct ("active") nouns were then derived from verbs, e.g. 'overseer' (not 'who/what is overseen') from 'to see' (Downer's ex. A 2; cf. set 32 above), or 'rider' (not 'who/what is ridden') from 'to ride' (Downer's ex. A 9). As Mei, Downer and Zhou studied qusheng in CC, not just in EZ, they were therefore led to define one of this tone's functions as nominalization (Downer cat. A; Zhou no. 2). Since, as we hypothesized, *-s derivations are fundamentally intransitive, transitive use turned them automatically into causatives. Therefore, "causativization" (Downer's cat. D; Zhou no. 5) is not an original function of this morpheme. Because the inverted forms can imply perfective aspect (just as English -ed, as in 'learned', implies: (1) passive (i.e. inversion); (2) perfective aspect; cf. especially exx. 2-21 above), Zhou perceived one function of qusheng as marker of completed action (no. 7). Because generally, derived forms are of a semantically narrower scope than the basic forms, Downer's categories E and H are also secondary phenomena and not basic functions of *-s. We conjecture that in CC the relationship between qusheng's original function of inversion and the secondary characteristics associated with it was so obscure that this morpheme was felt to be a general derivational device which could then also form adverbs (Downer's cat. G; Zhou no. 8) and verbs (Downer's cat. B; Zhou nos. 1, 4 and 5), in short: everything.

As Mei, Downer and Zhou investigated not EZ, but CC, our hypothesis for a single EZ function does not invalidate their conclusions, but shows that restricting the investigation to just the earliest few centuries of CC, namely EZ, can lead beyond previous results and bring us another step closer to an understanding of qusheng's original function.⁵

In CC, the attention flow is inverted by a number of passive constructions, such as marking the agent with the coverb ('preposition') yu 於, 于. Interestingly enough, such devices, though common in CC, are extremely rare in EZ -- if they exist at all. Perhaps the *-s derivation originally performed a function which was later, in the post-EZ period when the core meaning of *-s was lost, assumed by these passive constructions.

⁵ The question about the age of the qusheng derivations has not been discussed in this paper because, unlike traditional philologists in the past, most modern investigators agree that this tone is "old", i.e. at least EZ, among them Karlgren (1960:139), Forrest (1960), Zhou (1963:49-50), Mei (1980). Our investigation's conclusions bear this out: if the tone were 'late' (Zhanguo or Qin times), then qusheng readings had been retroactively projected back into Shu and Shi, and EZ and CC functions would then be identical. But since the EZ function is different from CC usages, qusheng must have existed already in EZ.

TIBETO-BURMAN DENTAL SUFFIXES: EVIDENCE FROM LIMBU (NEPAL)

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0. Introduction

0.1 General. The flamboyant verbal agreement morphology of Limbu (TB, East Nepal and adjacent India, 200,000 speakers) and of the rest of the East Himalayish (or Bahing-Vayu) group of Tibeto-Burman partly obscures the verbal roots, which themselves preserve traces of an older, no longer productive morphology. The present study presents the evidence, preserved in word-families, for two no longer productive suffixes, **-S** and **-T**, attached to Limbu verbal roots. These suffixes are compared with the "particularly troublesome" dental suffixes reconstructed for Proto-Tibeto-Burman (PTB) (STC:98). In passing, the Limbu evidence for the PTB causative prefix is also presented.

The fact that virtually the only suffixes reconstructed for PTB are dentals suggests, in the light of a typological universal proposed by Greenberg, that they were originally added to closed as well as open syllables; thus PTB may have had final consonant clusters of morphological origin.

The data on Limbu used in the present paper was collected in 1977-78 in the Maiwa-Mewa Valleys of Taplejung District, Nepal.¹ This dialect differs slightly from the Panchthar dialect studied by R.K. Sprigg (1966) and on which the late Iman Singh Chemjong's dictionary (n.d.) is mainly based.²

0.2 The Limbu verbal root. Limbu verbs are cited below in a root form, noted in capital letters (morphophonological transcription), which is arrived at by a process of internal reconstruction from the two stems on which all forms of a Limbu verb are based. If these roots look different from R. K. Sprigg's "Phonological formulae for the verb in Limbu" (1966), they nonetheless fall into essentially the same categories, based, according to my interpretation, on their final and postfinal elements.

Phonologically, the Limbu syllable may be open, may end in a glottal stop, or may have one of the consonant finals /p, t, k, m, n, ŋ/. There are no final consonant clusters. Verbal roots (morphophonological) in Limbu are either monosyllables of the types mentioned or extended monosyllables with postfinal

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² For an older dictionary, based on the Phedap dialect, see Senior (1908). The information in the LSI (3.1:283-304) is based on unpublished work by Senior.

elements **-T** or **-S**. In actually occurring (phonological) verbal forms, the postfinal element either functions as the initial of an affix syllable containing pronominal agreement markers or is dropped (see examples next section). There are also roots in **-R** and **?R**, although /r/ is never a syllable-final in Limbu (in verbal forms it functions as the initial of the affix syllable). The following is a complete list of the final consonants and clusters found on Limbu verbal roots: \emptyset , -S, -R, -?R, -P, -PT, -PS, -T, -TT, -TS, -K, -KT, -KS, -M, -MT, -MS, -N, -NT, -NS, -Nj, -NTj, -NSj.³

0.3 Families of roots. In compiling the lists of word-families in the appendix, my rule has been to list every pair or triplet of roots having the same initial (+aspiration) and vowel, a plausible final correspondence (generally, common point of articulation), and some semantic connection. I have adopted Jim Matisoff's term "allofam" for "member of the same word-family", and his sign "x" to indicate this relationship where two allofams are cited together. In most of the families listed in the appendices §§A1-A4, the formal difference between the allofams lies in the postfinal element. Thus when I refer to the \emptyset , T-, or S- allofam of a family, I am referring to the postfinal, not the final: **HA:P** itr. 'weep' is the \emptyset allofam (in spite of its final -P) of the family **HA:P x HA:PT x HA:PS**; **HA:PT** tr. 'mourn' is the T-allofam of **HA:P** (or of the family), and **HA:PS** tr. 'cause to weep' is the S-allofam.

The following forms, based on the word-family just cited, show how the postfinals function as initials of the affix syllable in some forms and are dropped in others (leading, in the latter case, to homophony between forms of different allofams of the family). In general, the postfinals appear only in forms based on the past stem.

Root HA:P 'weep':	
/ke-ha:p/	'you weep;
/ke-ha:pɛ/	'you wept'
Root HA:PT 'mourn'	
/ke-ha:p/	'he mourns/misses you'
/ke-ha:ptɛ/	'he mourned/missed you'
Root HA:PS 'cause to weep'	
/ke-ha:m/	'he makes you weep'
/ke-ha:psɛ/	'he made you weep'

There are a few formal uncertainties; for example, prima facie it is not obvious whether a root in **-T** is the \emptyset -allofam (**-T** being taken as a root final) or the T-allofam (**-T** being taken as the postfinal, added to an originally open root) of its family. A similar uncertainty hangs over roots in **-R** and **-?R**, which in some cases seem to be related to **-T** and **-N**. A few families show other relationships, most commonly between stop and nasal finals (e.g. the series **-Nj x -KT x -NSj** in §A1). These uncertainties do not obscure the general picture, however.

³ Supplementary notes: Quantity is phonologically distinctive on all Limbu vowels except /e/ and /o/, which are only long, and which I would now transcribe as /e:/ and /o:/. In the dialect studied (but not in all dialects), roots in **-S** (i.e. (C)VS) are all long; I would now transcribe them as (C)V:S. R.K. Sprigg (personal communication, 1980) has objected to my use of "root" for elements some of which are clearly derived, at least historically; "base" might be preferable.

0.4 Morphosyntax and semantics. Limbu morphosyntax is not our subject here, but a few remarks will be needed. Each verb root is cited with one of the notations "tr." (transitive), "itr." (intransitive), or "dep." (deponent), indicating which of the three distinct types of agreement morphology it takes. Briefly, intransitives and deponents show agreement with one argument, which I call the "subject" and which appears in the absolutive case (suffix zero). Transitives show agreement with two arguments, the "subject", which appears in the ergative case (suffix *-/lɛ/*) if third person, absolutive if first or second person, and the "object", which appears in the absolutive.

Deponents differ from intransitives in third person agreement marking. In the third person, the intransitive pattern (ignoring number marking) is the following:

non-past: (PRESENT STEM) \emptyset
 past: (PAST STEM) *-ɛ*

Deponent verbs show no tense distinction, but have:

(PAST STEM) *-u*

The suffix *-/ɛ/* with a third person argument (and no prefix) is peculiar to intransitives (e.g. */ha:pɛ/* 'he wept', cited above), while the suffix *-/u/* of deponents is also found in the transitive paradigm, where it always indicates a third person "object" e.g. */ha:psu/* 'he made him weep'. Thus a deponent is a monovalent verb which shows agreement with a third person subject in the same way as a transitive verb shows agreement with a third person object. In the first and second persons, deponents are indistinguishable from intransitives. Thus, for example, we find */mɛʔru/* 'he is/was fat' from **MEʔR** dep. 'be fat'. There seems to be no clear semantic difference between intransitive and deponent verbs, except that the more "active" monovalent verbs (e.g. 'run', 'jump') are intransitive and not deponent.

It should be noted that the terms "intransitive", "transitive", "deponent", "subject", and "object" as used here are defined formally, on the basis of Limbu morphology, and are applied to individual verb roots (or to their arguments), while the semantic notions "causative", "applicative", etc., are used rather subjectively, but in a narrowly defined context, which is to express the semantic relation between the meanings of formally related verb roots (allofams).

I. Suffixed *-S* and *-T* on the Limbu verb

1.1 Families of three roots. In section A1 of the appendix are listed 21 triplets of verb roots which, allowing for formal uncertainty in a few cases, consist of \emptyset -, T-, and S- allofams, all with meanings in the same semantic area. In 20 of the triplets, the \emptyset - allofam is intransitive; most of the T-allofams and all of the S-allofams are transitive.

1.2 Postfinal *-S*. In all of the triplets, the S-allofam can be interpreted as a causative of the \emptyset -allofam. (Perhaps **LI:KS** and **LKS** are rather weak as causatives.) The same relation applies to 36 pairs of verb roots, each consisting of a \emptyset - and an S-allofam, listed in §A2. (The 37th pair, **KO** & **KOS**, listed first, seems to have no causative sense.) In every case, the S-allofam

is transitive, a consequence of its causative sense. It also happens that in all but three cases the \emptyset -allofam is intransitive, but this does not seem to be a necessary consequence of being the non-causative member of a non-causative/causative pair. There is no reason to regard the families with transitive \emptyset -allofam, such as **THUN** tr. 'drink' * **THUNS** tr. 'cause to drink, entertain with drink' or **TUM** tr. 'meet' * **TUMS** tr. 'assemble (a fire)', as exceptional. The triplet based on **TE?R** tr. 'take away' raises a few problems, but the semantic relationship between **TE?R** and its causative **TES** tr. 'send away' is straightforward.

Note that it is not the case that all, or even most Limbu verbs with postfinal -S are transitive (or, *a fortiori*, causative in sense); the generalization applies only to those with a \emptyset -allofam. Similarly, transitives are in a minority only among verbs with \emptyset -postfinal that have T- or S-allofams, not among all verbs with \emptyset -postfinal.

1.3 Postfinal -T. The sense of the T-allofams of verbs in postfinal \emptyset (§§A1 and A3) is somewhat harder to pin down. Morphosyntactically, most of the T-allofams of verbs in postfinal \emptyset (§§A1 and A3) are transitive, but there is a significant minority of deponents, discussed below (§1.31). Among the transitive T-allofams, in some cases the postfinal -T seems to give a causative sense little different from that of -S. Thus while **THUN** tr. 'drink' has a causative S-allofam **THUNS, CA** tr. 'eat' has a causative T-allofam **CA:TT** tr. 'feed' and **KU** tr. 'carry' has a causative **KU?T** tr. 'cause something (object) to carry'. (It is unclear why these T-allofams are in -TT rather than -T.) Note also **LUP** itr. 'sink, be buried' * **LUPT** tr. 'bury, cover, fill in'. In the case of **MA:R** itr. 'be lost or finished' * **MA:NT** tr. 'finish off' * **MAS** tr. 'lose', two allofams seem to have become specialized with different senses, both causative.

In other cases, even where the T-allofam could, *prima facie*, be taken as a causative, it has an additional sense which I will call "directive", following Wolfenden (1929:66, for Tibetan); another possible term would be "applied" or, in some cases "benefactive" (taken, of course, to include "malefactive" as well). Thus we find **mut THA** itr. 'fall' * **mut THA:NT** tr. 'drop something on someone (object)' * **mut THAS** tr. 'drop', where the T-allofam has the causative sense 'drop' of the S-allofam plus a directive sense, bringing the target, instead of the object dropped, into object position.

The four verbs 'to come' have a pattern of their own; the T-allofam has the sense of 'to come bringing something (object)' -- a kind of "applied coming" -- while the S-allofam has a more purely causative sense 'to send something or someone (object) toward the speaker or center of interest, e.g. to throw it, pass it, mail it, tell it to go, etc., without necessarily moving oneself'. The \emptyset -allofams are **TA** itr. 'arrive (near the speaker), appear, come', **THAN** itr. 'come up', **JU** itr. 'come down', **PHEN** itr. 'come on the same level'.

The pairs of verbs including \emptyset - and T-allofams -- or at least not including S-allofams -- listed in §A3 raise no new semantic questions, although the pairs in **-NT** * **-TT** in particular pose problems of form.

1.31 Deponent T-allofams. Of the 21 triplets in §A1, five or six have deponent (see §0.4) T-allofams, in general with meanings very similar to those of the intransitive \emptyset -allofams. Most of these verbs were not very frequent in

text or conversation, and it was difficult to detect (to say nothing of eliciting) a precise difference in meaning or use. However, there were some indications that the same -T suffix was at work in these deponent verbs. Consider the triplet **NON** itr. 'be left over' * **NOTT** dep. 'be spoiled from being left too long (e.g. stale food or beer)' * **NONS** tr. 'to save, keep leftovers'. **NOTT**, the T-allofam, is deponent, hence monovalent, yet we might find a directive semantic element in the sense, which could be paraphrased 'to suffer the effects of being left over'. The T-allofam is indeed a directive version of the \emptyset -allofam, but the process expressed by the \emptyset -allofam is found to be directed at the subject of a deponent T-allofam rather than at the object of a transitive T-allofam. In this connection, it is undoubtedly relevant that the formal mark of a deponent verb is that it shows agreement with a 3rd person subject using the same morphology as a transitive verb uses to show agreement with a 3rd person object.

There are two cases of intransitive T-allofams. The first, **KHEKT** itr./dep. 'be dried (of fruit or maize)' * **KHEN** itr. 'dry or be smoked over a fire', has a deponent variant. The second family involved is **POR** itr. 'grow' * **PONT** itr. 'prosper, be numerous' * **PHOS** tr. 'increase'; here perhaps the T-allofam could be seen as 'to enjoy the benefits of growth', but I will not insist on it.

1.4 Families without \emptyset -allofams. Pairs of verbs in which one of the allofams has postfinal -T and the other -S are listed in §A4, divided into two groups as follows: in §A4a the T-allofams are intransitive (13 roots) or deponent (2), and the S-allofams are transitive and semantically causative; in §A4b the T-allofams are transitive, plausibly directive versions of the S-allofams, which may be either intransitive (10) or transitive (15).

These families differ somewhat from those listed in §§A2-3 in that most of them -- in particular those in which the T-allofam or the S-allofam is intransitive -- cannot be regarded as simply defective triplets from which the \emptyset -allofam is somehow missing, since such triplets do not have intransitive S- or (with two exceptions) T-allofams. The S-allofams of §A4b, and the T-allofams of §A4a seem rather to be comparable to the large number of Limbu roots in postfinal -T or -S which do not belong to families of roots and whose postfinals do not appear to have any link with the causative or directive suffixes. Perhaps a middle sense is suggested by the predominance of bodily functions and verbs 'to wear' among the S-allofams of §A4b, but such senses are far from absent among verbs in postfinals - \emptyset and -T. This is an area for further exploration.

II. Initial alternations in Limbu

The 30 pairs of Limbu verbs showing initial alternations are presented in §A5. Several of these word families also show differences in postfinals and have already been listed in §§A1-4. In each pair listed in §A5, an intransitive verb with an unaspirated stop initial has a transitive allofam with an aspirated stop initial. It should be noted that Limbu has two series of initial stops, unaspirated and aspirated; voicing is not distinctive and there is no tone. There is no phoneme */ch/; in causatives, /s/ is seen to function as the aspirate partner of /c/. One pair shows the alternation \emptyset - ~ /h/-. No initial alternations involving the nasals /m, n, ŋ/ or the sonants /j, r, l, w/ have been found.

Initial alternations associated with a causative or transitivizing sense

in TB languages were noted by Hodgson, most clearly in his Bahing grammar (1857-8, reprint 1880:388), where he gives a list of seven pairs of verbs, and were thoroughly covered by Conrady (1896); cf. STC:124ff and Matisoff (1976:415-9). Limbu is typical of the family here. The history of these alternations, which the *Conspectus* puts back to PTB, is difficult to reconstruct precisely; an old prefix seems to be indicated. Many writers have plausibly associated them with the PTB *s- causative prefix, preserved in Tibetan, Jinghpaw, and Nung (STC:105ff), and in Kham (West Nepal), which has a productive causative prefix sə- (Watters 1973:126-8). It is possible that the two types of causative alloforms in Limbu, those with aspirate initials and those with suffixed -s, are to be traced to the same morpheme *s. (Conrady proposed [1896:43] that Tibetan prefixed s- and certain -s suffixes were the same element). It is not clear why this s- prefix should give /h/- in Limbu (and in Hayu and Bahing) in alternation with vocalic initials, when the normal reflex of PTB initial *s is /s/.

III. TB dental suffixes

3.1 Comparative review

3.11 Transitivity suffixes. Wolfenden (1929:56-6) proposed that the suffix -d ~ -s (depending on the preceding final) marking the perfect in many Tibetan verbs had originally had a directive sense, which survived in another form in a few pairs of verbs in which an intransitive without a suffix was paired with a transitive bearing a suffix. He associated this suffix with the -tu ~ -du ~ -ru ~ -su suffix of the Tibetan "terminative" case, which he regarded as of locative origin but as having a general manner-adverbial sense. Such developments, from locative to verbal adjunct, are widely known; Wolfenden himself cites the Malay locative and passive marker di.

Benedict, in his chapter on dental suffixes (STC §20), retains only *-t as a causative or directive element for PTB; he cites examples from Tibetan, Kachin, and Bahing-Vayu. A Kachin example is *mani* 'laugh' * *manit* 'laugh at'; cf. Limbu **ET** * **EIT** in §A3. In Hayu (Vayu) the benefactive/applicative paradigm of the transitive verb is marked either by a set of suffixes with initial /t/ (in opposition with a non-applicative set in initial /k/) or, in certain cases, a root in -/t/ (in alternation with an open root) (Michailovsky 1981). In Bahing, there is evidence, similar to that in Limbu but much less extensive, for an old transitivity -t suffix (Michailovsky 1976:200-202). We find the same kind of evidence in Khaling (ibid. 213) and in Thulung (Allen 1975:132).

Further morphological study could reveal more parallels in other branches of TB. For example, Bauman and Okrand (1972) detected a dental suffix underlying tonal alternations in the Chin verb and related it to PTB -t (but the sense is not a transitivity one). Weidert also reconstructs dental suffixes here (1979:94ff).

Thus the Limbu transitivity -t has a solid pedigree, at least in the Bodic side of the family.

There is less comparative evidence for a transitivity -s, even in East Himalayish/Bahing-Vayu. However, I have found both -T and -S postfinals similar to those of Limbu in Bantawa (dialect of Dilpa), e.g. in the triplet I 'laugh' * **ITT** 'laugh at' * **IS** 'cause to laugh'.

The relation of transitivizing suffixes to aspect markers is interesting. The Tibetan postfinals serve often to mark the perfect form of the verb. In Bahing, *-/t/-* is the mark of the past tense (Michailovsky 1976 Tables 4 and 6; this is apart from its preservation as a transitivizing suffix on a few verbs only). A clue to this development may be provided by Limbu, where the main difference between the past and the present stems of the verb is that the postfinal element is dropped from the present (see examples §0.3).

3.12 "Middle" *-s(i)*. Benedict (STC:98) mentions a "suffixed *-s(i) ~ -so* used to form a type of 'middle voice'", with evidence from Kanauri, Nung, and Bahing-Vayu. Note that this element is often reconstructed with a vowel; Bauman (1975:93) reasonably chooses **-si*.⁴ In Bahing, reflexives are formed by adding intransitive suffixes to the root, which is augmented by a postfinal *-S*, often followed by an epenthetic vowel *i* before a consonant (Michailovsky 1976:200, 202 [mis-numbered "203"] - 203 [mis-numbered "202"]). Thulung has a reflexive *-/si(t)/* (Allen 1975:74). The Hayu and Limbu reflexive suffixes are probably related; they contain an affricate [ts] rather than a sibilant. In Hayu, the reflexive suffixes contain an element *-/tse/ ~ -/tse/*.⁵ Limbu has a reflexive suffix *-/ciŋ/*. In addition, it is at least possible that the postfinal *-S* in the examples of §A4b has a middle sense.

3.13 Suffixed *-n*. Suffixes in *-n* have been noted in a variety of TB languages, although Wolfenden tried to assign this element to the roots. The *Conspectus* cites Tibetan derived adjectives and nouns, and scattered transitive verbs in Tibetan, Kanauri, and Lushei as bearing suffixed *-n* (STC:102-3). I have not identified an *-n* on Limbu verb roots, but there are a number of examples which might point to a nasal suffix marking derived nominals, e.g. */can/* 'clothing' ✕ *CAKS* tr. 'wear'; */pa:n/* 'word' ✕ *PA:T* 'speak'. It is not clear, however, whether what is at work here is a suffix *-n* or perhaps a reduced form of the suffix *-/ma* found on infinitives and a few derived nouns such as */tamma/* 'handle' ✕ *TEM* tr. 'hold'.

3.2 Phonological typology and the TB dental suffixes. Very few suffixes have been reconstructed for TB, and it is generally supposed that the proto-language, like many of the daughter languages, was of an isolating character and largely monosyllabic. The *Conspectus* (96) lists only the "gender" suffixes **-pa* (masculine) ✕ **pa* 'father' and **-ma* (feminine) ✕ **ma* 'mother', the related *-pa ~ -ba* nominalizing suffix, **-la* (masculine, animals), and perhaps a subordinating/genitival **-ki ~ *-gi*. The dental suffixes, except perhaps for the "middle" **-s(i)*, are reconstructed without a vowel, since there is no evidence for one, suggesting that they were originally added to morphemes without overstepping the boundary of the already loaded PTB syllable.

Benedict asserts that "all three [dental] suffixes appear only in roots with vocalic or semivocalic ending, in accordance with the general TB phonemic rule that consonant clusters occur only in root-initial position" (STC:98), a restriction that would have reduced their functional utility. Of course,

⁴ The *o* of Benedict's *-so* alternant is in fact the Bahing imperative marker.

⁵ Except in duals. The *-s* (or *-ś*) in the Hayu forms cited in STC:98-9, in fact [x], is not a middle suffix but an allophone of root-final *-/t/* before the homorganic initial */ts/* of the reflexive suffix; it appears equally well before suffix-initial */t/* of the nonreflexive form *sisto* 'kill!' cited in the same place. All of the Hayu forms cited are from roots in *-/t/*. See Michailovsky 1981.

Written Tibetan has syllable-final clusters with postfinal **-s**, plus the controversial postfinal **-d** (**da drag**) in **-nd**, **-rd**, **-ld**, but these are dismissed as belonging to "modern, derived forms" (STC:13) or, in the case of **da drag**, as phonologically conditioned. In fact, elsewhere in the family syllable-final clusters seem to be almost unknown, as in Limbu.

It remains to be explained, however, why PTB non-syllabic suffixes should have been limited to dentals, in contrast to the rich variety of PTB prefixes. I believe that this limitation can be explained only if we assume that these suffixes originally functioned as postfinals in syllable-final consonant clusters. Greenberg has noted the favor that coronal consonants enjoy as the final elements in syllable-final consonant clusters in the following universal implication (1965:28): "Every language with final clusters contains at least one cluster with a final obstruent in the dental-alveolar region." English speakers will think of the English suffixes **-ed**, **-en**, and the overworked **-(e)s**; a recent theory of the English syllable (Selkirk, n.d.) states the rule: "The second consonant of the syllable coda must be a coronal." In the light of these typological considerations, the very fact that PTB non-syllabic suffixes are limited to dentals suggests that they were not only added to open syllables, but also to closed ones, and that they must have functioned as postfinals in syllable-final consonant clusters of morphological origin.

APPENDIX: Families of Limbu Verbal Roots

A1. Families with \emptyset -, T-, and S- allofams

- \emptyset × -T × -S
 - TA itr. 'come, arrive, appear' × TA:T tr. 'bring' ×
 - TAS tr. 'reach (an object), cause to arrive (in /pansu ta:su/ 'he-sent-him he-caused-him-to-arrive (at a place)')
 - JU itr. 'come down' × JU:T tr. 'bring down' × JUS tr. 'send down'
- \emptyset × -TT × -S
 - KHE itr. 'quarrel' × KHETT tr. 'quarrel over sth. (obj.)'
 - × KHES tr. 'cause or incite to quarrel'
- \emptyset × -NT × -S
 - mut THA itr. 'fall' × mut THA:NT tr. 'drop sth. on so. (obj.)'
 - × mut THAS tr. 'drop sth. (obj.)'
- P × -PT × -PS
 - CIP itr. 'be quiet, ?stop (of rain)' × CIPT dep. 'stop (of rain)'
 - × SIPS tr. 'turn off (e.g. radio)'
 - C \emptyset P itr. 'dry up, evaporate' × C \emptyset PT dep. 'dry out (e.g. a field or a pot of rice cooking)' × C \emptyset PS tr. 'dry (e.g. by letting water out of a rice paddy, boiling water out of food, etc.)'
 - LUP itr. 'sink, be buried' × LUPT tr. 'bury, cover, fill in, fatten (a pig)' × LUPS tr. "pile up"
 - HA:P itr. 'weep' × HA:PT tr. 'mourn so. (obj.)' × HA:PS tr. 'cause to weep'
- K × -KT × KS
 - LI:K itr. 'become domesticated (of an animal)' × LI:KT tr. 'pass a parasite or infection to so. (obj.)', ?dep. 'be infected'
 - × LI:KS tr. 'insert sth. (obj.) into an opening'
- N × -NT × -NS
 - CAN \emptyset itr. 'be in a state of erection, ?have an erection' × CAN \emptyset T dep. 'have an erection' × CAN \emptyset S tr. 'cause so. (obj.) to have an erection'

- ŋ × -KT × -ŋS
 KHIN_ŋ itr./dep. 'be stretched (e.g. a drum head); extend across sth. (e.g. clouds over the sky)' × KHIKT tr. 'cover (by stretching sth. over)' × KHIN_S tr. 'stretch'
 KHEN_ŋ itr. 'dry, be smoked (over fire)' × KHĒKT itr./dep. 'become dried up (of fruit), be dried (of maize)' × KHĒNS tr. 'dry [over fire], smoke'
 THAN_ŋ itr. 'come up' × THAKT tr. 'bring sth. up from below' × THAN_S tr. 'send sth. up from below'
 JUN_ŋ itr. 'sit' × JUKT tr. 'ride, sit on' × JU_S 'set down, keep'
 LEN_ŋ itr. 'wander' × LĒKT tr. 'exchange; cross (a ridge or river)' × LĒKS tr. 'turn sth. over'
- ʔR × -NT × -S
 TEʔR tr. 'take away'; surit TENT tr. 'winnow in wind' (/surit/ 'wind') × TES tr. 'send away'
- R × -NT × -S
 POR itr. 'grow' × PONT itr. 'prosper, be numerous' × PHOS tr. 'increase'
 MA:R itr. 'be lost, run out, be finished' × MA:NT tr. 'finish off' × MAS tr. 'lose'
 SE:R itr. 'separate' × SENT tr. 'separate, distinguish, butcher (meat)' × SES tr. 'separate, scatter'
- N × -TT × -NS
 NON_N itr. 'be left over' × NŌTT dep. 'be spoiled from being left too long (e.g. stale beer, rice cooked over too low a fire)' × NON_S tr. 'save, keep leftovers'
 PHEN_N itr. 'come (on the same level)' × PHĒTT tr. 'bring (on the same level)' × PHĒNS tr. 'send (on the same level)'
- A2. Families with Ø- and S-allofams
- Ø × -S
 KO itr. 'be burned (in a fire)' × KOS itr. 'hot' (This pair is apparently not related semantically to the others.)
 niŋwa TA itr. 'be pleased' × niŋwa TAS tr. 'please' (/niŋwa/ 'heart'; cf. the family based on TĀ itr. 'come' in §A1.)
 MU itr./dep. 'be intoxicated' × MUS tr. 'intoxicate'
- P × -PS
 THA:P itr. 'be seen, be visible' × (ni) THA:PS tr. 'expose to view' (/ni/, present stem of NIS tr. 'see')
 THUP itr. 'collapse' × THUPS tr. 'demolish'
 JĒP itr. 'stand, be standing' × JĒPS tr. 'stand sth. up'
- M × -MS
 KAM itr. 'be habituated' × KAMS tr. 'habituate so.'
 TUM tr. 'meet so.' × mi ('fire') TUMS tr. 'assemble a fire'
 HUM itr. 'sink in' × HUMS tr. 'insert; plant (a seedling)'
- ʔR × -S (perhaps should be placed in §A4a below)
 pa:n ('word') KHŌʔR itr. 'stutter, have a speech defect' × KHŌS tr. 'obstruct'
- R × -S (perhaps should be placed in §A4a below)
 I:R itr. 'go around' × IS tr. 'stir' × HIS tr. 'turn around'
 PE:R itr. 'fly' × PHĒS tr. 'cause to fly'
 PHI:R itr. 'shrink, become thin' × PHIS tr. 'reduce sth. in size'
 SOR itr. 'wake up' × SOS tr. 'wake up'
 HER itr. 'dry (in sun)' × HES tr. 'dry (in sun)'
 HŌ:R itr. 'burst open (e.g. dike or abscess)' × HŌS tr. 'id.'

- (and perhaps H ND tr. 'open', but the short vowel is odd)
- T × -TS (perhaps should be placed in §A4a below)
 TI:T itr. 'flame up' × THI:TS tr. 'cause to flame up'
 TĚ:T itr. 'break open (esp. when overripe or overcooked)' THĚS tr.
 'break or split open (a fruit or carcass)'
- N × -NS ~ -S
 JĀN itr. 'collapse' × JĀNS ~ JĀS tr. 'demolish'
- K × -KS
 A:K itr. 'be uprooted' × A:KS tr. 'uproot'
 ĔK itr. 'break (of a stick, etc.)' × ĔKS tr. 'break'
 ĶK itr. 'fall off, come loose (esp. from a cliff or slope)' × ĶKS
 tr. 'pull off, pull loose'
 ĊĔK itr. 'bread' × SĔKS tr. 'break'
 TUK itr. 'hurt; be ill' × TUKS tr. 'hurt'
 S-ningsaŋ PUK itr. 'be heart-broken' × S-ningsaŋ PUKS obj. + tr. 'to
 stop caring'
 POK itr. 'get up' × PHOKS tr. 'get someone up'
 MEK itr. 'run out (of supply)' × MEKS tr. 'finish off'
 LUK itr. 'be completed (esp. a story)' × LUKS tr. 'complete, get to
 the end (e.g. of a story, digging a long yam)'
 LU:K itr. 'fall off (e.g. fruit from a tree)' × LU:KS tr. 'shell
 (maize), shake down (fruit), strip (taro leaves)'
- ŋ × -ŋS
 Iŋ itr. 'become known (of news)' × IŋS tr. 'spread (news)'
 KAN itr. 'be dried or heated at the edge of the fire (e.g. bread,
 a yam, etc.)' × KANŋS tr. 'dry at the edge of a fire'
 KEŋ itr. 'fall' × KEŋS tr. 'cause to fall, knock down'
 TUN tr. 'bend' × TUNŋS tr. 'bend'
 TĀN itr. 'fit together, agree, be reconciled' × TĀNŋS tr. 'settle
 (a dispute); mix together'
 THUN tr. 'drink' × THUNŋS tr. 'cause to drink, entertain'
 HIN itr. 'live' × HINŋS tr. 'bring someone up; rear; raise'
 HĀN itr. 'be pierced' × HĀNŋS tr. 'pierce'
- A3. Families with Ø- and T-allofams (or two T-allofams)
- Ø × -ʔR
 TĶ tr. 'sew' × TĶʔR tr. 'have something sewn for someone (obj.)'
 THA tr. 'keep (only in composition)' × THAʔR tr. 'put aside, keep
 (?for someone (obj.))'
- Ø × -TT
 KU tr. 'carry' × KU:TT tr. 'have someone (obj.) carry something'
 maŋ ('spirit') KHĶ obj. + tr. 'worship spirits' × maŋ KHĶ:TT tr.
 'exorcise spirits from someone (obj.)'
 CA tr. 'eat' × CA:TT tr. 'feed'
 SA tr. 'convey or deliver' × SA:TT tr. 'deliver something to
 someone (obj.)'
- P × -PT
 THAP itr. 'be born' × THAPT tr. 'give birth to someone'
 SUP tr. 'shut (e.g. a door, eye)' × SU:PT tr. 'shut something in,
 cover something' (vowel length unexplained)
- R × -ʔR
 JOR dep. 'have enough' × JOʔR tr. 'add something into a bargain;
 give a second helping of something'
- R × -NT
 SĶ:R itr. 'slide down, drip' × SĶ:NT tr. 'slide'

- ʔR × -NT
 ʔʔR itr. 'fall off, break off' × ʔNT tr. 'break off, remove a bit of something; pick (maize)' ? × ʔS tr. 'spit out'
 phət LAʔR itr. 'be ruined, spoiled' × phət LA:NT tr. 'ruin, spoil something'
 HAʔR dep. 'be lit, burn' × HA:NT tr. 'light'
- T × -TT
 ET itr. 'laugh' × ETT tr. 'laugh at someone'
 KET itr. 'arrive' × KETT tr. 'deliver'
 PA:T itr. 'speak' × PA:TT tr. 'say something (to someone [obj.])'
 WA:T tr. 'put on, wear (ornaments)' × WA:TT tr. 'put ornaments on someone [obj.]'
- N × -NT
 THON tr. 'endure' × THO:TT tr. 'endure' (?dialect variation)
- NT × -TT
 I:TT itr. 'be excessive' × I:NT tr. 'imitate someone' (here -NT seems to mark the directive allofam (if this is a family); in the following exx., -TT marks the directive)
 CONT tr. 'push' × COTT tr. 'move'
 PINT itr. 'jump (up)' × PITT tr. 'jump across something; jump to a point'
 LO:NT itr. 'exit' × LO:TT tr. 'extract something'
- K × -KT
 THOK tr. 'work (metal), pound' × THOKT tr. 'have (jewelry) made for someone (obj.)'
- ŋ × -KT
 HAN tr. 'send' × HAKT tr. 'send something to someone (obj.)'
- A4. Families with T- and S-allofams
- a) T- allofam intransitive or deponent
- PT × -PS
 KHIPT itr. 'adhere' × KHIPT tr. 'adhere to something (obj.)'
 × KHIPS tr. 'stick something on something (obj.)'
 HAPT dep. 'get stuck or tangled' × HAPS tr. 'cause something (obj.) to catch on something; hang something up'
- TT × -TS
 WETT itr. 'heal, get well' × WETS tr. 'cure, heal'
- NT × -NS
 tak KJNT itr. 'wander' × KJNT tr. 'tour' ? × KJNS tr. 'stir'
- KT × -KS
 KHOKT itr. 'spark; pop (of a squashed louse)' × KHOKS tr. 'strike (a spark); pop (a louse)'
 KHOK:KT itr. 'be damaged (of a nicked blade)' × KHOK:KS tr. 'damage (a blade)'
 CI:KT itr./dep. 'cool off, feel cold' × CI:KS tr. 'spread to cool (esp. grain for fermentation); cool'
 COKT itr. 'tear' × COKS tr. 'tear'
 THOKT itr. 'fight' × THOKS tr. 'incite to fight'
 NAKT itr. 'be fooled; be forgetful or negligent' × NAKS tr. 'fool someone'; itr. 'become crazy'
 PHOKT itr. 'explode' × PHOKS tr. 'set off (explosion)'
 MUKT itr. 'ring, sound' × MUKS tr. 'sound, play (instrument)'
 JOK:KT itr. 'be worn down' × JOK:KS tr. 'chew; grind (teeth)'

wa ('liquid') ROKT itr. 'be wet, soaked' × wa ROKS tr. 'wet, soak'
LAKT dep. 'boil' × LAKS tr. 'boil'
LOKT itr. 'run' × LOKS tr. 'cause someone to run'

b) T- allofam transitive

-PS × -PT

IPS itr. 'sleep' × IPT tr. 'put someone to bed'
KHAPS tr. 'cover oneself with bedclothes (obj.)' × KHAPT tr. 'cover
someone (obj.) with bedclothes; roof'
JUPS tr. 'wear (a waistband)' × JUPT tr. 'tie (a waistband) on
someone (obj.)'
SI:PS tr. 'insert, especially a stick under the eaves to hang things
on' × SI:PT tr. 'repair a thatch roof (obj.) by inserting
extra thatch in an upward direction in thin places'

-S × -?R

NAS itr. 'be tired' × NA?R tr. 'desist, leave something alone'
PES itr. 'vomit' × PE?R tr. 'vomit on'
PHES itr. 'fart' × PHE?R tr. 'fart at'
PHES tr. 'spread (a mat), lay (flooring)' × PHE?R tr. 'spread
a mat for someone (obj.) to sit on'
SES itr. 'urinate' × SE?R tr. 'urinate on someone (obj.)'
HUS tr. 'pass on (news)' × HU?R tr. 'teach someone (obj.)'

-S × -T

KIS itr. 'be afraid' × KIT tr. 'fear something (obj.)'
LAS (irr. pres. stem /la:t/) itr. 'enter' × LA:T tr. 'keep something
(obj.) for oneself; take in (a wife)'

-S × -TT

kha US obj. + tr. 'perform a ritual' × U:TT tr. 'call someone'
ES tr. 'defecate' × ETT tr. 'defecate on something (obj.)'
KHAS itr. 'be sated (with food)' × KHA:TT tr. 'satisfy someone
(obj.) (with food)'
NIS tr. 'see' × kusij NI:TT tr. 'recognize, understand' × NI:T
'count, read'
PHOS tr. 'stir' × PHOTT tr. 'stir'
LOS tr. 'use something (obj.) to sit or sleep on' × LOTT tr.
'surface something (obj.) by spreading earth over it; spread
something under a carpet (obj.)'
HAS tr. 'share something (obj.)' × HA:TT 'share something out
to others (obj.)'

-S × -NT

LIS tr. 'insert one's hand (obj.) into something' × LI:NT tr.
'tunnel under or through something'

-KS × -KT

KOKS tr. 'use something (obj.) as a pillow for oneself' × KOKT tr.
'prop someone (obj.) up, especially on a pillow; raise (a bid)'
KHU:KS tr. 'wear (a hat or head-covering)' × KHU:KT tr. 'put (a hat
or head-covering) on someone (obj.)'
CAKS tr. 'wear, put on (clothing)' × CAKT tr. 'dress someone (obj.)'
NU:KS itr. 'return, go back' × NU:KT tr. 'give or get something
back; answer'
LA:KS itr. 'dance' × LA:KT tr. 'trample'

A5. Families with initial alternations

Ø- × H-
 I:R itr. 'go around'; HIS tr. 'turn, divert'
 K- × KH-
 KA:NT itr. 'be wounded'; KHA:NT tr. 'wound'
 KEKS itr. 'be hooked, caught, tangled in something'; KHEKS tr. 'tie, attach'
 ta KONT itr. 'wander'; KHONS tr. 'stir'
 C- × S-
 CIP itr. 'be silent'; SIPS tr. 'turn something off'
 CUP itr. 'fill in (e.g. of pierced ear-lobe)'; SUP tr. 'shut, close'
 CUPS itr. 'gather'; SUPS tr. 'gather'
 CU:T itr. 'be completed'; SU:T tr. 'finish something'
 CEK itr. 'break (of long, solid object)' [also EK]; SEKS tr. 'break (a long, solid object)'
 CONT itr. 'fall over'; SONT tr. 'fell, knock over'
 (?CONT tr. 'push'; SONT tr. 'stretch')
 T- × TH-
 TI:KT itr. 'peel off (especially of skin)'; THI:KT tr. 'peel, husk, unwrap', probably related to:
 TI:KS itr. 'be pulled back (of foreskin, exposing glans)'; THI:KS tr. 'pull back (foreskin)'
 TIMS itr. 'be full'; THIMS tr. 'fill'
 TI:T itr. 'flame up'; THI:TS tr. 'cause to flame up'
 TUN itr. 'bend, be bent'; THU:KS tr. 'bend double, bend' (perhaps separate roots)
 TU?R itr. 'be bent double'; THU?R tr. 'bend double'
 TĒKT itr. 'be sufficient, reach a certain quantity', tr. or imp./dep. 'be sufficient for'; THEKT 'insert'
 TĒ:KS itr. 'tear'; THE:KS tr. 'tear'
 P- × PH-
 PA:KS itr. 'come undone'; PHA:KS tr. 'undo, untie'
 ?PANJS tr. 'send, cause someone to do something'; PHAKT tr. 'permit someone to do something'
 PI:KS itr. 'fall out'; PHI:KS tr. 'pull out (e.g. a weapon)'
 PINT itr. 'jump'; PHINT tr. 'cause to jump'
 PI?R itr. 'be dented'; PHI?R tr. 'dent something'
 PUNT itr. 'become unblocked or uncovered; PHUNT tr. 'open (e.g. a bottle)'
 PU?R itr. 'break (of string)'; PHU?R tr. 'break (string)'
 PĒNT itr. 'slip down (e.g. trousers. landslide)'; PHĒNT tr. 'undo, remove clothes'
 PĒ:R itr. 'fly'; PHĒS tr. 'cause to fly'
 POK itr. 'get up, rise'; PHOKS tr. 'rouse, get someone up'
 POR itr. 'grow'; PHOS tr. 'increase'
 POTS itr. 'be in a high place or suspended; be hired' PHOTS tr. 'put in a high place; hire'

PRONOUNS, VERB AGREEMENT SYSTEMS,¹
&
THE SUBGROUPING OF TIBETO-BURMAN

Graham Thurgood

0. Introduction. The need for a more definitive subgrouping of Tibeto-Burman is self-evident. Only two major attempts at subgrouping Tibeto-Burman exist: Benedict (1972) and Shafer (1966-7, 1974); other attempts such as Egerod (1974) involve minor modifications of one or both of these. Further, Benedict (1972), displaying his characteristic caution, only offers a series of lower-level 'nuclei' thus completely avoiding the question of higher-level branching. Shafer (1966-7, 1974) goes further than Benedict in offering four major supergroups [Bodic, Burmic, Baric, and Karenic] but fails to provide compelling evidence for his conclusions. In short, Tibeto-Burman subgrouping is still at a stage where numerous questions exist about the composition of lower-level units and most questions about higher-level units are largely wide open.

The older verbal agreement system. Bauman (1975) established pronominalization systems as a native rather than a borrowed Tibeto-Burman feature and argued that it was reconstructable back to common Tibeto-Burman. While the precise antiquity of the 'oldest' verb agreement system may be open to some argument, Bauman's contention that it dates all the way back to proto-Tibeto-Burman [=PTB] is supported by sufficient evidence to make it clear that the original system at least transcended a number of the established major subgroups; thus, even if Bauman's precise dating of the system should require a minor revision, his more general contention that the original system was extremely archaic has proven quite accurate. As a consequence, the most archaic pronominalization system is not at our present state of knowledge useful for subgrouping purposes.

¹ I shall be astonished if all my errors should prove minor, and I will be grateful to readers for their corrections. The foundations for this work lie in Bauman (1975). This paper also owes a large debt to Hale 1982, which has become a standard reference. In addition, I also wish to thank Keith Record for his help. This material is based upon work supported by the National Science Foundation under Grant No. BNS-8203882.

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Abbreviations: LSI (Linguistic Survey of India, see Grierson). Symbols: /E/ and /O/ are open vowels; <*> marks a reconstructed form; and /ts/ and /dz/ mark apical-dental affricates, while /c/ and /j/ mark palatals.

However, a careful examination of the characteristics and distribution of the modern systems shows they represent more than just the reflexes of a single original agreement system; instead, in addition to reflexes of the older system, the evidence shows a number of historically-distinct paths of development both in the pronoun systems and in the agreement systems and where these patterns represent changes which postdate the breakup of the original proto-system, they constitute excellent subgrouping evidence.²

This paper first distinguishes the more archaic pronoun patterns and verbal agreement systems from the more recently innovated pronoun patterns and verbal agreement systems, and then examines the evidence provided by the innovation patterns for Tibeto-Burman subgrouping. The oldest proto-Tibeto-Burman (=PTB) pronouns are the first person singular *nga 'I' and the second person singular *nang 'thou'; these are reconstructed at the PTB level and thus are of no use for subgrouping. The oldest verbal agreement patterns are also extremely archaic; in fact, these same first and second person pronouns through the reinterpretation of the syntax and semantics of interaction with various topicalization processes were reanalyzed and form the oldest clear sources of verbal agreement markers. The decision to examine pronouns and verb agreement systems together is a natural consequence of the historical interaction between the two—an interaction so intimate that modern agreement markers are often still transparently the remains of these original pronouns.³

In some systems, new independent pronouns have been innovated and then these innovated pronouns have been subsequently incorporated into the agreement systems. For example, in proto-Kuki-Chin *kai 'I' first replaced the older proto-Tibeto-Burman *nga 'I'; then, the new first person pronoun was incorporated into the subject-verb agreement system as *ka- '1st'. From a methodological viewpoint, the existence in a number of different languages of systems where it is not reflexes of the oldest layer of proto-Tibeto-Burman pronouns but rather reflexes of a more recent layer of pronouns which has been incorporated into the verbal morphology is particularly strong evidence for a prior period of shared common development.

² The use of verb pronominalization for subgrouping is certainly not new and dates back at least to Konow's *Linguistic Survey of India* (1903-28; Grierson (ed.)), where Western pronominalized and Eastern pronominalized languages are distinguished. However, this and subsequent attempts have frequently been undermined by inadequate data and by the tendency to use for subgrouping the mere presence of any pronominalization system rather than the presence of a specific pronominalization system. This practice, however, is typological rather than genetic, and thus is in principle not a valid basis for genetic subgrouping; for genetic subgrouping, only the presence of reflexes of what was historically the same system are valid evidence.

Voegelin and Voegelin's (1977) more recent use of pronominalization for subgrouping runs into other problems. Their division of these languages into non-pronominalized, eastern pronominalized, and western pronominalized is undermined by the inclusion of the clearly pronominalized Gyarung in their non-pronominalized and the inclusion of Kusunda, a language Shafer (1953:356) termed 'non-Tibeto-Burman' in their eastern pronominalized. This and other errors make Voegelin and Voegelin of limited value.

³ Within the Tibeto-Burman literature, verbal agreement systems are often termed 'verbal pronominalization' or simply 'pronominalization' systems. This usage, found as early as Hodgson (1856), is solidly entrenched in over one hundred years of literature.

1.0 Methodology. While subgrouping often constitutes a far more difficult task than the simple discovery of genetic relationship,⁴ the principle involved is quite simple: subgrouping is done exclusively on the basis of shared innovations. The corollary to the above principle is equally simple: since shared retentions can occur independent of a period of common development, the presence of shared retentions does not constitute subgrouping evidence. Although this corollary seems self-evident, even a cursory glance at the literature on subgrouping in Tibeto-Burman makes it necessary to state it.

2.0. Innovated second person pronouns. The presence of an innovated velar-initial second person pronoun overlaps with a considerable portion of what is traditionally thought of as Bodish languages: (§2.1) the Tibetan languages and dialects and (§2.2) the Tamang-Gurung-Thakali-Manang complex. Included in this group on the basis of other evidence is Takpa (§2.3), which has a definitely innovated and rather unique second person pronoun but not a velar-initialled one; instead, the Takpa innovation appears unique to Takpa and thus reveals little about the history of 'shared periods of common development'.

2.1 Tibetan languages⁵. With the exception of his single member East Bodish Unit [i.e. Takpa], all the remaining languages within within Shafer's Tibetan Section [= West Bodish, a Central Bodish, and South Bodish] all share the innovation of a second person singular *khyot 'thou' [Chart 2.1] and, although the reconstruction of third person forms still leaves much to be desired, they also apparently share the innovation of a third person singular *kho. Thus, the pronominal systems of languages in of the Tibetan Section seem to have evolved from a Proto-Tibetan *nga 'I', *khyot 'thou', and *kho '3rd person'.

Chart 2.1: Tibetan Languages

	first person	second person	third person
Balti LSI 3.1	nga nga-ang	khiang yang (resp.)	kho
Purik LSI 3.1	nga nga-rang ⁶	khyod khye-rang	kho kho-rang

⁴ Subgrouping is complicated by the fact that many similarities between closely-related languages are the product not of common inheritance but of what Sapir 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. The picture is further complicated by the areal convergence produced by the wide-spread multilingualism. Finally, the detection of borrowing is more difficult between related languages.

⁵ Miller (1969) and Nishida (1970) include Taofu (Migot 1957: esp. 556-60) within this section, but Migot himself suggested its non-Tibetan roots, a position supported by Shafer and by the colloquial language, which has, in addition to the probably borrowed formal forms t'i 'thou' and khör, the colloquial forms nu [noe] 'thou' and thu [thoe] 'third person'. Shafer has placed Taofu in a group with Horpa.

⁶ The various forms of *rang 'self' found throughout the pronominal systems of

		ye-rang	
Ladakhi LSI 3.1	nga nga-rang	khyot khyo-rang nye-rang ⁷	kho kho-rang khong
Lhasa Tibetan Sedlacek 1959	nga 13	tyø: 41	k'o:n 53 (hon.)
Central Tibetan LSI 3.1	nga	khyö khye	kho khong (hon.)
K'ang Ting 1 Migot 1957	nga	chE chö	
K'ang Ting 2 Migot 1957	nga	chEt chOt	
Kantze Migot 1957	nga	chEt chöt	
De-ge [=Derge ⁸] Migot 1957	nga	che chö	
Spiti LSI 3.1	nga	khyut	kho
Sherpa LSI 3.1	nga	khyod khyed khyo	kho
Sherpa c. 1600 Nishida 1970	nga nge2	khjo2	khong
Amdo Sherpa	ña [L]	chö	kho ri [HH]

these languages are a secondary reflection of the fact that the pronouns often need not appear at all except when necessary for foregrounding purposes. Thus, pronouns often appear accompanied by either an emphatic reflexive such as *rang 'self' or with a topic marking particle such as the *ka found in various subgroups often with a secondarily-developed pronominal function. In fact, it is this that accounts for the large number of disyllabic pronominal roots in Tibeto-Burman.

⁷ Unless this form is actually a plural form used in the singular in an honorific capacity, the nasal initial would indicate that, while *khyot 'thou' was an innovative second person pronoun, it did not entirely replace the original *nang of Tibeto-Burman.

⁸ Egerod (1974) classifies this language as outside the Tibetan Section; Roerich (1931), Uray (1955 [1949]), Miller (1969), and Nishida (1970) all classify it as Tibetan. The pronominal configuration would suggest it belongs within Tibetan.

Nagano 1980

Amdo Sherpa c. 1600 Nishida 1970	nga nge2	khjo2	khong khung
Amdo Sherpa Roerich 1958	nga	k'ye c' 'o2	k'e ge
Hsi-K'ang Sherpa c. 1700 Nishida 1963	nga	khyod	
Ton Jon Hsien Go 1954	ngo	tshhø	
Jirel (abs.) Strahm (erg.) 1975	'nga nye	'khoq khuig	'the 'theiki
Lhami Vesalainen 1980	nga	khøtq	kotta
Kagate LSI 3.1	nga	khyo	kho
Dänjong-ka	nga	chhø	kho khu
Lhoke LSI 3.1	nga	khyøt, khyø chhot, chho	kho khu
Glo skad Kitamura 1977b	nga	khyod	kho

Thus, the Tibetan Section can be distinguished from much of Tibeto-Burman by its innovative *khyot 'thou' and from closely-related Tamang-Gurung by its *kho 'third person singular'. It should be noted that the investigation of the above languages has not revealed even vestigial evidence of an original Tibeto-Burman pronominalization system.

2.2 Tamang-Gurung Section. Like Tibetan, the Tamang-Gurung Section has innovated a second person pronoun but apparently does not seem to show even vestigial evidence of an original PTB agreement system⁹. [Chart 2.2]

Chart 2.2: Tamang-Gurung Section¹⁰

first person second person third person

⁹ Ghale, which Nishi (1981) includes in Tamang-Gurung, is best placed in some other subgroup. Not only are the pronouns inappropriate for this subgrouping but also the tonal system shared by Tamang-Gurung-Thakali-Manang (Mazaudon 1978) is not shared by Ghale (Reyes 1983).

¹⁰ Data from Hale (ed.) (1973.4:46, 309).

Tamang Hale (1973)	nga	'e:	the
Gurung Hale (1973)	nga	kih ¹¹	caq
Thakali Hale (1973)	nga	'kyahng	the

2.3 Takpa Section. Benedict (1972) and Shafer (1974) both recognize this as a separate section¹². As Chart 2.3 below makes evident, the pronoun configuration found in Takpa is distinct from that found in the languages of the Tibetan Section. Specifically, Takpa has innovated a second person singular pronoun but one which is not velar initialled; in addition, the third person singular pronoun¹³ is distinct from the *kho of other Tibetan dialects.

Chart 2.3: Takpa [=Dwags] Section

	first person	second person	third person
Takpa Hodgson 1853	gne ¹⁴ , nye	i	pe, be
Tsuona ¹⁵ Sun et al. 1980:4-64	nge 13	2i 53	pe 13

Like both the Tibetan and the Tamang subgroups, Takpa has no apparent traces of an original PTB agreement system.

3.0 First person innovations.

3.1 Tsangla. Although Tsangla is normally grouped with the Tamang-Gurung complex and with the Tibetan complex, it differs from the Tibetan-Tamang-Gurung complex in two features: unlike those languages, Central Monpa and Muotuo Monpa have retained reflexes of the original PTB *nang 'thou' while innovating a first person singular form.¹⁶

¹¹ Bauman (1975:148) lists a form ke:n 'thou' here as well as a form ai 'thou' for Tamang above.

¹² Shafer (1974) treats it as a Tibetan language by making it the only member of the East Bodish Unit of his Bodish Branch; similarly, Voegelin and Voegelin (1977) simply put it in their Central Tibetan, while Nishida (1970) treats it as one of his Southeastern dialects of Tibetan. Benedict, however, makes it a separate branch of Bodish.

¹³ Hrusso [=Aka], like Takpa, has also innovated a non-velar-stop initialled second person singular pronoun (ba) as well as a distinctive third person singular pronoun (i/e).

¹⁴ Hodgson's gn is simply a velar nasal.

¹⁵ The name Tsona Monpa used by Sun et al. (1980:4-64) suggests a relationship to Central (Muotuo) Monpa, but if one exists it must be a more ethnographic than linguistic since a comparison of this with their Muotuo Monpa or with Das Gupta's Central Monpa (1968) shows it to be structurally quite distinct not just in terms of pronouns but also in terms of such things as the tense/aspect system.

Chart 3.1: Tsangla

	first person	second person	third person
Central Monpa Das Gupta 1968	jang	nang	dan
Muotuo Monpa Sun et al. 1980:65-114	dʒang	nan	dan ro2

The structure of the innovated first person pronoun suggests descent from an earlier #ga-nga source. Like the Tibetan, Tamang-Gurung-Thakali, and Takpa sections, Tsangla appears to have retained no evidence of the earlier PTB agreement system.

3.2 Kuki-Chin Section. The Kuki-Chin languages readily reconstruct a pronoun system that consists of *kai 'I', *nang 'thou', and *a-mi 'third person' and a prefixal subject-verb agreement system that consists of *ka- 'first', *na- 'second', and *a- 'third' (see Chart 3.2).

Chart 3.2: Kuki-Chin pronouns and pronominalization patterns¹⁷

	first person		second person		third person	
	pronoun form	agreement affix	pronoun form	agreement affix	pronoun form	agreement affix
<u>Northern Chin</u>						
Tiddim Chin Henderson 1965	kei	ka-	nang oblique	na-	a-ma	a-
Thado LSI 3.3.	kei	ka-	nang	na-	a-ma	a-
Siyin LSI 3.3	kei	ka- ki-	nang	na- ni-	a-ma	a-
Ralte LSI 3.3.	kei ka ¹⁸	ka-	na	na-	a-ma	a-
Paite LSI 3.3.	kei ka	ka-	na	na-	a-ma	a-

¹⁶ Central Monpa and Muotuo Monpa are at the very least dialects of the same language.

¹⁷ The pronouns found in the chart below are not an exhaustive list.

¹⁸ In addition, Ralte has an nai form apparently from the older *nga provenience as well as an object form ai which in itself is intriguing.

Proto-	*kei *ka	*ka-	*nang	*na-	*a-ma	*a-
--------	-------------	------	-------	------	-------	-----

Central Chin A

Lushei Bauman 1975:290	kei	ka-	nang	i-	a-ma	a-
Zahao LSI 3.3.	kei ka	ka-	nang	i- na-	a-ma a	a-
Mhar LSI 3.3.	kei ka	ka-	i-ni	i-	a-ma	a-
Proto A	*kei *ka (? possessive?)	*ka-	*nang	*i-	*a-ma	*a-

Central Chin B

Lai (Haka) LSI 3.3.	kei ke	ka- kx-	nang nx-	na-	amma	a-
Banjogi LSI 3.3.	kei	ka-	nang	na-	a-ma	a-
Pankhu LSI 3.3.	kei	ka- ke-	nang	na-	a-ma	a-
Proto B	*kei	*ka-	*nang	*na-	*a-ma	*a-

Old Kuki¹⁹

Kolren [=Koireng] LSI 3.3.	kai	ka- ki-	nang	na- ni-	a-ma	a-
Kom LSI 3.3	kai	ka-	nang	na- nx-	a-ma	a-
Purum LSI 3.3.	kai	ka- (occasional)	nang	?	a-mo (occasional)	a-
Rangkhoh LSI 3.3.	ga ge	ga-	nang	ne- ni-	a-ma mi	a-
Bete LSI 3.3.		ka-		na-		a-

¹⁹ Anal and Hiroi-Lamgang are also traditionally subgrouped with the Old Kuki languages. As with Purum, the data is limited and unclear; however, it is at least clear that both have first person pronouns with an initial nasal rather than a velar stop and both probably have a subject-agreement system with a first person *ka- derived form. Recall the Ralte form nai 'I' found in Northern Chin above.

Hallam LSI 3.3.	kei	ka-	nang	na-	a-ma	a-
Langrong LSI 3.3.	kai	kai- kei-	nang-ma	na- nai-	a-ni	a-
Aimol LSI 3.3.	kai	ka-	nang	na-	a-ma	a-
Chiru	kai	ka-	nang	na-	a-ma	a-
Proto	*kai	*ka-	*nang	*na-	*a-ma	*a-
<hr/>						
Southern Chin ²⁰						
Shõ	kye	*ka- (H)	naung	na-	a-ya	a-
<hr/>						
Proto-Kuki- Chin	*kai	*ka-	*nang	*na-	*a-(ma)	*a-

3.3 Karen.²¹ Three forms of pronouns are reported in Jones (1961): topic forms (T), object forms (O), and subject-possessive forms. Etymologically, the object forms are historically prior. The subject-possessive forms, which partake in the subject-verb agreement system, are for the first and second person phonological reductions of the object forms. The topic forms are the product of the fusion of the object forms with the topic marking particle wE e.g. ja + wE > jE.

Chart 3.3: Karen pronouns and pronominalization²²

	first person		second person		third person	
	pronoun form	agreement affix	pronoun form	agreement affix	pronoun form	agreement affix
Moulmein Sgaw	ja (O)	jx2	na (O)	nx2		
	jE (T)		nE (T)			

3.4 Naga languages. First person innovations are also found in the Naga languages. How these languages are subgrouped is far from determined e.g. distinct subgroupings found in Benedict (1972), Shafer (1966-7, 1974), Marrison (1967), French (1983), and Weidert (1979, 1981). French and Weidert are quite similar with the major difference being in the placement of the Tangkhul languages. The chart below, which contrasts first person innovations with nasal initial reflexes, should be viewed with caution. Not only is the chart not intended as a serious claim about subgrouping but also the reliability of the data base is sometimes open to question. Further, Mikir and Meithei, which are

²⁰ The Southern Chin data is limited.

²¹ Although Karen is normally considered outside of Tibeto-Burman proper, its pronouns do pattern as do the other pronoun systems here.

²² More than just Jones' Moulmein Sgaw dialect needs to be examined.

generally treated as peripheral to the main body of Naga languages, occur in the appropriate pronoun groupings.

Chart 3.4: Naga languages

	first person	second person	third person
<u>Naga I:</u>			
First person innovation			
<u>Southwestern Naga</u>			
Maram McCulloch 1859	e-	nang-	a-do
Maring LSI	kai ²³	nang	a
Khoirao LSI	ii ai hai-ni	nang nang-ni	pai pai-ni
Kabui [=Kapwi]	ai (S) a (O)	nang	kamai
Empeo LSI	anui ²⁴ i (St.)	nang	ji
Kwoireng LSI	i	nang	si
Nzong LSI	a-	ne	a-
Nzong Mills 1937	a (low note)	ne no	a (high note)
Tangkhul LSI	i	na	a
Phadang [=Tangkhul] LSI	i	nge	ai
Khangoi [=Tangkhul] LSI	i ei	nang	pro

Angami

²³ This kai root for Maring is intriguing but unexplainable. Perhaps this is the same root reflected in the Khoirao hai-ni.

²⁴ This form is not necessarily as transparent as it initially appears. It may simply be a straightforward reflex of *nga 'I', but it also may be the result of a parentage such as *a-ni (cf. the Khoirao forms above).

Sopvoma [=Memi] LSI	yi	ni	po hana
Kezhama LSI	ye iye	no	pu
Angami (Tengima) LSI	a	no	po
<u>Lhota</u>			
Lhota LSI	a ai	na no	mbo
Anyo Mills 1937	hi	no	ma
Ntenyi Mills 1937	he	na	ma
Yachumi LSI	iya	nunu	
<u>Other</u>			
Meithei LSI	ai i-hak ei	nang na-hak	ma ma-hak
Thukomi [=Ao?] LSI	iyeshu	nana	napunu

Naga II:

Nasal initialled first person forms

Ao

Mongsen Mills 1937	ni	nang	pa
Chungli LSI	ni	na	pa
Tengsa LSI	ngai	nang	po

Innovated and nasal initialled first person forms

Sema²⁵

²⁵ The first person possessive suffix for these languages is either i- or ni-.

Lazemi LSI	ngi	na	pa
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Z̄moni Hutton 1921 [1968]	ni ni-ye	no	pa
---------------------------------	-------------	----	----

Mikir

Mikir Grüssner 1978	ne e	nang
---------------------------	---------	------

Despite the temptation to speculate, full interpretation of this data will have to await a better overall understanding of the interrelationships among the Naga languages.

3.5 Bodo-Garo. All of the Bodo-Garo languages are characterized by a first person reflex reflecting an earlier *a-nga (> *ang) provenience. In Abeng and Dacca, the reflex is still a-nga, while the reflexes elsewhere are transparently from an *a-nga source. The second person forms reflect an earlier *nang source.

4.0 Innovated first and second person pronouns

4.1 Kiranti. The Kiranti pronouns display innovative first and second person singular pronouns. However, it is not these innovated pronouns that have been incorporated into the system of pronominal agreement in the verb morphology (see Chart 4.1 below); instead, it is the older PTB pronouns *nga 'I' and *nang 'thou'. The disyllabic first person forms appear to reflect an earlier *ka + *nga, while the second person forms appear to reflect an earlier *ka + *nang. The *ka element in each of these forms is probably a 'TOPIC/ERGATIVE' marker, while the second element is a former pronoun. This unique configuration of characteristics effectively sets off the Kiranti languages.

Chart 4.1: Kiranti pronouns and pronominalization patterns²⁶

first person	second person	third person
pronoun agreement <u>form</u> <u>affix</u>	pronoun agreement <u>form</u> <u>affix</u>	pronoun agreement <u>form</u> <u>affix</u>

Hayu²⁷

²⁶ The absence of a form, unless specifically designated with the symbol \emptyset , is as likely to reflect a gap in the data base as anything else.

²⁷ The Hayu pronouns cited are those in the absolutive case; the agreement affixes cited are those obviously derived from *nga 'I' and *nang 'thou'.

The ergative and the oblique pronouns are also of interest since they suggest one parameter which might account for some of the striking diversity and variation among Kiranti pronouns. Similarly, the presence of more than one agreement system might account for the often unexplained variants found in the verbal morphology. In this regard, Michailovsky's own often brilliant work has already brought a great deal of order out of what was formerly chaos.

Michailovsky 1974, 1976c, 1981	gu / gu'u	-ngo 1st > 2nd	gon	-na- 1st > 2nd	mi ²⁸	-∅
Bahing LSI 3.1.327-37 Michailovsky 1976	go	-nga	ga	-na- 1st > 2nd	harem ²⁹	
Sunwar ³⁰ LSI 3.1.198-205 Bieri, Schulze, and Hale 1973	go	-nga- -ng	ga / ge	?	hare	
Thulung ³¹ Allen 1975	go	-ngu	gana	-na	gu	-∅
Proto	#go	#-nga	*gana	*-na	-	-
Khaling ³² S. Toba 1979 I. Toba 1973	ung	-ngaa	in	-∅	am	-∅
Chourasya LSI 3.1. 369-70	unggu		ngo-me unu		ti-me yo-me ya-me	
Dumi LSI 3.1. 372-3	ung ang-ngu		in anu		mo-mi nam yakam	
Rai LSI 3.1. 373-9	ung		in		tam mam yakam	
Proto	*ung	#-ngaa	*in	#-∅	#am	#-∅
Kulunge ³³	kong	-o	an	-x ³⁴	ngkx	-x

Hayu, without question, belongs in Kiranti.

- ²⁸ The only etymologically pronominal third-person form in Hayu is the third person oblique form a. Etymologically, this is a demonstrative being used as a third person pronoun.
- ²⁹ The pronouns are cited from the LSI account, while the agreement description is from Michailovsky 1976. It is unlikely that harem and hare below are really third person pronouns even synchronically let alone historically.
- ³⁰ The Sunwar data comes both from the LSI material and from Bieri, Schulze, and Hale (1973), but as the latter is not a grammar not only are the precise conditions for the use of nga/ng not stated but also information on the use or non-use of a second person singular agreement particle is not given.
- ³¹ The forms cited here are the absolutive pronouns and the agreeing intransitive affixes.
- ³² The pronouns cited for Khaling are those of the absolutive case; the affixes cited are those which agree with subjects in the absolutive case.

Holzhausen
1973:15-26

Khambu LSI 3.1. 316-26	kong konga	ana	na/ kho / khallu / khungko
Sangpang LSI 3.1. 351-3	kanga	ana	mo-ko me-ko
Natchereng LSI 3.1. 365-66	ka kanga	ana	manka ya-ko
Proto ³⁵	#kang(-a) #-a?	#an(-a) #-a?	#-a?
Rodong LSI 3.1. 363-5	kanga ing-ka	khana	khu
Waling LSI 3.1. 357-8	ang-ka ing-ka	hana khana	aya haya-ko mo-ko
Rungchhenbung LSI 3.1. 360-1	ung-ka ang-ka	khana	o-ko / mo-ko euhya-ko euyau-ko
Dungmali LSI 3.1. 362-3	ang?-ka ing?-ka	hana	mu-go
Proto	#i/ang-ka	#khana [?> hana]	#-ko [<?#kho]
Lambichhang LSI 3.1. 355-7	ka kanga	khana	a-ko / yo-na mo-na to-na
Chhingtang LSI 3.1. 358-9	aka	hana	mo-gwa yo-ko
Lohorong LSI 3.1. 353-5	ka kanga	hana ana	mo-nu mo mi

³³ Again, the pronouns are cited in the absolutive case along with the agreement particles which correspond.

³⁴ The symbol x is used here to designate a schwa.

³⁵ The first and second forms are most likely absolutive without the #-a and ergative with it. Given the data base, the reconstructed agreement markers are also similarly quite speculative.

Balali LSI 3.1. 350-1	ka kanga		ana		mo kho
Proto	*ka *kang-a		#khana		*mo 'ʔ'
Limbu ³⁶ Bauman 1975: 286-89	anga: -a: ³⁷ -ang		khene: k'-		³⁸ khu:ne: -∅
Yakha LSI 3.1. 305-15	ka -nga- -ng-		ing-khi -ka- -ga-		u-khi ³⁹ i-khi
Proto	*ka #ng-		#kv-		

4.2 Kanauri-Almora.⁴⁰ Innovated first and second person pronouns are found in Kanauri-Almora. The first person agreement forms are forms of *-ga, the second person agreement forms are the familiar-looking *-na < *nang 'thou' and forms of *-ga, and the third person forms also although less frequently contain forms of *-ga. This unique configuration quite effectively sets off these languages as a distinct subgroup.

Chart 4.2: Kanauri-Almora pronouns and pronominalization⁴¹

first person		second person		third person	
pronoun agreement form	affix	pronoun agreement form	affix	pronoun agreement form	affix

Kanauri Branch

³⁶ The forms cited are absolutive case pronouns with corresponding intransitive verb affixes.

A number of the Limbu agreement markers display the classical split ergative case marking pattern e.g., in the past tense, the first person forms -ang/-hang occur marking intransitive subjects and transitive objects. No corresponding pattern occurs with third person forms.

³⁷ The -a: occurs in the nonpast; the -ang occurs in the past.

³⁸ Bauman notes (p. 286) that the three forms of the third person singular form a system in which the first is appropriate when the object is absent, the second is appropriate when in sight but distant, and the third is appropriate when near. Presumably, these come directly from demonstratives, still reflecting the three-way distinction found in many Tibeto-Burman demonstrative systems.

³⁹ The first element of each of these two forms is a demonstrative pronoun i.e., i- 'this' and u- 'that'.

⁴⁰ Cf. Shafer's West Himalayish Section.

⁴¹ A number of the languages listed below are not extensively described. One consequence of this is that the agreement systems for several of them list second person agreement morphemes but not first; however, it would be most surprising if a fuller description did not also show first person forms.

Kanauri ⁴² Bauman 1975 280	gø	-g	ka' ki' (hon.)	-n	do nu	—
Kanashi LSI 3.1.	gu	-k	ko	-n	du nu	—
Manchati Bauman 1975: 291	gye ghyanga	-ga -g	(hon.) ka kyena kakyena	-na -n	du	— -t -g
Chamba Lahuli LSI 3.1.	ge	-ga -g	ka ku	-na -n	du	— -d
Bunan Bauman 1975: 271-2	gyi	-g -g ⁴³	han	-na -g-ni	tal	-re -g-re / -g
Rangloi, Gondla, Tinan	gye		ka		du do	
<u>Almora Branch</u>						
Rangkas LSI 3.1.	ji / je jin ⁴⁴	-?	ga	-?	hve u	
Darmiya LSI 3.1.	ji	-?	gai	-n	vo u	
Chaudangsi LSI 3.1.	ji	-?	gan	-n	vo u	
Byangsi LSI 3.1.	ji	-?	gan	-n	vaii u	
Proto	*gai	*-ga	*gan	*-na	*du *u	

While the interpretation of these patterns is not completely obvious, one explanation for the *-ga / *-na variation in the second person agreement forms is origin in a disyllabic second person pronoun. This pronoun, now reconstructed as *gan, must have evolved from an earlier form such as #ka-na < #ka-nang. The first person *gai pronoun is also ultimately disyllabic but its more immediate origin is not as apparent.⁴⁵

⁴² Kanauri also has an intriguing genitive first person form ang.

⁴³ The suffixes in this row occur on the dual/plural forms.

⁴⁴ This form, if actually first person singular, would point to a disyllabic root such as #ka-nga.

⁴⁵ The splitting of the Kanauri-Almora Section into a Kanauri Branch and an Almora Branch can tentatively be done on the basis of the *gai > *ji isogloss

4.3 Lepcha and Newari. Lepcha and Newari also have innovative first as well as second person pronouns.

Chart 4.3: Lepcha and Newari⁴⁶

	first person		second person		third person	
	<u>form</u>	<u>affix</u>	<u>form</u>	<u>affix</u>	<u>form</u>	<u>affix</u>
Lepcha	go		ho		hu	
Newari	ji		chha chhi		o	
Pahri (Newari dialect)	ji		chha chhi		ho chho chha	

These languages, unlike the others with innovative first and second person pronouns, have no apparent pronominalization systems.

4.4 The Qiang languages. Despite the outstanding recent research on the Qiang languages by Sun Hong-kai work on the Qiang languages our interpretation of that work has not yet caught up; thus, not much can be said with total confidence about the history of Qiang. However, like Sun's descriptive work, both his subgrouping and subgrouping evidence (1981b:177-94) can be used with confidence. Sun divides the Qiang languages into five southern Qiang dialects [= Da-chi-shun, Tau-ping, Du-xi, Mien-xi, and Hei-hu] and five northern Qiang dialects [=Lu-hwa, Ma-chi, Tsi-mo-ling, Wei-gu, and Ya-du].⁴⁷ From an examination of the pronouns certain patterns appear:

4.4: Qiang

as well as as on the basis of the *du versus *u distribution. Both would set Rangkas, Darmiya, Chaudangsi, and Byangsi off from the remaining languages.

⁴⁶ While the ultimate subgrouping of Lepcha and Newari is far from settled, Thurgood (1984) places Lepcha (contra Shafer's classification of Lepcha with the Naga languages) with the Rung languages. The classification of Newari remains totally unclear.

⁴⁷ The bases for the various subgroupings differ (Chang 1967:423). Wen Yu (1941) divided the languages into eight groups primarily on geographical grounds. The Institute of Nationalities (ibid.) divided the languages into two groups on an essentially typological basis--phonological complexity. In contrast to both of these, Sun's criteria are such that the resultant subgrouping should be genetic rather than geographical or typological. Nonetheless, Sun's subgrouping only differs significantly from that of the Institute of Nationalities in its omission of Lung-hsi from the list of southern dialects. This difference, however, is important for our discussion.

Equally important for our discussion are the six southern dialects discussed in depth in Chang (1967): (1) Waszu (four dialects from Wen Yu 1941: Antzut'ou, Lip'ing, Kaotungshan, and Hop'ing), (2) Lopu Chai, (3) T'aop'ing Hsiang, (4) Tsengt'ou Hsiachai, (5) Chiutzu Ying, and (6) Jota Chai.

	first person		second person	
	Nominative	Oblique ⁴⁸	Nominative	Oblique
<u>Southern Qiang</u>				
Lip'ing ⁴⁹	nga	ka	no	ʔu/u
Goadongshan	nga	ka	no	ʔu/u
Anzitou	nga	ka	no	ʔu/u
Lopu Chai	— ⁵⁰	ka	nx	—
T'aop'ing Hsiang	nga	qa	no	—
Tsengt'ou Hsiang	nga	qa	no	—
Chiutzu Ying	—	qa	no	—
Jota Chai	nga	qa	no	—
Tauping ⁵¹	nga 55	qa 55/ qo 55	no 55	kux 55/ ko 55
Jiashanzhai ⁵²	nga	ka	no	kux
Niushanzhai	nga	ka	no	kux
Dapuxi	ngae	ka	no	kux
Seruzhai	nga	ka	no	kux
Banpo	nga	ka	no	ko
	<*nga		<*no < *nang	
<u>Northern Qiang</u>				
Machi ⁵³	qa	qa	kux	kux
Xiabaishui ⁵⁴	ka	ka	nx	n/ nyi
Qingtuping	ka	ka	nx	n/ ni
Tongshanzhai	ka	ka	no	nx
Suoqiao	ka	ka	nx	ni
Longxi	ka	ka	no	kux
Xige	ka	ka	wu	wu
Erwazhai	ka	ka	no	kux

⁴⁸ Oblique refers here to both the objective and possessive cases.

⁴⁹ The first three languages are Waszu cf. above footnote.

⁵⁰ The data for these five languages is from Chang (1967). Where a form has not been found in that source the symbol <—> has been used.

⁵¹ From Sun (1981b:78). Whether or not this is the same as Taop'ing Hsiang listed above is not clear but in any case it is definitely a southern Qiang dialect.

⁵² The membership of these five languages from Wen Yu (1941) in southern rather than northern Qiang is only tentatively assumed on the basis of their pronoun configuration.

⁵³ Northern Qiang from Sun (1981b:218).

⁵⁴ The ten languages in this group have only very tentatively been grouped with northern Qiang Machi on the basis of their parallel pronoun systems.

Jiuzizhai	ka	ka	no	kux
Ershui	ka	ka	kux	kux
Hnik s1	ka	ka	kuxn	kuxn

(1) The southern dialects have a peculiar pattern whereby in the subject case the first and second person pronouns reflect the earlier *nga 'I' and *nang 'thou', respectively, while in the objective case innovation has taken place. This is unusual since it is typically the subject case which innovates while the object case remains the same. (2) The patterns for the objective and the possessive cases are so similar that the chart simply lists them jointly as the 'oblique' case.⁵⁵ The real oddity in this is that it is typically the nominative case not the oblique cases which shows innovation.

The Qiang languages also clearly have an agreement system, but it has been obscured both by simple loss and by assimilation. However, both the northern Qiang dialect Machi and the southern Qiang dialect Tauping show clear vestigial evidence of some sort of suffixal first person marker as well as an extant -n or -nx second person marker.

5.0 Pronominalization without innovative pronouns.

5.1 Rung. Subject-verb agreement systems, of course, also occur in other language groups which did not innovate pronouns. Unlike cases where either innovation in the pronoun system or innovation in the pronominalization system occurred, the mere existence of a non-innovative pronominalization system provides no evidence for subgrouping since it is merely a retention from the proto-system. Within Rung such a retention of the original pronominalization system is found well preserved in Gyarong, Kham, Chepang, Jinghpaw, and Tangut as well as in the Nungish subset of Rung languages.⁵⁶

Chart 5.1: Rung

	pronoun <u>form</u>	agreement <u>affix</u>	pronoun <u>form</u>	agreement <u>affix</u>	pronoun <u>form</u>	agreement <u>affix</u>
Gyarung Bauman 1975: 276-7	nga	-ng ⁵⁷	no	tx- <u>v</u> -n	mx	---
Kham Watters 1973 <Bauman 1975:282-5	nga:	nga- ⁵⁸	nxn:	nx-	no-	---
Chepang Bauman 1975: 273-5	nga:	-ng ⁵⁹ -nga	na:ngte	-te	u:	---

⁵⁵ When the two cases are marked differently, the object case is given first, the possessive second.

⁵⁶ The Qiang languages (§4.3b above) are also subgrouped with the Rung languages (see Thurgood 1984).

⁵⁷ These are the intransitive verb affixes.

⁵⁸ These prefixes occur with transitive verbs.

⁵⁹ These agreement particles are the intransitive verb affixes.

Tangut hnga: -nga na: -na² tha:
 Kepping 1975 (R 14) (R 17) (R 17)

5.2 Nungish. Within the Nungish subset of the Rung languages, the pronominalization on the verb morphology is distinguished by the suffixal nature of the first person agreement particle in contrast to the prefixal nature of the second person marker.

Chart 5.2: Nungish

	first person		second person		third person	
	<u>pronoun</u> <u>form</u>	<u>agreement</u> <u>affix</u>	<u>pronoun</u> <u>form</u>	<u>agreement</u> <u>affix</u>	<u>pronoun</u> <u>form</u>	<u>agreement</u> <u>affix</u>
Trung Lo 1945	nga ⁴	-ng ⁴	na ⁴	nx-	ang ⁴	-θ
Trung Sun 1982, 1983 ⁶¹	nga 53	*-ng	na 53	*nw- ⁶⁰	ang 53	---
Rawang Morse 1965 ⁶²	nga/	-ng	na/	e-	ang/	---

Nungish is also distinguished by its third person singular pronoun.

5.3 Nocte. The agreement pattern in the Nocte data below is for the intransitive verbs (Das Gupta 1971:16). Aside from the obvious fact that the Nocte shows agreement, it is important because Nocte is the only Northern Naga language (French 1983) which shows pronominalization.

Chart 5.3: Nocte

	first person		second person		third person	
	<u>pronoun</u> <u>form</u>	<u>agreement</u> <u>affix</u>	<u>pronoun</u> <u>form</u>	<u>agreement</u> <u>affix</u>	<u>pronoun</u> <u>form</u>	<u>agreement</u> <u>affix</u>
Nocte	nga	ang	nang	o	ate	a

5.4 Other. The languages below are distinguished by their innovated first person pronoun and, in several cases, by their innovated first person agreement marking pattern. Of these, Kaman and Taraung are most likely closely-related to Nungish, while the affiliations of Dhimal, Thami, and Toto remain indeterminate.

⁶⁰ Second person plural agreement is designated by *nw-v-n.

⁶¹ The agreement forms here are internally-reconstructed on the basis of the forms found in Sun (1982, 1983).

⁶² The agreement forms are actually from Bauman (1975:294).

Chart 5.4: Other

	first person		second person		third person	
	pronoun form	agreement affix	pronoun form	agreement affix	pronoun form	agreement affix
Miju [=Kaman] Das Gupta 1977	ki	-ng/-ki	no nu	-n	wi	-n
Kaman ⁶³ Sun et al. 1980:232-98	ki 53	-ng/-ki	nyo 53	-n	wi53	-n
Digaro ⁶⁴ LSI 3.1	ha ⁿ ha		nya		he/e m'ta	
Taraung [=Digaro] Sun et al. 1980:174-231	xang 35		nyon 35		tcye 55	
Dhimal LSI 3.1. 277-9	ka kang- ⁶⁵ cf. Kuki-Chin	-ka	na nang-	-na	wa wang-	---
Thami LSI 3.1. 280-2 ⁶⁶	gai ai-mi	-nga-	nang na	-na-	dha	---
Toto LSI 3.1. 250-3 ⁶⁷	ka-te		na-ga		dea ko	

6.0 Configurational evidence: the Adi languages.⁶⁸ In the case of Adi, it is the parallelism of a cluster of morphological features cooccurring along with the pronouns rather than just the pronouns themselves that provides the subgrouping evidence.

⁶³ Although the agreement system is far more complex than represented here, it is sufficient to note that a first person *-ng can be factored out of several of the standard verb endings. Cf. also Sun (1983:21).

⁶⁴ Digaro is often classed with Mishmi. This more and more appears to be an ethnographic designation. Chulikata [=Midu] is most closely-related to the Adi languages, while both Digaro [=Taraung] and Miju [=Kaman] appear most closely-related to the Nungish languages.

⁶⁵ These are the pronominal part of forms found glossed 'by me', 'by thou', and 'by him', respectively. These may be agentive forms.

⁶⁶ Konow (LSI 3.1:275) writes: "...as far as we can judge, Thami is a dialect of the same description as Dhimal".

⁶⁷ The material on Toto so limited that a full analysis is impossible. Thus, an accurate subgrouping may also remain beyond our grasp.

⁶⁸ Adi is here meant to designate the Abor-Miri-Dafla or Mirish languages.

⁶⁹ Even from the enormously limited LSI (3.1.613-5) sample data, it is clear that

Chart 6.0: Adi pronominal morphology⁶⁹

	case	first person	second person	third person	plural marker
Eastern Nishi Simon 1978	'subject'	ngo	no	mi	-lu
	'object'	nga-m	na-m	mi-em	
	'possessive'	nga-k	na-k	mi-ge	
Apatani Simon 1978	'subject'	ngo	no	mo	-nu
	'object'	ngi-mi	ni-mi	mo-mi	
	'possessive'	ngi-ki	ni-ka	mi-ge	
Galo Simon 1978	'subject'	ngo	no	mi	-nu
	'object'	ngo-m	no-m	mi-em	
	'possessive'	ngo-kke	no-kke	mi-ge	
Galo Das Gupta 1963	'subject'	ngo	no	mi/bi	-lu
	'object'	ngo-m	no-m	mi-m/bi-m	-nu
	'possessive'	ngo-k	no-kke	mi-ge	
		ngo-kke			
Padam Simon 1978	'subject'	ngo	no	bi	-lu
	'object'	ngo-m	no-m	bi-m	
	'possessive'	ngo-k	no-kke	bi-ke	
Hill Miri Simon 1978	'subject'	ngo	no	e/be	-lu
	'object'	ngo-m	no-m	e-m/be-m	
	'possessive'	ngo-k	no-kke	e-ke/be-ke	
Luoba Sun et al. 1980	'subject'	ngo:	no:	ko:	-lu
	'object'	ngo-m	no-m	ko-m	
	'possessive'				
Tagin Simon 1978	'subject'	ngo	no	e	-lu
	'object'	nga-m	na-m	ong -nu	
	'possessive'	ngo-ke	no-kke	e-ke-ge (?)	
Miri LSI 3.1. 594	'subject'	nga ⁷⁰	na	bui	-lu
	'object'	ngo-m	no-m	bui-m	
	'possessive'	nga-ka	na-ka	bui-ka	
Dafla LSI 3.1.	'subject'	nga	na	ma	-lu
	'object'	nga-m	na-m	ma-m	

the Chulikata Mishmi [=Midu]—despite being one of the four main divisions of the Mishmi and despite the close phonological resemblance between the names Midu and Miju—must be subgrouped linguistically with the Mirish rather than with the Mishmi languages. The pronouns, even such as they are in the sample, nonetheless make it clear that the first person singular is connected to *nga rather than an innovated velar stop initialled form as in the Mishmi group. Other parallels such as the apparent use of -lu 'plural' with pronouns as well as an apparent -m object marking suffix also exist, but these cannot be fully evaluated without a better sample.

⁷⁰ It is not clear to me to what degree these stem alternations are real and to what degree they are a byproduct of the notational system used.

'possessive' nga na mui-ga
 nga-ka na-ka mŭ-ga

In fact, it is not yet clear to precisely what degree the individual features themselves represent innovations. The system, however, is an innovation; it is clear from the almost suspicious lack of divergency and from the striking closeness between the systems of the various languages these languages descend from a single common system in the not too distant past.

7.0 Conclusion. The patterns of innovative pronouns and agreement systems effectively characterize certain lower-level subgroupings; then as a consequence of the recognition of the criterial nature of such patterns, these patterns can then be used as one piece of evidence to help decide cases of disputed membership in these groups. The groups thus far characterizable in this way include:

Chart 7.0: Lower-level groupings

	pronoun form	agreement affix	pronoun form	agreement affix	pronoun form	agreement affix
Tibetan (§2.1)	*nga	---	*khyot	---	*kho	---
Kiranti (§4.1)	*ka *kang-a	*-nga	#khana ⁷¹	*-na	---	---
Kanauri- Almora (§4.2)	*gai	*-ga	*gan	*-na	---	---
Kuki-Chin (§3.2)	*kai	*ka-	*nang	*na-	*a-(ma)	*a-
Naga I ⁷² (§3.4)	*(k)ai	---	*nang	---	---	---
Qiang (§4.4)	*nga/ka	*-a	*no	*-n	---	---
Bodo-Garo (§3.5)	*ang <	*a-nga	*nang	---	---	---

7.1 Individual languages. The explicit knowledge of these patterns has immediately allowed us to choose on a principled basis between a number of alternative subgrouping proposals for individual languages; as is undoubtedly obvious to those familiar with the state of Tibeto-Burman subgrouping, these decisions have already been incorporated in the text above. In terms of future work, the patterns above such choices generate some testable and

⁷¹ <#> indicates a rather tentative reconstruction.

⁷² Naga I: Southwestern, Angami, Lhota, and Meithei; Naga II: Ao, Sema, and Mikir. The terms Naga I and Naga II only characterize the split discussed in this chart and should not be taken as indicating any major claims about Naga.

potentially fruitful hypotheses about the subgroup membership of a number of heretofore unclassified languages e.g. Dhimal (§5.2), Thami (§5.2), Newari (§4.3), Tsangla (§3.1), Takpa (§2.3), and even Karen (§3.3).

7.2 Lower-level subgroupings. Just as Adi (§6.0) has been characterized by its unique patterns of pronominal configuration, the subgroups in Chart 7.0 have also been uniquely characterized through their patterns of innovative pronouns and/or agreement morphology. This, however, is not to say that considerable work does not remain to be done—precisely the converse is closer to the truth. Nonetheless, these characterizations alone or in combination with other defining characteristics allow membership in these groups to be designated with some confidence. In addition, within some these subgroups sub-patterns have sometimes clarified the nature of divisions within subgroups e.g. within Kiranti (§4.1), within Kanauri-Almora (§4.2), within Naga (§3.4), and within Qiang (§4.4).

7.3 Higher-level subgroupings. However, what the above patterns have to say about higher-level relationships is far more problematic. First, it is difficult to evaluate the absence of any agreement markers in a given language or even a given subgroup. After all, even a casual analysis of the various systems surveyed in this paper makes it readily apparent that the following agreement system was common to most if not all of Tibeto-Burman at one time:

pronoun <u>form</u>	agreement <u>affix</u>	pronoun <u>form</u>	agreement <u>affix</u>	pronoun <u>form</u>	agreement <u>affix</u>
*nga	*-nga-	*nang	*-na-	---	---

As a consequence, neither the presence nor the absence of the above agreement markers is strong evidence for higher-level subgrouping. For example, if the system was already present in common Tibeto-Burman, its presence in various subgroups merely represents common retentions; however, if the system was innovated after the breakup of common Tibeto-Burman, then its presence in certain subgroups could represent a shared common innovation—with the caveat that at least some parallel but independent development is conceivable.

The stop-initialled forms above provide a more immediately useful source of hypotheses. The second person innovation *khyot found in the Tibetan languages invites comparison with a similar *k-initialled second person form found in the Tamang-Gurung languages (§2.2) and Takpa (§2.3); conversely, the lack of such an innovation in Tsangla (§3.1) coupled with a first person innovation not found in Tibetan, Tamang-Gurung, or Takpa suggests the hypotheses that these three are closer to each other than any of them is to Tsangla. Numerous hypotheses are suggested by the various cross-group similarities found among the groups sharing stop-initialled first person innovations e.g. Kiranti & Kanauri-Almora? (first and second person innovations), Kanauri-Almora & Kuki-Chin & Naga I (*kai 'I'). The eventual confirmation or disconfirmation of any of these hypotheses will ultimately rest on the the discovery and accurate interpretation of other data than that discussed here. [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]

7.4 Comments. Subgrouping is an art but an art capable of achieving precise and historically accurate results if the cross-section of innovation patterns used is sufficiently broad. The patterns used above although reasonably complex merely generate 'interesting hypotheses' until confirmed by their intersection with the evidence provided by other innovative patterns. Further work needs to be done with the complex patterns of agreement found in languages such as Hayu, Thulung, Chepang, Gyarung, Trung, etc. in which the

marking system correlates with a person hierarchy, with the transitivity of the verb, and with the tense/aspect system. Parts of these various complex systems are historically related while others are not; undoubtedly, these complexities contain much valuable subgrouping evidence that has not yet be utilized. Nonetheless, these patterns have produced some 'interesting hypotheses.'

THE DECLINE OF VERB-FINAL SYNTAX
IN THE YI (LOLO) LANGUAGES OF SOUTHWESTERN CHINA¹

Julian K. Wheatley

Paul Benedict, in the book that has become a cynosure of Sino-Tibetan [ST] studies, *Sino-Tibetan: A Conspectus*, established the genetic bond between Tibeto-Burman [TB] and Chinese by showing resemblances in fundamental vocabulary too numerous to be attributed to borrowing. The vast family thereby revealed tolerates a broad range of grammatical disparity, notably between the "verb-final" [OV] TB languages and the "verb-medial" [VO] Chinese and Karen; but given the lexical resemblances, and the presence of neighboring languages from which the verb-medial type could have been cast, the question of how such divergencies came about was not critical to the genetic hypothesis and, until recently, did not attract a great deal of attention. It is, nevertheless, a question that has to be answered eventually and this paper is intended as a first step towards that end. It deals with syntactic change on a scale comparable to that presupposed by the ST articulation — and in much the same direction — that has taken place in a group of languages known in China as the "Yi" and in the West as the "Lolo", that form one of the major groupings in the Loloish (or "Yiish") subbranch of TB. Although the Yi developments are not identical to those inferred for Chinese and Karen, they do suggest a way in which the verb-final word order of the TB proto-language could have been breached.

1. THE YI

"Yi", replacing earlier "Lolo," is the name given by the Chinese to the largest and most diverse of the four or five major languages, or groups of dialects, that form the Loloish branch of the TB language family.² The other

¹ Some of the comparative data presented in this article formed the basis of papers delivered at the XVth [Peking, 1982] and XVIth [Seattle, 1983] Conferences on Sino-Tibetan Languages and Linguistics and at the Xth meeting of the Berkeley Linguistic Society [1984]. The Berkeley paper entitled "The role of verb serialization in word-order change," will appear in the published proceedings (cf. Wheatley 1984). I would like to thank participants for their comments. My analysis of the comparative data has also profited greatly from discussions with Graham Thurgood and James Matisoff.

² According to Chen (1963), the majority of the Yi call themselves "Nosu" (or dialectal variants thereof, such as "Nasu"), while a few call themselves "Ni" (cf. "Sani"), or "Lo-lo-pho" (= "La-lo-pha"). For my misgivings about the last designation, cf. note 15 below. The name "Lolo," one of a number of names

important members of this branch, referred to collectively as the "non-Yi" languages, are Lisu, Lahu, and Hani (the last known as "Akha" outside China). These are spoken by peoples relatively south and west of the Yi. Yi speakers number over three million (cf. Chen 1963:334) and are concentrated in highland regions of Yunnan, Sichuan and Guizhou provinces of southwestern China. "Classical" Yi society was divided into two castes, a small elite (known as the "Black Yi"), who owned the land and were involved in animal husbandry, and a large serf population ("the White Yi") who engaged in dry farming.³

The Yi seem to have occupied the same regions for several thousand years.⁴ From at least early Ming times, when large scale Han settlement of the southwest began, Yi have been drifting onto the margins of Han social and political structure. By the nineteenth century large numbers of Yi coexisted with Han, as well as with Tai [i.e. Pu-yi = Zhongjia] and Miao. But in their stronghold in the Liangshan region ["the Cool Mountains"] of present-day southern Sichuan, the Yi have persisted with no more than nominal political integration in Chinese society until recent times.

2. DATA AND SOURCES

Chen, in his brief survey of Yi (*Ibid.*), distinguishes nine 'varieties', which he groups into six dialects.⁵ Published descriptions represent only three of these dialects: Ma's grammar of "Sani" (1951) and Yuan's "Axi" (1953),⁶ though not explicitly identified as such in Chen's article, probably represent the "Southeastern" dialect; Gao's Yi grammar (1958) and Ma's "Luquan" texts (1949a, b) - the latter based on manuscripts dating from the 17th century -- represent Chen's "Eastern" dialect; and the Liangshan dialect cited in Chen *et al.*'s article on simplex-causative verb pairs (1962) gives us a glimpse of the important "Northern" dialect.⁷ Gao's dialect [abbreviated "YI", with no

formerly used by the Chinese, has always been considered derogatory; its replacement, "Yi," though written differently (彝 rather than 夷) is homophonous with an earlier term for the "Western tribes." I follow Chinese practice in using "Yi" for the subgrouping within Loloish, hence "the Yi dialects" or "the Yi languages," but I retain the name "Loloish" rather than the awkward "Yiish" as the superordinate term - hence "the Loloish languages," or "the Loloish subbranch."

3 Cf. Alan Winington, *The Slaves of the Cool Mountains* (London 1959), especially chapter three. For ethnological works on Yi, cf. Alain Y. Dessaint's annotated bibliography entitled *Minorities of Southwest China* (HRAF, 1980).

4 Cf. Feng Han-yi and J.K. Shryock, "The historical origins of the Lolo," *Harvard Journal of Asiatic Studies* 3.2 (1938):103-27.

5 *Tǔhuà* (土話) 'varieties' and *fāngyán* (方言) 'dialects'. Chen gives the dialects geographical labels: a "Northern" dialect, with two varieties; an "Eastern," with three; a "Western," a "Central," and a "Southeastern," each with a single variety. No two dialects are mutually intelligible, though varieties may be.

6 These two dialects form the basis of several very fine earlier studies: Paul Vial's *Dictionnaire français-lolo, dialecte gni* (Hong Kong, 1909); and Alfred Liétard's "Essai de dictionnaire lolo-français: dialecte A-Hi," *T'oung Pao* 12 (1911) 1-37, 123-56, 316-46, 544-58, and his "Notions de grammaire lo-lo: dialecte A-Hi," *T'oung Pao* 12 (1911) 627-62.

7 The "Northern" dialect of Liangshan is considered the standard. Chen *et al.* (1962) contains only a few dozen sentences from this dialect. Boyd Michailovsky has kindly sent me two recently published books on the Liangshan

subscript]⁸ is our main source of Yi examples. Some examples are also drawn from Ma's Sani [abbreviated YI_M] and from Chen et al's Liangshan [YI_C]. Non-Yi languages are represented mainly as follows: Lisu, by Xu and Ou (1959) [= LI]⁹ and by Hope (1974) [=LI_H]; Lahu by Matisoff (1973 = G[rammar of] L[ahu], and p.c.) [all LH]; and Hani, by Li (1979) [=HA].

3. GRAMMATICAL CORRESPONDENCES BETWEEN YI AND NON-YI

Consistent sound correspondences among initials, rhymes and tones (cf. Matisoff 1972, 1979; Bradley 1979; Thurgood 1982)¹⁰ leave no doubt that the Yi languages share a common origin with Lisu, Lahu, and Hani — the non-Yi group. Structurally the Yi have much in common with the other Loloish languages and, indeed, with many of the languages — TB or otherwise — found on the mainland of Southeast Asia. They are tonal and highly segmentable; they exhibit a simple syllable structure; they require the use of classifiers with quantified noun phrases; they are characterized by an extreme "economy of expression," employing a minimum of obligatory nominal and verbal categories, and allowing "given" (i.e. "recoverable") material to be omitted ("zero-anaphora"); and they make use of grammaticalized verbs to indicate aspect and modality notions.

With important exceptions to be examined at length below, the Yi dialects also display many of the verb-final features characteristic of the TB family: modality morphemes, directional complements and other "auxiliaries" generally follow the verb,¹¹ while genitive noun phrases — and, in many cases, other nominal modifiers as well — precede their head nouns; where case and spatial relationships are indicated they are signaled post-positionally; subordinate conjunctions appear at the foot of non-final clauses;¹² clauses of comparison

dialect: Li Min Ma Ming's *Liangshan Yiyu Yufa* (The Grammar of Liangshan Yi), 1981, and his *Liangshan Yiyu Huihua Liubaiju* (600 Sentences in Liangshan Yi), 1982, both published by the Sichuan People's Press. Rather than try to incorporate the new Liangshan material in this article, I am making a separate study.

- 8 Translated, the title of Gao's book is *A Study on Yi Grammar*, but it includes an appendix entitled "A study of Chinese loanwords in Nasu," and it has become customary to refer to this Yi dialect as "Nasu". Not all Yi who call themselves "Nasu" necessarily speak this dialect, it should be noted (cf. fn. 2).
- 9 Because the authors' names were not listed on the title page, this work has, in the past, often been labeled "Anonymous," or else attributed to the "Institute of National Minorities of the Chinese Academy of Sciences."
- 10 Despite the large number of their speakers, Yi dialects have played a relatively minor role in comparative Loloish studies. Matisoff (1972) makes use of the best materials that were then available, but information on the important Northern dialects of "Liangshan," and "Xide" has been lacking until recently.
- 11 Lahu is something of an exception among Loloish languages in that it places some auxiliaries before the head verb (cf. GL §4.32 and Matisoff 1969). The majority of verbal modifiers still follow, however. The Lahu phonological system and lexicon have been heavily influenced by Tai languages and perhaps the unusual "fore-and-aft concatenations" (GL § 4.36) of Lahu owe their origin to Tai influences as well.
- 12 Though (Gao's) Yi shows some variation here. The conditional conjunction $-p'a^{33}$ is regularly placed before the main verb; cf. YI (44) $\eta a^{213} v_y^{33} p'a^{33} gu^{33} ji^{213}$ 'my-father-if-return-go = if my father returns.' Other subordinate conjunctions in Nasu are placed in final position in subordinate clauses, like

have the order "standard-marker-adjective," and so on. These features will not be specially illustrated; most of them will be apparent from the examples that follow.

We are interested in differences, two in particular: first, in places where the non-Yi languages are hypotactic -- providing overt signals of clause boundaries --, the Yi languages tend to be paratactic, that is, they forgo the use of conjunctions in consecutive constructions and complementizers or nominalizers in embeddings. Secondly -- and more interestingly -- where the non-Yi languages employ a consistent verb-final pattern that divides the clause into a nominal "hemistiche" and a verbal (Matisoff's terms), the Yi languages employ a verb-final "serializing" pattern, with noun phrases intervening in the verbal string.

3.1 HYPOTAXIS IN NON-YI VERSUS PARATAXIS IN YI

A. CONSECUTIVE CONSTRUCTIONS¹³

Hypotaxis in non-Yi:

la. LI (146)

... za⁵tʃhw⁵za⁵ niε³ tshe⁶ʃw¹ ma³ mε⁴ ha² si¹ ha⁴mi³ o¹gu⁵ kua³
 orphan TOP grain PT lift raise and ground on at
 ni⁵ tu² ʃw¹ ha², ...
 two handfulls scatter down

... the orphan picked up the grain and threw a couple of handfulls on the ground, ...

b. LH (417)

á-qhɔ qò? e lɛ- ɔ cá pè á lɛ yɿ? e ve
 home return PT and food finish PT and sleep PT PT
 After returning home, he ate his meal and went to sleep.

their counterparts in the non-Yi languages. The position of -p'a³³ may be a result of Chinese influence. In Chinese subordinate conjunctions may precede or follow the subject; if they follow they will often appear immediately before the verb. Nasu speakers may have generalized the pre-verbal rather than the post-subject position of the Chinese conjunction.

¹³ All citations are given in their original transcription with the exception that, for Yi dialects, I have substituted numbers for the tone letters of the Chinese sources (33 for -1, etc.) In such cases, glottalized or checked tones, indicated in the original by underlining the vowel, are symbolized by underlining the numbers (bi³¹). Hope, for Lisu, and Matisoff, for Lahu, use diacritics to indicate tones, and these are left unchanged. Xu and Ou number the tones of their Lisu dialect arbitrarily, 1 to 6. In word-for-word glosses, grammatical functions and classes are capitalized and abbreviated as follows: PT 'particle of unspecified function,' TOP 'topic marker,' ASP 'aspectual morpheme,' OBJ 'object marker,' DECL 'declarative marker,' POSS 'possessive marker,' NZR 'nominalizing particle.' When citing Chinese sources I have translated the glosses into English. Original page numbers are placed in parentheses.

c. HA (144)

da⁵⁵dza³³ xo⁵⁵gɔ³¹ da³³ li³³ a⁵⁵ne³³ mi³¹kho³¹ xe³¹ kha⁵⁵
 everyone mountain climb go and firewood cut PT
 Everyone climbed up the mountain to cut firewood.

Parataxis in Yi:

2. YI (43)

t'i³¹ lɿ⁴⁴ du³² lɛ²⁴ ŋu³³ dʒ'i³¹ vɛ³² to³² t'ia³¹
 he sneak exit come fish skin hold lift him-by
 t'a³¹ to³² sɔ³² mu³³tu⁴⁴ ku⁴⁴ tɕ'u³³
 one piece tear fire inside burn

He sneaked out, picked up the fish skin, tore off a piece,
 and burned it in the fire.

COMMENTS: Lisu -si¹ (cf. Xu and Ou, p. 80), Lahu -le (cf. GL §5.42), and Hani -a⁵⁵ne³³ indicate that the previous clause is temporally prior and not the final clause of the sentence.¹⁴ Comparable conjunctions appear in many TB languages; Burmese, for example, uses a morpheme, -pl, derived from the verb pl 'finish, complete.' But in Yi, consecutive "clauses" are usually juxtaposed without any explicit indication of clause boundaries.

B. EMBEDDED CLAUSES

Hypotaxis in non-Yi:

3a. LH (440) nò là ve ñà ha-lè jâ
 you come NZR I glad very
 I'm very glad you came.

b. LH (446) nò-hì thà? he ò-šf̄ thu cì ve thà?
 you-PL OBJ fields new clear let NZR OBJ
 ñà mà yō p̄f̄
 I not believe be-able

I can't believe [they]'re letting you clear new fields.

¹⁴ None of the three conjunctions is etymologically related to any of the others. This is typical of particles in TB languages. It may be that grammatical words, because of their frequency, tend to gain a high content of social meaning. If so, the formal diversity of these words in the various Loloish languages may be a linguistic reflection of local loyalties.

- c. LI_H(133) alě nya ása nya ami khwa-a tsf mə -a
 Ale TOP Asa TOP fields hoe-NZR remember get-DECL
 Ale remembers that Asa is hoeing fields.

Parataxis in Yi:

- 4a. YI(42) t'i³¹ ɲu³¹ ɲo³³ mo²¹³ ɲu³³ ɲo²¹³ uo²⁴
 he my sister cry see ASP
 He saw my younger sister crying.
- b. YI(45) t'ɛ⁴⁴ bɣ³¹ a⁵⁵ nu³² dzɔ³² dzu³³ ma³¹ tɕ'ɛ⁴⁴
 they POSS bean-curd eat not aware
 [They] forgot to eat their beancurd.
- c. YI(44) ... ɲu³¹ tsɿ²¹³ to³² p'a³³ dzɔ³²
 I run go-up if fear
 if [you]'re worried about me running off

COMMENTS: Examples #3a-c and #4a-c contain clauses that are notionally embedded as objects (with or without Equi-NP deletion) to verbs of perception or cognition. Lahu and Lisu (as well as Burmese and other TB languages) require clauses to be nominalized (by -ve in Lahu, -a in Lisu) before being embedded. In Yi languages, on the other hand, embedding is not overtly signaled. There are cases in Lahu (and no doubt in Lisu as well) in which no complementizer is required -- after negated verbs for example (cf. GL §6.117(2)). But in the texts the predominant pattern is hypotaxis in non-Yi, parataxis in Yi.

One other observation: in the Lisu example (#3c), it will be noted, the nominalizing morpheme that marks off the embedded clause is homophonous with the sentence-final particle glossed as 'declarative'. They are etymologically the same. Most Loloish languages and, indeed, most TB languages abhor a naked verb. Only in the unrestrained imperative does the verb stand alone. Otherwise, if there is no auxiliary verb to provide cover, the verb is clothed in one of a set of particles. The most neutral of these often has the form of a nominalizer, as in Lisu. The same phenomenon is found in Lahu: -ve, the nominalizing particle that appears in #3a above, also occurs after the matrix verb in declarative sentences. Matisoff has discussed the relationship between these apparently different functions at length (1972c) and we need not delve into it again here. The point is that just as the Yi languages forgo the use of explicit boundaries in subordinate clauses, they also have less compunction about ending a declarative sentence with a free standing verb (cf. #2, 4b).

3.2 SINGLE-CLAUSE SYNTAX IN NON-YI VERSUS MULTIPLE-CLAUSE SYNTAX IN YI

The configuration illustrated in the previous Yi examples, involving a

succession of verbs and associated noun phrases strung together without overt grammatical linkage, is a favorite type of construction in Yi, employed not only where the non-Yi languages require conjoined clauses of the type illustrated in the previous section, but even where they utilize constructions that have the form of a single clause. An illustration of the latter correspondence can be found in one of the earliest Western records of Loloish languages, the texts collected by the French missionary and linguist, Alfred Liétard (cf. fn. 6). Liétard adopted the sensible practice of having a single text -- the "Parable of the Prodigal Son" in this case -- translated into the various languages he wished to illustrate, providing a more or less consistent semantic structure ideal for our comparative purposes. Liétard (1909) records the Parable in two languages; one is "A-H'i" [the "Axi" of Yuan (1953)], a Southeastern Yi dialect; the other is identified as "Lo-lo-p'o", a language that Liétard regarded as Yi but which has none of the features characteristic of that group, and is probably a dialect of Lisu.¹⁵ The third sentence of the Parable, "And he divided unto them his living," appears in the two languages as follows:¹⁶

- 5a. Lo-lo-p'o Ya³ a-bo⁴ ya³ lo³ bo^r go⁴
 his father them to [it] divide give
- b. A-H'i [Yi] Ko¹ ba⁴ kyé³ ko¹dyi⁴ hō-pu³ vi¹ ko¹go³ ho³
 his father then his inheritance divide them give PT

A comparable pair of examples can be cited from more recent materials:

- 6a. HA(144) ko²⁴tsha³³ta³³ no³¹mi³¹ a³³ pa⁵⁵de³³ bi⁵⁵ bi³¹
 Communist Party peasants to fields divide give
 The Communist Party distributed the land to the peasants.
- b. YI(112) tɕ'i³³ u³³ dzɿ³¹ fi³³ t'i³¹ ɲo³³zu³³ dʒɛ⁴⁴
 dog that pair divide his brother give
 [He] gave the pair of dogs to his younger brother as his share.

The Lo-lo-p'o and Hani sentences, representing the non-Yi languages, exhibit the polarized clause structure typical of TB languages: noun phrases freely -- i.e., pragmatically -- ordered to the left of an uninterrupted string of verbs. A-H'i and Gao's Yi, by contrast, though still verb-final, in the sense that a verb or verb-like morpheme appears at the foot of the clause, allow noun phrases to intervene in the verbal string; in #5b and #6b, the

¹⁵ As mentioned in fn. 2, Chen (1963) also gave Lo-lo-p'o as a designation used by a minority of Yi people for themselves. We have no reason to doubt Chen. But if Liétard's Lo-lo-p'o is Yi, it is a very deviant dialect: not only is it non-serializing, as we see from example #5a, but it hasn't participated in sound changes characteristic of known Yi dialects (cf. Thurgood 1982). It does not, for example, show the centralization of labial clusters that are found in Gao, Ma, and Yuan's Yi dialects, as we can see from the following two sets of cognates: 'bee', Proto-LB *bya², Written Burmese pyā, LH pē, LI bi⁵, Lo-lo-p'o byo³, but YI du³³, YI (Yuan) do²¹, YIM da¹¹; and 'white', Proto-LB *plu¹, WB phru, LH phu, LI phu³, Lo-lo-p'o ya-p'i³, but YI thu²⁴, YI (Yuan) tho²², YIM hlz³³.

¹⁶ In Liétard's transcription *o* probably represents an unrounded *o*, i.e. [ɤ], as in the de Rhodes transcription of Vietnamese.

dative phrase is separated from the agent and patient phrases by the verb "divide". Since these Yi sentences show the same configuration of constituents as those encoding clearly articulated sequences of events (cf. #2), it is tempting to translate them, accordingly, with a complex sentence, e.g., for #5b, "divide [it] in order to give [it] to them." Yet the fact that the Yi sentences correspond to single clauses in non-Yi languages, plus the lack of an alternative way of expressing the dative, makes such a pragmatically marked translation inappropriate. Clearly, in the Yi sentences, we are dealing with an extension of "multiple-clause syntax" into "single-clause semantics," i.e., with the construction that is generally known as "verb serialization." The following three pairs of sentences provide further support for this view:

- 7a. LH(p.c.) ḡà ò-e vè?-qâ thà? ta-qō ò-qhò kə t̄ā ve yò
 my mother clothes OBJ box inside put PT PT PT
- b. YI(29) ḡa²¹³ jɛ³³b'ɛ³³ t'ɣ⁴⁴ sīã³³tsl³¹ kw⁴⁴ tsɿ⁴⁴
 my mother clothes put trunk inside be-at
- Both: My mother put the clothes in the trunk.
- 8a. LH(p.c.) yô ve ph̄ hɛ ú-qhò ḡ̄ lò? e ve
 he POSS dog field top run enter PT PT
- b. YI(112) t'i³¹ tɕ'i³³ ... tsl²¹³ mi³³ ɲɛ⁴⁴ tɕ'ɛ²¹³
 his dog run field mouth reach
- Both: His dog ran to the top of the field.
- 9a. LI(61) e¹li⁴ ma³ ɲua³nu⁵ tɛ¹ la⁵fɯ³ tɕua³ ma¹ go³
 principles PT us to completely tell teach give
 Explain the principles to us thoroughly.
- b. YI(49) na³¹ dɔ⁵⁵ a⁵⁵ tɕɛ⁴⁴ a³¹si⁵⁵-a³¹ dɛ⁴⁴ na³¹ mu³³
 you speech this phrase who-AGENT tell you teach
 Who explained this phrase of yours to you?

In each case, a single verb (#7a) or a pair of consecutive verbs in Lahu or Lisu corresponds to a pair of verbs separated by a noun phrase in Yi. In #7b, the intervening constituent is an "inner locative," in #8b, a "goal," and in #9b, a "dative." As before, there is no way to recast the Yi sentences so that these constituents appear on the same side of the verb as agents and patients.

3.2.1 "Verb concatenation" versus "verb serialization": a note on terminology. In applying the term "verb serialization" to the interrupted -- or interruptable -- strings of verbs seen in our Yi examples but not to the consecutive strings seen in corresponding Lahu and Lisu sentences, I am narrowing the scope of the term as it is often used. Hyman's definition of verb serialization as "verbs which occur in sequence, but which are not overtly marked for coordination or subordination with respect to each other (Hyman 1975:136)," ignores the position of nominals and so applies to the pairs of verbs in the non-Yi sentences as much as to those in the Yi. Now it is true

that regardless of the position of nominals, there is a family resemblance between the Yi and the non-Yi constructions. Both can be related to notionally complex sentences, involving temporal or logical succession; it is for this reason that the order of verbs tends to be the same (though cf. #24-25 below). Yet their relationship to such sentences is not identical. In the Yi case, the serial construction is structurally indistinguishable from a complex sentence, as we have seen. Yi does not make the distinction between "consecutivization" -- verbs mediated by weakly subordinate conjunctions -- and "serialization" -- verbs without explicit connectives -- that is found in the serializing languages of Africa (cf. Hyman 1971:30). Since the non-Yi languages do distinguish between consecutive constructions (cf. #1a-c) and unmediated verbal strings, the latter will involve, at very least, deletion of a conjunction. In Lahu, for example, Matisoff derives sentences like #10 from ones containing the conjunction -lɛ, as indicated:

10. LH(203) a-kf tú (lɛ) qò? e ve tí yò è?
 torch kindle and return away NZR PT PT PT
 [We]'ll just light pine-torches and go home.

Matisoff terms unmediated verb strings, such as tú qò? in the previous example, "fortuitous concatenations" (GL §4.312). But not all such verb strings in Lahu and the non-Yi languages can be derived from consecutive constructions by just the deletion of a conjunction or complementizer. In some cases the collapse of a multi-clausal construction into a single clause requires the displacement of a nominal as well. In #5a and #6a, for example, the dative phrase is a logical argument of the second verb in the string, "give," not the first, so if an explicit clause boundary were to be placed between the verbs, making them consecutive clauses, the dative phrase would appear to the left of the verb "give" -- the position it occupies in the corresponding Yi sentences. This is the essential difference between the Yi construction and the non-Yi. The Yi involves the "compression" of multiple-clause syntax onto what I have been loosely calling "single-clause semantics"; but the non-Yi involves the recasting of multiple-clause syntax as single-clause syntax, a process that always involves the deletion of conjunctions or other grammatical morphemes, but may also involve the movement of certain nominals -- goals, as it turns out -- to a position to the left of the verb string. The term "verb serialization" will be applied only to the first type; the second, we will call "verb concatenation," adapting Matisoff's term.

We can now label the Yi languages "OV serializing," meaning that nominals precede the verbs that govern them and the predominant clause pattern involves verb serialization. By the same token, Lahu, Lisu and Hani -- the non-Yi languages -- can be labeled "OV concatenating."

There are still constructions in Yi in which verbs appear without intervening nominals. Such strings frequently result from the anaphoric deletion of goals, as we see from the following examples:

11. YI(107) t'a²¹³ p'i³³ t'i³¹ la⁵⁵p'a³¹ tɕ'ɛ³² a³¹g'u³³ bi⁴⁴ gw³³ lɛ²⁴
 his g-mother her hand extend door crack enter come
 His grandmother put her hand in through the door.
12. YI(44) na³¹ la⁵⁵p'a³¹ t'a³¹ pa³² tɕ'ɛ³² [] gw³³ lɛ²⁴
 your hand one CLF extend enter come
 Put your hand through.

In #13, it is the inner locative that is anaphorically deleted (cf. #7b):

13. YI(101) $ji^{31}tə'i^{55} t'a^{31} tʂ'o^{33} dʂ^{32} [] tsv^{44}$
water one pan load be-at
[He] filled [it] with a pan of water.

We continue to regard such verb strings as verb serialization, since they retain the potential to be separated by nominals. But not all verbal strings in Yi can be interrupted by a nominal; combinations of verb and resultative, such as YI(28) $tʂa^{55} mʂ^{32}$ 'boil + cook = cook (by boiling),' or verb and modal, such as YI(69) $ji^{213} da^{24}$ 'go + able to = able to go,' have syntactic properties very similar to equivalent expressions in the non-Yi languages. In such cases, the distinction between "serialization" and "concatenation" does not apply.

3.3 THE RANGE OF VERB SERIALIZATION IN YI

Without the comparative data, it would not be possible to distinguish, in a principled way, between sentences in Yi involving 'distinct events' and those involving closely articulated or 'unitary events' -- between "ordinary" and "compressed" clauses in other words. But using the non-Yi data as a guide, we can give sharp definition to this hazy notion and proceed to examine the extent of the phenomenon. In the following examples, Yi sentences are matched with comparable sentences from non-Yi languages where possible; fortunately the available texts are of the same genre, folk tales, so the match up is quite good. I do cite some unmatched Yi examples, though, assuming that in non-Yi languages, the same meaning would be expressed with a single verb or a verb concatenation.

Restricting our examination to those cases in which the serial pattern expresses semantic structures that would be encoded as single clauses in non-Yi languages has an additional advantage: it allows us to label the nominals with the semantic roles that they would have if they appeared in single clauses. So in #5b and #6b, we can describe the intervening nominal as a "dative" or "benefactive", just as in the a-versions.

3.3.1 Core constituents: agents, patients and "goals". Of core constituents, it is those which can be subsumed under the heading of "goal" that interrupt the verb string in Yi; these include datives or benefactives, inner locatives, destinations -- goals proper --, purposes, "transforms" -- the results of change --, and "causated entities" -- the results of processes of causation. The first three of these roles are illustrated by the b-sentences of #5-9. The other roles, and additional examples of the first three, are illustrated here.¹⁷

i. dative/benefactive:

14. YI_M(94) $ŋa^{33} lɿ^{33} kə^{33} mʂ^{33} zə^{33} nɑ^{11} nɑ^{44}$
I AGENT reason tell you hear
I'll tell you about [it].

¹⁷ Where possible the Chinese linguists use the conventional, IPA symbols in their transcription. But Ma's Yi [=Sani] contains four "apical" vowels, for which special symbols had to be devised. The vowel usually written ɿ (as in Gao's Yi) appears as ʂ in Ma's transcription; its retroflex version, usually ʂ̣, is written ʂ̣. The two others are: ʂ̥, with lips spread, and ʂ̥̣, with lips rounded. For the historical origins of all four, cf. Wheatley 1976.

15. YI(25) a³³mu³³ b'e³³ ve³² ŋu³¹ dzɛ⁴⁴
 brother clothes take me give
 [My] older brother gave me the clothes.

ii. inner locative:

16. YI(31) na³³ a³¹dzi³¹ɔɛ⁴⁴ p'a²¹³ a³¹ kw⁴⁴vɛ⁵⁵ ŋi³³
 you tomorrow evade house in hide watch
 Tomorrow, you hide in the house and watch.
17. YI_M(62) de⁴⁴ m⁵⁵ n³³
 ascend horse sit = to ride a horse

iii. destination:

- 18a. YI_M(66) tca³³ by⁴⁴hæ³³ t'ɿ¹¹ mɔ⁴⁴ gw³³ ẓ³³
 run temple one CLF enter go
 [He] ran inside a temple.
- b. LI_H(147) ása nya hipywe khwù wa tǒ dwǎ ye-a
 Asa TOP shack in to run enter go-DECL
 Asa went running into the shack.
- 19a. YI(101) bu³²ɣɔ³³ u³³ tɔɛ³³ sɿ³¹ lɿ⁴⁴ t'i³¹ b'e³³mɔ³³ kw⁴⁴ ji²¹³
 snake that CLF then sneak her blouse in go
 The snake made [its] way under her blouse.
- b. LI(137) ŋua¹tʃhu⁵ŋua¹thy³ nɛ³zi⁴ kua³ pha³ ly⁶ ge⁴ ka¹nɛ¹
 abalone river at just sneak go after
 after the abalone made [its] way into the river, ...
20. YI(98) ji³¹ gw²⁴ t'u³³p'a⁵⁵ dzɿ³¹
 water immerse thigh be-level-with
 The water rose to [his] thighs.
21. YI(103) mu³³p'a³¹ ve³² kɛ⁵⁵ di³³do³³ u³³ bɿ³² t'a⁵⁵ sa⁵⁵
 gourd take pour monks that group on descend
 [He] took a gourd and poured the hot oil onto the monks.

iv. purpose:

- 22a. YI(96) tsɛ⁴⁴ ji²¹³ ji³¹tɔ⁵⁵ va⁵⁵
 again go water carry
 [and] go fetch water again
- b. LI_H(148) ása nya ámu la dzǎ -a
 Asa TOP horse come ride-DECL
 Asa came to ride a horse.

v. "transform":

- 23a. YI(107) a⁴⁴p'i³³ mo⁴⁴ky³² t'a³¹dx⁴⁴ piε⁴⁴ ji³¹mo²⁴ t'ε⁵⁵
 g'mother feeble one CLF change orangutan become
 The feeble old grandmother turned into an orangutan.
- b. LI(133) za⁶mu⁶lε¹za⁶ niε³ qua¹tʃhw⁶qua¹thy³ thi⁵thy³
 young-girl TOP abalone one CLF
 pw¹ li⁴ gu⁴ ua³
 change become completely ASP
 The young girl changed completely into an abalone.

vi. "causated entity":

- 24a. YI(22) t'i³³ va³³ts'ɔ³³ tsi³³ va⁵⁵to³² tε³³
 her husband make pig pen build
 [She] made her husband build a pigpen.
- b. LH(245) yɔ̂ nà thà? nā-mā šê? cɛ̂ lâ ve
 he me OBJ oil spill make PT PT
 He made me spill the oil.
- 25a. YIM(72) m¹¹ty⁵⁵ qe⁵⁵ hæ³³ t'a¹¹ t'ɣ²² m⁴⁴
 fire make house not burn hope
 [to] hope the fire doesn't burn the house [down]
- b. LI_H(144) ása nya zànwɛ̂ lǎ thùyè su tyɛ̂ -ǎ
 Asa TOP child to book study cause-DECL
 Asa made the children study (i.e. go to school).
26. YIC(418) la³¹bu³³ b¹⁴⁴ z¹³³ dzw³³ ʃu⁴⁴
 cow make grass eat PT
 Make the cow eat (grass).

The correspondence between Yi and non-Yi causative constructions (#24 and #25) is interesting. Both languages employ a periphrasis involving a causative verb that can be glossed as 'make,'¹⁸ but the relative ordering of the verbs differs. The Yi dialects place the causative verb first, iconic with the

¹⁸ The three causative verbs in the a-sentences of #24-6 are etymologically distinct (cf. fn. 14): tsi³³ in (Gao's) Yi is cognate to Lahu cɛ̂ in #24b and Lisu tye in #25b; cf. also Burmese sei (spelled ce), an auxiliary used in similar causative constructions, and an obsolescent verb meaning 'send, dispatch.' YIC b¹⁴⁴ is, etymologically at least, the verb 'give,' cognate to Lahu p¹, YIM bz¹¹ Burmese peì (spelled pè). The etymology of YIM qe⁵⁵ is unknown.

logical priority of cause over effect. But the non-Yi languages place the causative morpheme second, which reflects its origin as a higher verb governing an embedded structure, i.e., using English glosses, HE (I OIL SPILL)OBJ MAKE.

If no adjuncts come between them, agents and (transitive) patients in Yi usually appear together to the left of the same verb, as they do in non-Yi languages:

27. YI(17) ɲa⁴⁴ mu³³ tɕ'i⁵⁵ si⁵⁵ ɲɔ⁴⁴
 my brother goat kill want
 My brother wants to kill the goat.

The order patient before agent is rare in the texts and usually requires post-positional marking on the agent:

28. YI(17) di³³do³³ u³³ ɕi²¹³ dɿ⁴⁴ t'ɛ⁴⁴-a³¹ t'u³¹ ɕi⁴⁴
 monk those seven CLF them-by scald die
 The seven monks were scalded to death by them.

3.3.2 Adjuncts. Whether they are introduced by their own verbs or not, adjuncts in Yi, like core constituents, tend to follow a fixed relative order. The following sentence, with order agent, locative, range, and patient, is typical:

29. YI(31) a³¹vi⁵⁵ a³¹ ku⁴⁴ ts'ɿ³² ta³¹ ɕɕ³² t'i³¹ tɛ⁵⁵
 sister house in be-at one blow him hit
 [His] sister struck him at the house.

Outer locatives are introduced by the verb ts'ɿ³² 'be at,' as we see from this last example.

3.3.2.1 Instrumentals. One semantic role that has not been mentioned yet is instrumental. In Yi, this role is introduced by a verb meaning 'to carry, take.' In Hani, its counterpart is signalled by the 'comitative' particle -ne. But with instrumentals, Lahu and Lisu are more like Yi than Hani, requiring a multiple clause, consecutive construction. Examples #30-33 illustrate:

30. YI(93) ɲa³¹ vi⁵⁵ tɕ'ɿ³² vɛ³² va⁵⁵ xu³³ tɕ'ɿ³²
 my sister scales take pig flesh weigh
 My sister weighed the pork with the scales.
31. LI(154) nu³ nie³ si¹do⁴ʒi⁴ lo⁴ʃu⁵ thi⁵ phɛ⁶ ze⁵ si¹ do⁴
 you TOP bowl leak NZR one CLF use and drink
 You use the leaky bowl to drink [it].
32. LH(160) á-tho yù lɛ tɕʰ? chɛʰ? phèʰ? ɔ lâ
 knife take-ing cut sever able PT ?
 Can [you] cut [it] through with a knife?

33. HA(142) da⁵⁵tsh1⁵⁵ ne³³ t̄hi³¹ la³¹ di³¹
 stick with one blow hit
 Give [it] a blow with a stick.

Although functionally, the Lahu and Lisu constructions are like the Yi, they retain the overt conjunctions, -le in Lahu, -si in Lisu (cf. p. 405 above) and are, therefore, structurally like the sentences #1a-c above.

3.4 VERBS OR COVERBS?

It is well attested, by languages in different parts of the world, that verbs which occur frequently in serial constructions tend to become conventionalized as case-marking morphemes, giving up some of their lexical content and syntactic flexibility in the process. This "categorical shift" of verb to "co-verb" or ad-position has been inferred for Chinese (cf. Chao 1970:335 and §8.2, Li and Thompson 1974a,b,c) and for various Niger-Congo languages (Givon 1975 §4.2), and it is likely that the same process is underway in Yi. In fact, the loss of lexical content of one -- or possibly both -- verbs is implied by our perception that, in sentences such as those illustrated in §3.3, we are dealing with "single-clause semantics." In (Gao's) Yi, the most likely candidates for co-verb status are the three verbs -- I will continue to call them verbs for now -- that occur frequently as first members of serializations, ts'132 'be at,' ve³² 'take,' and tsi³³ 'make(?),' and the three that occur as second, ts'132 'be at,' dze⁴⁴ 'give,' and te²¹³ 'arrive.' The first three are associated with the semantic roles of locative (#29), instrumental (#21, #30), and causee (#24a), the second three, with inner locative (#7b, 13), dative or benefactive (#6b), and destination (#8b). There is no particular verb associated with transitive patients (cf. #27), though in sentences such as #15, ve³², normally the signal of instrumental, could easily be interpreted as a patient marker, as could its cognate in the following sentence from Ma's dialect:

34. YI_M(80) n̄³³ li³³ la" z̄ vi³³ ŋa³³ to³³
 you AGENT tea take me make-drink
 You offered me tea to drink.

In Chen et al's Yi (=Liangshan dialect), the verb 'take' may be deleted in contexts where it seems to function most like a patient marker:

35. YI_C(421) ve⁵⁵ga³³ (zu³³) ko³³ b1⁴⁴
 clothes take him give
 Give the clothes to him.

And this appears to be true of Gao's dialect as well; cf. #15 with:

36. YI(48) a³¹vi⁵⁵ t̄s'ε³¹ t'ε²⁴ t'a³¹ s̄l³³ ŋu³¹ dze⁴⁴
 sister rice one scoop me give
 [My] sister gave me a scoop of rice.

Of the six verbs mentioned above, only three are actually attested as head

verbs: ts'ɿ³², ve³², and dʒɛ⁴⁴.

37. YI(16) ɬi³³ bɿ³² a³¹ kw⁴⁴ ts'ɿ³²
 g'daughter home in be-at
 Granddaughter is at home.
38. YI(42) t'i³¹ a³¹ pɿ³² ma³¹ ve³²
 he lunchbox not take ...
 [if] he doesn't take a lunchbox ...
39. YI(25) ŋu³¹ na³¹ dʒɛ⁴⁴
 I you give
 I gave [it] to you.

But even the existence of a fully lexical prototype does not mean these morphemes function as full verbs wherever they appear. Givón (*ibid.*) has noted several ways in which the grammaticalization of verbs is made manifest. One is intolerance for aspectual marking. In Yi, as in most TB languages, aspectual notions are conveyed by grammaticalized verbs or by verb suffixes. As it turns out, aspectual or modal modification of any kind is rare in our texts, and where it does appear, as in sentence #40, the aspectual morpheme can be interpreted as being in constituency with the rest of the sentence rather than with just the preceding morpheme.¹⁹

40. YI(105) t'i³¹ la⁵⁵ p'a³¹ tɕ'ɛ³² tɕ'i⁵⁵ ɳɛ⁴⁴ pu³¹ tsɿ⁴⁴ xɿ³²
 he hand extend sheep mouth be-at ASP
 He put his hand into the mouth of the sheep.

Givón's semantic criterion is more revealing. Grammaticalized verbs, he notes, often cannot be given their literal meanings. Of the following examples, only the first allows dʒɛ⁴⁴ its literal meaning of 'give':

41. YI(100) tɕ'ɛ³¹ t'u²⁴ t'a³¹ ɕɿ³³ dʒɔ²¹³ t'i³¹ dʒɛ⁴⁴
 rice one catty measure her give
 [She] measured out a catty of grain for her.
42. YI(41) t'ia³¹ t'a³¹ tɕ'u⁵⁵ tɛ⁵⁵ va⁵⁵ pɿ³¹ dʒɛ⁴⁴
 he-by one shot(n.) shoot boar give
 The boar was shot by him.
43. YI(104) ni⁴⁴ sa³³ xã²⁴ uo²¹³ ti³¹ dʒɛ⁴⁴
 two three nights stay-up him give
 [He] kept him awake for several nights.

¹⁹ The morpheme xɿ³² is glossed with Chinese -zhe, often termed a "progressive" marker, but xɿ³² also occurs after nouns (cf. Gao p. 57) and it may turn out to be a genitive/nominalizing particle like Lahu ve.

So for dze⁴⁴, in these contexts, the evidence is good that we are dealing with a co-verb rather than a verb. The term co-verb is appropriate; unlike post-positions, these morphemes permit the anaphoric deletion of their objects (cf. #12,13), but cannot themselves be deleted in the way that post-positions generally can be in TB languages. For the other verbs, our information is not conclusive, but their high textual frequency and their consistent association with a particular semantic role makes it likely they too have become institutionalized as case-marking morphemes.

There may also be cases in which the process of conventionalization has affected both members of a verbal series equally so that they should now be regarded as a disjunct verbal compound.²⁰ One of the characteristics of the "isolating" languages of mainland Southeast Asia is that they lack the formal distinctions between morphology and syntax that, in other languages, often suggest a clear boundary between these two extremes. "'Morphological compounds' and 'syntactic constructions' are situated along an axis of productivity-of-combination, which is more like a continuum than a series of discrete compartments," as Matisoff writes (GL: 53). In Lahu, for example, the expression gã?mi 'chase + catch' is phrase-like in that the negative morpheme mã- appears after the first morpheme, rather than before the two, but is word-like in that the subordinating conjunction -le could not comfortably be inserted into the expression (GL §4.315(b)). In Yi, some degree of lexicalization is likely to have taken place in "equipollent" verbal series such as de⁴⁴ ... mu³³ 'tell + teach = explain,' piɛ⁴⁴ ... t⁵⁵ 'change ... become = change into,' and YI_M za³³ ... na⁴⁴ 'tell + hear = tell' and de⁴⁴ ... n³³ 'ascend + sit = ride on.'

4. THE COLLAPSE OF SERIALIZATION IN YI

If, indeed, the "verbs" discussed in the previous section have undergone a categorial shift to become co-verbs, or post-positions, then verb serialization in such sentences is, of course, no more. Instead, we have "ordinary" clause patterns containing a single verb and an obligatory case marker. Where it is the first member of a verbal series that has lost its verbal status, a verb-final order has been restored. But where it is the second member of a series, a novel word order has been introduced: the erstwhile object of the second verb has become an adjunct of the first verb. Since these grammaticalized second verbs introduce goals, the order of constituents in such sentences will be SOV-GOAL.

The process of introducing verb-medial patterns into an otherwise verb-final language is the reverse of the Chinese case discussed by Li and Thompson (1974a,b). Chinese developments involve the collapse of VO serialization rather than OV; the grammaticalization of first members of a verbal series introduces verb-final patterns into the language. For example, the change of the verb ba 'grasp, hold' into a preposition associated with definite "patients" introduced pre-verbal objects in the prototypes of sentences such as the following (cf. #15):²¹

²⁰ For similar cases of "compounds" that permit intervening material, cf. Chao 1968 §6.5.8, "Ionization of pseudo-V[erb]-O[bject] compounds." Chao cites the phrase hái yōu-le tā yí-mò, shuō "and hu-ed him a mor, saying = and made a joke with him, saying," in which the compound yōu-mò (from the English word humor) has been split into two parts.

²¹ wō gěi tā shū, without bǎ and with both "objects" after the verb, is

44. Chinese tā bǎ shū gěi wǒ
 he (grasp) book give me
 He gave me the book.

Comparable developments are attested, in a different part of the world, by languages of the Niger-Congo family (Givón *op. cit.*). The process can be represented formulaically as: S V Opat V Ogoal > S CoV-Opat V Ogoal. Developments like those observed in Yi, involving the introduction of verb-medial patterns into OV serializing syntax, are not as well documented, but Hyman (*op cit*: 124) does foresee the possibility of this development in Ijo, the one Niger-Congo language that is both serializing and verb-final.

4.1 THE SPREAD OF VERB-MEDIAL PATTERNS IN YI.

The appearance of post-verbal constituents in Yi does not necessarily mean that the verb will eventually assume a medial position in all clauses. The rarity of languages with an SOV-GOAL order of core constituents suggests that such languages tend to move towards a more consistent positioning of nominal complements, but this could be achieved in more than one way (Hyman: *ibid*). Goals might be restored to a position to the left of the verb on the pattern of patients and other pre-verbal constituents; such a shift might be encouraged by the anaphoric deletion of goals, which places verbs in "fortuitous" concatenations at the foot of the sentence (cf. pp. 409-10 above). Alternatively, patients and other constituents might be drawn to the right of the verb by analogy with goals. The fact that goals — the constituents that created the initial breach in the barrier of the final verb — are relatively frequent in texts increases the likelihood that the new order will be prominent enough to stimulate the process of analogy.

The factor that ultimately determines which direction the Yi dialects take — if any — is likely to be contact with Chinese, which despite the exceptions recounted by Li and Thompson (1974a,b) continues to place the verb medially in many, if not most, clause patterns.²² Chinese influence on Yi is reflected by the large number of Chinese loanwords.²³ Further incursion of verb-medial clause patterns into Yi need not be the result of direct structural borrowing from Chinese. Some anomalous sentences that appear in the Yi texts suggest another, less obtrusive avenue. In Yi, "causative" verbs, such as 'cause' itself, 'tell,' 'persuade,' and 'lead,' generally treat the causee as an object, placing it directly to the left, as in sentences #24a, 25a, 26 above, or in the following sentence:

45. YI(22) a³¹vi⁵⁵ nō³¹g'u³¹p'u⁴⁴ k'u³³ nō³¹ g'u³¹
 sister doctor call illness treat
 [My] sister asked the doctor to treat the illness.

But there are also a few examples of the causee following the causative verb.

also possible, but the meaning is 'I gave him a book.'

²² For refutation of Li and Thompson's position that the "basic" word order of Mandarin Chinese is OV, cf. Light 1979.

²³ The appendix to Gao (1958) lists about 240 Chinese loanwords, but most of these are additions to the native Yi vocabulary. I know of no core vocabulary that has been replaced in Gao's dialect.

One of these involves the verb dʒe⁴⁴ 'give,' which we have already seen in final position associated with dative or benefactive phrases. The same morpheme also occurs in first position as a causative verb:

46. YI(107) t'i³¹ dʒe⁴⁴ t'a²¹³ p'i³³ gw³³ lɛ²⁴
 he (give) his g'mother enter come
 He let his grandmother in.

A parallel example contains the verb xɔ⁴⁴ 'lead':

47. YI(31) xɔ⁴⁴ tɕ'i³³ dʒɔ⁴⁴ t'a⁵⁵ go³² lɛ²⁴
 lead dog place on play come
 Take the dog outside to play.

Both #46 and #47 have the word order of the so called "pivotal construction" of Chinese (Chao op. cit.:§2.13) and could be considered direct calques the on Chinese construction; cf.:

48. Chinese tā gěi / ràng tā zǔmǔ jìnlai
 he (give)/ let his g'mother enter come
 He let his grandmother in.

But why should causative constructions be the first to adopt the Chinese pattern? The answer may lie in the ambiguous role of the causee as both the object of the higher verb and the subject of the lower -- it is this role as "pivot" that gives the name to the Chinese construction. As object of the higher verb, the causee would precede; but as subject of the lower, it would follow. The post-verbal position of the causee in Chinese can be accommodated to Yi syntax if it is regarded as a lower subject. However, once established in this position, the lack of either case marking or an explicit clause boundary would allow it to be reinterpreted as a post-verbal object. In such a way, objects might begin to leak to the right of the verb, where their presence would add to the analogical pressures in favor of the verb-medial pattern.

5. THE DEVELOPMENT OF VERB SERIALIZATION IN YI.

The grammaticalization of one member of a verbal series may play an important role in the development of verb-medial sentence structure, but no more so than the development of verb serialization in the first place. It is, after all, the iconic arrangement inherent in the serializing process that ensures that goals will be separated from other core constituents, setting the stage for their eventual appearance to the right of the verb should the second verb in a series come to function as a co-verb or post-position. How, then, could this radical re-shaping of Yi sentence structure have come about?

The question just posed really has two parts: what is the source of the serial pattern, and what caused the language to take that course -- how and why, in other words. The first is easier to answer than the second. Given the geographical position of Yi at the eastern reaches of the TB family, we might expect the source of such dramatic structural innovation to be one of the contiguous languages, many of which are or have been serializing. But whatever the role played by contact, it could not have been a direct one. All of the languages in the region that could be considered serializing -- those in the Chinese, Tai, Mon-Khmer, and Miao-Yao families -- are verb-medial rather than verb-final; nominal complements follow the governing verb rather than precede

(cf. #44 and 48). So the source of verb serialization in Yi lies within the language, and it must be, as we have suggested already, complex sentences involving temporal or logical succession. It is this source that ensures the iconic arrangement of core constituents that is so salient a feature of Yi sentence structure. Such complex sentences would be available for explicit paraphrase at all stages of the language, but for reasons to be considered below, the complex structure gained favor over the single-clause option and eventually, the latter ceased to be used. The development of paratactic configurations -- the one feature that can be attributed to contact -- would have made it easier to accommodate the serial construction to "single-clause semantics" by eliminating explicit clause boundaries, and once established in this function, the pattern could have spread by internal borrowing, without the necessity of going through a complex-sentence stage.

Why the complex sentence took over the function of the single clause patterns rather than continuing as a functionally distinct option is more difficult to understand, but the extent of the restructuring that has taken place in Yi suggests that the answer may lie in the perceptual simplicity of the serial configuration. Not only is it often more explicit, requiring two verbs where the non-Yi languages have only one, but it allows the listener to infer the semantic relationships between nominals and verbs one at a time. By contrast, verb concatenation, with nouns and verbs piled up at opposite ends of the clause, has the perceptual properties of center-embedded structures -- it is, in fact, an extension of the center-embedding pattern inherent in consistent OV syntax. The complexity of semantic patterns that underlie the uniform syntax of verb concatenation can be gauged from Matisoff's exhaustive study of the Lahu verb phrase (1969). Now obviously, speakers of Lahu, Lisu and the other non-Yi languages do not find the concatenating pattern troublesome; presumably it represents a balance of the conflicting needs of clarity and conciseness. But if concatenation is, as we conjecture, relatively closer to the limits of our processing abilities, then "strain" on the system may cause those limits to be exceeded and lead to the replacement of concatenation by the semantically more transparent configuration. What might that strain have been?

One possibility is that perceptual difficulties were caused by developments within the language. Givón's explanation for the rise of verb serialization in Niger-Congo languages takes this position. Adapting an argument used by Vennemann (1973) and others, he suggests that verb serialization -- VO, or in the case of Ijo, OV -- arose as a functional response to the phonetic attrition of nominal case-marking morphology. There has, indeed, been plenty of phonetic attrition in Loloish languages, as can be seen by comparing the following Loloish forms with the conservative forms of Written Burmese (WB):

	WB	Yi	Yi _M	LH
mushroom	mhui	--	m̄ ⁴⁴	mù
to blow	mhut	mu ³²	m̄ ⁴⁴	m̄ ³²
high	mrəj'	mɿ ²¹³	m̄ ⁴⁴	mu

Ma's Yi [= Sani], with nothing more than a sonorous hum in all three morphemes, represents an extreme, but in general, Yi dialects are not much different from non-Yi in this respect; none of them has much meat even on its lexical morphemes. In any case, phonetic attrition of case-marking postpositions is unlikely to have provided the impetus for Yi developments; in Loloish languages, phonetic material is, generally, restored by the doubling up

of grammatical morphemes. Lahu ve, can be enlarged, with negligible semantic consequences, by the addition of the "topicalizing" particles, ṽ (as in example #1b) or ḡ (cf. GL §5.421). "Pleonasm" is a widely used process for adding to the phonetic bulk of lexical as well as grammatical words in the "monosyllabic" languages of mainland Southeast Asia.

An alternate possibility is that the replacement of the concatenating pattern by the semantically more transparent serializing pattern was a response not to developments within the language (nor to contact with other languages) but to a change in the social context of the language. What makes this likely is the distinctive social history of the Yi compared to that of Loloish peoples farther to the south and west. For at least five hundred years, Han and other peoples were captured by the Yi and used as slave labor, with their descendants becoming Yi. Winnington (*op. cit.*: 32) claims that about 47% of the "Norsu" (i.e. Nasu) living in the Liangshan region were slaves at the time slavery was abolished in 1957, and that most of these were originally other nationalities. We can only speculate on what the linguistic consequences of such social patterns might have been. If the Yi slaves were of mixed origins, with no one language predominating, conditions would be right for the rise of pidgins and, eventually, creoles. At the very least, there would have been widespread bilingualism. Such conditions might well put a premium on semantically transparent structures employing serial verbs. Without more detailed understanding of the sociolinguistics of traditional Yi society, this explanation is only conjecture. But, if correct, it would resolve the otherwise paradoxical fact that the Loloish languages that have undergone the most extensive structural changes are found on the boundary between the verb-final and the verb-medial linguistic areas, yet they do not seem to have borrowed the new patterns from surrounding languages. Apparently, contact did not result in the Yi languages being overwhelmed, but did have sufficient social consequences to set in motion the change from concatenating to serializing syntax.

OUT ON A LIMB: ARM, HAND, AND WING

IN SINO-TIBETAN¹

James A. Matisoff

This paper² is another illustration of the 'organic semantic' approach to Sino-Tibetan [ST] reconstruction (Matisoff 1978, 1980). The key to this method is the recognition that cognate identifications must take account of variation, both on the phonological and the semantic levels. On the phonological side, we operate with word-family alternants ('allofams') that may differ from each other by choice of prefix, voicing of the initial consonant, presence or absence of a medial glide or suffix, etc. Semantically, our etyma may undergo shifts of meaning from point to point in semantic space.

The theoretical basis for this approach has been developed in detail in Matisoff 1978 [henceforth VSTB]. Here we need make only the following points:

- Allofamic variation in ST follows certain well-established patterns. The recognition of phonological and semantic variation is not an invitation to promiscuity in cognate identification, nor does it imply a disrespect for 'sound laws.'
- Both phonological and semantic variation exist at all time-depths, synchronically as well as in the proto-languages all the way back to Proto-Tibeto-Burman [PTB] and Proto-Sino-Tibetan [PST].
- Different languages (even closely related ones) are quite likely to make different selections from the proto-lexicon in forming compounds. A given compound is liable to reflect an idiosyncratic combination of several different proto-etyma. (E.g., Dimasa bagarangthong 'wing' is composed of reflexes of our roots 13.2 + 5.3 + 3.2, though this particular combination is

¹ Symbols and abbreviations: x = is an allofam of; belongs in the same word-family as; AMD = Abor-Miri-Dafla; CSDPN = Hale, ed. 1973; GSR = Karlgren 1957; Jg. = Jinghpaw; LB = Lolo-Burmese; LED = Matisoff, in prep.; PLB = Proto-Lolo-Burmese; PST = Proto-Sino-Tibetan; PTB = Proto-Tibeto-Burman; ST = Sino-Tibetan; STC = Benedict 1972; TB = Tibeto-Burman; TSR = Matisoff 1972; VSTB = Matisoff 1978; WB = Written Burmese; WT = Written Tibetan.

² This paper was originally presented at the Thirteenth Sino-Tibetan Conference (University of Virginia, 1980). Responding to the precirculated version, Paul Yang produced three pages of "Addenda" which he distributed at the Conference (Yang 1980). Several of his useful suggestions of possible Chinese cognates for our various etyma have been incorporated below, as indicated. I am also indebted to Paul Benedict for comments and criticism, mostly included in a letter (Oct., 1980).

not found in any other language examined to date.

--None of this implies anything strange about PTB or PST. Indo-Europeanists have been operating implicitly on such assumptions for at least 150 years.

In view of the complexity of this sort of investigation, it is wise to concentrate on one relatively well-defined sector of 'semantic space' at a time. Previous studies dealt with the internal organs of the body (VSTB) and words for STAR, MOON, and SPIRIT ('Bright Beings of the Night': Matisoff 1980). Here we take up the area of morphemes referring primarily to the upper limbs of the human body (especially ARM, HAND) and the corresponding parts of animal bodies (especially WING).³

I am going 'out on a limb' in more ways than one. The scope of this study is large, involving forms from over 100 TB languages as well as Chinese. The data on the TB side are of uneven quality,⁴ and the details of the Lautgesetze (especially as concerns syllable-final developments) are still unknown (at least to me) for some branches of the family. This is therefore to be viewed as a work of degrossissage. I have tried to be conservative in setting up roots and allofams, and have sometimes assigned groups of forms to separate proto-entities according to their modern shapes, where more detailed knowledge might permit us to lump them together as descending from the same etymon. In a fair number of cases it is impossible to decide between alternative etymologies for a given modern form on the basis of present knowledge.

At any rate, the aim of scientific investigation is to generate falsifiable hypotheses -- i.e., ideas so precise and clear that they can be shown to be either true or false. I ask nothing better than to be corrected!

Some 30 putatively distinct proto-roots (most of them new) have been identified in this semantic area.⁵ These differ from one another in genetic/geographical spread (some are represented in many or all branches of TB, while others seem confined to one or two subgroups), in the amount of allofamic variation they display, and in their semantic 'center of gravity' (e.g. some are confined to a narrow range of meaning like 'PALM/SOLE' or 'WING/FEATHER', while others have 'metastasized' to several adjacent points in semantic space).

For each proto-root we first give an abstract 'pan-allofamic formula' that represents the whole range of its phonological variation. We then break this down into individual proto-allofams, and present the forms which justify each one. At the end, we offer a 'metastatic flowchart' which traces the patterns of semantic association for which the data provide evidence.

³ I have been interested in the limbs for some time. At the Eighth ST Conference at Berkeley I had circulated a two-page handout on words for HAND and WING [Matisoff 1975]. In VSTB (p. 273 [n. 239] and p. 319) I promised to write this paper, but erroneously supposed it would appear in LTBA.

⁴ For some languages, especially in the Kuki-Chin-Naga branch, such 'luxuries' as tonal indications and glottal stop are not indicated in my sources.

⁵ By way of comparison, Benedict 1972 [henceforth 'STC'] offers only about 6 PTB etyma in this semantic area: *g-lak 'arm, hand' [#86] and *(g-)yak 'armpit' [pp. 34, 167, 170, 189] (we consider both of these to be allofams of the same word-family, below 1.31, 1.32); *mu·k 'arm length, cubit' [#394; below XXIV]; *g-li × *k(a)li 'armpit; tickle' [#265; not dealt with below]; *p-wa 'palm' [#418; below XXX and II]; and *plej 'flat' [#138; below XXVIII, 'palm'].

I.
$$\left\{ \begin{array}{c} d- \\ g- \\ p- \end{array} \right\} \begin{array}{c} 1 \\ \\ y \end{array} \quad a \quad k \quad \text{or} \quad \left\{ \begin{array}{c} d- \\ g- \\ p- \end{array} \right\} \begin{array}{c} 1 \\ y \\ \\ \end{array} a \quad k$$

1.1 with simple (unprefixed) sonorant initial

1.11 *lak This is the widespread allofam reconstructed in STC #86 on the basis of forms from Written Tibetan [WT], Miri, Chairel, Jinghpaw [Jg.], and Written Burmese [WB]. Throughout TB this allofam means 'hand' or 'arm', referring either to the whole limb or its distal segment.

A. [Lolo-Burmese] (PLB *lak: TSR #166): WB lak, ʔalak (Mod. Bs. lɛʔ); Lahu làʔ-ʃɛ (cf. khi-ʃɛ 'foot'); Akha à-làʔ; Lisu lá⁶-hpá² 'hand', lá⁶-hprgh⁴ 'arm' (Fraser), lɛ⁵-phɛ² (Nu-chiang), lia (Jui); Ahi lie^{44c}pu⁵⁵, lie^{44c}pr⁴⁴, lie^{44c}y²²; Sani le^{22p}e⁴⁴; Hani la²¹(Kao), a²¹la^{21c}(Hu and Tai); Bisu là-pù; Woni la³³ni⁵⁵; Phunoi là, ləsùp; Mpi l²phu⁶; Nasu la^{55p}a^{32s}; Lu-ch'üan là^{55c}; Moso la¹¹.

B. [Himalayish] WT lag-pa; Sherpa 'lak-pā; Jirel lāk-pā; Kaike laa; Thulung Rai loa:.

C. [Abor-Miri-Dafla] Abor-Miri a-lāk (Lorrain), Miri əlak [STC]; Gallong alak; Dafla əla (also al 'foot').

D. [Luish] Chairel lak (also la 'foot') [STC]; Lui lək.

E. [Kachinic] Jinghpaw lə- (unstressed preformative prefix in words like ləphàʔ 'shoulders', ləphum 'forearm', ləphō 'arm above the elbow', etc.; also occurs in words referring to the lower limb, like ləphùt 'knee', ləgō 'foot and leg', ləkhat 'kick with heel or hoof', etc.). For Jg. lətáʔ 'hand', see *d-lak [below 1.21]. Note a similar 'prefixization' of this etymon in Phunoi ləsùp [above A].

F. [Naga] Phom (= Tamnu) lak; Yacham-Tengsa lakpa.

G. [Chinese] 力 *liək/liək [GSR 928a-b] 'strong, strength, force' ('the graph seems to depict an arm with a hand');⁶ also, in the same phonetic series, 什 *lək/lək × *liək/liək [GSR 928c] 'a tenth' (from the ten fingers),⁷ and 拈 *lək/lək [GSR 928d] 'space between the fingers (where divination sticks were inserted)'.

1.12 *yak (> zak) This variant is clearly related to the preceding, though it is hard to decide whether to capture this allofamic relationship 'paradigmatically' (by positing an alternation of two proto-phonemes, *lak × *lak) or 'syntagmatically' (by stuffing both the lateral and palatal elements into a single proto-form (*l-[y]ak or *lYak).⁸ At any rate, the nucleus of the

⁶ For a similar semantic association, cf. Japanese ude 'arm' and te 'hand', which may both also be used in the sense of 'ability, competence, skill'.

⁷ The l- prefix in WT lña 'five', it is tempting to speculate, might also be a reduced version of *lak 'hand'. (Jinghpaw, e.g., has a different prefix, mña.) For the semantic association between 'hand' and 'five', cf. Proto-Austronesian *lima 'hand; five' [see Benedict 1975, p. 309].

rhyme *-ak frequently develops into a front vowel in TB (note the Modern Burmese, Lisu, Ahi, and Lui forms), and apparently in Chinese as well (note the -ak x -iak alternation in Series 928), a phenomenon which could easily lead to the palatalization of the lateral initial.⁹ Though the yak allofam may perhaps be considered 'secondary' to the lak form, this is a relative matter: both variants go back as far as our reconstructive methods can take us, and many languages have doublets traceable to each of them.

Even 'more secondary' than yak is the allofam with voiced spirant, zak. The phonetic difference between a y pronounced with local friction (i.e. that slit spirant [ỵ] that is the voiced homologue of 'ich-Laut' [ç]) and a [z] is very slight. In Lahu, for example, [z] is merely the allophone of /y/ that appears before the single vowel /i/ (Matisoff 1973, pp. 5-6).

The variant in z-, whatever its phonological origin and despite its 'secondariness', is also of great antiquity (it occurs in Archaic Chinese), and has somehow acquired the semantic increment of 'armpit/tickle/side of the body' [which is also shared by some forms in y-].

1.121 yak A. [Himalayish] Tamang yā: 'hand'; Thakali yā 'id.'; Gurung yo 'id.'; Newari yāk-wa 'armpit'; Lepcha yak 'tickle' (x Lepcha jak ult. < *d-yak or *g-yak [below 1.22, 1.32]).

B. [Naga] Konyak (Tableng) yak 'hand, arm' (also ya 'foot'); Tangsa (Yogli) yak 'hand', yakphim 'arm'; Tangsa (Moshang) yokpha 'hand', yokphum 'arm'; Chang yik 'hand, arm' (with secondary palatalization of vowel).

C. [Mruish] Mru yāk 'armpit'.

D. [Barish] Dimasa yau 'arm' (also ya 'foot').

E. [Loloish] Lahu yá 'tickle' (< PLB *?yak).¹⁰

1.222 zak. A. [Kuki-Chin-Naga] Lushai zak 'armpit'; Zeme mi-zak 'side (of body)'; Mzieme hezak 'id.'

B. [Chinese] 亦 **ziāk/iāk [GSR 800a-c] or 腋 [GSR 800, 1-m] 'armpit'.

1.2 with dental prefix A number of languages reflect an allofam with dental prefix.¹¹ The morphemic origin of this prefix is a matter of sheer speculation. A remote possibility is that it is an ancient borrowing from Mon-Khmer (cf. PMK *ti? 'hand'). Rather more likely is that it has some connection with an

⁸ For a discussion of the theoretical issues involved in 'paradigmatic' vs. 'syntagmatic' reconstruction, see Wheatley 1978.

⁹ Another highly plausible palatalization-precipitator is the influence of prefixes, at least three of which could be preposed to this root [below]. For a conclusive demonstration of the palatalizing effect of the s- prefix in Lepcha, see Benedict 1943. See also SIC, n. 108 (p. 34).

¹⁰ The Lahu high-rising tone / ' / reflects a PLB syllable with original preglottalized proto-voiced initial and final stop (Matisoff 1970, 1972).

¹¹ There is no systematic contrast in voicing for prefixes in TB, so it makes little difference whether we represent this dental prefix as *d- or *t-. We usually conventionally adopt the voiced alternative, probably due to unconscious bias from WT.

apparently prefixal dental that occurs before other roots referring to the upper limb in scattered TB languages:

[Himalayish] WT dpun 'shoulder', Gyarung tekhlye 'upper arm'; [Luish] Kadu tapaung, təhü 'arm', Sak takú 'arm', Lui takhu 'id.'; [Naga] Ao Chungli teben 'arm', tashikang 'wing'/Ao Mongsen tūpen, tūcha 'arm', tacha 'wing', Yacham Tengsa taka 'wing'; [Abor-Miri=Dafla] Taron ta:lō 'feather'.

1.21 *d-lak The cluster dl- is not tolerated in most TB languages,¹² so that the presence of the dental prefix has favored the palatalization of the root-initial lateral [below 1.22].

In a couple of cases, however, it appears that a language adopted the alternative strategy of metathesizing the dental prefix with the lateral initial. This provides a rather neat explanation for a form which has puzzled Tibeto-Burmanists for some time: Jg. lətá? 'hand'.¹³ It also gibes very well with the reconstructed pronunciation of the Hsi-hsia (Tangut) character 𪛗 'hand' adopted in Kepping 1975 (p. 223): *lda.¹⁴ We refer both of these forms to a prototype *d-lak.

1.22 *d-yak The clearest reflex of this allofam is Gyarung təyāk 'hand' (cited in STC, n. 108).¹⁵

On the Chinese side, Benedict has persuasively identified his PTB root *g-lak with the Chinese word for WING, 翼, reconstructed by Karlgren as *giak/iək [GSR 954d]. However, the presence of the word 趨 *t'iək/t'iək 'the sound of marching' in the same phonetic series [954g-h] leads Benedict to prefer the reconstruction *diək/iək for WING also.¹⁶ In our terms, it makes little difference whether we refer this Chinese word to an immediate prototype *d-yak or *g-yak [below 1.32], since there is ample evidence that both prefixes occurred with our etymon *-lak/-yak.

1.23 *d-[]ak Yet another strategy for reconciling the dental prefix with this root is exemplified by the curious Namsang (= Nocte) form dak 'hand' (alongside da 'foot'). In this case it appears that the prefix has 'pre-empted' or driven

¹² An exception is the Loloish language Sani (= Nyi), which has developed dl- from *by- (e.g. 'bee' PLB *bya > Nyi dla-ma).

¹³ I much prefer this to the 'epenthetic t after liquids' that I suggested in my portion of STC n. 102 (p. 32), or to Benedict's attempt [STC, notes 109, 137] to explain it via a development *g-lak > lətá? (why should a velar prefix have had such an effect?).

Still another explanation (also much less plausible than metathesis in my view) would be to derive Jg. lətá? from the 'prefix preempted' variant *d-[]ak (below 1.23) to which the unstressed lə- [< *lak, above 1.11(E)] was later preposed, i.e. from an 'incestuous' rhyming compound of the form *lak-dak, where two allofams of the same etymon co-occurred. [For a brief discussion of such 'rhyming compounds' see VSTB, p. 119.]

¹⁴ This is according to the reconstructive scheme of M.V. Sofronov. This etymon is reconstructed as *la in Nishida 1966 (p. 349, #39-061).

¹⁵ This is confirmed by Y. Nagano (1978), who cites the Chos-kia Gyarung dialect form tayak 'arm', alongside wayak 'id.'

¹⁶ STC, n. 458 (p. 171). Benedict (p.c.) now agrees with the reconstruction in GSR, assuming that it is underlain by an earlier *gliək. The allofam in *t'- he derives from an alternant with prefixal *s- (*skiək).

out the original root initial.¹⁷

1.3 with velar prefix

1.31 *g-lak This is the overall PST and PTB reconstruction set up in STC, though, as we are discovering, it is a considerable oversimplification -- *g-lak is only one allofam among many!

This allofam is directly represented by a Chinese form in a phonetic series where Karlgren explicitly reconstructs an l-cluster for the Archaic stage: 腋 *klâk/kâk [GSR 766d] 'armpit'.¹⁸

The Gyarung form tekhlye (data by Kun Chang) 'upper arm', referred to in STC (n. 109, p. 34), may now be interpreted as deriving from a doubly-prefixed prototype, *d-g-la[k] (see above 1.2).¹⁹

1.32 *g-yak and *g-ya.

1.321 Yang (1980) offers a large number of Chinese forms, some of which seem to fit in nicely with the velar-prefixal and y-initialled branch of this luxuriant word-family:

脚 *kiak/kiak 'leg, foot' (GSR #776g) < PST *k-yak (Yang; see below 1.5);

掬 and 掬 *kiôk/kiuk 'both hands joined; grasp with both hands; double-handful' (GSR #1017a,c).

[Less likely candidates suggested by Yang include:

右 *giüg/jiau:, jiau- 'the right hand; on the right' [GSR #995i];²⁰

肘 *tiôg/tiau: 'waist; elbow' [GSR #1073a];

手 *síôg/siäu: 'hand' [GSR #1101a].²¹

Alongside 翼 *giäk/iäk 'wing' [above 1.22], Yang cites two other Chinese

¹⁷ The mechanism of 'prefix preemption' was first discussed in Matisoff 1972b, and again in "Quo Vadimus" (MS 1973, published version 1979) and VSTB.

¹⁸ This is now seen to be a doublet of 腋 < *zak < *yak [above 1.121]. It should be noted that similar forms meaning 'armpit' or 'tickle' also occur outside of ST, e.g. Khmer kliək, Indonesian ketiak 'armpit' (Yang 1971), Cham kalək 'tickle' (Benedict 1975, p. 410).

¹⁹ Reprefixation is also common in such Kuki-Chin-Naga languages as Tangkhul Naga, where one encounters doubly-prefixed verbs like khəmələk 'lick' < *k-m-lyak (Pettigrew 1918, p. 304; see STC #211 and TSR #179).

²⁰ The right hand is the 'hand par excellence'. See n. 42 below. Benedict declares Chinese 右 to be directly cognate to PTB *g-ya [STC #98 and pp. 168,187] 'right'. Nowhere does Benedict suggest a relationship between this root and *(g-)lak 'hand' [STC #86]. If they were really related, compounds like WT lag-gyas and WB lak-ya would be 'incestuous' - i.e. contain two elements that are both co-allofams of the same word-family. See VSTB pp. 118-9.

²¹ This important word is assigned to quite a separate root in STC (PST *tsəw) to which I would now also like to assign 𠂔 as well. See 8.1 and note 40, below.

synonyms: 翅 *siëg/sie- [GSR #864e] and 翼 [#866f], the latter with the double reading *siëg/sie- and kiëg/kjie-, deriving all three of these winged words from a doubly-prefixed prototype, PST *s-g-yak x *s-k-yak.

Finally, Yang adduces [p.c. 1980] an interesting group of forms from GSR Series #864:

支, 枝, and 肢 *tiëg/tsie 'branch; limb of a tree' [GSR #864a-c];

跂 *g'iëg/g'jie [GSR #864g] 'foot with six toes' ~ *k'iëg/k'jie; k'jie- 'stand on tiptoe'.²²

These he derives from Proto-Chinese *skiëg, ultimately also from a doubly-prefixed PST prototype *s-g-yak. On the TB side, we may compare these to such forms as Padam (Abor-Miri) a-giag, Mzieme pekiak and tsingkiak, and Chang Naga puphyek 'branch' (Marrison 1967), and possibly also to the Lolo-Burmese set for BRANCH reconstructed as *gak in TSR #43 (e.g. ʔəkhak, Lahu ḡ-gá 'branch', lāʔnə-gá-é 'double (i.e. branched) finger', khi-nə-gá-é 'double toe'), though the lack of a *-y- here is a problem. (Perhaps the erstwhile velar prefix preempted the root-initial *y- in Lolo-Burmese.)

1.322 A direct reflex of the *g-yak allofam is WB gyak-kəli 'armpit', one of a triplet of WB forms including chak-kəli [below 1.4] and lak-kəli 'idd'.²³

From ARMPIT, the notion of TICKLE is but a giggle away in semantic space, and it is tempting to bring in here another group of forms meaning 'tickle' or 'itch', with no final consonant, reconstructed as *g-ya [STC #451]: WT gya-ba 'tickle; itch', Jg. kəyá 'id.', WB yá 'itch'. To complicate matters further, there is a logical semantic progression from these ticklish notions to the idea of 'ashamed; shy, bashful', as represented by a root reconstructed separately in STC #452 as *g-yak (Jg. kəyáʔ 'ashamed, bashful', Lushai zak 'ashamed, shy', Tangkhul kəkhəyak 'shame; veneration'). The semantic interconnection is most apparent from the Lepcha forms, as pointed out by Benedict [p.c. 1980]: Lp. jak 'itch, tickle, titillate; desire, long for, lust for' x yak 'tickle; be ticklish, sensitive', muyak (mú = 'body') 'be bashful; feel shame, as girls before strangers'.²⁴

²² Presumably the common meaning here is 'with branching toes' (so-called either because they are splayed out from the pressure of standing on tiptoe or because they are especially numerous).

²³ Also WB kəli thui 'tickle'. For the etymology of -kəli, see STC #265 and n. 199 (where I cite Lahu pē-lí-kā 'armpit' and ḡi-li-yá ~ ḡu-li-yá 'tickle'. Yang (1971) has collected similar binomial forms meaning 'armpit' or 'tickle' from many modern Chinese dialects, e.g. ke-li (written 舍利) 'tickle' [Jīn-nán 晉南 dialect].

²⁴ Cf. also Lepcha uk 'feel shame'. Another set of forms meaning 'shame; ashamed, shy' is reconstructed in STC #431 as deriving from an etymon *s-rak (e.g. WB hrak, Bunan srag, Mikir therak), which Benedict hesitates to assign to the same word-family as *g-yak [STC #452], though he does posit a similar *-r-x *-y- interchange for RIGHT *g-ya x *g-ra [STC #98 and n. 110; see note 20, above].

In TSR #182, I cite several curiously parallel Loloish binomes meaning 'ashamed', where the second element is of unknown meaning (e.g. Lahu yāʔ-tə, Akha sha-daw, Lisu shá-taw³). The first syllables derive mostly from a prototype with a preempting *s- prefix, though the Lahu form comes from *-yak, not *-rak. There seems little doubt that *g-yak and *s-rak are merely co-

A. [Barish] Garo džak 'arm' (also dža 'foot'); Atong cak 'hand, arm'; Wanang cak-donj 'id.'

B. [Naga] Banpara (= Wancho) tsak 'arm, hand' (also tsia 'foot') [STC p. 34]. Marrison cites both Wancho tzak 'arm' and chuk 'arm', the latter to be assigned to *g-tsyaw-k [below VIII].

C. [Himalayish] Lepcha jak 'tickle' (× yak 'id.'). This doublet reflects a proto-alternation between prefixed and unprefixed allofams, and is semantically akin to WB chak-kəlî 'armpit' [above 1.322].

D. [Loloish] Lahu jâ?, ḡ-jâ? 'cubit, length from elbow to fingertips' (the voiced initial reflects a PLB *prenasalized initial); Akha cá? 'id.'; Sani ca⁴⁴ 'id.'; Lisu cha³ 'length of the outstretched fingers'.²⁵

These forms are all presented in TSR #100, where they are reconstructed as PLB *Nkyak × *?kyak (though of course *Ntyak × *?tyak would do equally well). Note that all these languages have forms meaning 'hand' that reflect the unprefixed allofam *lak [above 1.1(A)]: Lahu lâ?, etc.

1.5 'hand' and 'foot' Benedict was the first to point out [STC, n. 108 (p. 34)] the 'curious series' of parallel forms for 'hand' and 'foot' in certain Western TB languages, where the main difference between the pairs of forms is the lack of a final consonant in 'foot'. Thus:

Miri əlak 'hand' (< *lak) / əla 'foot' Tableng (Konyak) yak 'hand' (< *yak) / ya 'foot' Namsang (Nöcte) dak 'hand' (< *d-[]ak) / da 'foot' Garo džak 'hand' (< *g-yak or *d-yak) / dža 'foot'.

However these forms for 'foot' are to be explained (they certainly seem secondary to those for 'hand') the parallel alternation-patterns are a neat confirmation of the 'co-allofamy' of the lateral, palatal, dental, and affricated variants of this etymon.²⁶

1.6 with labial prefix: *p-yak Finally, several interesting forms point to a prototype with labial prefix, *p-yak. Chief among these is WT p'yag 'hand (respect language)', which we claim is a doublet of the ordinary Tibetan word for hand, lag-pa (< *lak).²⁷

Other prime candidates for this etymology are Chinese 臂 *piěg/ pjiē- [GSR 853c] 'arm'; Lepcha a-ká pek 'forearm' (for a-ká, see below 12.2); and Limbu phuk-bek 'forearm'.

The morphemic source of our putative labial prefix is a matter of

²⁵ Fraser's symbol "ch" represents a plain initial, the aspirated one being transcribed by the trigraph "hch".

²⁶ We have seen [above 1.11 (E)] that the Jingphaw prefix lă- (< *lak) also occurs in words referring to the lower limbs. Cf. also Chinese 脚 'foot' (< *k-yak) adduced by Yang [above 1.321].

²⁷ Tibetan does not tolerate clusters of aspirates with -l-, so it does not matter whether we ascribe WT p'yag to *p-yak or *p-lak.

speculation, though there is possible some connection with the unstressed variant of the root *ba [below 13.2].

II. *pak or *p(r)ak 'leaf; flat object; flat of hand, palm'

The forms just discussed [above 1.6] are to be distinguished from an etymon which occurs in the second syllables of certain compounds meaning 'hand' or 'palm', i.e.

(a) in Loloish compounds meaning specifically 'hand' (as opposed to 'arm'), where the first syllable is from *lak:

Lisu lá⁶-hpá² (Fraser), lɛ⁵-phɛ² (Nu-chiang); Sani le²²sp'e⁴⁴ [the tones all point to a syllable-final stop];

(b) in Himalayish and Kuki-Chin compounds glossed as 'palm', where the first syllable is from *k(r)ut [below IV]:

Chepang krutpāk; Meithei khubak; Lushai kut-pha? (also ke-pha? 'sole');

(c) in Naga, Barish, and Abor-Miri-Dafla compounds for 'palm', where the first syllable is from some allofom of *lak or *yak:

Phom lakpha, Konyak yakpha, Garo džak-pha (also džá-pha 'sole'), Abor-Miri lāk-po × lāk-pio 'palm' (also le-po 'sole');²⁸

(d) Mikir has a compound doublet, ri-pak × ri-pek, glossed as 'hand (distinct from arm)' [Walker 1925, p. 148].²⁹

It seems clear that these forms are traceable to an etymon like *pak, whose basic meaning is LEAF³⁰ or, more generally, FLAT OBJECT. The Mikir morpheme -pak is glossed as 'num. part., flat things' [Walker, p. 119].³¹

²⁸ To these we may certainly add Moshang yokpha, glossed 'hand' in Marrison 1967, though he leaves the Moshang row blank under the item 'palm' [see n. 51]; as well as Nung ur-pha 'palm', with its characteristic first element [see below 4.6]. The lack of a final stop in this group of forms is a problem (although it is certainly possible that some final glottal stops have gone unrecorded in the sources), and suggests an allofom *pa which might ultimately be relatable to the root we set up separately as *pwa × *pya × *pla [below, XXX]. This is more or less the line taken in STC [#418 and n. 287].

²⁹ ri-pek is also glossed 'palm' [Walker 1925, p. 360], where it is given as a synonym of the more specific Mikir word for 'palm', ri-deng [see below, XXVII]. The morpheme ri- is practically an isolate in TB [below, XXV]. The Mikir word for 'sole' is keng-pak.

³⁰ Cf. PTB *(r-)pak 'leaf' [STC #40 and n. 77] and PLB *v-pak 'leaf' (TSR #29).

³¹ This is confirmed in Grüssner 1978, who glosses -pak as 'Klf. f. flache sachen'. It is well known that morphemes whose original meanings are the plant-parts LEAF, FRUIT, and STEM are often generalized for use as classifiers for FLAT, SPHERICAL, and ELONGATED objects, respectively [see Adams, Becker, and Conklin 1975]. The lines of the palm and the veins of the back of the hand irresistibly suggest the venation of a leaf. For further evidence of the semantic connection between PALM and FLAT OBJECT, see the root *plem × pleŋ [below XXVIII].

There is also some evidence for an -r- in this 'flat' root: WB prak × brak 'breadth, width'³² and Jirel lak-pe parakq 'palm of the hand' (lakp-e is the 'genitive' form of lak-pa 'hand').³³

It is tempting to try to explain the Mikir doublet -pak/-pek in terms of an alternation between this *pak root (> Mk. -pak) and the labial-prefixed etymon *p-yak [above 1.6] (> Mk. -pek), though this is perhaps far-fetched.

III. d d
 o x a
 t t

This root, which does not appear in STC, usually means WING, but sometimes HAND/ARM or CUBIT. The cognates usually reflect a *voiced initial, though a *voiceless allofam is also attested. The rhyme is usually -oŋ, though several languages point to a variant in *-aŋ.

3.1 *doŋ

A. [Lolo-Burmese] WB toŋ 'measure in cubits', ?atoŋ (1) 'a cubit (measure of length equal to 2 spans)' (2) 'wing', taŋtoŋ × tatoŋ (1) 'elbow' (2) 'measure of arm from elbow to end of middle finger'; Phunoi ?ã-tõ 'wing'; Bisu ?aŋ-tõŋ 'id.'; Mpi mm²-tuŋ⁶ 'id.'; Lahu tõ-là?-quí × tõ-là?-quí 'id.'; Lisu du⁴-lá⁶ 'wing' (also du³ 'feather'); Akha à-dã 'wing' (spelled a.dah in Lewis transcription).

All these languages except Lisu and Akha regularly reflect PLB (and PTB) *voiced stops by voiceless unaspirates. All these forms reflect PLB Tone *1, except for Lahu, which points to a PLB Tone *2 allofam with preglottalized initial. The Lahu vowel in tõ- comes from *-aŋ.

B. [Barish] Wanang cak-doŋ 'hand, arm'.

3.2 *toŋ / *taŋ Thakali [Himalayish] tãhng-karã 'wing'; Puiron [Kukish] bathang 'id.'; Jinghpaw sumthãng 'arm'; Dimasa [Barish] bagarangthong 'wing'.

IV. k k-
 (r) u t or [r] u t
 g g-

This etymon [not in STC] seems confined to Kuki-Chin and Himalayish, though there is possibly a Burmese form which can also be related to it. The -r- shows up only in a few languages, but cannot be ignored. Semantically this

³² It was the -r- in the WB forms which led me to reconstruct the PLB root *brak × *prak × *?prak × *Nbrak 'flat; broad; a plank' [TSR #111] with that medial. In TSR I did not recognize an allofamic relationship between this root and LEAF [#29].

³³ Note that the -pã of Jirel (and of WT lag-pa, etc.) is the old PTB 'gender-like' noun-suffix (partner of -ma), and has nothing whatever to do with the present discussion.

We must also refrain from bringing in the ST forms p'rag-pa and p'rag-go 'shoulder, upper arm', since the semantic leap is too large--these are rounded body-parts, not flat ones [see below, XVIII]. (G. Diffloth points out a Mon-Khmer root *prac, found in Waic and Aslian, meaning 'shoulder'.)

root is firmly anchored in the HAND/ARM area.

4.1 *rut Mru [Kuki-Chin or 'Mruish'] rut 'hand'.

4.2 *krut [Himalayish] Chepang krut 'hand, arm'; Gurung pā:khrug 'arm'.

4.3 *gūt [Himalayish] Kanauri gud(h) 'hand, arm'; Hayu got 'id.'; Magari mi-hut 'id.' (with unexplained de-occlusivization of the initial).³⁴

4.4 *kut [Kuki-Chin] Lushai, Lai, Laizo, Chinbok, Bawm kut; Ngawn, Tiddim Chin khut; Meithei khut (× khu- in compounds); Anal khu? [all 'hand']; Maring akhut 'hand', khutbang 'arm'; Puiron khut 'hand, arm', Khutyung 'hand'.

4.5 *ku? There is a Burmese morpheme which might possibly be related to this etymon: WB khu [creaky tone] (1) 'unit, individual thing' (2) 'the present time'; ꨎakhu 'id.' [× yəkhu in sense (2)]; khu-hnac 'seven' [in composition with hnac 'two']. The semantic developments here might involve the fingers of the hand as a 'unit' in counting (5 + 2 = 7), as well as the association between the hands and the present moment (the moment 'at hand'; cf. French maintenant 'now' [lit. "holding in the hand"] and Lahu lâ? 'hand', lâ?-há 'immediately').

4.6 There is a mysterious form for 'hand' in Nung/Trung of the shape ul, which appears to be an isolate in all of TB.³⁵ Given the fact that our present etymon sometimes appears with non-stop initials (h- or r-), from which it is but a short step to zero-initial, there is a remote possibility that the -l final might somehow be an allofamic variant of the -t found elsewhere.

V. $\left\{ \begin{array}{l} k \\ g \end{array} \right\} - \begin{array}{l} y \\ r \end{array} \quad a \eta$

This etymon [not in STC] usually means 'wing', but sometimes 'hand' or 'arm'. It is confined mostly to Barish, Naga, and AMD languages, but there is one good-looking cognate from Himalayish (Kanauri). The forms mostly show a velar initial followed by y or r. In a number of languages the velar is absent and the resonant appears as the root-initial, which indicates that the velar is prefixal [see above 4.1]. There is also a group with velar initial but no following y or r [below 5.5] which we provisionally interpret as 'prefix-preempted' forms, though it may eventually prove preferable to assign them rather to a different etymon [below VI].

5.1 *ran [Naga] Wancho rang 'wing'; Nocte arang 'ie.'; Tangsa (Moshang) wurong 'id.' (wu 'bird').

5.2 *yan [Naga] Konyak, Phom yang 'wing'.

³⁴ The mi- is a productive prefix with body-part words in Magari, and corresponds in this function to Meithei m̄-, Mzieme and Zeme (Empeo) mi-, and Rengma n-/m-. Shafer has tried to derive this from TB *mi(y) 'man', a view rejected by Benedict, who interprets it as a much more general pronominal element [STC n. 329, p. 118].

The Limbu huk-pe 'hand' has the same initial as the Magari form, but the velar final leads us to assign it to a different etymon [8.32].

³⁵ Benedict [p.c.] also cites the form ur from the Rawang dialect of Nung.

5.3 *k-ran × *g-ran [Barish] Atong ga-ran, Wanang ka-ran, Garo gran, Kachari gaʔŋ, Dimasa bagarangthong [all 'wing'].

[AMD] Monpa garang 'hand', garang-par 'palm'.

5.4 *k-yan [Naga] Yimchungru keang 'wing'; Sangtam pūkyang 'arm'; Mzieme miba-kengkieng 'arm'; Tangkhul angachang 'wing' [Tangkhul has no ky- cluster].³⁶

[Himalayish] Kanauri pakhō 'wing'.

Yang (1980) makes an interesting comparison of this allofam with Chinese 翔 *dziang/ziang 'go to and fro; fly backwards and forwards; soar; walk with elbows kept as outstretched wings' [GSR #732p]. He reconstructs PST *s-giang × *s-kiang, pointing out that the same phonetic 羊 occurs in a word reconstructed with velar initial, 姜 *kiang/kiang [GSR #711a].

5.5 *k-[]an or *kan [Kuki-Naga] Khoirao akang, Yacham Tengsa shikang, Nruanghmei sukang, Ao Chungli tashikang [all 'wing'].

These forms are either from a prefix pre-empted variant of V, or else to be related rather to the group assembled as VI, below.

Chang Naga has a form kak 'wing', which may be either a stop-finalled allofam of this group of forms or else assignable to the PTB root *ka.k 'branch, fork' [STC #327].

VI.	k	w a
	g	

This etymon [not in STC] seems to mean basically 'upper arm', though the putative Mikir reflex means 'wing'. It is attested in Kuki-Naga, Tibetan, Chinese, and maybe Loloish. The *-w- medial appears as such in Chinese and Ntenyi and is implied by the vocalism of the Tibetan and Mikir forms. The Maram form looks like it belongs here, but the Lautgesetze are not known. This set of forms is perhaps ultimately related to V, above [especially 5.5].

Chinese 肘 *kwang/kwang [GSR 887f] 'arm, esp. the upper arm, from elbow to shoulder'; WT p'ran-gon 'upper arm' (gon 'upper part' [note voiced initial]); Ntenyi [Naga] akwang 'arm'; Mikir kong, vengkong, arvengkong 'wing'; Maram [Kukish] wai-chu-kung 'arm'; Jg. (Maran, p. 1390) siŋ-kōŋ ~ siŋ-ko (Hanson).

The vowel of the second syllable of Lahu lāʔ-qō 'whole arm (shoulder to wrist)' could reflect *-an, and its tone testifies to a PLB *preglottalized initial, so that -qō could be from PLB *ʔkan² or *ʔgan². Lahu sometimes responds to *k^w with p,³⁷ so we might prefer to assign this Lahu form to 5.5

³⁶ The -nga- may be related to PLB *s-nak 'bird' [TSR #141]; the Tangkhul word for 'bird' is vanao.

³⁷ The three solid labiovelar roots reconstructed so far where Lahu has a labial are DOG [PLB *k^wiy² > Lh. phᵛ], NEST [PLB *k^wiy¹ > Lh. phᵛ], and COMB [PLB *ʔk^wiy² > Lh. pf]. See Matisoff 1978b (pp. 6-7) and 1980 [passim], as well as my Note 16 to Benedict 1979.

rather than VI.³⁸

VII.

g - w a n

This root [not in STC] is set up on the basis of forms from Kuki-Naga, Himalayish, and Chinese. It seems quite distinct from VI, in that it consistently has -n (not -ŋ). Note especially the different Ntenyi forms under VI and VII.

7.1 *wan The unprefixd allofam is reflected by Khoirao wan 'hand', Lotha Naga ewon 'arm', and Chinese 挽 or 腕 *wân/·uân- [GSR 260 m,n] 'wrist'.

7.2 *g-wan Ntenyi agwûn (also akhwen) 'hand' [alongside akwang 'arm', above VI]; Lepcha agon 'fin', ŋo-gon 'fish-fin'.

The semantic connection between 'wrist' (Chinese) and 'fin' (Lepcha) is not bad, since both are mobile articulating parts, and that is perhaps the essential semantic component of this root.

VIII.

g-tsyaw-k

This etymon is reconstructed on the basis of forms from all over Sino-Tibetan, the allofams falling into two major groups: with open final and with velar stop final. The root-initial is a sibilant or affricate. Since I do not yet know much about the rhyme developments in many of the relevant languages,³⁹ it is very possible that some of the forms in -o assigned to this etymon belong rather to an allofam of our next proto-construct, *(t)s(y)a [below, IX].

8.1 *tsyaw (× *tyaw × *saw) The important Chinese word 手 *śiôg/śiau: [GSR #1101a] 'hand' is equated with Proto-Karen *tsù 'hand' by Benedict, and both are assigned to PST *ts̄aw, which we here reinterpret as *tsyaw.⁴⁰

To this same root we assign Lotha Naga echo 'wing' and Maram wai-chu-kung 'arm'.⁴¹ Tاراon (= Digaro) a:tyo 'hand' (perhaps from an immediate prototype

³⁸ Another possibility is that the second syllable of Lahu làʔ-pō × làʔ-pwē 'segment of the arm; forearm or upper arm' could be the direct reflex of this *kw- etymon, though it is at least as likely that it belongs with the root *p/bay set up below [XV].

³⁹ The Naga rhymes in particular appear to be at least as complex as the rhyme developments in Loloish -- which is saying something! See now French 1983.

⁴⁰ STC, n. 455 (p. 170). Jones 1961 [#174, pp. 124-5] sets up the Proto-Karen form as *cùh, on the basis of Taungthu cù, Sgaw sý, Pho (Moulmein) sú?, (Bassein) sù, and Palaychi cùg.

Chinese 寸 *ts'wan/ts'uan [GSR 431a-b] 'thumb' is considered by Benedict to represent a variant of this root with the -n 'dual' suffix, *tsu-n [STC n. 428, p. 158]. This character is used in compounds in the sense of 'hand', and is graphically related to 手 [GSR, p. 119].

As we have seen [above 1.321] Yang (1980) reconstructs 手 differently, though in this case the etymology proposed in STC seems clearly preferable.

We are indebted to Yang, however, for pointing out the phonological similarity between 手 and 肘 *tiôg/tiàn: 'wrist, elbow' [GSR #1073a], which certainly looks like it also derives from some allofam of *tsyaw.

⁴¹ Lepcha pák-čóm 'arm' also looks like it fits in somewhere (? < *tsyaw-m), with the final nasal possibly reflecting the same dual suffix as in Chinese [n.

*tyaw) also belongs here, as do the first syllables of Nruanghmei sukang 'wing' and maybe of Palaychi (Karen) zù-kəq 'id.' (perhaps < *saw).⁴²

8.2 *k(w)i-tsyaw or *ku(y)-tsyaw Several languages have dissyllabic forms meaning 'wing' or 'feather', whose first syllables begin with a velar and have vowels ranging from u and o to i:

Maram kiso 'wing'; Mao dosho 'id.'; Limbu kuco 'feather' (also kulāp 'wing'); Sangtam khyo 'wing'.

The second syllables here are derivable either from *-tsyaw (or *-syaw or *-saw) or from some allofam or other of IX, below. The first syllables we assign to a separate root, *k(w)i & *ku(y) this disyllabic prototype, where the first syllable was reduced or 'prefixized' and in the process pre-empted the root-initial: *ki-tsyaw > *kə[]yaw > khyo.

8.3 *g-(t)s(y)awk The allofams of this root with velar final also show variation of the initial consonant, with the reflexes ranging from simple sibilants to affricates (dental or palatal). This, of course, is a familiar and well-attested variational pattern in TB⁴³ and is captured formulaically by the notation "(t)s(y)".

8.31 *ts(y)awk Bantawa [Himalayish] tshuk 'arm, hand'; Wancho [Naga] chuk 'arm' [also Wancho tzak 'arm' and chak 'hand' (see above 1.41B)].⁴⁴

8.32 *s(y)awk WT suq-pa 'hand (medical)' [< *sawk], alongside WT soq-pa & gsoq-pa [< *g-syawk] 'wing; wing-feather, pinion' and gzogs 'side of body'; Sherpa pušokq 'wing', puzokq 'feather' (showing similar unexplained variation between palatal/dental and voiced/voiceless initial); Jirel syok-pāq 'wing' (also pujyāq 'feather').

Special problems are presented by Limbu huk, huk-pe 'arm, hand' (where the initial has 'laryngealized' -- see n. 29 above), and by Phunoi lāsūp 'hand', where the final has perhaps assimilated to the preceding rounded vowel.

IX.

$$m - (t) s \begin{pmatrix} 1 \\ y \end{pmatrix} a$$

This etymon mostly means 'wing', but sometimes 'hand/arm'. It is attested sporadically all over TB, and I have the feeling that many more cognates remain

34].

⁴² All the other Karen dialects cited in Jones 1961 have words for 'wing' with first syllables like de?- or dai?-, from a separate root [Jones #219, pp. 128-9], here assigned to XXI, below. The Palaychi forms cūq 'hand' and zù- 'wing' look like co-allofams.

⁴³ See, e.g., VSTB pp. 54-6, and Matisoff 1974, pp. 156-7.

⁴⁴ Yang [p.c. 1980] here makes an excellent comparison with Chinese 足 *tsiuk /tsiwok 'foot' [GSR #1219a]. If Chinese 手 'hand' (<*tsyaw) and 足 'foot' (<*tsyaw-k) are indeed co-allofams, that would make Chinese look very much like the languages of section 1.5 (above) - where, however, it is HAND (not FOOT) that gets the final -k!

Yang also cites 𪚗 *sio/siwo 'foot' [GSR #90a], with the 'mysterious' Archaic initial *s-, which also clearly belongs somewhere in this family.

to be discovered. It presents some of the most interesting allofamic patterns of any of our roots.

9.1 *m-sa Manipuri (= Meithei) masa 'wing'; Maring asa 'id.'; Angami ú-sa 'id.'⁴⁵

(It is very possible that some or all of the forms in -o given under 8.2 belong here instead.)

9.2 *m-sla Lakher ma-thlaw 'the fin of a fish; a bird's wing' [Lorrain 1951, p. 204];⁴⁶ Lushai, Lai, Laizo thla 'wing'; Trung (Nungish) ul⁴⁴sla⁴² 'arm'; Newari lhā: 'hand, arm' (also lhāt, with unexplained dental suffix); Kaike lhā-na-jīng 'palm', lhe-nu-pang 'sole' (alongside laa 'hand' < *lak).

Most interesting of all is the reconstructed pronunciation of the Hsi-hsia (= Tangut) character 翼 'wing', given by Sofronov as *lhi⁴⁷. This fits *s-la perfectly, since, as Nishida has demonstrated, PTB *-a regularly becomes Hsi-hsia (and Tosu) -i.⁴⁸

9.3 *sya To this allofam we tentatively assign Ntenyi akisha 'wing' and Rengma seki 'id.', and perhaps also Yacham-Tengsa shiking 'wing' and Ao Chungli tashikang 'id.'

9.4 *tsya With equal tentativity, we suggest as possible reflexes of this allofam Ao Mongsen tacha, ozacha 'wing' (as well as tūcha 'arm'); Liangmai (= Kwoireng) chabin 'hand'; and Angami dze (Khonoma), u⁴⁹zie (Kohima) 'hand'.

Finally, we may here bring in another Hsi-hsia form. The character 𐰇𐰏 'wing' is reconstructed as *ndzwi² by Sofronov [see n. 47], and may reflect a prototype *m-tswa, which is quite close to our own PTB reconstruction for this etymon. The two Hsi-hsia words for WING, reconstructed *lhi² and *ndzwi², would then be doublets (i.e., coallofams).

X. k(w)i ɣ ku(y)

We set up this root to account for a number of forms with velar initial plus high vowel. Sometimes this vowel turns up as -i, sometimes as -u, and sometimes as a diphthong containing both vowels simultaneously.

⁴⁵ This form is in the transcription developed in our Berkeley field-methods course on Angami (1974-5). Marrison 1967 gives shū (Khonoma dialect) and puosū (Khoima dialect). Angami ə (= Marrison's "ū") is a frequent reflex of PTB *-a [Matisoff 1980, p. 14].

⁴⁶ The vowel -aw is unexplained, in view of the Lakher forms thla 'month, moon' and thlah 'spirit, soul; goblin', both also from something like PTB *s-la [see Matisoff 1980]. Note the reinforcement of the semantic association WING <----> FIN implied above (7.2).

⁴⁷ Personal communication. In 1976, Professor Sofronov was kind enough to enter his reconstructions for all the Tangut body-part words in the glossary of my copy of Grinstead 1972.

⁴⁸ Nishida 1975, p.1. Examples include PTB *sya 'flesh' < Hsi-hsia *tshi; PTB *za 'child, son' > Hsi-hsia *rif, etc.

⁴⁹ Angami -ie is sometimes the reflex of PTB *-iy [Matisoff 1980, p. 10], and no doubt has other proveniences as well.

10.0 With high diphthongal nucleus:

[Chin] Khumi kiu 'hand'; Zotung kui? 'id.';

[Himalayish] Sunwar guy 'hand'; Kham (of Nepal) 'kwi 'id.';

[Nungish] Trung a³²kui⁴⁴ul⁴⁴ 'right hand'.⁵⁰

It is worth mentioning that Karlgren's Archaic Chinese reconstruction of 羽 'feather; wing' is *giwo (> Anc. jiu:) [GSR 98a-b], which looks mighty close to these TB diphthongal forms.⁵¹

10.2 With front vowel:

[Himalayish] Bahing gy 'hand' (alongside dzumro gø 'right hand' and pe:ro gø 'left hand');⁵²

[Kuki-Chin] Maram kiso 'wing'; Khumi pa-khi 'id.';⁵³

[Naga] Rengma seki 'wing'; Ntenyi akisha 'id.'⁵⁴

Sema achichibo 'wing' perhaps fits here (with reduplication and secondary palatalization?), though of course many other hypotheses are possible.

10.3 With back vowel:

[Himalayish] Lepcha păku, pŭŋku 'wing'; Limbu ku-lāp 'wing', ku-co 'feather'; Chepang wa?-ko 'small feather'.

[Luish] Sak ta-kú, tăhù, tahu 'arm'; Kadu təhù 'id.'; Lui takhu, tahu 'id.' [note the consistent presence of the dental prefix in Luish (above 1.2)].

Benedict (1974e) cites a Chinese form from Karlgren 1923 that appears in the Shuo Wen but not in any text, 羽. It is glossed either 'root of a feather' (with the reading *g'u/ŷau) or 'short wing of a bird' (with the reading *điu/ziu). Benedict suggests a PST reconstruction of *(s-)guw or *(s-)gəw for this (perhaps chimerical) morpheme.⁵⁵

⁵⁰ Since ul means 'hand' [above 4.6], Trung kui probably means 'right', though this is perhaps not a fatal objection to including the form here. The semantic shift HAND <-----> RIGHTSIDE is quite plausible, given that the right hand is the 'hand par excellence'. See note 20, above.

⁵¹ Benedict derives this word rather from PST *g-wa [see our root XXII, below].

⁵² All forms from Michailovsky and Mazaudon 1974.

⁵³ Note the putative Khumi doublet: kiu 'hand' * pa-khi 'wing'.

⁵⁴ Note that by our analysis both the Rengma and Ntenyi forms are compounds consisting of the morphemes 9.3 and 10.2, though in opposite orders. (This is entirely plausible -- cf. the discussion of 'compound families' in VSTB, pp. 58 ff. et passim.)

⁵⁵ While on the subject of Chinese feathers, we might mention an exotic Tibetan/Chinese pair of cognates identified in Benedict 1974e: WT sgro 'a large feather, esp. quill-feather, used for an ornament of arrows, as a charm, etc.' /Chinese 长尾羽 *g'log/g'jau [GSR 1164h] 'long tail feather'. Although only these two forms have been uncovered so far, the semantic fit is extremely good, and Benedict suggests PST *s-g[r]ow for the etymon. (We may add the observation

10.4 Forms in -ai:

Finally, there are some Barish forms for 'arm/hand' with a diphthong written "-ai" or "-ay", which are perhaps relatable to the group cited in 10.1:

Boro akáy, ha-káy 'arm, hand', na-káy 'hand'; Kachari aʔ-kai? 'id.' These may ultimately be relatable to the group cited in 10.1 [above] or the forms in 12.1 [below].

XI. kar and kan

This root appears mostly in Himalayish, and usually means 'wing'. It is not yet clear whether the forms in -n go back to the same etymon as those in -r.

11.1 *kar

[Himalayish] Khaling khar 'hand', 'khar 'arm', phlemkhar 'palm'; Magari mi-khār 'wing'; Kham (Nepal) 'kar 'wing' (also 'khār 'branch'); Thakali tāhng-karā 'wing'; Kaike korpā 'id.'

Possibly related is Mikir phang-kor 'shoulder, bust, upper arm.'

11.2 *kan

[Kuki-Naga] Liangmai pakan 'wing'; Nruanghmei pakan 'id.'; Zeme pekan 'id.'

There is a good-looking Chinese cognate: 翰 *g'ân/yân- [GSR 140 f-g] 'pheasant feather; wing; to fly'.⁵⁶ Chinese -n sometimes reflects PST *-r [STC n. 460, p. 172], and the same development has occurred in several TB languages, notably Jinghpaw [STC, p. 15], so that it is possible that 11.1 and 11.2 are co-allofams.

Some slight evidence that these are rather two separate roots is provided by two TB languages which do preserve *-r as such: Boro akánti 'upper part of arm' and Mikir rikan 'forearm' (alongside phang-kor, assigned to 11.1). These forms may of course be entirely unrelated to those for 'wing' (the semantic fit is not too good), so we prefer to leave the relationship of 11.1 and 11.2 'up in the air' for the time being.

XII. ka-t

This root is apparently distinct from XI, though some open-syllables forms included here might eventually be better assigned to *kar (11.1). The dental stop that turns up in some forms appears to be suffixal. Most of the exemplars of this root are in Naga languages, though a form of key importance occurs in Lepcha (Himalayish).

12.1 *ka Lepcha ká, a-ká 'hand';⁵⁷ Yimchungrú kha 'id.'; Ao Chungli teka

that this phonetic series also contains the word 燒 *sniog/ siäu in the WT form.)

⁵⁶ In this connection, Yang (1980) also cites Chinese 翺 *xiwan/xiwan 'to fly about' [GSR #256a'] and 翺 *xwâd/xwâi- 'rustling wings' [GSR #346g].

'id. '; Yacham-Tengsa taka 'wing' (alongside takhat 'hand'); Taraon a:tyo-ka: 'palm'.

12.2 *kat Yacham-Tengsa takhat 'hand' (alongside taka 'wing'); Ao Mongsen tükhet 'id. '; Meluri akhet 'id. '

The fronting of a to e before a dental final (as in Ao Mongsen and Meluri) is a common development in TB.⁵⁸ This leads us also to assign Lotha okhe 'hand' and Sangtam khe 'id.' to *kat, even though no final consonant appears overtly in these forms.

This suffixal -t is apparently the same element that we found in the Newari doublet lhā: \times lhāt 'hand, arm' [above 9.2].

XIII.

ba-n

A number of forms for 'hand/arm' in Kuki-Naga languages have forms with labial initial plus -a as their main root syllable (13.1). Other languages have a similar syllable as initial element in compounds meaning 'wing' (13.2). Still another group of Kuki-Chin forms with labial initials end in -an (13.3).

13.1 *ba Lakher ba 'arm'; Mao oba 'hand, arm'; Kezhama ba 'hand'; Maram ava 'id. '; Mzieme miba 'hand, arm'; Zeme mipa 'id. '

In Himalayish we find compounds for 'arm' whose first syllables apparently reflect the same etymon:

Kaike, Jirel pāpung 'arm'; Gurung pā:khruq 'id. '

However, these forms with voiceless initial⁵⁹ may have been influenced by Nepali pākhurā 'arm', like Sunwar pā:khra: 'arm'.

13.2 *bǎ- \times *pǎ- Words for WING in several Kuki-Chin-Naga, Barish, and Himalayish languages have a first syllable that appears to be a reduced variant of 13.1. The destressing would account for the voiced \times voiceless alternation, which is typical of TB 'minor syllables'.

[Kuki-Chin-Naga] Liangmai, Nruanghmei pakan; Zeme pekan (alongside mipa 'hand, arm'); Puiron bathang; Khumi pakhi.

[Barish] Dimasa bagarangthong.

⁵⁷ Lepcha retains PTB *-r as such, which leads us to consider *ka to be a separate etymon from kar (11.1). Semantically, *kar usually means 'wing', while *ka usually means 'hand'.

⁵⁸ It occurred, e.g., in Lhasa Tibetan [WT brgyad 'eight' > Lhasa kɛ̃ɛ̃] and in Lahu [PLB *krwat 'leech' > Lh. vèʔ].

⁵⁹ Our root *ba is distinct from a root with voiceless labial initial in the same general semantic area, *pwa \times *pya \times *pla [below, XXX]. Marrison (p., 117) gives yokpha for Tangsa Moshang 'hand', though this is clearly the same formation as Konyak yakpha 'palm' [< yak 'hand'] and Phom lakpha 'palm' [< lak 'hand']. See note 23, above.

It is conceivable that there is some connection between 13.1 and the homophonous root *ba 'carry' [STC #26].

[Himalayish] Kanauri pakhōŋ; Thulung Rai baphlem; Newari paputi; Lepcha pāku x pūŋku.⁶⁰

13.3 *ban [Kuki-Chin] Tiddim Chin ba:n 'arm'; Lushai bân 'arm', pan-puam 'muscle of upper arm' [for 2nd. syllable see below, XVIII]; Ngawn, Lai, Laizo ban 'arm'; Nruanghmei ban 'hand', banpom 'arm'; also Lui pambom 'id.', Meithei pāmbôm 'id.' (the latter two with assimilation to the labial initial of the following syllable).⁶¹

The Khumi form bam 'arm' must have a similar origin. We may assume assimilation to a following labial, then loss of the second syllable in the compound.

It is possible that the final nasal in *ban reflects an ancient PST *dual suffix, for which there is considerable independent evidence [STC, pp. 99-100].

XIV. bi-n or be-n

A number of forms meaning 'hand, arm' in Kuki-Naga languages have labial initials and front vowels, with or without a final -n. It is very possible that these will be relatable to *ba-n once the Lautgesetze are better known. For now we list them separately here.

14.1 With modern open syllables (bi, be): Angami (Khonoma) bi 'hand', (Kohima) ubi 'id.'; Chokri ube 'id.'; Rengma mbe 'hand, arm' (with nasal body-part prefix [above, n. 29]).

14.2 With nasal-finaled syllables (bin, ben, pen): Liangmai chabin 'hand'; Ao (Chungli) teben 'arm', (Mongsen) tūpen 'id.' [also tūcha, above 9.4].

XV. p a
b

This root has been uncovered in a few Kuki-Chin-Naga languages, and there is a good-looking Lahu (Loloish) cognate. The basic meaning seems to be 'segment of the arm'.

Tangkhu pang 'hand', pangthei 'arm'; Maring khutbang 'arm' (for the first syllable, see 4.4 above); Mikir phang-kor 'upper arm' (also ri-apon 'id.', with last syllable from XVI, below); Lahu lāʔ-pɔ̄ x lāʔ-pwē⁶² 'arm;

⁶⁰ The Lepcha variant pūŋ- seems to be a resyllabification of the unstressed prefix pā-. The same alternation occurs before a number of Lepcha roots. (Mainwaring glosses pūŋ- as 'idem quod pā-' [p. 216].) A similar example of prefix resyllabification is Jinghpaw gum-rà x gum-rāŋ 'horse' < PTB *mrāŋ [STC #145].

On the other hand, Lepcha pūŋ- could be a direct reflex of our etymon XVI, below.

It is interesting to speculate that this morpheme *bā- x pā- might be the source of the labial prefix discussed under *p-yak [above 1.6].

⁶¹ The syllables -pom/-bom reflect a quite separate root, below XVIII.

⁶² Lahu ɔ̄ ~ wɛ is a fairly productive alternational pattern (along with u ~ wi, o ~ wɛ) peculiar to Lahu, clearly of secondary origin with respect to PLB. See Matisoff 1973, p.19.

segment of the arm (either shoulder to elbow or elbow to wrist'.^{63,64}

XVI.

p
b uŋ

This etymon seems never to mean merely 'hand', but always the whole arm or its proximal segment. Since this is quite close to the meaning of, and the two putative etyma differ only in vowels, it is certainly possible that there is a more general root of which XV and XVI are both merely allofams. With our characteristic conservatism, however, we are provisionally keeping them separate. [Note, e.g., the Mikir forms, one in -a- and one in -o-.]

WT dpun-ba 'shoulder' (perhaps with the prefix discussed above, 1.2), dpun-pa rka 'upper-arm bone', dpun-pa lag 'upper and lower arm'; Kadu tapaung 'arm' (with the same prefix); Kaikē, Jirel pāpung 'arm' (for first element see 13.1); Abor-Miri lāk-pong 'arm'; Mru bong 'arm' (with voiced initial); Mikir ri-apong 'upper arm' (alongside phang-kor 'id.' < *paŋ [XV]); Idu Mishmi lapū 'arm' (the same formation as in Abor-Miri).⁶⁵

Loloish forms like Lisu lā²-hprgh⁴ 'arm', Ahi lie⁴⁴sp⁴⁴ (also lie⁴⁴sp⁵⁵ 'id.' [see below, XIX]) and Lahu lā[?]-p⁵ [above, XV and n. 55] are also compounded with the same first element as in Abor-Miri and Idu, and their second syllables may belong under this etymon.

Another possible cognate is Lepcha pū[?]ku × pāku 'wing; fin', though we have suggested an alternative explanation above [n. 52].

XVII.

p
m- u k
b

We tentatively set up this root on the basis of forms from Jinghpaw and Lepcha. Given the frequency of the allofamic alternation between homorganic final stops and nasals in TB,⁶⁶ it is quite possible that this etymon should be combined with XVI into the same word-family.

Lepcha phukbek 'forearm' (for the second element see *p-yak, above 1.6); Jinghpaw mābū[?] 'wing' (poetic couplet of sī[?]ko, above VI).⁶⁷

⁶³ A (perhaps less likely) possibility is that this Lahu syllable derives rather from *kwaŋ [above, VI and n. 32]. Or, since Lahu -ŋ sometimes derives from a back vowel plus velar nasal, our root XVI might prove to be the better etymology. At any rate the two Lahu forms lā[?]-q⁵ and lā[?]-p⁵ must both be accounted for.

⁶⁴ Yang (1980) cites Peking Mandarin 肩膀 jiānbǎng 'shoulder' and 翅膀 chìbǎng 'wing', where the second element has the same phonetic as other members of GSR Series #740, with the basic meaning of SIDE: e.g. 房 [#740y] *b'iwang/ b'iwang 'side-room', 旁 [#740f] *b'wāng/ b'wāng 'side, on all sides', 傍 [#740m] *b'wāng/ b'wāng(-) 'at the side of; assist'.

⁶⁵ Without intimate knowledge of the Lautgesetze, we cannot of course be sure that Idu -pū does not descend rather from XV (above) or *pum [below, XVIII].

⁶⁶ See VSTB, pp. 23-5.

⁶⁷ The final -ʔ is of course not indicated in Hanson 1906 (who didn't bother with tones or glottal stops), but is supplied in Maran's revised and enlarged

XVIII.

pum or pom

This root, which seems usually to refer to the upper arm, looks like it is definitely related to PTB *bwam [STC #172] 'to swell; be plump or protuberant', the tertium comparationis being the curve of the biceps. This etymon is quite distinct from *ban (13.3), with which it forms compounds. It occurs mostly in Kuki-Chin-Naga, but also in Jinghpaw and probably in Lolo-Burmese as well.

Lushai puam 'swell', pan-puam 'muscle of upper arm'; Nruanghmei bampom 'arm'; Meithei pambom 'id.'; Liangmai mpoum 'id.';⁶⁸ Tangsa yokphum (Moshang), yakphim (Yogli) 'id.'; Jinghpaw laphum 'forearm'.

Also related is the second syllable of Lahu khi-pē-qu 'fleshy part of leg, calf'. (Lahu -ε is the regular reflex of *-um, as in lē 'warm' < PLB *lum [STC #381].)⁶⁹

XIX.

p p
u or o w
b b

On top of all the other roots already reconstructed with labial initial (XIII-XVIII), one more may also be necessary, this time with final *-u or *-ow (with no following nasal or stop). Here we merely list the modern forms that are open syllables, but more detailed information on the Lautgesetze may push some of them into one of our *nasal-finaled roots.

[Naga] Angami bu (Khonoma), ubou (Kohima) 'arm'; Chokri ubo 'id.'; Sema aou 'hand, arm' (with vocalization of initial); Sangtam pūkyang (for second element see above 5.4).

[Kachinish] Jg. laphō 'the arm above the elbow (putative seat of strength)'.

There is also a group of Loloish compounds for 'hand' (apparently as opposed to 'arm'), whose first element is from *lak [above 1.1(A)] and whose second syllables begin with labials and have tones characteristic of non-stopped syllables (< PLB Tones *1 or *2). Again, a *nasal-finaled provenience for these forms, while unlikely, cannot be excluded. Nevertheless, we include them here:

(a) < PLB Tone *1 : Mpi lw²phu⁶ 'hand'; Akha là⁷-pú 'back of hand';

(b) < PLB Tone *2 : Bisu là⁸-pù 'hand';

(c) PLB tone not yet determined : Ahi lie^{44s}pu⁵⁵ (also lie^{44s}py⁴⁴ [see XVI above]); WB lak-phəmüi 'back of hand' (with destressing or 'prefixization' of the syllable).

dictionary.

⁶⁸ The initial nasal in Liangmai is undoubtedly a prefixization of the final consonant of the now-vanished first element of a compound with *ban-, as in Lushai, Nruanghmei, and Meithei.

⁶⁹ Lahu khi means 'foot, leg'. There is no homologous Lahu formation like *là⁷-pē-qu 'fleshy part of arm'.

Finally, there is a set of Himalayish forms with an element -pu- in compounds meaning 'wing' or 'feather':

Newari pa-pu-ti 'wing'; Sherpa pu-šokq 'wing', pu-zokq 'feather'; Jirel pujyāq 'feather'.

Much 'microlinguistic' work remains to be done before all these labial-initial roots (XIII-XIX) are straightened out.

XX. $\left\{ \begin{array}{l} p- \\ s- \end{array} \right\} 1 (y) a p$

This well-attested root occurs mostly in Himalayish, and is firmly in the semantic area of WING/FEATHER, with connections to the notions of waving, fanning, flapping, or fluttering.⁷⁰

The root-initial is sometimes a simple lateral, but often a -y- glide can also be inferred, so that this etymon and its relatives provide further evidence for l/y interchange in TB. Two prefixes are associated with the root in its meaning 'wing, feather': an *s- and a *p-.

20.1 *lap [Himalayish] Limbu ku-lap 'wing'; Thulung Rai lāp-ter 'id.';⁷¹

[AMD] Abor-Miri a-lap 'id.'; Gallong alap 'id.'

20.2 [Himalayish] Khaling 'lepti 'wing' [S. and I. Toba 1975], 'feather'

[CSDPN IV, p. 51], 'lehpti 'wing' [CSDPN IV, p. 93].

The *-y- is inferred from the Khaling front vowel, though it may of course prove to be the case that PTB *-ap regularly develops into Khaling -ep anyway.

20.3 *s-lap Lepcha lyop 'flap'; WT hlab-hlab 'flutter to and fro'.

Paradoxically, the presence of a -y- in Lepcha does not necessarily imply a *-y- at an earlier stage. As Benedict showed long ago, Lepcha -y- is often a secondary development from an *s- prefix.⁷²

The WT voiceless lateral also points to an *s- prefix, though WT does of course have the cluster sl- as well. Perhaps the degree of morphemic binding between the two consonants plays a role, so that the 'intrinsic' PTB cluster *sl- > WT sl, while PTB prefixal *s- plus l > WT hl (*səl- > WT hl).⁷³

20.4 *s-lyap WT hdab-ma 'wing; petal, leaf; fan (Csuma de Korōs); flag

⁷⁰ Benedict [p.c.] now suggests a connection between this root and *(s-)lap 'leaf' [STC #321].

⁷¹ We resolutely deny any connection with Greek pterón or ptéruks! For the second element in the Thulung compound, see XXI below.

⁷² Benedict 1943. See n. 8.

⁷³ WT word-families contain other puzzling doublets where voiceless laterals alternate with different-prefix-plus-lateral, e.g. glod-pa × hlod-pa 'loose, relaxed; loosen; be easy, unconcerned' < PTB *g-lwat × *s-lwat [see STC #209].

(Cs.); ladle'.

This reconstruction is motivated partly by the obvious allofamic relationship between this form and WT yab-mo x gyab-mo 'a fan; fanning, waving', where a y appears overtly.^{74,75}

For thoughts on the 'paradigmatic' vs. 'syntagmatic' reconstruction of lateral/palatal entities, see the discussion of *lak/*yad [above 1.12].

20.5 *p-lap [Himalayish] Hayu blop 'feather'; Chepang pāp 'wing'. Note that the Chepang form shows prefix preemption.⁷⁶

20.6 *p-(l)yap [Himalayish] Tamang pyāhp; Gurung pyā:h; Sunwar phra: [all 'wing'].

We cannot tell yet whether the prototype of these three forms had a simple *-l- glide (>Tm., Gur. -y-, Sun. -r-), or whether a complex *-ly- was involved.

The labial prefix in 20.5-6 is plausibly to be identified with the element *bā- x *pā- discussed above (13.2), which also appears in words for 'wing'. The Newari form paputi 'wing' is to be analyzed in these same terms, as pa-pu-ti [see above, XIX], and not as pap-u-ti.

It is probably no more than a coincidence that the *pyap allofam of the present root looks very similar to the PTB root *pyam 'fly' [STC, pp. 29, 51], even though homorganic final stop/nasal alternation is common in TB etyma [see above, XVII] and the semantic connection between 'fly' and 'wing' is close (cf. Jinghpaw pyēn 'fly' [< *pyam], məpyēn 'wing' [< *m-pyam]).

XXI. ti(r)

This root is tentatively set up on the basis of forms from Himalayish, Karen, and Naga languages. It is firmly in ornithological semantic space, always carrying the meaning 'wing' or 'feather'.

[Himalayish] Thulung Rai lap-ter 'wing'; Khaling lepti 'wing, feather'; Newari paputi 'wing'.

[Karenic] Sgaw (Moulmein, Bassein) dīʔshé; Pho (Moulmein) dàiʔshwèn, (Bassein) dèʔshwèn; Taungthu déʔ [all 'wing'].

[Naga] Ao Chungli te 'feather'; Rengma teroha 'feather' (also tegū 'bird').

XXII. *wa and *wu

⁷⁴ See STC #92. In Matisoff 1972b (p. 282) I identified WT hkhrah 'to winnow, fan' as still another allofam in this complex word-family.

⁷⁵ Yang (1980) has discovered two good-looking Chinese cognates here, 習 *dziap /ziap 'to practice flying' [GSR #690a] and 翥 *t'áp/t'áp 'to fly' [GSR #628a], which he derives from Proto-Chinese *s-g-liap ~ *s-k-lâp < PST *s-g-l(y)ap.

⁷⁶ Interestingly enough, it was also Chepang which developed a prefix-preempted form in the TB root for LUNG, *p-wap (> Chepang pop), that is discussed at length in VSTB, pp. 113-23 (esp. p. 117). TB languages obviously have different preemptive propensities.

With the utmost caution I would like to offer another pair of related roots which are 'strictly for the birds'. From the limited and ill-understood data available to me from Naga languages, it looks as if there was an underlying 'elaborate expression' of the form **awu-awa*, where the two elements both meant either 'bird' or 'feather', and the compound as a whole meant something like 'feathered creatures in general; denizens of the sky'.

22.1 **wa* Ntenyi *awa* 'bird', *aowa* 'id.' [*< *awu-(a)wa*], *aowa-anu* 'feather' (with *anu* 'mother');⁷⁷ Ao Mongsen *towa* 'feather'; also perhaps Rengma *teroha* 'feather', Tangkhul *vanoha* 'id.'⁷⁸

22.2 **g-wa* This is how Benedict⁷⁹ reconstructs Proto-Chinese 羽 'feather'. Karlgren's reconstruction **giwo/jiu*: [GSR 98a-b] looks closer to our etymon **k(w)i* × **ku(y)*, as noted above (10.1).

22.3 **wu* Tangsa (Moshang) *vu* 'bird', (Yogli) *wu* 'bird', *wu-rong* 'wing'; Khoirao *awu* 'feather'; Wancho *ao* 'bird' [*< *awu*]; Ntenyi *aowa* 'bird' [*< *awu-(a)wa*]; Chang *ao* 'bird', *awu* 'feather' [*? < *awu-kwi* "bird's hand"; see above 10.1];⁸⁰ also perhaps Monpa *oi-lom* 'wing' [*? < *awu-wi*].

22.4 **g-wu* Liangmai *kahu* 'feather'.

XXIII.

lom

This putative root has so far only been noted in two obscure languages of Arunachal Pradesh. We invite further cognate identifications:

Monpa *oi-lom* 'wing'; Taron (= Digaro) *ta:lō* 'feather'.

XXIV.

**mu·k* × **mu(·)ŋ*

This root is set up in STC #394 as **mu·k* on the basis of Kiranti (Lambichong, Chingtang, Yakha) *muk* 'arm, hand'; Garo *mik* 'cubit'; Bodo *mu* 'arm-length'; and WB *muik* 'measure with breadth of fist'.

To these we may add Mru *muk* 'lower arm', as well as a group of forms with final nasal which speak for a nasal-finaled allofem **mu·ŋ*:

WB *mōŋ* 'the arm', *lak-mōŋ* 'upper arm', *mōŋ-râŋ* 'upper arm close to shoulder'; Jinghpaw *ləmōŋ-ləp̄həm* 'forearm [archaic]' (tone of *-mōŋ* not

⁷⁷ I.e., "bird-its principal part": the use of morphemes for 'mother' to mean 'principal or characteristic part' is widespread in Southeast Asian languages. Chang Naga uses the cognate syllable *-nyu* as a common noun-formative, bleached of even this semantic content. See Matisoff 1980, pp. 35-6.

⁷⁸ The Tangkhul word for 'bird' is *vanao*, which presents us with a dilemma: are the *va-* of *vanao* and the *-ha* of *vanoha* co-allofems of this morpheme **wa*, or is only one of them a genuine reflex of this etymon while the other is a mere look-alike?

⁷⁹ P.C., Aug.-Sept. 1974. Benedict speculates that this is a loan from Austro-Thai into Chinese, since there is a similar Kam-Sui form. In view of the many likely TB candidates for cognacy, however, it seems to me that we are dealing with a genuine PST and PTB root.

⁸⁰ Benedict [p.c. 1980] suggests that the second syllable of Chang *au-wi* derives rather from **mwil* < **mil* × **mul* 'body hair' [STC #2].

indicated in Maran, p. 681).

XXV.

ri

This tantalizing etymon has so far only surfaced in Mikir and Tamang:

Mikir ri 'hand', eri 'arm', ri-pak × ri-pek 'hand', rikan 'forearm' [Grüssner has -ri 'Unterarm, Hand' (p. 208)]; Tamang nā:ri 'arm'.

XXVI.

du

This etymon appears in the second syllable of identical compound formations in two widely separated TB languages:

[Loloish] Akha lā?-du 'forearm'; [Abor-Miri-Dafla] Gallong lag-du 'lower arm' (alongside alak 'arm').

The semantics are so close, the phonological fit so good, and the morphemic structure of the compound so identical, that the root *du may be set up for PTB as a whole. This is a good example of how sometimes even a tiny bit of evidence can go a long way.⁸¹

XXVII.

*den

This etymon (like XXVIII-XXX below) refers specifically to the palm of the hand (or the sole of the foot). It is attested in Himalayish and Mikir, and there is an excellent Chinese cognate.

Mikir ri-deng 'palm'; Hayu pleŋ-ten 'id.'; Tamang yā:thing 'id.'; Thakali yā-thin 'id.'; Kaike lhānājing (apparently with secondary palatalization) 'id.'

Also showing palatalization of the initial is Chinese 掌 *tian/ tšian: 'palm' [GSR 725j].⁸²

XXVIII.

*plem × *pleŋ

This root occurs with the meaning 'palm' in Himalayish (and perhaps Nungish), and shows variation between final -m and -ŋ.

[Himalayish] Hayu pleŋ-ten 'palm'; Khaling phlem-khar 'id.'; Thulung Rai phlem-lā 'palm' (Rai 1944), baphlem 'wing' (Allen 1975) [also plem, plemte, phlem 'flat' (Allen)].⁸³

[Nungish] Trung ul⁴⁴s_a³²be⁴² 'palm'.

This root is obviously the same etymon as the group of forms assembled in

⁸¹ One may speculate that there is some connection between this etymon and PTB *tuk 'neck' [STC #392] ("hand-neck" = 'forearm'), though much more evidence would be needed to establish this.

⁸² Is it mere coincidence that the Chinese word for 'sole' reconstructs identically, except with a final velar stop instead of nasal? Cf. 跣 or 跣 *tiäk/ tšiak 'sole' [GSR 795i].

⁸³ For Limbu huk-tappe, see XXIX and n. 73, below.

STC #138 (*pleŋ 'flat surface; plank'). As the Thulung words for 'flat' just cited show, even in the sense of 'flat' we must posit *-ŋ x -m variation in this word-family.

XXIX.

*tal

Still another root for 'palm' is to be found in Himalayish languages, this time with dental initial and a lateral final attested directly in WT. (It appears to be quite distinct from XXVII.)

WT t'al-mo 'palm'; Kham (Nepal) lap-tā 'id.' [< *lak-tal]; Sunwar t̄ā-plā (for second element see below, XXX); Limbu t̄āppe [< *tal-pe, with the second syllable probably the same element as in Limbu hukpe 'hand', perhaps a reflex of *plem x *pleŋ (XXVIII)].⁸⁴

It is also possible that the second syllables of Lahu làʔ-tɔ-qɔ 'palm', khi-tɔ-qɔ 'sole' may be related, though the sparse traces of PTB *-l in Loloish are far from having been worked out.

XXX.

w
p y a
l

Finally, there is a set of forms meaning 'palm' beginning with a labial and showing overt traces of a glide (-w-, -y-, or -l-) plus -a. One of these (WB bh wa) Benedict has grouped into STC #418 with a bunch of forms which I prefer to assign rather to *pak 'leaf; flat object; palm' [above, II].⁸⁵

My approach here is to distinguish two separate roots, *pak and *pGa,⁸⁶ with the first showing affinities for LEAF/FLAT OBJECT, while the second seems to mean PALM specifically. Heuristically, forms are assigned to the present root if they show overt evidence of a glide; otherwise they are assigned to *pak, even though the sources show no evidence of a final stop. The last word has yet to be said on this complex problem.

[Himalayish] Gurung yo-plā:; Sunwar t̄ā-plā; Magari huŋpyā;⁸⁷

[Kuki-Chin-Naga] Lakher ku-paza (also phei-paza 'sole'); Tangkhul pāŋ-mayā (with assimilation to the final nasal of the preceding syllable) [all 'palm'];

[Lolo-Burmese] WB phāwâ, bhāwâ 'palm, sole'.

⁸⁴ It is also possible, of course, that Limbu -pe in both t̄āppe 'palm' and hukpe 'hand' is from *pya [below, XXX], especially in view of the similar Magari formation huŋpyā 'palm'.

⁸⁵ STC #418 cites only the forms from Nung, Miri, WB, and Garo, as well as the problematic Jinghpaw form in -n [below]. The stop-finaled forms from Lushai and Mikir are presented as a problem in STC n. 286. The forms with medial glide from Gurung, Magari, Sunwar, Tangkhul, Limbu, and Lakher given in the present section are not in STC.

⁸⁶ Where "G" stands for a glide (-w-, -y-, or -l-).

⁸⁷ Newari pā-lhā(t) 'palm', being a Himalayish form, might also be brought in here, though it shows no trace of a glide.

Putative Chinese relatives offered in STC [notes 463, 487] are 扶 *piwo /piu 'breadth of four fingers' [GSR 101f]; 巴 *pā/pa (glossed 'snake' in GSR 39a, but also 'palm' in Karlgren 19233); and 把 *pā/pa: 'grasp in the hand' [GSR 39b].

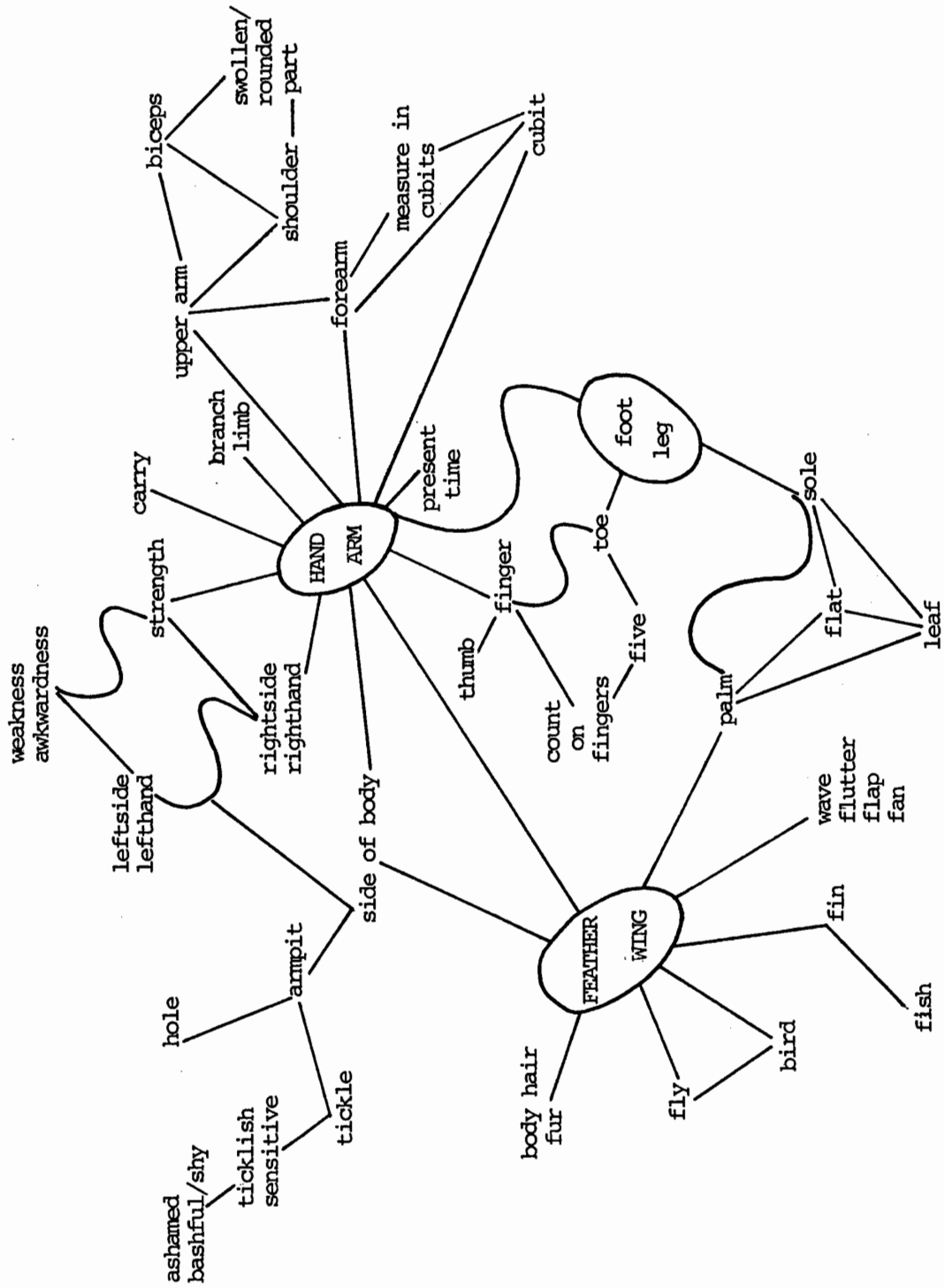
The problematic final -n in the Jinghpaw form ləphān 'palm, sole' (cited already in STC #418) might be the 'dual' suffix [above, n. 34; STC n. 428, p. 158].

* *
 *
 *

As is our custom in these 'organic semantic' studies, we here offer a 'metastatic flowchart' that indicates schematically the semantic associations revealed by the data.⁸⁸

⁸⁸ For similar charts mapping (a) the internal organs of the body, and (b) nocturnal celestial bodies and spirits, see VSTB, Figure 19 (p., 229) and Matisoff 1980, p. 39, respectively.

Figure 1. Metastatic flowchart of the "limb-ic system"



LANGUAGES AND SOURCES USED IN THIS STUDY

Abor-Miri (Lorrain 1907); Ahi (Yüan Chia-hua 1953 [see TSR]); Akha (Lewis 1968 [see TSR]); Anal (Ono 1965); Angami [Khonoma, Kohima] (Marrison 1967; Matisoff 1980); Ao [Chungli, Mongsen] (Marrison 1967); Atong (Burling 1959); Bahing (Michailovsky and Mazaudon 1974); Bantawa [= Bontawa] (Michailovsky 1974b); Bawm (Schwerli 1979); Bisu (Nishida 1966b/67 [see TSR]); Boro [= Bodo] (Burling 1959; Bhat 1968); Burmese (Judson 1893; Benedict, ed. 1976 [see TSR]); Chang (Marrison 1967); Chepang (CSDPN); Chinbok (Ono 1965); Chairel (STC); Chinese (Karlgren 1923, 1957 [GSR]; Benedict 1972 [STC]; Benedict 1974e; Yang 1975); Chokri (Marrison 1967); Dafla (STC); Dimasa (STC); Gallong (Das Gupta 1963); Garo (Burling 1959; STC); Gurung (CSDPN); Gyarung [=rGyarong] (Chang 1968; Nagano 1978); Hani (Kao Hua-nien 1955; Hu and Tai 1964 [see TSR]); Hayu (Michailovsky 1974c); Hsi-hsia [= Tangut] (Nishida 1966, 1975; Grinstead 1972; Kepping 1975); Idu Mishmi (Anonymous 1962); Jinghpaw [= Kachin] (Hanson 1906; STC; Matisoff 1974; Maran [in prep.]); Jirel (CSDPN); Kachari (Burling 1959); Kadu (Löffler 1964); Kaike (CSDPN); Kanauri (Joshi 1909; Bailey 1911); Karen (Jones 1961; Benedict 1979); Kezhama (Marrison 1967); Khaling (CSDPN; Toba and Toba 1975); Kham [of Nepal] (CSDPN; Watters and Watters 1973); Khoirao (Marrison 1967); Khumi (Ono 1965); Kiranti (STC); Konyak (Marrison 1967); Lahu (Matisoff 1969, 1970, 1973 [see TSR, LED]); Lai (Ono 1965); Laizo (Ono 1965; Osburne 1975); Lakher [Mara] (Lorrain 1951); Lepcha (Mainwaring and Grünwedel 1898; Benedict 1943); Liangmai (Marrison 1967); Limbu (Chemjong, n.d.); Lisu (Fraser 1922; Jui Yi-fu 1948; Xu Lin and Ou Yizi 1959); Lotha (Marrison 1967); Lu-ch'üan Lolo (Ma Hsüeh-liang [see TSR]); Lui (Löffler 1964); Lushai (Lorrain 1940; STC); Magar(i) (CSDPN); Mao (Marrison 1967); Maram (Marrison 1967); Maring (Marrison 1967); Meithei [= Manipuri] (Pettigrew 1912; Marrison 1967; P.C. Thoudam, pers. comm.); Meluri (Marrison 1967); Mikir (Walker 1925; Grüssner 1978); Monpa (Das Gupta 1968); Moso (Li Lin-tsan, Chang K'un, and Ho Ts'ai 1967 [see TSR]); Mpi (Srinuan 1976; Matisoff 1978b); Mru (Löffler 1966); Mieme (Marrison 1967); Nasu (Kao Hua-hnien 1958 [see TSR]); Newari (CSDPN); Ngawn (Ono 1965); Nocte [= Namsang] (Marrison 1967; Das Gupta 1971; STC); Nruanghmei (Marrison 1967); Ntenyi (Marrison 1967); Nung (see Trung); Padam (Marrison 1967); Palaychi Karen (Jones 1961); Pho Karen (Jones 1961); Phom (Marrison 1967); Phunoi (Bradley 1977); Puiron (Marrison 1967); Rengma (Marrison 1967); Sak (Löffler 1964); Sangtam (Marrison 1967); Sani [= Nyi Lolo] (Ma Hsüeh-liang 1951) (= Ma Xueliang 1951); Sema (Marrison 1967); Sgaw Karen (Jones 1961); Sherpa (CSDPN); Sunwar [= Sunawari] (CSDPN); Tamang (CSDPN; Mazaudon 1974); Tangut (see Hsi-hsia); Tangkhul (Pettigrew 1918; Marrison 1967; Bhat 1969; Matisoff 1927b); Tangsa [Moshang, Yogli] (Marrison 1967); Taraon [= Digaro] (Chakravarty et al. 1963); Taungthu Karen (Jones 1961); Thakali (CSDPN); Thulung Rai (Rai 1944; Allen 1975); Tibetan (Csoma de Korös 1834; Jäschke 1881); Tiddim Chin (Ono 1965; Henderson 1965); Trung [= Nung] (Lo Ch'ang-p'ei 1945); Wanang (Burling 1959); Wancho (Marrison 1967); Woni (Yüan Chia-hua 1947 [see TSR]); Yacham-Tengsa (Marrison 1967); Yimchungrü (Marrison 1967); Zeme (Marrison 1967); Zotung (Ono 1965).

For an alphabetic/genetic listing of TB languages and dialects, see Matisoff 1980b. For complete references see the Bibliography.

PRELIMINARY NOTES ON GLO-SKAD (MUSTANG TIBETAN)¹

Yasuhiko Nagano

0. Introduction

This paper provides gLo-skad materials and then sketches a historical analysis. gLo-skad itself (Mustang, in the narrow sense) lies in the north-central region of the Himalayan ranges of Nepal jutting out into Tibet. The strongly Tibetan-oriented culture of this area has long drawn the attention of Tibetologists; unfortunately, however, the area is now closed to foreigners.

Partly because of its geographical position and partly because of the numerous forms similar but not identical to those of Shigatse Tibetan, gLo-skad seems to be a southern Tibetan dialect. Presently, we have little material dealing specifically with gLo-skad. As far as I know, the only monograph now available is Kitamura 1977, in which sentences and words are written in Tibetan characters but without a phonemic transcription. This paper is intended to supplement Kitamura's publication by giving the phonemic transcription and by discussing the historical status of gLo-skad.

The author went to the Thak Khola area (just south of Mustang) from September 1980 through January 1981 to join the "Anthropological & Linguistic Survey on National Integration in Nepal" project supported by the Ministry of Education (Japan), but the survey team was not allowed into Lo Mönthang. Instead, the informant Mrs. Kalsang Lhawang and her husband kindly helped me with my preliminary survey of gLo-skad in Kathmandu.² The informant, a native speaker of gLo-skad, now lives in Kathmandu with her mother (also a native speaker of gLo-skad), her husband (Mr. Kalsang Namgyal) and her two daughters. She was born at Lo Mönthang (Mustang) in 1943 and stayed there until she left for Kathmandu when she was seventeen years old. Her mother and elder sister accompanied her to Kathmandu and supported her, while she studied at St. Mary's High School. gLo-skad was spoken at home, English at school, and Nepali in the city. Since her mother speaks only gLo-skad, even after she married Mr. Kalsang Namgyal in 1965, gLo-skad remained the standard language at home. Incidentally, Mrs. Kalsang Lhawang also served Professor Kitamura as informant

¹ A classified lexicon of 805 gLo-skad words organized along the lines of Professor Hattori's "Linguistic Questionnaire" (Department of Linguistics, University of Tokyo, 1957) can be found in Nagano 1982. The numbers before the items in this article correspond to the numbers on that list.

Abbreviations: a = adjective, h/hon = honorifics, hu = self-humbling, imp = imperative, impf = imperfect, lit = literary, n = noun, perf = perfect, v = verb, vi = verb intransitive, vt = verb transitive; WrT = Written Tibetan.

² I would like to thank Mr. and Mrs. Kalsang as well as the people affiliated with the project for their help.

when he compiled his 1977 monograph on gLo-skad.

1.0 Phonology

1.1 Consonants. The following consonant phonemes can be set up:

Stops	p	t	T	k	ʔ
	ph	th	Th	kh	
	b	d	D	g	
Fricatives		s		sy	
Affricates		ts		c	
		tsh		ch	
		dz		j	
Nasals	m	n		ny	ng
Liquids		l	r		
		L	R		
Glides	w			y	

The only consonants which occur in syllable final position are: /p, t, k, ʔ, ' , m, n, ng, l, r, w, y/.

/T/, /D/ and /Th/ are retroflex.

/ʔ/ is a glottal stop which always occurs with high pitch.

There is a general tendency for syllables with initial aspirated stops (except for /ʔ/) or affricates to carry high pitch, but for those with initial voiced sounds to begin with low pitch. This tendency obviously correlates with the tonogenesis found among Tibetan dialects.

/s-/ appears as [s-] if high pitch follows, but as [z-] before low pitch. Alternately, it is possible to set up /s-/ and /z-/ for this series, but the author would prefer to phonemicize it as a tonal distinction. This distinction is partially parallel to the s/z opposition in WrT (Written Tibetan).

/sy-/ is [ç-] if the syllable carries high pitch but [ʃ-] if the syllable begins with low pitch. However, [ʃ-] with high pitch actually occurs in some high-frequency words, so it seems better to analyze this as a tonal distinction. This consonantal opposition corresponds to the WrT sh-/zh-opposition.

/h-/ is a voiceless glottal fricative. Syllables with this initial have high pitch.

/'-/ is a voiced glottal fricative, always occurring with low pitch. This might be the same phoneme as /ʔ-/ since the glottal stop always occurs with high pitch except that these are in opposition in syllable final position, so different phonemes have been set up.

/-n/ in syllable final position nasalizes the preceding vowel.

/L-/ and /R-/ are voiceless liquids, always occurring with high pitch.

/r-/ is a flap; syllables with this initial have low pitch.

1.2 Vowels. The vowels are: /a, i, u, e, o, E, U, O/.

/E, U, O/ are palatalized /a, u, o/ respectively (phonetically [E], [Ü], [Ø]). Vowel length is distinctive. The syllable structures are: CV, CVV, and CVC. No prefixation was observed. Tonal distinctions are observed in the nasals, liquids (except for voiceless liquids), and glides.

1.3 Tones.

The author interprets the pitch differences occurring with alveolar and

alveopalatal fricatives as phonemic. For the other series, tones (pitch accents) are not phonemic. The tones are distinguished by register not by contour. A grave in the word-list means that the preceding syllable begins with low pitch, while high pitch is unmarked.

In the stop and affricate series, the non-distinctive pitch patterns are fixed and correlate with aspiration and voicing. Since these phenomena are often significant in tonogenesis, this phonetic pitch accent (low pitch) is also marked. (For further discussion of tones, see 2.3.)

2.0 Correspondence rules

2.1 Discussion. Although it is true that gLo-skad has some forms identical to those of Tamang-Gurung-Thakali-Manang (TGMT: a Tibeto-Burman group in Nepal), the main correlations seem to be with WrT. Thus, this section is devoted to setting up the correspondence rules between gLo-skad and WrT.

2.2.1 Velar stops

WrT rk-: dk-: sk-: lk-: bk-		WrT	gLo-skad
337	'white'	dkar	kaa
045	'foot'	rkang pa	kang pa
041	'waist'	rked pa	kye pa
263	'star'	skar ma	kam ma
069	'thread'	skud pa	kU pa
009	'deaf'	lkugs pa	kuk kya
187-011	'command'	bka'	ka'

The six WrT distinctions all merged into k- in gLo-skad. All the above gLo-skad words have high pitch.

WrT kh-: 'kh-: mkh-		WrT	gLo-skad
010	'mouth'	kha	kha
171-01	'turn around'	'khor	khor yE
250	'sky'	mkha'	kha'

WrT g-: rg-: sg-: dg-: mg-		WrT	gLo-skad
103	'ash'	gog thal	gok` daa
304-022	'mare'	rgod ma	gOO` ma
098	'door'	sgo	go`^
402	'nine'	dgu	gu`
001	'head'	mgo	go` 'a

As was mentioned in 1.2, no prefixation occurs in gLo-skad; however, the WrT aspiration and voicing features, accompanied by fixed pitch patterns, are still kept in gLo-skad.

WrT sky-: khy-: rgy-		WrT	gLo-skad
124	'be born'	skyes	kyee yE
304	'dog'	khyi	kyi
305-011	'phoenix'	khyung	khyung
355	'back'	rgyab	gyap`

Although -y- is regularly preserved, the correspondences are a little inconsistent. The loss of aspiration seen in 'dog' is quite common in the TGIM group as well as the Tibetan dialects along the Himalayas. 'Phoenix' (preserving aspiration) seems to be a loan word from Central Tibetan. Apparently, with the exception of some loanwords WrT sky- and khy- generally merged into ky- in gLo-skad.

WrT skr-: khr-: mkhr-: gr-: 'gr-		WrT	gLo-skad
001-10	'hair'	skra	Ra
053	'blood'	khrag	Thaʔ
038-02	'bile'	mkhris	Thik
071-02	'wheat'	gro	Do`
117	'knife'	gri	Di`
023	'cheek'	'gram pa	Da` pa

While skr- clusters went to voiceless liquids, other clusters followed Central Tibetan by becoming retroflex.

WrT gl-		WrT	gLo-skad
034-03	'lungs'	glo ba	lo 'a
304-031	'bull'	glang gog	lung
248-05	'fool'	glen pa	lOn pa

2.2.2 Alveolar stops

WrT t-: rt-: st-: gt-: lt-: bt-		WrT	gLo-skad
326-021	'dwarf'	te po	te le
304-02	'horse'	rta	ta
304-09	'tiger'	stag	taʔ
192-052	'pawn'	gte	te
039	'navel'	lte pa	tee
92-06	'send'	btang	tang yE

WrT th-: 'th-: mth-		WrT	gLo-skad
121	'rope'	thag pa	thak
206	'pull'	'then	then
366	'high'	mtho po	tho 'a

WrT d-: gd-: rd-: sd-: 'd-: bd-: md-: ld-		WrT	gLo-skad
102	'smoke'	du ba	dU` ba
022	'face'	gdong	ngo` rong
286	'stone'	rdo	dO` kung
306-01	'spider'	sdom	dom`
345	'bad'	'dug cag	du` wa
400	'seven'	bdun	dUn`
145	'arrow'	mda'	da`
406-01	'times'	ldab	dap`
080-033	'tea mixer'	ldong mo	dong` mo
084	'lick'	bldags	dak` yE

The same correspondence system is observed as in the velar stop series, as far as no glides occur after the initials. gLo-skad ngo^ʔ 'face' corresponds to WrT ngo 'face' rather than to gdong.

WrT dr-: 'dr-		WrT	gLo-skad
399	'six'	drug	Tu ^ʔ
272	'warm'	dro po	Tho ^ʔ wa
340	'smell'	dri ma	Thi ^ʔ ma
071-01	'rice'	'dras	DEE ^ʔ
231-01	'mix'	'dres	Dee ^ʔ

The WrT dr- cluster with no prefix goes to an aspirated retroflex with low pitch, while the prefixed WrT 'dr- goes to a voiced retroflex with low pitch; this innovation is similar to the one in Lhasa Tibetan. The loss of aspiration in 'six' seems to parallel that in 'dog' (2.2.1).

2.2.3 Labial stops

WrT p-: lp-: sp-: dp-		WrT	gLo-skad
043	'knee'	pid mo	pUU mo
049	'skin'	pags pa	pak 'o
048	'hair of body'	spu	pu
188-02	'example'	dpe	pe

WrT ph-: 'ph-		WrT	gLo-skad
304-06	'pig'	phag pa	phak pa
412-01	'increase'	'phel	phEE yE

WrT b-: 'b-: sb-: db-		WrT	gLo-skad
066-13	'wool'	bal	baa ^ʔ
237	'descend'	babs	bap ^ʔ
211	'hide'	sbas	bEE ^ʔ
228	'swell'	sbos	bOO ^ʔ
303	'insect'	'bu	bu ^ʔ
341-01	'power'	dbang	? ang
016	'breathe'	dbugs btang	'up ^ʔ tang

WrT spy-: dpy-: phy-: by-: sby-: dby-		WrT	gLo-skad
003	'eye'	spyan	cEn
392-02	'spring'	dpyid kha	pyi ^ʔ ka
304-11	'wolf'	spyang ky	cang ky
360	'outside'	phyi	phyi da
167	'go'	phyin	phim
030	'hand (H)'	phyag	cha ^ʔ
375	'direction'	phyogs	choo
304-071	'cock'	bya mo	cha ^ʔ mo
375-04	'north'	byang	chang ^ʔ
244-01	'study'	sbyangs	chang ^ʔ yE
392-03	'summer'	dbyar kha	ya ^ʔ ka

In this set, the initials followed by i#/-iCf seem to remain unaltered, while the others changed into affricates.

WrT spr-: phr-: 'phr-: br-: 'sbr-: 'br-	WrT	gLo-skad
251 'cloud'	sprin pa	Rin ba
304-14 'monkey'	spra	Ra
081-01 'roast'	sprags	Rak yE
392-02 'thin'	phra po	Thaa
081-011 'roasted'	phrogs	Raa
249-05 'magic'	'phrul	ThUU
033 'chest'	brang khog	Dang` ko
074 'fruit'	'bras bu	Di` 'u
220-01 'split'	dbral	raa` yE
286-01 'rock'	brag	Da?`
351 'dirty'	dbre	Re la
306-02 'bee'	sbrang ma	rang` ma
311 'snake'	sbrul	DUU`

For the above, it is fairly difficult to set up straightforward rules; in fact, the innovations may be on the lexical level. The WrT spr- clusters went to voiceless liquids, but other clusters have had quite different paths of innovation in apparently the same environment.

WrT bl-	WrT	gLo-skad
159-123 'monk'	bla ma	la ma
018 'cough'	blo	lo
340-051 'pluck'	blo khog	lo kho?

Parallel to Central Tibetan, WrT bl- clusters correspond to gLo-skad l- with high pitch.

2.2.4 Alveopalatal affricates

WrT c-: gc-: bc-: lc-: ch-: mch-: 'ch-	WrT	gLo-skad
085 'chew'	cag cag byas	LEE yE
394 'one'	gcig	cik
042-04 'urine'	gcin	cin
403 'ten'	bcu	cu
012 'tongue'	lce	ce mo
288-03 'iron'	lcags	caa
253 'rain'	char pa	cha 'a
080 'water'	chu	chu
038 'liver'	mchin pa	chim pa
305-07 'sparrow'	mchil pa	chik wa
191-02 'religious dance'	'cham	cham

WrT j-: rj-: 'j-: lj-	WrT	gLo-skad
080-03 'tea'	ja	cha`
081-03 'raw'	rjem pa	cen` pa
042-071 'penis'	brje	je`

243	'forget'	brjed	jee` yE
256	'rainbow'	'ja	ja`
346	'smooth'	'jam po	ja` ba
087	'suck'	'jibs	jip` yE
012	'tongue (h)'	ljags	jak`
336	'green'	ljang gu	jang` gu

Except for 'raw', which might originally have been ja` and devoiced at some stage, these correspondences are regular.

2.2.5 Alveolar affricates

WrT ts-: gts-: bts-: tsh-: tshw-: 'tsh-: mtsh-			
		WrT	gLo-skad
099	'wall'	tsig pa	tsik pa
073-01	'onion'	tsong	tsong
277	'river'	gtsang po	tsang po
297	'root'	rtsa ba	tse` wa
290	'grass'	rtswa	tse
077	'salt'	tshwa	tsha
216-01	'gather'	'tshogs	dzom` yE
276	'lake'	mtsho	tsho
379	'night'	mtshan	tshEE mo
070	'sew'	'tshem	tshen po gyap` yE
318	'nest'	tshang	tshang

Except for 'gather', which may actually correspond to WrT 'dzom, these correspondences are regular.

WrT dz-: 'dz-: mdz-: rdz-			
		WrT	gLo-skad
351	'dirty'	dzor po	dzo` ra
031	'finger'	'dzug go	dzu` 'u
130-021	'leprosy'	mdze	dze`
288-02	'clay'	rdza	dza`

2.2.6 Alveopalatal fricatives

WrT sh-: gsh-: bsh-: zh-: bzh-			
		WrT	gLo-skad
055	'flesh'	sha	sya
375-01	'east'	shar	sya oo
166	'peel'	bshu	syu wi
220	'tear (v.)'	gshag	syak
288-07	'lead'	zha ne	sya` ne
191-01	'dance (n.)'	zhabs bro	syap` ro
066-01	'hat'	zhwa mo	sya` mo
144	'bow'	gzhu	syu`
245	'afraid'	gzhes	syee` yE
397	'four'	bzhi	syi`

The voiceless/voiced distinction of WrT has been replaced in gLo-skad by a palatal/ alveopalatal opposition ([ç-] vs. [ʃ-]). However, in rapid speech palatal fricatives frequently go to [ʃ-], leaving pitch as the only distinctive feature.

2.2.7 Alveolar fricatives

WrT s-: gs-: bs-: z-: gz-: bz-: sr-: zl-		WrT	gLo-skad
335	'yellow'	ser po	se 'o
288-03	'gold'	gser	ser
396	'three'	gsum	sum
136	'kill'	bsad	sEE yE
253-011	'dewdrop'	zil pa	sii` wa
264-02	'beam'	zer	ser`
083	'eat'	bzas	sEE` yE
217	'make'	bzos	so` yE
047	'body'	gzugs go	su` 'u
066-111	'cotton'	sring bal	Ring paa
303-001	'worm'	srin bu	sin pu
262	'moon'	zla ba	da` 'a

Although supported in part by a voicing distinction, the s/z opposition in WrT is now essentially maintained in gLo-skad by a tonal distinction, with the whole development providing a beautiful example of tonogenesis.

The WrT sr- cluster developed in two ways: in 'cotton', it went to a voiceless liquid and in 'worm' the -r- just dropped (as in Lhasa Tibetan). Since the changes in these two words are in similar environments but followed different paths, the different developments may be related to frequency instead of phonological conditioning.

2.2.8 Nasals

WrT ng-: sng-: rng-: mng-: dng-: lng-		WrT	gLo-skad
413	'I'	nga	nga`
334	'blue'	sngon po	ngOn bo
093	'sweet'	mngar mo	ngar mo
191-03	'drum'	rnga	nga
288-05	'silver'	dngul	ngUU
398	'five'	lnga	nga

WrT ny-: sny-: gny-: rny-: mny-		WrT	gLo-skad
075-01	'fish'	nya	nya`
408-041	'steel yard'	nya ga	nya` 'a
035	'heart'	snying	nying
162-01	'trap'	rnyi	nyip
347	'old'	rnying pa	nying pa
395	'two'	gnyis	nyii
323-01	'flat'	gnyom po	nyo bo
166-05	'tan'	mnyed	nyee yE

WrT n-: gn-: sn-: rn-: mn-		WrT	gLo-skad
338	'black'	nga po	nak` po
007	'nose'	sna khug	na
250	'sky'	gnam mkha'	nam
050	'pus'	rnag	na?

322	'sharp'	rno po	no 'a
186-041	'oath'	mna'	na'
WrT m-: sm-: dm-: rm-			
146	'man'	WrT mi	gLo-skad mi'
082	'ripe'	smin	tshO yE
333	'red'	dmr po	ma' 'o
003	'eye'	dmig	mik
131	'wound'	rma	ma

All WrT prefixed nasals correspond to nasals with high pitch.

2.2.9 Liquids

WrT r-: rl-: lh-			
273	'mountain'	WrT ri	gLo-skad ri'
268-01	'storm'	rlung tshub	lung na?
138	'god'	lha	La
178-02	'pass'	la	la'

2.2.10 Approximats et al.

WrT y-: g-y-			
410	'light'	WrT yang po	gLo-skad ya` nga
099-011	'curtain'	yol	yo` la
392-001	'Hare (4th of the horary signs)'	yos	yOO`
288-10	'turquoise'	g-yu	yu
288-09	'rust'	g-ya'	ya'

WrT w-
No appropriate word.

WrT h-: #-			
435-01	'almost'	WrT ha lam	gLo-skad ha lam
095-01	'mould'	ham po	ha bu
066-07	'collar'	hwa	ha
264	'light (n.)'	'od	'O?'
153	'mother'	a ma	?a ma

The initial correspondences between WrT and gLo-skad shown above are fairly regular and suggests that on the basis of its loss of prefixes and its tonal development, gLo-skad seems to represent an intermediate stage of development between Central Tibetan and Amdo Sherpa (cf. Nagano 1980).

2.3 Rhymes

gLo-skad is fairly conservative in keeping the rhymes of WrT. Like Lhasa Tibetan, however, /a, o, u/ palatalize before /-d, -n, -s/, becoming /E, O, U/, while preserving the final consonants; on the other hand, in some words, vowel lengthening (with loss of final consonants) occurs. This

inconsistency seems important for us to trace the historical alternation of rhymes in Tibetan dialects as a whole.

			WrT	gLo-skad
2.3.1	010	'mouth'	kha	kha
2.3.2	338	'black'	nag	nak`
2.3.3	081-01	'roast'	sprags	Rak
2.3.4	096	'house'	khang pa	khang pa
2.3.5	401	'eight'	brgyad	gyE7`
	136	'kill'	bsad	SEE
2.3.6	431-081	'certain'	brtan po	tEn
2.3.7	068	'needle'	khab	khab
	139-04	'tactics'	thabs shes	thap syee
2.3.8	250	'sky'	gnam	nam
	240	'dry (v.)'	bskams	kam
2.3.9	361	'right'	g-yas	yEE
2.3.10	220-01	'split (v.)'	dbral	raa` yE
	192-11	'tax'	khral	Thaa

In Central Tibetan, -a- is palatalized before -l, but in gLo-skad, the vowel is lengthened instead of palatalized.

			WrT	gLo-skad
2.3.11	186-056	'photo'	par	par
	337	'white'	dkar po	kaa 'o
	348	'new'	gsar pa	sam pa
2.3.12	405-14	'ten thousand'	khri	Thi
2.3.13	310	'louse'	shig	syik
2.3.14	289	'tree'	shing sdong	sying dong
2.3.15	249	'mind'	yid	yi7`
	120	'wipe'	'phyid	phii
2.3.16	251	'cloud'	sprin pa	Rin pa
	192-10	'value'	rin	rin`
2.3.17	320-041	'form'	dbyibs	yip
	087	'suck'	'jibs	jip` yE
2.3.18	412-03	'order (n.)'	rim	rim`
	145-02	'law'	khrims	Thim
2.3.19	224	'wind (v.)'	dkris	Thii
	355-01	'side'	'khris	Thi7`
2.3.20	030-01	'palm of hand'	mthil	thii
	356-01	'center'	dkyil	kii
2.3.21	186-052	'writing brush'	pir	pir
2.3.22	080	'water'	chu	chu
	424	'who'	su	su
2.3.23	215-04	'put in'	bcug	cuk
2.3.24	088	'vomit'	bskyugs	kyuk yE
2.3.25	143	'lance'	mdung	dung`
2.3.26	069	'thread'	skud pa	kU pa
	163-04	'fertilizer'	lud	lU7`
	102-02	'chimney'	dud khung	dUU` khung
2.3.27	392-011	'period'	yun	yUr`
2.3.28	042	'buttocks'	rkub	kup
	263-021	'a lunar mansion'	snrubs	nup
2.3.29	396	'three'	gsum	sum
2.3.30	216	'collect'	bsdus	dUU`

	223	'wash'	'khrus	ThUU
2.3.31	311	'snake'	sbrul	DUU\
2.3.32	096-01	'tent'	gur	gur\
2.3.33	192-052	'pawn'	gte	te
2.3.34	081-01	'roast'	bsreg	Rak yE
	186-054	'Tseg'	tsheg	tsha?
2.3.35	405	'times'	thengs	thang ma
2.3.36	408	'half'	phyed ka	phe?
	166-05	'tan (v.)'	mnyed	nyee yE
2.3.37	032	'nail'	sen mo	sen mo
2.3.38	304-021	'stud'	gseb	sep\
	112-02	'cover (n.)'	khebs	khep
2.3.39	081-03	'raw'	rjem pa	cen\ pa
	249-01	'mind'	sems	sem pa
2.3.40	231-01	'mix (vi.)'	'dres	Dee\
2.3.41	14-031	'glass'	shel	syee
2.3.42	288-04	'gold'	gser	ser
2.3.43	071-02	'wheat'	gro	Tho\
2.3.44	100	'roof'	thog	tho?
	090	'hungry'	ltogs	tok yE
2.3.45	374	'empty'	stong pa	tong pa
	192-02	'sell'	btsongs	tsong yE
2.3.46	304-022	'mare'	rgod ma	gOO\ ma
2.3.47	334	'blue'	sngon po	ngOn po
2.3.48	066-15	'button'	thob chi	thap chi
2.3.49	060-02	'market'	khrom	Thom
2.3.50	231-01	'carve (v.)'	brkos	kO?
	247-031	'religion'	chos	chOO
2.3.51	226	'untie'	bkrol	tOO
2.3.52	171-01	'turn around'	'khor	khor yE

/a, o, u/ are regularly palatalized before /-s, -n, -d/: /o/ and /u/ are palatalized before /-l/, while /a/ behaves distinctly. Final consonants are well preserved (except for -ul and -os).

2.4 Tones

As noted in Nagano (1980), the initial emergence of tones always occurs with the nasals. Not only does the Amdo Sherpa dialect have a tonal distinction only in the nasal series, but gLo-skad also seems to have innovated tones here. In addition, approximants have an explicit tonal distinction. Thus:

maa ra nga (066 'naked'; WrT dmar)	<-->	maa\ (078-01 'butter'; WrT mar)
nam (250 'sky'; WrT gnam)	<-->	nam\ (429 'when'; WrT nam)
nga (191-03 'drum'; WrT rnga)	<-->	nga\ (413 'I'; WrT nga)
nyee (166-05 'tan'; WrT mnyed)	<-->	nyee\ ('ugly'; WrT nyes)
lo (018 'cough'; WrT blo)	<-->	lo\ (392 'year'; WrT lo)

A tonal distinction has also been recognized for the alveolar and alveopalatal fricatives, although the tonal differences correlate with other phonetic differences e.g., the alveolar fricatives can be distinguished by voicing as well as pitch differences. Thus:

ser (288-04 'gold; WrT gser)	<-->	ser\ (264-02 'light'; WrT zer)
------------------------------	------	--------------------------------

'Gold' actually appears as [ser ɿ], while 'light' appears as [zer ʌ]. If one sets up /s/ and /z/, tones are not needed. However, in normal speech [zer ʌ] often becomes [ser ʌ], and thus it is better to treat this as a tonal distinction.

In another case where tonal distinctions have been recognized, 'velarization' differences correlate with the pitch distinctions:

syak (288 'tear (vt)'; WrT gshag) <--> syk` (215 'put'; WrT gzhag)

'tear (vt)' is pronounced as [çak ɿ], and 'put' as [šak ʌ]. It seems that the voiced/voiceless opposition was original and the 'velarization' was caused by the devoicing of [zak ʌ] (WrT gzhag) to [šak ɿ]; a similar phenomenon also occurs in Amdo Sherpa (Nagano 1980:166). Since ç- often goes to š- in rapid speech, tonal distinctions have also been established for this series.

With stops and affricates, the situation is different: since voice and aspiration remain as in WrT, tonal distinctions are not needed. Nonetheless, certain fairly fixed pitch patterns co-occur with specific features of the syllable initial consonant: aspiration usually occurs with high pitch while voicing occurs with low pitch. This is parallel to Central Tibetan except that in Central Tibetan the WrT voiced stops, under the influence of the prefixes, split into, for example, /'p-/ ['p'-] and /'b-/ ['b-], while in gLo-skad all voiced initials regardless of the prefixes went to, for example, ['b-].

Written Tibetan, Amdo Sherpa, gLo-skad, and Central Tibetan all represent different stages of tonogenesis: 1) Written Tibetan represents the original pre-tonal stage, with its various prefixes and suffixes and its oppositions between voicing, voicelessness, and aspiration. 2) Amdo Sherpa represents a second stage. The suffixes remain as in WrT, but the effect of the prefixes has been lost except for nasal initials; however, as a result tonal distinctions now exist for nasals. 3) gLo-skad represents a third stage. Tones can only be set up for the nasals and the sibilants, but contrasting phonetic pitch patterns are emerging for all initials. 4) Central Tibetan represents a final stage, where syllable structures are extremely simplified and tonal distinctions exist for all series.³

³ Of course, the above is far too simplified. In order to precisely trace the historical tonal changes among Tibetan dialects in detail, more data from the southern Tibetan dialects is indispensable. The author will attempt to get this in the near future.

SOME ARCHAIC VIETNAMESE WORDS

IN NGUYỄN TRÃI'S POEMS

Nguyễn Đình-hoà

In a paper¹ presented at the 1975 International Conference on Sino-Tibetan Languages and Linguistics at Berkeley, California, I indicated that 阮膺 Nguyễn Trãi's (1380-1442) Quốc-âm Thi-tập 國音詩集 [Collected Poems in the National Language] contains a number of archaic words. A year or so later, I was able to compare that quốc-ngữ (romanized) version of the work, transcribed and edited by Trần Văn Giáp and Phạm Trọng Điềm (1956), with another, transcribed and edited by Đào Duy Anh (1969, 1976) as part of Nguyễn Trãi Toàn-tập 阮膺全集 [Complete Words of Nguyễn Trãi], as well as with the nôm text² dated 1868.

This paper will present fifty lexemes which were used as free words in Nguyễn Trãi's time, but which are found only in compounds or in rare contexts in modern Vietnamese. Each of these archaic lexemes will be followed by its nôm character(s), its meaning, and its occurrences in the 254 vernacular poems left by the famous scholar-statesman whose six-hundredth birthday was observed by UNESCO in 1980.

1. âu 憂, 歐 'to worry'. Cf. Modern VN lo-âu.

18.8 Chẳng âu ngật, chẳng âu già.
庄 憂 兀 庄 憂 羈

30.8 Tư hào chưa báo, hãy còn âu.
絲 毫 渚 報 矣 群 歐

31.3 Nhà còn thi-lễ, âu chi ngật.
茹 群 詩 禮 歐 之 兀

68.7 Còn có một lòng âu việc nước.
群 固 殘 悉 謳 役 諾

¹ "The Language of Nguyễn Trãi: A Sampling of Fifteenth-Century Vietnamese," Paper presented at the Eighth International Conference on Sino-Tibetan Languages and Linguistics, University of California at Berkeley, October 1975. For a bibliography on the nôm script, see Nguyễn Đình-hoà 1979.

² I am grateful to Professor Hoàng Xuân-Hãn for a copy of the nôm version—hard to find and thought to have been lost until 1954—as well as for valuable (oral and written) teachings on the Vietnamese demotic script.

72.5 Những vì chúa thánh âu đời trị.

仍為主聖謳農治

116.4 Vàng thật âu chi lửa thiêu.

黃寶謳之炤燒

121.2 Được ít chẳng mừng, mất chẳng âu.

得也拯明秩拯謳

2. bát 扒 'right-hand side'. Cf. vật, the plowman's order to his water-buffalo to turn right, as opposed to cay.

42.1 Chèo lan bẻ bát thuở tà-dương.

棹蘭開扒課針陽

3. bát 扒 'span'.

45.1 Bảy tám mươi bằng một bát tay.

七接對平幾扒腮

4. bợ 把 'to flatter'. Cf. Modern VN bợ đỡ, bợ dít.

11.4 Ngày vắng xem hoa bợ cây.

時永粘花把核

Đào Duy Anh has bẻ 'to trim' (p. 711).³

5. bui 盃 'only'.

26.8 Bui một lòng người cực hiểm thay.

盃幾惡得極險台

83.8 Bui một ta khen ta hữu tình.

盃幾些嗜些有情

6. chác 卓 'to buy'. Cf. Modern VN đổi chác 'to barter'.

189.3 Túi đã không tiền khôn chác rượu.

罈也空錢坤卓酌

7. chăm 沉 'to sew, mend, patch'.

124.4 Mùa qua chăm bức áo sen.

務戈沉幅襖蓮

134.3 Đông hiem giá lạnh chăm mền kếp.

冬嫌這冷沉綿甲

8. chầy 遲 'late, long'.

137.2 Ai học thì hay mưa lê chầy.

埃寧報哈馬辰遲

³ Trần Xuân Ngọc-Lan (1981:24) more recently gave the reading trở 'to turn over [one's body, an object]'.

- 167.3 Một phát khách chầy còn thấy hỏi.
 幾 蕪 客 遲 群 体 晦
- 171.8 Của ấy nào ai từng được chầy.
 貼 意 帛 埃 曾 特 遲
9. chung 蒸 'of, from'. Cf. Hanic⁴ chi 之, 于 於.
- 10.1 Sang cùng khó bởi chung giới.
 聳 共 庫 黜 蒸 奎
- 80.7 Ngoài chung phận ấy cầu dâu nữa.
 外 蒸 分 意 求 兜 女
- 122.5 Sự thế chung ta dầu đậm-bạc.
 事 世 蒸 些 油 淡 泊
10. cóc 谷 'to know'. Cf. Hanic giác 覺. Also cóc, cộc.
- 20.7 Tuồng ni cóc được bề hơn thiết.
 從 尼 谷 特 皮 欣 舌
- 33.4 Có thân thì sá cóc chung thân.
 固 身 扣 舍 谷 蒸 身
- 47.1 Có thân thì cóc khá lam sao.
 固 身 扣 谷 可 澀 牢
- 85.2 Chẳng cóc nhân sinh gửi chơi.
 拯 谷 人 生 改 制
- 104.8 Có ai cóc được mây cười cười.
 固 埃 谷 特 其 畸 畸
- 151.7 Thế-gian ai có thì cóc.
 世 間 埃 固 扣 谷
11. dạm 淡, 攏 'to draw, sketch, trace'.
 19.5 Giang-son đạm được đồ hai bức.
 江 山 淡 特 圖 二 幅
12. dịp 韜 'before, formerly'.
 62.3 Dịp huyện hoa còn quyền khách.
 韜 縣 花 群 脊 客
- 162.3 Dịp còn theo tiên gác phượng.
 曠 群 曉 仙 閣 鳳
- 200.1 Dịp trúc còn khoe tiết cung.
 曠 竹 群 誇 節 勁

⁴ This term has been proposed by Schneider (1981, 1982: personal communications).

13. đôi 唯 'to follow (up), continue'. Cf. Modern VN theo dõi.

188.3 Tước thưởng càng ngày càng đôi chịu.

爵賞強時強唯召

14. để 底 'to leave behind, abandon'.

8.1 Đã mấy thu nay để lệ nhà.

已傘秋尼底例茹

Trần Văn Giáp's gloss is 'to follow', but actually the author of the poem had abandoned his family tradition of living in retirement amidst nature.

15. đôi¹ 隊 'maid-servant'.

1.3 Con đôi trốn, đường ai quyền.

昆隊遁揚埃眷

16. đôi² 隊 'to follow'. Cf. theo dõi.

132.3 Văn-chương chép lấy đôi câu thánh.

文章削秘隊勾聖

160.2 Lui tới đôi thì miên phận an.

雷細隊扣免分安

162.2 Đôi phận mà yên há sở cầu.

隊分麻安呵所求

17. đôi³ 隊 'several; every'.

41.2 Đôi nước non, chơi quán dầu.

隊諾嶽制管油

45.5 Nhật nguyệt soi đôi chôn hiện.

日月燭隊淮現

62.5 Đành hay thương-hại đôi thì biên.

停咄滄海隊扣變

75.5 Qua đôi cảnh chép câu đôi cảnh.

戈隊景削勾隊景

18. đon dùng/rùng 衰用 'to add up, gather' (Trần Văn Giáp and Phạm Trọng Điềm 1956: 157).

207.4 Hoa nguyệt đon dùng mây phát lành.

花月衰用余發冷

19. đôi 堆 'to question, deny'. Cf. đôi cơ, found in Poem 91.

13.2 Thua được bằng cờ ai kẻ đôi.

輸特朋碁埃几堆

91.8 Đôi co ai dễ kém chi ai.

堆姑埃易剝之埃

In Modern VN, đôi co means 'to compare, contrast, confront (two versions of the same story—as in court)'.
20. han 嘆 'to inquire'. Cf. Modern VN hỏi han.

23.8 Thấy có ai han chó đái đàng.

覓固埃嘆渚代贍

133.6 Khó ở kinh-thành thiếu kẻ han.

庫於京城少几嘆

21. hằng 恒 'constantly, often'. Cf. Hanic thường 常.

12.3 Nghiệp cũ thi thư hằng một chức.

業窳詩書恒茂職

18.3 Song viết hằng lệ phiên sách cũ.

双日恒例片册窳

23.1 Ngày tháng kê khoai những sản hằng.

時朧替芋仍産恒

92.4 Sừng hằng những mọc qua tai.

鯨恒仍木戈腮

139.2 Hai ấy hằng lệ sự thế-gian.

尔意恒例事世間

Because of a taboo, thường had to substitute for hằng under the Nguyễn dynasty (1802-1945) (Trần Văn Giáp and Phạm Trọng Điềm 1956:42).

22. khiên 遣 'to cause to...'

128.8 Khiên chó cho qua một đạo thường.

遣渚朱戈茂道常

23. khó 庫 'poor, needy, lowly'.

10.1 Sang cùng khó bởi chung giới.

聶共庫黜蒸奎

43.3 Khó bên mới phải người quân-tử.

庫卜買沛得君子

58.7 Khó miễn vui, chẳng thừa trách.

庫免盃庄所貴

72.7 Thừa chỉ ai rằng thì khó ngặt.

承旨埃浪扣庫兀

77.1 Giàu chẳng kịp, khó còn bằng.

霸庄及庫群朋

133.6 Khó ở kinh-thành thiếu kẻ han.

庫於京城少几嘆

139.1 Giàu người hẹp, khó người tan.

霸得合庫得散

24. khôn 坤 'difficult'.

1.5 Ao bờ hẹp hòi khôn thả cá.

洄黜狹回坤且斂

7.4 Thuyền mỏng khôn đua bể lục kinh.

船斷坤都泄六經

6.6 Khôn biết lòng người văn dài.

坤別惡得煥駭

65.5 Cơm áo khôn đến Nghiêu Thuần trị.

餽襖坤田堯舜治

25. khúng 肯 'to consent to'

14.7 Thuyền mỏng còn chèo chằng khúng đố.

船斷群掉拯肯杜

54.7 Cốt lãnh hồn thanh chằng khúng hoá.

骨冷魂清庄肯化

92.1 Đương cơ ai kẻ khúng nhường ai.

當機埃几肯讓埃

26. lệ 戾 'to fear'. Cf. Modern VN e lệ.

48.8 Cầu ai khen liền lệ ai chê.

求埃嗜免戾埃歧

134.4 Hạ lệ mồ hôi kết áo đơn.

夏戾戊灰結襖單

160.4 Quét hiên ngày lệ bóng hoa tan.

括軒時戾俸花散

199.4 Khoan khoan những lệ ác tan vừng.

寬匕仍戾鷓散葷

The noun thỏ 兔 would fit the context better than ác 鷓 (Đào Duy Anh, p. 822).

27. liễn 免 'and'. Cf. Modern VN lãn.

2.8 Đạo làm con liễn đạo làm tôi.

道澁昆免道澁碎

48.8 Cầu ai khen liền lệ ai chê.

求埃嗜免戾埃歧

28. mống 夢 'germ, sprout'. Cf. Modern VN mầm mống.

25.1 Có mống tự nhiên lại có cây.

固夢自然 吏囡核

29. mũa 馬罵 'do not...'

10.6 Trung hiếu niêm xưa mũa nữ rồi.

忠孝念初馬女移

25.6 Nghĩa nhân lễ trí mũa cho khuây.

義仁禮智馬朱弓

44.7 Làm người mũa cây khi quyền-thế.

濫得馬忌欺權勸

91.2 Mũa cây sang, mũa cây tài.

馬忌廊馬忌才

137.2 Ai học thì hay mũa lệ chày.

埃孛扣哈馬戾退

140.6 Chê khen mũa ngại tiếng chê khen.

吱嗜馬矜嗜吱嗜

30. nài chi 奈之 'not to mind; why should you need?'

4.4 Áo mặc nài chi gấm là.

襖默奈之錦羅

31. náu 耨 'to take shelter, hide'.

33.1 Náu về quê cũ bấy nhiêu xuân.

耨術圭寥閉饒春

54.3 Non lạ nước thanh làm náu.

嫩邏諾清溫鬪

Đào Duy Anh (p. 413) has dầu for the graph 鬪, dầu.

153.8 Đông-giang được náu một dài câu. (?)

桐江特報茂蔓鈎

Đào Duy Anh (p. 447) has nân for the graph 報, noãn.

32. năng 能 'to know, be acquainted with'.

5.8 Năng mây sơn-tăng làm bạn ngàm.

能某山僧濫伴吟

33. ngặt 兀 'poor, needy'. Cf. Modern VN nghèo.

10.7 Con cháu chó hiềm song viết ngặt.

昆詔渚孃双日兀

- 18.8 Chàng âu ngật, chàng âu già.
庄謳兀 庄謳羸
- 29.5 Nhà ngật túi không tiền máu tử.
茹兀薜空錢母子
- 31.3 Nhà còn thi-lễ âu chi ngật.
茹群詩禮歐之兀
- 46.6 Nhà ngật quan thanh lạnh nữa đèn.
茹兀官清冷女烟
- 122.7 Vũ truyền thiên-hạ Nhan Uyên ngật.
禹傳天下顏淵兀
- 140.5 Khó ngật hãy bền lòng khó ngật.
庫兀矣駢惡庫兀
- 168.2 Dầu ngật ta vui đạo ta.
油兀些盃道些
34. ngheo 饒 'difficult'. Cf. Modern VN ngặt nghèo.
32.6 Sự thế bằng cò bước bước ngheo.
事世平碁北北蹇
46.5 Thì ngheo sự biến nhiều bằng tóc.
扣蹇事變饒平避
131.6 Thuở ngheo thì biết có tôi lành.
課饒扣別固碎冷
35. ngõ 午 'so that, so as to'. Cf. Modern VN ngõ hầu.
4.6 Đất cây ngõ ải rảnh ương hoa.
坦靺午隘吟挾花
37.4 Lui: ngõ được đất nho-thần.
醜午特坦儒臣
143.6 Kết bạn thông mai ngõ phỉ nguyên.
結伴椿梅午丕願
195.4 Ốc dương hoà lại ngõ dùng chân.
沃陽和吏午停真
36. phen 番 'to compare'.
180.7 Bàng rông nọ ai phen kịp.
朋蜂奴埃番及
217.5 Danh thơm Thượng-uyên còn phen kịp.
名蒼上苑群番及

37. phô 鋪 '[pluralizer]'. Cf. Modern VN chúng, các.

192.1 Nhấn bảo phô bay đạo cái con.

恩保鋪悲道丐昆

Trần Văn Giáp - Phạm Trọng Diêm (1956) have phô bày.

38. quạnh 蔓 'deserted'. Cf. Modern VN hiu quạnh.

29.4 Câu quạnh cây nhân dưỡng mỡ thân.

鈎蔓耜閒養某身

31.1 Am quạnh thiêu hương đọc ngũ kinh.

庵蔓燒香讀五經

39. rập 立 'to help, assist'.

184.4 Rập chúa hàng ngay liền cần.

立主恒甃免勤

40. rợ 纜 'rope; string, twine'.

137.3 Rợ dứt khôn cầm bà ngựa đừ.

纜担坤拎娑馭樊

176.3 Rợ nọ có dai nào có dứt.

纜怒固唯市固担

41. rụng 動 '[of leaf] to fall'.

5.3 Rụng nhiều cây rợ hoa chầy rụng.

稜饒核葉花遲動

Trần Văn Giáp - Phạm Trọng Diêm (1956) as well as Đào Duy Anh (1956) have động.

42. tam 三 'younger sibling'. Cf. Modern VN em.

64.6 Mây khách khứa, nguyệt anh tam.

遷客次月娶三

139.6 Bếp lạnh anh tam biếng hỏi han.

灶冷娶三丙噯嘆

174.1 Tuy rằng bốn bề cũng anh tam.

雖浪界波共英三

43. thìn 辰 'to guard, preserve, conserve'. Cf. (giữ) gìn.

127.3 Hết kính hết thìn bề tiến thoái.

歇敬歇辰皮進退

139.8 Ta thìn nhân nghĩa chớ loạn đơn.

些辰仁義渚乱單

193.6 Tính quen khinh bạc bướm chẳng thìn.

性 涓 輕 泊 蝶 拯 辰

201.2 Lòng xuân nhọn động át khôn thìn.

蕊 春 忍 動 乙 坤 辰

44. thuộc 熟 'acquainted with'.

26.3 Non cao non thấp, mây thuộc.

嫩 高 嫩 舒 靈 熟

45. tịn 羨 'to finish, exhaust'.

2.4 Tìm thanh trong vắt tịn chè mai.

尋 清 中 日 羨 茶 梅

17.3 Song im hương tịn khói sơ tàn.

窓 陰 香 羨 燭 初 殘

Đào Duy Anh (p. 704) says that in the provinces of Thanh-hoá and Nghệ-tĩnh tịn is used instead of tận 'all the way to'.

46. trại 歹 'to deviate'.

2.7 Bui có một niềm chẳng nữ trại.

盃 固 幾 念 庄 女 歹

188.1 Trung cần há nữ trại cần xung.

忠 勤 呵 女 歹 介 赫

According to Schneider (1979: 17), the reading trễ 'tardy' used by TVG-PIĐ in Poem 2 and by ĐDA in both Poems 2 and 188 is incorrect.

47. tróc 祿 'top of the head'

159.8 Hồ xanh xanh ở tróc đầu.

虎 撐 乙 於 祿 頭

48. tua 須 'should, ought to'.

10.5 Liêm cần tiết cả tua hằng năm.

廉 勤 節 奇 須 恒 掄

59.7 Nhìn thấy Ngu-công tua sá hỏi.

忍 籠 愚 公 須 舍 悔

175.2 Tua hay thừa phận chó còn nản.

須 咄 所 分 渚 群 唯

49. tượng 象 'perhaps, maybe, seemingly'.

12.4 Duyên xưa hương lửa tượng ba thân.

緣 初 香 火 象 巴 身

45.8 Tượng có giới bày đặt vay.

象 固 奎 排 達 為

103.2 Tương thấy ba thân đã có duyên.

象 寬 匪 身 屯 固 絲

50. vây 團 'to have a happy reunion/meeting'.

75.3 Áng cục thông quen vầy bầu bạn.

盎 菊 椿 涓 團 部 伴

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Abbreviations:

Al	Anthropological Linguistics. Bloomington.
ALH	Acta Linguistica Hafniensia. Copenhagen
BEFEO	Bulletin de l'Ecole Française d'Extrême-Orient. Paris.
BIHP	Bulletin of the Institute of History and Philology, Academia Sinica.
BLS	Proceedings of the Berkeley Linguistics Society.
BMFEA	Bulletin of the Museum of Far Eastern Antiquities. Stockholm.
BSL	Bulletin de la Société de Linguistique de Paris.
BSOAS	Bulletin of the School of Oriental and African Studies. University of London.
CAAL	Computational Analyses of Asian and African Languages. Tokyo.
CKYW	Chung-kuo Yü-wen. Beijing.
GK	Gengo Kenkyu. Tokyo.
HJAS	Harvard Journal of Asian Studies.
JAAS	Journal of Asian and African Studies. Tokyo.
JAOS	Journal of the American Oriental Society. New Haven.
JAS	The Journal of Asian Studies. New York.
JASB	Journal of the Asiatic Society of Bengal. Calcutta.
JBRS	Journal of the Burma Research Society. Rangoon.
JCL	Journal of Chinese Linguistics. Berkeley.
JHKAS	Journal of the Hong Kong Archaeological Society.
JIPA	Journal of the International Phonetic Association.
JOUFS	Journal of Osaka University Foreign Studies. Osaka.
Lg.	Language. Baltimore.
LTBA	Linguistics of the Tibeto-Burman Area. Fresno and Berkeley.
MZYW	Minzu Yuwen. Beijing.
NEFA	North-east Frontier Agency.
NSL	Nepal Studies in Linguistics. Kathmandu.
OPWSTBL	Occasional papers of the Wolfenden Society on Tibeto-Burman Linguistics.
SELAF	Société d'Etudes Linguistiques et Anthropologiques de France. Paris.
SIL	Summer Institute of Linguistics.
TAK	Tonan Ajia Kenkyu [Southeast Asia Studies]. Kyoto.
THJCS	Tsing Hua Journal of Chinese Studies.
TP	T'oung Pao. Leiden.
TPS	Transactions of the Philological Society. Oxford.
UCPL	University of California Publications in Linguistics.
WZUL	Wissenschaftliche Zeitschrift der Karl-Marx-Universität. Leipzig.
YAK	Tokyo University of Foreign Studies.
ZDMG	Zeitschrift für Ethnologie, Organ der Deutschen Gesellschaft. Wiesbaden.

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STC I	The First Meeting on Sino-Tibetan Reconstruction, Yale University, 1968.
STC II	The Second Meeting on Sino-Tibetan Reconstruction, Columbia University, 1969.
STC III	The Third Meeting on Sino-Tibetan Reconstruction, Cornell University,

- 1970.
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- STC V The Fifth International Conference on Sino-Tibetan Language and Linguistic Studies, University of Michigan, 1972.
- STC VI The Sixth International Conference on Sino-Tibetan Languages and Linguistics, University of California, San Diego, 1973.
- STC VII The Seventh International Conference on Sino-Tibetan Languages and Linguistics, Georgia State University, Atlanta, 1974.
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- STC X The Tenth International Conference on Sino-Tibetan Languages and Linguistics, Georgetown, 1977.
- STC XI The Eleventh International Conference on Sino-Tibetan Languages and Linguistics, University of Arizona, 1978.
- STC XII The Twelfth International Conference on Sino-Tibetan Languages and Linguistics, Paris, 1979.
- STC XIII The Thirteenth International Conference on Sino-Tibetan Languages and Linguistics, University of Virginia, 1980.
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