

Tonogenesis in Yipo-Burmic Syllables with Final Stops

Jakob Dempsey
Yuan-Ze University

ABSTRACT

This paper proposes a new and, hopefully, simpler explanation for the historical development of syllables with final stops in Yipo-Burmic (Lolo-Burmese) languages, particularly in regard to syllables such as ‘six,’ which show a voiceless, aspirated stop initial in the “lower register,” a tonal category often associated with voiced proto-initials. Evidence cited from several other East Asian linguistic phyla suggests that the development which the author proposes for Yipo-Burmic is already widely seen in this area.

Key Words: Lolo-Burmese, tonogenesis, Tibeto-Burman, historical phonology

Introduction: General features of tonogenesis in Yipo-Burmic

The two major sides of the Yipo-Burmic (=Lolo-Burmese) language family both contain many examples of languages whose tone-systems are sufficiently complex to reflect two, or sometimes more, different reflexes developing out of the Common YB (cYB) tonal categories. The most common two reflexes are from an earlier voiceless vs. voiced series of initials. For example, in Lahu, an Yipoic language, words with a mid-level tone such as *cì* ‘be sour’ often derive from cYB Tone-Contour One (TC-I, the most unmarked non-stopped proto-tone) when the word had a voiceless initial, thus typologically similar to Mandarin Tone-1 (e.g. 東 *dōng* < **toŋ* ‘east’), while words with a low-falling tone such as *cì* ‘tooth’ also derive from cYB TC-I, but from formerly voiced initials, parallel to Mandarin Tone-2 (e.g. 同 *tóng* < **doŋ* ‘same’). For cYB Tone-Contour Two (TC-II, the second-most unmarked type), Lahu fails to show such a voiced vs. voiceless split (although it does show a TC-II split based on another, less commonly

seen distinction). There is a third non-stopped proto-tone category, TC-III, and it has left traces in a number of YB languages, but in Lahu it has mostly merged with the voiceless TC-I type. Syllables with stopped endings make up the TC-IV category, which can be divided very roughly into upper register reflexes from former voiceless initials, and lower register reflexes from former voiced initials, but the circumstances are actually quite a bit more complex and the details of reconstruction for this tonal category are not quite as settled as are the other three. Some further examples from Lahu:¹

1. This paper includes transcriptions of a number of words from many different languages. The goal behind the transcriptions used is twofold: a) to present the data in a visual format which is simplified and easy to read, b) to move away from the presentation of mere phonetic detail and towards a more phonemically-oriented transcription which at the same time attempts to present a unified, standardized representation of those features that are common to several different languages. For everyday transcriptional purposes, it is often sufficient to just distinguish a language's tones as, say, low falling and high rising or even as just high, mid and low rather than having to see and mentally note the exact, numeric pitch levels each time one sees the word in print. If a language has just one mid-front vowel, it is not necessary each time it is shown to remind the reader that it is phonetically ε , e or E — a simply e will do unless we are specifically discussing its phonetic details. These are two examples of my method.

For the Yipoish languages referred to in YY and YZ (q.v. below) as 彝語, the commonly-seen high-level and mid-level tones are represented as \tilde{a} and \bar{a} ; a low-falling tone with non-tense phonation, whether 31 or 21 or 11, is \tilde{a} ; Y35's 34 tone is \tilde{a} , and Y39's 44 tone is \tilde{a} . Tense voicing in this group has developed from earlier stopped syllables; to ensure typographical neatness and at the same time remind the reader of the historical origin (this being a paper on historical phonology), these tense-voiced syllables are given a final $-q$. High, mid and low-toned versions are thus $\tilde{la}q$, $\bar{la}q$ and $\tilde{la}q$. In Sani (Y39), we see a different pattern, and a post-vocalic tone indicator is only found on one tone: as in Lisu, this is a low tone derived from an earlier final stop. For both Lisu and Sani, we will simply mark this with $-q$, e.g. laq . The $-q$ represents tense voicing in Lisu; in Sani it represents a true glottal stop, but both have the same historical origin. For Y35 and Y38, the languages in our sample which show inverted register, I have retained the overt tone-markings in order to highlight the inversion.

Such higher and lower toned, originally stopped syllables are also found in the Hani languages and Lahu; since I am more familiar with the their phonological systems, I will show the tones based on a system of markedness: such syllables with sonorant or voiced fricative initials will be marked for high tone, but unmarked for low tone; for all other initials, it is the opposite. Thus: Lahu vaq 'chicken', $\gamma\tilde{a}q$ 'chicken', tiq 'to soak', laq 'hand', $k^h\delta q$ 'six', (note that the unmarked mid vowel is o , while the marked, higher one is ϕ); Hani juq 'to lie down', $\tilde{s}\#q$ 'new', zaq / γaq 'to weave', $n\tilde{a}q$ 'to be black', $b\#q$ 'to be numb', $b\tilde{u}q$ 'to spoil'. The mid unstopped tone in Hani is represented by $-h$ after the pronounced coda. In Lahu, except for the slight modification of stopped tones discussed above, other tones follow Matisoff's system in his dictionary. - The complex tonal system of Lisu is rendered as follows: 1) high 55 tone as \tilde{a} , rising 35 tone as \tilde{a} , mid to high 44 with tense voicing as ah , plain 33 as a , low falling 31 as \tilde{a} , and falling 42 with tense voicing as aq . For the Jino forms which appear here: \tilde{a} = tone 55, a^c = 44, \bar{a} = 33, and a = 42. For Gazhuo (GZ), \tilde{a} = tone 55, \hat{a} =

I - voiceless	I - voiced	II	III	IV - voiceless	IV - voiced
<i>sɿ</i> - 'die'	<i>cḡ</i> - 'bridge'	<i>bê</i> - 'chew'	<i>p^ho</i> - 'open'	<i>zĩq</i> - 'move'	<i>dāq</i> - 'good'
<i>p'u</i> - 'silver'	<i>vḥ</i> - 'snake'	<i>k^hâ</i> - 'bitter'	<i>šĩ</i> - 'know'	<i>k^haq</i> - 'village'	<i>k^hḡq</i> - 'six'
<i>na</i> - 'listen'	<i>ŋā</i> - 'I'	<i>mũ</i> - 'sky'	<i>mu</i> - 'tall'	<i>nōq</i> - 'bean'	<i>laq</i> - 'hand'

On the Burmish side, Bola, in the North Burmish group, for example, shows no such split in its tonal reflexes for TC-I, but words with a high-rising tone often derive from TC-II with voiceless initials, whereas words with low-falling tone as a rule derive from TC-II with voiced initials in cYB. Some Bola examples:

I	II - voiceless	II - voiced	III	IV - voiceless	IV - voiced
<i>šĩ</i> - 'die'	<i>šón</i> - 'louse'	<i>pĩ</i> - 'give'	<i>p^hũŋ</i> - 'open'	<i>^hneq</i> - 'mucus'	<i>bāp</i> - 'rot'
<i>k'jũ</i> - 'horn'	<i>k^hāu</i> - 'steal'	<i>kjōn</i> - 'fungus'	<i>sẽ</i> - 'know'	<i>č^het</i> - 'deer'	<i>veq</i> - 'wear'
<i>ŋḡ</i> - 'silver'	<i>^hpjẽ</i> - 'comb'	<i>nō</i> - 'cattle'	<i>nāu</i> - 'breast'	<i>sak</i> - 'tree'	<i>mot</i> - 'blow'

As can be seen from the chart, TC-III has again merged, in this case with the voiceless reflexes of TC-II.

For the historical phonologist it is particularly unfortunate that the language with the oldest records in the YB group, Inscriptional and Written Burmese, itself lacks any tonal splits at all, thus, despite all its other valuable evidence, Burmese contains no unequivocal information about the earlier voiced vs. voiceless status of cYB non-sonorant initials.

Based on the languages which do show such tonal splits, many aspects of the YB group's phonological history have been worked out to the agreement of many investigators, although in the case of the Burmish side such work has been very recent.² But with regard to TC-IV, the category of words reconstructed as having final stop consonants in cYB, there is significant disagreement among

53, ā = 33, a = 35, ā = 323.

In the Northern Burmish group the syllables still have true final stops, in which case the *-q* here means a glottal stop. Tense voicing in this group reflects a former strident prefix (this term used since it may have had a supralaryngeal gesture, e.g. *s-*, or it may not have, thus *h-*). This type of tense voicing, due to its historical origin, is transcribed here with the prefix *^h-*, e.g. LC-A *hmraŋ* :: ZW *^hmjaŋ* 'tall'. - For reconstructed forms, I have purposely avoided the Matisoff / Bradley system of attaching H (high) or L (low) after YB syllables; not only does this practice lead to many redundancies in representation, it leaves the reconstructed forms unnecessarily abstract and unfinished. I see it as my task here to provide a reconstruction from which one can automatically predict the future H or L register (depending on the language).

2. cf. Dempsey 2003a.

scholars. The variety of initial-types found to occur in present-day YB languages within the tonal categories that must be reflexes of cYB TC-IV is larger than one would expect based on the fairly simple theory of a two-way (voiced vs. voiceless initial) split that has been worked out for the other Tone Contours, and the confusion lies in various scholars' attempts to explain this unexpected distribution. Sonorants are typically associated with voiced initials from the proto-language, but here we find them also in the upper register³, e.g. Bola ^h*neq* - 'mucus'. Most particularly, syllables with certain kinds of initial stops occur where the two-way split would not allow: voiced stop initials in the upper register, e.g. Lahu *ziq* - 'move', and aspirated stop initials in the lower register, e.g. Sani (Y39) *k^huq* 'six'. This paper examines the major theories which attempt to explain this tonal split in TC-IV, and introduces a new view based on known historical developments in Chinese, Karen, Thai, and particularly in Tibetan.

Let us look at two different explanations, the first rather popular in China, and the second often referred to as the prevailing theory.

Li 1996 (李永燧) envisions a cYB phonological system with no consonantal prefixes at all, although he accepts them for Common Tibeto-Burman (cTB). He accepts the Benedict's version of a two-way (e.g. *p*- *b*-) distinction in initial stops for cTB, but reconstructs a four-way distinction for cYB: *p*- *p^h*- *b*- *b^h*- recognizing the likelihood that the difference between, say, cYB *p*- and *p^h*- is due to the influence of prefixes at the cTB stage. Li's cYB **b^h*- is indeed an oddity: although we find such four-way stop-arrays in many languages of the Indian subcontinent, they are quite rare in East Asia, the Sino-Tibetan sphere. One usually reconstructs **b^h*- in order to account for a combination of voicing and aspiration seen in daughter languages, e.g. in Indo-European. Li's **b^h*-, however, has no aspirated reflexes (op.cit. page 4), so I suspect it could be better interpreted as "some different kind of **b*-".

3. For the term "register" cf. Handel 2003, p.3: "'Upper register' refers to those tones traditionally termed 陰 *ym*, and 'lower register' to those tones traditionally termed 陽 *yáng*. Upper register tones correlate with the voiceless initials of the traditional framework, while lower register tones correlate with the voiced initials. The terms 'upper' and 'lower' are used as category labels; there is no implication that upper register tones are higher in pitch than lower register tones, although such a correlation may have existed historically." I have added the Chinese characters to his footnote. This type of analysis is now used for many other tonal languages besides Chinese. Handel's use of the term here applies more to an earlier stage of Chinese; in this paper I use "register" more often in synchronic description. The important thing to remember is that it implies a comparison between two types: for example in Lahu and Hani, words of the *paq* type are in the upper register whereas words of the *pàq* type are in the lower register.

In Li 1992 he first suggests three different factors which may influence the development of differences in tone: 1) variation in type of initial 2) presence or absence of a final 3) variation in vowel-length. When looking at TC-IV syllables, Li seems to have been too hasty in dismissing the first factor; the second factor was not relevant since all the syllables have or had stopped finals, therefore that left vowel-length as the only possible explanation, and conveniently he found a single TB language, Hani, which shows a slight variation in vowel-length between closed syllables in upper and lower register. Although other scholars have taken this variation to be sub-phonemic since there is already a contrast in tonal categories, Li took it to mean that the tonal contrast was secondary, that all YB languages must have originally had this length-variation also, but that it is now preserved only in Hani. Unfortunately, other than in Hani there is no evidence for such a variation in his two sets of TC-IV words anywhere else in TB languages.

Neither does Li present any explanation for the distributional details mentioned above: why should syllables beginning with sounds such as *f*- *š*- *x*- be so much more common with Li's "long-vowel" proto-rimes? Why should sonorant initials favor "short-vowel" proto-rimes? Li's proposed system seems typologically aberrant and unrealistic.

Matisoff 1972 proposes that upper-register voiced stops derive from earlier prenasalised voiceless stops, e.g. ^N*t*- ^N*p*-, while those in the lower register derive from ^N*d*- ^N*b*- etc. Aspirated stops in lower-register were said to be originally voiceless stops but prefixed by some voiced prefix (evidently excluding the homorganic nasal). Matisoff accounted for the difference in Lahu between a high-toned form like *k^hāq* 'crossbow' and a low-toned form like *k^hōq* 'six' by positing a prefix, according to him probably *d*- in this case, before a voiceless **kruk* for the latter word.

Matisoff theorised that the "voiced prefixes" seen in Written Tibetan (*g*- *b*- *d*- *r*- *l*-) were also found in proto-Yipoish; the argument being: 'six', for example, must have had a voiceless velar stop in order to turn into the present voiceless aspirate (according to Benedict's system laid down in the STC⁴), but the tone category is low, so there must have been a voiced prefix before the velar stop that caused the word for 'six' to end up with a low tone. This would seem to be in agreement with the generally observed tonogenetic phenomenon seen throughout East Asia, including in Chinese, wherein voiced initials develop into low

4. The basic pattern for initial consonants in TB, as presented on p. 13 of Benedict 1972, includes a series of voiced vs. voiceless stops: *p*- *t*- *c*- *k*- vs. *b*- *d*- *č*- *g*-.

tones and voiceless initials into high tones.

Here are some Lahu examples from Matsoff 72 which should make his position clear:

UPPER REGISTER	<i>pāʔ</i> < *ʔ <i>pak</i> come undone	<i>khāʔ</i> < *ʔ <i>krak</i> crossbow	<i>jāʔ</i> < *ʔ <i>Ntsak</i> drop/drip
GLOTTALIZED	<i>cāʔ</i> < *ʔ <i>kyak</i> rope		<i>cā</i> < *ʔ <i>dzak</i> join
LOWER REGISTER	<i>qāʔ</i> < *ʔ <i>gok</i> crooked	<i>qhāʔ</i> < *ʔ <i>ḥ</i> · <i>kok</i> return	<i>būʔ</i> < *ʔ <i>Nbuḥ</i> rot

The transcription in this table keeps Matisoff's original version. My interpretation, as well as revised etymologies of many of these words, can be found in the data sets at the end of this paper. The symbol **ḥ* - as in 'return' is frequently found in the reconstructions of Matisoff 1972 and is one of the main reasons for my writing this paper. Matisoff's explanation for this symbol has changed little since then, so we can quote from his 2003 *Handbook*, p. 144: "In many other cases, however, the Loloish tonal developments are the only evidence for the C-prefix. To indicate this, TSR usually puts a slash through the C, thus **ḥ* -." Simply put, Matisoff is saying that a certain tonal development seen in present-day YB languages *requires* the reconstruction of this prefix, even when, as in many cases, there is no evidence for it. This is equivalent to stating: "Since this substance burns, it must contain phlogiston. Where evidence for phlogiston is lacking, we must assume the object contains another sort of phlogiston which is *phlogiston*."

Matisoff 2003 p. 143 "In favorable cases there is extra-Loloish evidence for a voiced prefix" shows us that, in general, the best kind of evidence that Matisoff can present is still irrelevant to the task of reconstructing cYB. Given the ephemeral nature of prefixes in TB⁵ it is impossible, for example, to use the *g* in Written Tibetan (wTib) *gsad* 'kill' as any kind of relevant evidence when discussing the history of, say, Achang *sat*. Speculating on the precise phonetic influence of such totally hypothetical YB prefixes is then even more futile. Matisoff characterizes these prefixes (the above-mentioned *g*- *b*- *d*- *r*- *l*-) as "voiced", and projects this all the way back to the proto-TB level, but there is no proof that they were voiced even at the stage of wTib, and it certainly cannot be demonstrated by looking at modern Tibetan dialects. Most pointedly, however, the complicated, multi-step scenario which Matisoff envisions for low-toned aspiration is not the most simple one available; it thus violates Occam's Razor and

5. A quick look at large sets of cognates, for example as seen in Dempsey 1995, shows us that even if it may be possible in certain cases to reconstruct a proto-prefix, it will inevitably either undergo sound-changes throughout the millenia, or will be exchanged for another by the process of analogic leveling, or will completely disappear (as in YB languages).

further lacks any corroborative evidence in the Sino-Tibetan linguistic area.

Purpose of this paper

Although Matisoff's analysis of tonogenesis in YB contains a number of valuable contributions, I feel that this particular part of it has many problems. In this paper my aim is to propose a simpler solution, namely that YB words such as Lahu ꞥ^hðq 'return', ꞥ^hẽq 'vomit' etc. developed from simple voiced stop initials in a manner commonly seen throughout the Sino-Tibetan area and southeast Asia. In order to understand tonogenesis in YB more clearly, we need to first look at some distributional features in several languages.

Distribution of initials in TC-IV syllables and effect on tonogenesis in YB

We will examine the types of initials which can occur in languages of the YB group. Since our interest is in understanding the behavior of categories of sounds, it is not necessary to catalog every single type of initial possible. For this preliminary investigation it will suffice to pick a suitably representative language from the Burmish side and the Yipoish side of YB.

Burmese, the best-documented language of the YB group, preserves all four tonal categories from Common Yipo-Burmic (cYB), but, apart from a series of voiced and voiceless sonorant initials, shows no differentiation which would reliably reflect earlier voicing distinctions for other initials. Given the complex relationship that we often see between present-day reflexes of initial stops and their historical sources in various languages of East Asia, it would, in the context of TC-IV syllables, be reckless to assume, hypothetically, that a Written Burmese (wBrm) syllable such as *pak* must always derive from an earlier **bak*, or that a wBrm syllable such as ꞥ^h*ak* can only be a reflex of earlier **pak*.

For now, let us take a closer look at Zaiwa as a representative of the Northern Burmish group in which TC-IV syllables often do show a tonal split, that is to say a division into an upper and a lower register. If we look at the distribution of initial-types seen in TC-IV words (in Yabu 1982⁶) we find several types of skewed distribution:

6. Due to the rather small size of Yabu's corpus, I had to verify some aspects of this distribution by consulting other sources.

upper register:

p- p^h- m- f- t- t^h- n- l- r- c- c^h- s- č- č^h- š- j- k- k^h- ŋ- x- ʔ- (vowel initial)

lower register:

p- m- t- n- l- r- c- č- j- k- (k^h-) ŋ-

Voiceless aspirated stops and fricatives (s - š - x) are, excepting a few rare examples—mostly loans from Jingpo, and not even present in this corpus—not found in the lower register, and unaspirated stop initials are virtually nonexistent in the upper register unless accompanied by tense voicing. Of the nineteen types of sonorant-initial syllables found in the upper register in Yabu's corpus, all but one have tense voicing, otherwise the sonorant initials are all in the lower register. Vowel-initial words are in the upper register.⁷

If we remove those cases representing rare exceptions and treat tense voicing as a phoneme, we would have the following distribution for syllables with final stops:

upper register:

p^h- f- t^h- c^h- s- č^h- š- k^h- x- ʔ-

lower register:

p- m- t- n- l- r- c- č- j- k- ŋ-

In such a system, the members of the upper and lower registers are in complementary distribution: tone register is completely predictable, i.e. redundant, being wholly determined by the initial. This is the underlying phonological system for stopped syllables, although the actual present-day system is more complex. Some typical examples of the distribution are:

upper register:

āp < ap 'needle', jūp < hjup 'sleep', ŋōq < hŋoq 'bird', ŋāq < ʰŋaq 'sufficient'
t^hōq < t^hoq 'go out', kūt < hkut 'make', čūp < čūp⁸ 'suck', kjīp < kīp 'grasp' (JP

7. Vowel-initial morphemes, except as unstressed prefixes, are not common in nBsh languages, but if we look at ZW *u* 'intestines' (with identical cognates in cNusu, Standard Burmese, Bola and lcHani), *i* 'urine', the ^h*u* of t^hq^h*u* 'cotton' and the *u* of u^h*lu*^m 'head', we can deduce that for these two tone-categories (TC-I and TC-II) vowel-initial words also are in the upper-tone register (cf. Dempsey 2003a -Table-1).

8. Zaiwa words with the initials č- and c- (=ts) are redundantly marked with tense voice-quality in the upper register; the historical spelling here avoids the redundancy. In this respect, these initials do not behave like the other stops. An analogous, yet different situa-

loan⁹)

sāt < *sat* ‘kill’, *šīt* < *šit* ‘eight’, *xāq* < *xaq* ‘leaf’

lower register:

lōq < *loq* ‘hand’, *mjōq* < *mjoq* ‘grass’, *pjūq* < *bjuq* ‘disappear’, *čāk* < *žak* ‘machine’
kʰik ‘grand, magnificent’ (JP loan), *kjēp·kjēp* < *hgjēp·hgjēp* ‘sticky’ (JP: *gjēp·gjēp*)

The last item is listed with non-tense voice quality in the YZ, but with tense voicing in YY and in the Chinese-Zaiwa dictionary. In any case, such tense voicing in low-register, stopped syllables is quite rare, and may be entirely due to loans from Jingpo. This certainly is the case with words such as *kʰik*: such lower-tone aspiration is a type almost vanishingly rare in Zaiwa and its sister languages, and, as far as can be ascertained, derived exclusively from loan-words.

The distribution of the various initials can be simply explained by seeing the upper-register as a development from voiceless initials, and the lower register from voiced initials. Here we can remember Thurgood 1977 (p.156): “It is a well known acoustic fact that a vowel following a voiced consonant has a lower pitch than a vowel following a voiceless consonant.”

The aspirates and fricatives had no voiced counterparts, thus no presence in the lower register (except for loan-words, which do not reflect the native structure of the language anyway); the normal explanation for sonorants in the upper register is that they were rendered voiceless due to a prefix such as *s-* or *h-*; such prefixes also insured the voiceless quality in words such as *kūt*. In the case of *ᶑhaq* it may either be a loan, or else its presence in the upper register can be attributed to a former, non-strident prefix which we can still mark in a historical transcription as “*c*”.

On the Yipoish side, Lahu has a clear distinction between upper and lower register in stop-final syllables. A search through the whole of Lewis 1986 reveals the following distribution of initials:

upper register:

p- p^h- b- m- f- v- t- t^h- d- n- l- c- c^h- ʒ- s- j- k- k^h- g- ŋ- ɣ- ɣ^h- ɣ- h-

lower register:

p- p^h- b- m- f- v- t- t^h- d- n- l- c- c^h- ʒ- s- j- k- k^h- g- ɣ- ɣ^h- ɣ- h-

tion, is seen in the phonotactics of Jingpo, q.v. Dempsey 2003b.

9. This is not the only Jingpo loan in this list of words, but is one which does not follow the phonological rules that characterize Zaiwa and closely-related languages.

We can see that the distribution is virtually the same, which could indicate that the two tone-registers are basically of independent origin, but if we consider frequency, we find that the matter is not so simple.

Vowel-initial syllables, excluding a couple cases of onomatopoeia, all are low-register except for the morpheme 'oq 'form cracks'. Lower-register *f*- is only found in one Thai loan, contrasting with numerous upper-register *f*- words. A similar distribution holds for *h*- and *s*-, although with some differences that I plan to discuss in a later paper. The distribution of sonorant initials is, in general, more skewed towards the lower register. These facts can be explained by again assuming that the lower register derives from earlier voiced initials, and the upper one from voiceless. But when we look at the stops, the picture is not so clear. If we count by individual entries, we find, for dentals and labials:

upper register:	51 d-, 53 b-	75 t-, 60 p-	26 t ^h -, 60 p ^h -
lower register:	21 d-, 19 b-	43 t-, 30 p-	22 t ^h -, 68 p ^h -

Now, if the upper register is associated with voiceless proto-initials, what are all those voiced stops doing there, over twice as many as in the lower register? And although it makes sense that *t*- and *p*- are much more seen in the upper than the lower, but why should they be in the lower at all, and especially why are there all those aspirated *t*^h- and *p*^h- in the lower register? In Matisoff's theory, the lower-register *t*- and *p*- here were said to derive from earlier *d*- and *b*-, which would then have a surprisingly low frequency in this sample. Aspirated stops in lower-register, although rather plentiful, had, in the Matisoff's theory, the most elaborate, in other words most marked derivation.

Relevance of Tibetan language history to the problem

The task of phonologically reconstructing earlier stages of many TB languages involves a great deal of uncertainty because we generally lack any substantial historical record of these languages. An exception to the rule is the Tibetan language which, after the Indic manner, has from the beginning been written in a script which appears to have reflected all essential details of its early phonological system. With earliest records extending back over 12 centuries, Tibetan provides a unique opportunity to examine subsequent developments in numerous dialects in light of the early written records. Let us briefly look at tonogenesis in Lhasa Tibetan (lsTib) with particular reference to words with initial stops and sonorants.

Distribution of initials in various tone categories of lsTib

Initials found in the upper tone register are *k*- *k^h*- *h*- *ŋ*- *š*- *c*- *c^h*- *s*- *t*- *t^h*- *l*- *r*- *n*- *č*- *č^h*- *ñ*- *p*- *p^h*- *m*- *^hm*- *w*-. With the exception of *c^h*- and *^hm*-, all these can also occur in lower tone register words. The *^hm*- initial is highly marked, only occurring in the syllable *^hma*· as an alternate for the negative prefix *ma*· when it occurs with aspirated initials, e.g. *t^hop* (obtained)- *^hma·top* (didn't obtain). In addition there are vowel-initial words found in both registers, although co-articulatory factors suggest an alternate interpretation.¹⁰

The explanation of this distribution, confirmed by both wTib spelling and reflexes in certain conservative present-day Tibetan dialects or loans into neighboring languages, is that all the words in lsTib low-tone register derive from forms with voiced initials, and that the aspiration seen in some of the words with stop initials is due to a lack of prefix before the earlier voiced initial stop, e.g.

	MODERN LOW TONE	MODERN EVIDENCE	HISTORICAL EVIDENCE
UNASPIRATED/PREFIXED	lsTib <i>to</i> (feather)	Alike Tib. <i>ržo</i>	wTib <i>sgro</i>
ASPIRATED/UNPREFIXED	lsTib <i>t^hup·ši</i> (square)	Tsangla <i>žup·ži</i>	wTib <i>gru·bži</i>

The upper tone register is derived from words with earlier voiceless initials, and the explanation for sonorants appearing also in this category is that they derive from earlier sonorants devoiced by certain prefixes, e.g. lsTib *nā·kuq* (nose) :: Bathang Tib. *^hna* :: wTib *sna*. So, although it first appears irregular that aspirated initials appear in the lower register and that sonorants appear in the upper register, these two traditional analyses as applied to lsTib offers a simple, reasonable explanation. This behavior of nasals in Tibetan has occasionally been compared to other branches of TB, but it seems that the tonal behavior of stops, as seen in the chart above, has received less attention in a comparative context. If we apply this Tibetan model to the words for 'six' in YB it would then be quite simply: wBrm *k^hruk*, ZW *k^hjuq*, Lahu *k^hδq*, lcHani *kūq* < **k^hrūk* < **gruk*. Since native ZW words with aspirated initials only appear in upper tone, that is where we find 'six' despite its ultimately voiced origin. The Lahu and Hani reflexes

10. Words such as རྩ་མོ་ *o·ma* 'milk' have in lsTib, according to my extensive observations, an initial somewhat similar to the *ayin* of Classical Arabic, in this case more like a pharyngeal approximant, and this may be tightened (and fronted) to the fricative range as seen in the *ɣ*- found in the cognates of some eastern dialects.

remain in the lower tone as expected with originally voiced initials, and have gained aspiration merely due to the initial being a voiced stop.

Voicing in other TB languages

I assume this aspiration of voiced initial stops must have come about very early in the development of YB since there are no traces of voicing in the initials of such words in any YB language I am aware of. This is not the case when we look beyond the YB group to other branches of TB. In the case of ‘six’, we find clear evidence for voicing in the Tibetan language and its relatives, e.g. Written Tibetan *drug* < **gruk*, Eastern Monpa *grok*, and possibly in Southern Kuki-Chin also, e.g. Kumi *t·gru* (cf. Dempsey 1995). In the case of ‘vomit’, e.g. ZW *p^hāt*, we see cognates with overt voicing of the initial in Paku (Karen group), in Bogar, Apatani, Gallong (Tani group), and in Boro, Tripuri (Baric group). Matsoff 2003 p. 144 cites three TB languages which have this root preceded by a nasal prefix as evidence for his reconstruction *C·pat*. Yet on page 33 of his 1972 “LTSR” he says of “C”: “Note that we are using ‘prefixed’ in a restricted way so as not to include prenasalized or preglottalized symbols, which behave differently.” Have the “different” reflexes of the N- prefix and the C- prefix changed between 1972 and 2003? I don’t see any explanation in Matisoff 2003. Another example is: wTib *grok·po* (lsTib *t^hōq*), XD Achang *·k^hrōq* < **grok*, wBrm *k^hjok* < **gruk*, Jino *·č^hō* < **grok* ‘valley, ravine’, also cf. Paku Karen (t^hí·) *glō*, M. Pɣo Karen *k^hlōq* < **gloq*, Chinese 瀆 *duk* < **glōk* ‘ditch, gulley’.

Comparison of similar phenomena in Tai, Chinese and other languages

What Li Fang-kuei reconstructs as proto-Tai **b*- regularly appears as *p^h*- in the large SW Tai area including Standard Thai. The same process, change to a voiceless aspirate, has occurred with the other proto-Tai voiced stop initials:¹¹

11. Data here is from Li 1977.

gloss	proto-initial	tone	S.W. (Siamese)	Central (Lungchow)
be conquered	*b-	B2	p ^h aai	paai
expensive	*b-	A2	p ^h εεŋ	peeŋ
rest, stop	*b-	D2S	p ^h ak	pak
throw away	*d-	D2L	t ^h ɔɔt	toot
copper	*d-	A2	t ^h ɔɔŋ	tooŋ
elephant	*ʃ-	C2	č ^h aaŋ	čaaŋ [?]
narrow	*g-	D2L	k ^h εεp	keep
salty	*g-	A2	k ^h em	kim

In Li's system of tone-categories, every type containing “2” is reconstructed with a voiced initial.

Aspiration of former unaspirated voiced stops also is widespread among Chinese dialects, but varies according to the tone-categories it is seen in. In Mandarin Chinese it is as a rule only seen in former “level-tone” 平聲 — the unmarked category — but in more southerly dialects this aspiration is found in more tonal categories; in the Gàn and Hakka dialect groups it is usually found in all tonal categories. In Shuāng-fēng, the conservative Xiāng dialect, it is found only in stop-final (入聲) syllables:

gloss	proto-initial	tone	Beijing (Northern)	Nanchang (Gan)	Meixian (Hakka)	Shuangfeng (Xiang)	Wenzhou (Wu)
climb 爬	*b-	2	p ^h a	p ^h a	p ^h a	bo	bo
choose 擇	*d-	8	çai	t ^h ok	t ^h ok	c ^h o	za
yesterday 昨	*ʒ- (=dz)	8	cwo	c ^h ok	c ^h ok	c ^h u	zo
sit 坐	*ʒ-	4	cwo	c ^h o	c ^h o	zu	zo
hero 傑	*g-	8	čje	č ^h jet	k ^h jat	k ^h ja	ži
ruin 敵	*b-	6	pi	p ^h i	pi	bi	bei

The tone-numbers here and below are according to Jerry Norman's system; all even-numbered tones are reflexes of former voiced initials.

In the Hmong-Mien language phylum, aspiration of former voiced stops is not so widespread as in Chinese, but still can be observed in several languages:

gloss	proto-initial	tone	Dōzhū (She)	Dōngshān (Biāomǐn)	Shímén (CQD)
die	*d-	6	t ^h a	tai	da
copper	*d-	2	t ^h oŋ	toŋ	dau
bean	*d-	8	t ^h o	t ^h ən	dau
ten	*ǵ-	8	k ^h jo	k ^h jan	gau
hatch	*bw-	6	p ^h u	pu	ba
see	*bw-	8	p ^h ə	p ^h i	bo
flower	*bwj-	2	p ^h un	pjaŋ	baŋ
tongue	* ^N bl-	8	pi	blin	^N dlai

Data is from Wang & Mao 1995. The table shows us that this Chuān-Qián-Diān (川黔滇) Hmong language preserves the original voicing; the She language shown here is fairly consistent in aspirating the earlier voiced stop, whereas the Biaomin language only shows aspiration in what were originally stopped syllables — the subject of this paper. This is just the sort of reflex being proposed here for Yipo-Burmic: aspiration of earlier voiced initial stops but only in stopped syllables. Even more germane to the system proposed here is the fact that both of the aspirating languages in this table fail to show the expected aspiration in a checked syllable when its initial stop is preceded by another consonantal segment, in this case a homorganic nasal ('tongue'). This sort of initial is then equivalent to the Tibetan "protected" initial which also fails to aspirate, e.g. wTib *go* 'understand' → lsTib *k^ho* vs. wTib *mgo* 'head' → lsTib *k_o* (both low tone).

Some languages in the Mon-Khmer group also show this phenomenon:

gloss	proto-Waic	Wa (from Drage)	Umphai Lawa	Samtau
mouse, rat	*gaŋ	khōang	k ^h īaŋ	kāŋ
give	*gah	khō	k ^h īah	kāh
flower	*dai	t ^h ōi, tōi	t ^h ia	tāi
tray	*dok	t ^h ōk	t ^h uak	—
forest	*bre [?]	preh	p ^h re [?]	p ^h rē [?]
cloth	*brə [?]	pru	p ^h ru [?]	p ^h rū [?]
sticky	*bit	pīt	pīt	p ^h īt
thick	*kbəl	p ^h u	p ^h u	kəpəl

This data on Palaungic languages is from Diffloth 1980.

Among TB languages, this neo-aspiration is seen in Pwo Karen in all three

of its tonal categories; it is common in Mikir (Kuki-Chin-Naga group) and of course in the dialects of Central Tibetan such as lsTib mentioned above. Under certain circumstances this process also took place in Jingpo, Rawang (Kachin group), and the Keman language. Later in this paper we will see extensive evidence for aspirates derived from voiced stops when we look at “Y38”, an Yipoish language spoken in eastern Yunnan.

We can conclude from this and similar evidence that in the Sino-Tibetan linguistic area there is a widespread pattern of voiced stop \rightarrow aspirated voiceless stop; it is an accepted, common-place fact of the area’s linguistic history, and is found in many languages across diverse linguistic phyla.

Details of this paper’s new proposal

Due to the widespread nature of the aspiration process described above, and because of its inherent simplicity, I have proposed that this process also occurred, at an early stage, in the YB group. In Yipoish languages such as Lahu, Hani, and Lisu this change $g \rightarrow k^h$ - (low tone) etc. which I propose appears to occur only in historically stop-final syllables, i.e. those whose cognates have final stops in Written Burmese. How can we compare this with the global changes of $g \rightarrow k^h$ - found in Hakka Chinese or in Lhasa Tibetan? There is no reason why such a change need be global: in Mandarin Chinese, for example, this sort of change from a voiced stop to a voiceless aspirate is almost exclusively limited to the level-tone. The best match for the change I propose in Lahu (and most other languages in the YB group) is found in three different languages of southern China: 1) Shuāngfēng Chinese (mentioned above), 2) BānXī Hmong (CQD group), 3) Shuānglǒng Miǎn: in these languages the change of voiced (unaspirated) to voiceless aspirated stop occurs only in words with final stops, just as I am proposing for Lahu and its relatives (Chen 1991 page 3). The Biao-min language in the above examples appears to be another possible example.

There are also many other low-toned words in the TC-IV category with initial stops that do not show aspiration. What is the reason for this? I propose that again we follow what is already established fact in the history of Tibetan and regard this category of words as having had a prefix that prevented aspiration of the prevocalic or “root” consonant, sometimes known as a “protected initial”. This is the generally accepted analysis of this development in Central Tibetan, and also is more generally applicable, cf. Li Fang-kuei’s principle mentioned above: $*ka > k^ha$ but $*d + ka > dka$ [ka]. Whether any traces of such proposed prefixes can be found in present-day TB cognates is of course a difficult matter,

but the Matisoff/Bradley theory faces the same problem with their **C-bak* category. An example where prefixes can be found is ‘crooked, bent’ with *rgo* (reduplicated) in E. Gyarung and *d·goq* in Drung; the verbal form ‘be crooked’ has a prefix in JP, Jino and Zhábà. Northern Yipo (Y35) *lā·gú* may be showing a prefix, but in general we should not expect to find many traces in YB.

The table below shows the reflexes — abstracted as “stop+vowel+final stop” — in several YB languages, and to the left are Matisoff’s PLB prototypes and my proposed cYB sources for the reflexes. Following Matisoff, I just use labial stops here and in the table below, but the tonogenetic categories apply to all stop initials.

PLB	cYB	Y38	Y35	Y37	Lisu	Y39	Lahu	lcHani	wBrm	nBsh
pak	pak	p ^h āq	p ^h aq	p ^h aq	p ^h á	p ^h â	p ^h aq	paq	p ^h ak	p ^h ák
^ʔ pak	^h pak	pāq	paq	paq	pá	pâ	paq	paq	p ^h ak	^h pák
N-pak	ⁿ pak	ⁿ p ^h āq	ⁿ baq	baq	bah	bâ	baq	baq	pak	pāk
	^c pak	bāq	baq	baq	bah	bâ	paq	baq	pak	pāk
C-pak	bak	p ^h āq	p ^h á	p ^h á	p ^h aq	p ^h aq	p ^h āq	pāq	p ^h ak	p ^h ák
^ʔ bak	^h bak	pāq	pá	pāq	pâ	pá	pá	pāq	p ^h ak	^h pák
N-bak	ⁿ bak	ⁿ p ^h āq	ⁿ bá	bāq		baq	bāq	bāq	pak	pāk
bak C-bak	^c bak	bāq	^(N) bá	bāq	baq	baq	pāq	bāq	pak	pāk

In this table and in the data-sets below I draw particular attention to Y38, an “Eastern Yipo” dialect of Wǔdīng County, Yunnan, since it is an excellent example of the widespread, ongoing nature of the mechanism for aspiration I have proposed.¹² (**c-bak* = containing some undefined prefix)

12. The so-called Yi languages mentioned in this paper can be defined as follows:

Y22	Guizhou, Dǎfāng Cnty	Eastern Yi
Y24	Yúnnan, Nánhuá Cnty	Central Yi
Y25	Yúnnan, Mǐlè Cnty	S.E. Yi—Ahi
Y26	Yúnnan, Mōjiāng Cnty	Southern Yi
Y35	Sìchuan, Xǐdé Cnty	Northern Yi
Y36	Yúnnan, Wēishān Cnty	Western Yi
Y37	Yúnnan, Nánhuá Cnty	Central Yi—Lolopho
Y38	Yúnnan, Wǔdīng Cnty	Eastern Yi
Y39	Yúnnan, s.e. of Kunming	S.E. Yi - Sani

I have taken this table from Matisoff 1972 p.23 since I found no similar table in his 2003 book. One can see that in my cYB system the development of the initials with non-strident prefixes is quite similar overall (except for Y38), that is to say the similarity between ⁿpak and ^cpak parallels the similarity between ⁿbak and ^cbak, but in Matisoff's PLB the two sets show quite different reflexes. Also, the C- in Matisoff's C-pak profoundly alters the development of the syllable, but the C- in his C-bak seems to have no effect at all.

The reflexes in this table for Y38 are very similar to those of "Lü-ch'üan" Yipo in Figure 10 (page 23) of Matisoff 1972, but the reflex bāq < ^cpak seen here is not listed in Matisoff's table. The ^h- prefix is a symbol for stridency. In cYB initial clusters such as ^cp- and ^cb-, the segment before the stop stands in contrast to a homorganic nasal onset in Y38, Y35 and Lahu; these languages thus maintain reflexes of two distinct, non-strident "prefixes", one type being a nasal type and the other type of more uncertain origin.

Let us fill in the abstract categories with some specific examples; the Yipoish languages in the table below show regular patterns (with occasional exceptions of course) in the tonal reflexes for stop-final syllables with voiceless vs. voiced proto-initials:

Examples of voiceless proto-initials:

gloss	Init.	Y35	Y36	Y37	Lisu	Y38	Y39	Y22	Y24	Y25	byHani
tree	*s-	sɪq·	sɪq·	śiq·	sí·	sìq	sî	sē	seq·	siq·	sɪq·
eye	* ^c m-	ñɔq·	ʔmīq·	mēq·	mjeɦ·	ñāq·	nê·	nā·	mēq·	nēq·	máq·
ascend	* ^N t-	dɔq	diq	deq	dɛɦ	dāq	dê	dā	deq	deq	taq
chicken	* ^c r-	vāq	·žiq	žiq	ɣah·	ɣāq	jê	ɣā	žēq	žēq	·jáq
deer	* ^c h-	c ^h ē	č ^h iq	č ^h eq	c ^h é	c ^h iq	c ^h î	—			(·ceq)
flower	* ^c w-	·vēq	—	vēq·	·veh	vîq	vî·	vē·	vēq·	vîq	h ^j íq
lock	* ^N t-	^N žup	žuq	žuq		^N č ^h ũq	žû				

(for typological convenience and clarity, the understroke denoting tense voicing has been replaced by -q; Y35-39=languages #35-39 in YZ; Y22,24,25=languages #22,24,25 in YY, all referred to as 彝 Yi)

But according to Bradley 1997, the interrelationships are quite different. As far as I can understand the names he uses to refer to languages, we should group Y35, Y22 & Y38, and Y26 into three different subgroups of "Northern Loloish" (Yipoish), and then Y25 & Y39 into one group of "Central Loloish", with Y23 (Lalo), Y24/37 (Lolopho), Lahu and Lisu in another branch of Central Loloish.

Examples of voiced proto-initials:

gloss	Init.	Y35	Y36	Y37	Lisu	Y38	Y39	Y22	Y24	Y25	byHani
hand	*l-	lɔq	liq	leq	lɛq	lǎq	leq	lǎ	leq	leq	·laq
goat	*ʒ-	ɕʰɿ	·ɕʰɿq	·ɕʰɿq	·ɕʰɿq	ɕʰɿq	ɕʰɿq	ɕʰě	·ɕʰɿq	ɕʰɿq	ɕʰɿq
sew	* ^N gr-	gú	gùq	—	ʒiq	—	—	—	—	—	kʷq
six	*gr-	fú	kʰð(q)	ɕʰðq	ɕʰoq	ɕʰúq	kʰuq	ɕʰɔ	ɕʰð(q)	ɕʰùq	kʰʷq
early	*n-	—	ʔniq	neq	nɛq	nǎq	neq	—	neq	neq	naq
be drunk	*j-	jí	ìq	jiq	jiq	jíq	jiq				
lick	*ml-	jóq	lǎ	læq	lɹq	lɔq	laq	lě	lɛq	laq	mɔq
suck	*ʒ-	ɕɿ	ɕʰɿq	ɕʰɿq	ɕʰɿq	ɕɿq	ɕɿ				(ɕùq)
split	* ^c b-	bí	bìq	bǎ	(beq)	bíq	—				(pìq)

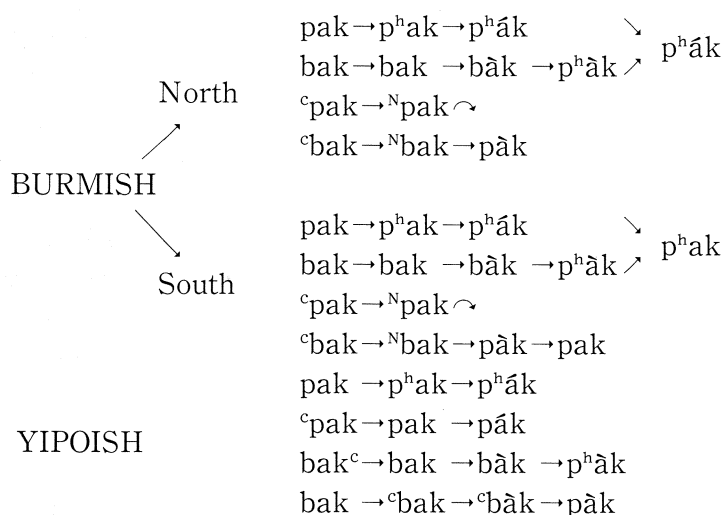
For each language, we can see a clear contrast between the tonal patterns in the first vs. the second table. If we attribute the different reflexes to an original difference in voicing of the initial consonant or consonant-cluster, that means we are assuming that at an early stage in the development of these languages the [+/-] voicing feature of the initial was the decisive factor in the future development of the syllable's tonology; the pitch-variations seen in these two tables did not yet have phonemic status (although it is possible that other, non-stopped syllable-types may have already incorporated tonological contrast)¹³. With this in mind, let us look at the equivalents for 'sew' and 'six' in some other languages of the Yipo-Burmish group:

gloss	Initial	wBrm	LC-Achang	XD-Achang	Zaiwa	cNusu
sew	* ^N gr-	kʰjup	xrōp	kʰjūp	kʰjúp	kʰrɔq
six	*gr-	kʰrok	xrōq	kʰjūq	kʰjúq	kʰruq

We have already seen that Burmese does not show any tonal contrast attributable to earlier differences in voicing of the initial: **pak* and **bak* both > *pʰak* — the only category of initials which still has such a contrast is the sonorants, yet even so there is no tonal variation, e.g. *mak* and *hmak* have the same tonal behavior. The Northern Burmish languages such as Zaiwa, however, do show

13. In the words of Thurgood 1977: "Within Lolo-Burmese the tonal reflexes of checked proveniences can be viewed as solely secondary developments; it is not necessary to posit any tonal contrasts at the Lolo-Burmese level."

such a contrast: A proto-syllable such as *mak* would end up in the low-tone register, whereas the proto-form *hmak* would end up in the high-tone register. But for the basic, native vocabulary of Northern Burmish, words such as *k^hjup* or *xroq* have to be in the high-tone register: as we have already seen, in this stopped syllable category, native words with aspirated initials or voiceless fricative initials are not found in the low-tone register. From the Yipoish cognates for ‘six’ and ‘sew’ seen above we can infer that the original YB stops for these words were voiced; other conclusions are possible, but we should first consider the most simple, straightforward one. On the Burmish side, the tonal split seen in syllables of the *p^hak* type (see table above) is lacking; this implies feature-loss, a merger of two types which were earlier distinct. The proposed steps of development can be simply illustrated for four major syllable types:



The third column is the stage of tonogenesis. Northern and Southern Burmish are quite similar in their development, but the Southern branch took the final step in losing any register distinction. Yipoish has in many cases preserved all four types. For the *bak* type, the change to the fourth stage involves the mechanism seen in many east Asian languages in the charts above. The *^cbak* type's last stage is represented by *bāk* in several Yipoish languages, but that is often (e.g. Lisu and Hani) noncontrastive with *pāk*. The voicing is probably due to an earlier merger with *^Npak* and *^Nbak*, where the prenasal must have spread its voicing to the following initial. Positing this mechanism for Northern Burmese also would then explain why an original *^cpak* type would end up in the lower register. As far as Burmish languages go, simply having a prefix would have

prevented aspiration, so that the reflexes of the four types ^cpak ^Npak ^cbak ^Nbak are all the same. The original ^Npak and ^Nbak types remain distinct in some Yipoish languages, not included in the diagram immediately above for the sake of simplicity. Also not illustrated in the above diagram are the strident-prefix types ^hpak and ^hbak , where the h was dropped off early on in Southern Burmish and in Hani, but in Northern Burmish it altered a syllable's phonation type before its eventual loss. In languages such as Lisu and Lahu it engineered a tonal inversion (from high to low, from low to high) before its loss, and in other Yipoish languages it prevented aspiration of the following stop. In the Youle dialect of Jino the strident prefix is still preserved, e.g. $^hn\acute{a}$ 'deep'.

For the *bak* type in Northern Burmish, there is some evidence from the Liánghé Achang dialect (LH-A) that the final "loss of register" step for aspirated stop initials did not always take place: as often seems to be the case, the "standard" Lóngchuān Achang (LC-A) tells us the least about the proto-Achang tonal system. If we look only at the other two dialects, Lùxī Achang (LX-A) and LH-A, we find three common patterns in cognates: 1) both dialects have high tone 2) both dialects have low tone 3) one dialect has high and the other has low tone. In this last type, LX-A with high tone and LH-A with low tone is somewhat more common. For words with aspirated stop initials, it appears that LX-A behaves like other Northern Burmish languages such as Zaiwa: in native words, such syllables must be high tone, no matter what their origin. In LH-A, however, some of these syllables are high tone, yet others are low tone. The low-tone type includes the words for 'sew', 'six' and 'vomit', all which are also in the low register in Yipoish.

Data-sets: some examples of correspondence sets from YB

These data sets are included, along with some commentary, in order to show the reader how the correspondences found in the table "reflexes of stop-final syllables in YB" were determined. The number on the left is for entries in YZ (Huang 1992), and the first entry is always Y38. (:= "is proposed as being cognate to"). At the head of each set, a labial stop is again used to symbolise all stops with the same voicing and phonation.

cYB voiceless initials:

*p-

#0066 $k^h\grave{a}q$:: Y35 $\cdot kaq$ Y37 $k^h\grave{\epsilon}q$ Y39 $\check{c}^h\acute{e}$:: Lisu $k^h\acute{a}$:: Lahu $k^h\grave{a}q$ 'village'

- #0097 $\dot{c}^h\grave{a}q$:: Y35 $\check{c}^h\grave{a}q$ Y36 $\dot{c}^h\grave{a}q$ Y37 \check{c}^heq Y39 $\check{c}^h\hat{e}$:: Lisu $\check{c}^h\hat{e}$:: Jino \check{c}^ha
 :: ZW $\check{c}^h\acute{o}q$ wBrm k^hjak ‘navel’
 #1391 $\dot{t}^h\grave{a}q$:: wBrm $p^hjak < *p^hrak$ (cf. #1390) ‘destroy-(vt)’
 #1780 $c^h\grave{a}q$:: Y35 $\cdot c\grave{a}q$ Y36 $c^h\grave{a}q$ Y37 c^hiq Y39 $c^h\hat{a}$ ‘blink-’

Comments: It can be seen that Y38, although described in the Chinese literature as an “Eastern Yipo dialect”, also shows the register inversion characteristic of Northern Yipo.

^{*h}p-

- #1545 $t\grave{a}q$:: Y35 $c\grave{a}q$ 36 tiq 37 tiq 39 $t\acute{a}$:: Lisu $t\acute{a} < *^htiq$
 :: lcHani $t\#q$, Lahu $tiq < *^ctiq (< *^htiq?)$ ‘brew- (tea)’
 #1803 $t\grave{u}q$:: Y35 tuq Y39 $\cdot t\hat{u}$:: Lisu $t\acute{o}$:: lcHani tuq :: wNaxi $t\acute{v}$
 :: cNusu $tuq < *^htuk$:: Y37 t^hoq :: Lahu t^hoq :: Jino t^ho
 :: ZW $t^h\acute{u}q$ wBrm $t^hok < *tuk$ ‘use/lean on (a walking stick)-’
 #1805 $\check{c}\grave{a}q$:: Y36 $\check{c}\grave{a}q$ Y37 $\check{c}\acute{a}q$:: cNusu $kraq$:: ZW $^hkj\acute{a}q < *^hkraq$
 $< *^hgrat$? cf. JP $m\cdot kraq$:: Drung $m\cdot grat$ ‘grab, seize-’

Comments: In #1803 we see an early variation between a plain voiceless initial and one with the strident prefix. If, as seems necessary, we regard the various Yipo dialects as having derived from a unitary source, and also if we view as unlikely that three quite distinct dialects would independently add on the same prefix to this verb, then the prefixed form must be original, and the prefix later dropped off in Burmese (necessarily) as well as in other languages in both the Yipoish and Burmish groups.

^{*N}p-

- #0584 $^N\dot{c}^h\grave{u}q$:: Y35 $^N\dot{z}uq$ 36(tr.vb.) $\dot{z}uq$ 37 $\dot{z}uq$ 39 $\dot{z}\hat{u}$ 22 $^N\dot{z}\bar{5}$ 25 $\dot{z}uq$ 26 $\dot{z}uq$:: Jino $c^hj\acute{o}e$?
 :: ZW $c\grave{o}q (< *^c\dot{z}ok < *^Ncok$? or $< JP$ $c\grave{o}q$?) ‘lock-’
 #1611 $\cdot ^Np^h\grave{a}q$:: Y37 $b\acute{a}q$ Y39 $b\hat{a} < *^Np-$ Y25, 36 baq :: cNusu beq :: Lisu $b\#h < *^Np\acute{a}q$?
 :: lcHani $b\acute{a}q < *^Np\acute{a}q$, Lahu $b\acute{o}q (< *^Np\acute{a}q$?) :: Jino $p\acute{a} < *^cp\acute{a}q$
 :: nBsh $*bek (< *^Npek$?) :: wBrm $pas < *^c\acute{b}ec / ^c\acute{p}ec < *^cp\acute{e}k < *^Npek$
 ‘shoot-’ (also cf. Y35, 22 $^Nb\bar{e}$)
 #1736 $^Nk^h\grave{u}q$:: Y39 $g\hat{u}$ ‘write-’ $< *^Nk-$

Comments: Going by other YB cognates, the words in this set appear to derive from forms with prenasalized unaspirated initial stops, but the presence of the nasal prefix must be associated with the neo-aspiration (of relatively

recent origin, unseen in other Yipoish languages) seen in Y38. This special aspiration of Y38 is found whether the original Yipoish stop was voiced or voiceless, but only when preceded by a nasal prefix.

‘Shoot-’ shows variation between a nasal and non-nasal prefix.

*^cp-

- #1207 *dũq* :: Y35 *duq* Y36 *dō* Y37 *duq* Y39 *dũ* < *^N*toq* :: Lisu *doh* < *^c*toq*
 (#1619) :: Jino *to* :: lcHani *duq* < *^N*toq* :: Lahu *toq* < *^c*toq* :: wNaxi *t^hv̄*?
 :: Gazhuo *tōq* :: wBrm *t^hwak*, ZW *t^hoq* < **t^hok* ‘come out-’
 #1341 *dāq* :: Y37 *dæq* < *^c*tæq* ? :: Lisu *d+h* :: cNusu *d#q* ‘sever-(vi)’
 #1366 *žũq* :: Y35 *žuo* Y39 *gũ* :: Lisu *žoh* < *^N*coq* :: lcHani *guq*
 :: Lahu *koq* :: Gazhuo *čôq* < *^c*kruk* :: cNusu *gruq*
 :: nBsh **kjũk* ~ **gruk*, wBrm *krok* < *^N*kruk* ‘be afraid-’
 #1390 *dāq* :: Bola *·hpjēq* :: wBrm *pjak* < *^c*pjak* < *^N*prak* (cf. #1391) ‘destroy’
 #1539 *dāq* :: Y35 *dɔq* Y36 *diq* Y37 *deq* Y39 *dē* :: Lisu *dεh*, lcHani *daq* < *^c*tak*
 (#1609) :: Jino *ta*, Lahu *taq* :: Gazhuo *tāq* < *^c*tak* :: wNaxi *dō*
 :: nBsh **tāk* < **dak* / *^N*tak* :: wBrm *tak* < (*^c*tak* <) *^N*tak* ‘climb-’

Comments: In this set although there may be nasalised prefixes in some other languages, Y38 has despecified the prefix, i.e. it is still [+cons] but no longer [+nas] and the result is lack of aspiration in Y38. - On the Burmish side there seems to be some confusion between proto-initial types such as *^c*t-* / *^c*p-* and *^N*t-* / *^N*p-* resulting, in the case of nBsh, in low-register forms, or, in the case of Burmese, in unaspirated forms, in both cases these forms are then indistinguishable from those deriving from *^c*b-* / *[§]*b-* etc. We even see this crossover into voiced initials affecting the Yipo initials, although not with the overt prenasalization that causes aspiration in Y38.

cYB voiced initials:

In the following set Y38 shares the YB-wide (but not TB-wide) aspiration:

*b-

- #0276 *ç^hɿq* :: Y35 *ç^hɿ* Y36 *·ç^hɿq* Y37 *·çɿq* Y39 *ç^hiq* :: Lisu *·ç^hiq* :: lcHani *·cìq*
 :: Lahu *·č^hēq* :: wNaxi *c^hɿ* :: Gazhuo *c^hɿ* :: wBrm *c^hit* < **žit* ‘goat’
 #1362 *k^hũq* :: Y35 *k^hũ* Y36 *k^hōq* Y39 *k^huoq* Y22 *k^hɔ̄* Y25, Y26 *k^hũq* :: Lisu *k^hoq*
 :: lcHani *xũq* :: Lahu *k^hōq* :: Gazhuo *kōq* :: wNaxi *k^hɔ̄* eNaxi *k^hv̄*
 < **guk* ‘celebrate, pass-’
 #1382 *k^hũq* :: Y37 *k^hũ* Y39 *k^huoq* :: lcHani *·xũq* :: Lahu *k^hōq* :: Gazhuo *kōq*
 < **guk* ‘return, give back-’ (cf. intr.vb. #1385)

- #1701 $k^h\bar{u}q$:: Y35 $k^h\bar{u}$ 37 $\cdot k^h\bar{u}$ 39 $\cdot kuq$:: Lisu $k^h\bar{u}$:: Jino $\cdot k^h\bar{o}$:: Gazhuo $k\bar{o}q$
 :: XD-Ach $k^h\bar{o}q < *guk$ ‘bend- (tr.vb.-cf. #1004/1700 below)’¹⁴
- #1476 $t^h\bar{e}q$:: Y39 $t^h\bar{e}q$:: Lisu $\cdot t^heq$:: Gazhuo $\cdot t^h\bar{e}q < *d$ ‘kowtow-’
- #1535 $p^h\bar{i}q$:: Y36 $p^h\bar{i}q$ 37 $p^h\bar{e}$:: Lisu p^heq , Jino $p^h\bar{e} < *bat$:: lcHani $b\bar{e}q < *^cb-$,
 mjHani $p^h\bar{i}q < *b-$:: wNaxi $p^h\bar{y}$:: nBsh $*p^hat < *bat$ ‘vomit-’
- #1540 $^N\bar{c}^h\bar{e}q$:: Y39 $\bar{z}aq$:: cNusu $br\bar{e}$ ‘strike, rap-’
- #1582 $k^h\bar{e}q$:: Y37 $k^h\bar{e} ?$:: Y39 k^haq :: Lisu k^hoq , lcHani $x\bar{a}q < *gak$
 :: Gazhuo $k\bar{e}q$ ‘chip-’
- #1753 $\bar{c}^h\bar{e}q$:: Y39 $k^h\bar{e}q$:: Lisu k^hoq lcHani $k\bar{o}q$ ‘bite-’
- #1802 $p^h\bar{e}q$:: Y36 $p^h\bar{y}q$ Y37 $p^h\bar{e}q$ Y39 $p^h\bar{e}q$:: Lahu $p^h\bar{o}q < *bop$
 :: Jino $p\bar{e} < *^cbop$:: Gazhuo $p^h\bar{e}$:: Gyarung $\cdot bop$ ‘swell-’

Comments: This is the set for which Matisoff’s theory would require the mechanism of voiced prefix + voiceless stop leading, after several steps, to an aspirated voiceless stop. Instead I have proposed the developmental mechanism as simply voiced stop > voiceless aspirate.

Matisoff 1972 p. 15 top states that “there is good evidence” for this hypothesis, yet the only evidence available, i.e. indications of voiced prefixes in cognates of this set, are quite hard to find. If we instead look only at those fewer cases where Matisoff has $C-$, not \bar{C} , i.e. where there is a real prefix we can examine, we rarely find any of the “voiced prefixes” (wTib $g-$ $b-$ $d-$ $r-$ $l-$) symbolized by Matisoff’s “ $C-$ ”. His #31 ‘one’ refers to wTib $g\bar{c}ig$, yet, as mentioned earlier, the last letter was certainly voiceless, but we have no way of knowing whether the first one was voiceless too, or voiced as Matisoff supposes. Certainly it is voiceless in modern Tibetan, e.g. lsTib $\bar{c}uk\bar{c}iq$ ‘eleven’.

14. The reflexes for this transitive / intransitive (vt / vi) pair are quite irregular: both Y35 and Y38 would lead on to reconstruct vt as $*guk$ and vi as $*^cguk$, which does not follow expected TB patterns. Following Matisoff would give us $*C-kuk$ and $*guk$ respectively, but since his $*C-$ is defined as a voiced prefix, this pattern would also be irregular (a type not to be found, for example, in the Chen 1990 study). If we compare the adjectival forms in YZ# 1004, they are in general more like the vi forms of #1700. We can then use Y37’s adjectival form $g\bar{u}q$ as a further confirmation of $*^cguk$ for the vi form. Of course it is possible that the vi form was originally $*^Nguk$ which lost its nasal feature (despecified from Nguk to cguk) early enough to miss becoming aspirated in Y38, but if so then Lahu offers no evidence for an earlier nasal either. The transitive/intransitive forms lsTib kuq / guq , Bathang (Kham) Tibetan kuq / Nguk , Achang k^hoq / koq , Lisu $k^h\bar{u}$ / goq , Gazhuo $\cdot k\bar{o}$ / $k^h\bar{o}$ show us that it may be impossible to derive all these forms from a single process acting on a single pair of etyma. The study of such variations in Tibeto-Burman languages is still very much in the beginning stages.

#35 Use of the PTB reconstruction **d-krok* ‘six’ as the only evidence for a prefix in YB is circular reasoning. #37 refers to some Jingpo words with prefixes, but they are doubtful cognates since their rime is *-ot* compared to cYB **-ak*. #38 rightly excludes the JP nasal prefix as evidence, but then adds that it “demonstrates the prefixability” of the root. Is there something which could demonstrate its non-prefixability?

#68 ‘be/exist/able-’ contains three variants: **ɕ-prek ~ *^ʔbrek ~ *brek* for which my reconstruction **brek ~ *^hbrek ~ *^cbrek* removes the need to explain the alleged change in voicing.

#69 alludes to wTib prefixes (in *gtub* - *btub*) whose actual existence in the language is unknown; there is certainly no spoken evidence for them. We cannot rely on modern Tibetan dictionaries for accurate, i.e. phonological information about prefixes. For example, the prefix in wTib *dpon* ‘leader’ is actually manifest as *-k-*, cf. lsTib *čokpɕ* ‘leader of ten (a military term)’. The word *sapṭa* ‘map’ is written as *sa·k^hra*. We must be careful when making use of traditional Tibetan spelling.

Looking through the 192 cognate-sets presented in Matisoff 1972, we see quite a few *ɕ* - but precious few *C-*, mostly of the doubtful kind discussed above, and particularly of the prenasalized or prevocalic type (e.g. Trung *a·čit*, Bisu *aŋ·t^hā*) which are not supposed to be evidence for the high > low conversion proposed. Moreover, not only this latter type of prefix but also the *C-* type prefixes can also be found in data-sets where they should exert their effect but do not, e.g. #14, 15, 18, 56, 58, 78, 82.

**^hb-*

- #1270 *túq* :: Y35 *tú* Y36 *tōq* Y37 *túq* Y39 *tɕ* :: lcHani *dōq*
 :: Lahu *tú* (= *^hduq*) :: Lisu *doq* < **^hdap* :: Jino *t^hɕ*.
 :: Gazhuo *·tɕ* (intr.vb.?) :: ZW *^htáp* < **st-* < **sd-* ? ‘light-(a fire)’
- #1496 *cāq* :: Y35 *có* Y36 *čiq* Y24, Y25 *céq* Y26 *čēq* :: Lisu *cā* :: Lahu *čá*
 :: Gazhuo *cā* < **^hzak* :: lcHani *cāq* :: Bisu *c^hɰ*
 :: wBrm *c^hak*, nBsh **c^hak* < **zak* ‘connect, link-’
- #1804 *čāq* :: Y35 *čó* Y36 *čiq* Y37 *čēq* Y39 *čé* :: Lisu *čā* :: Lahu *čá* :: Jino *čá*
 :: cNusu *čaq* :: ZW *čóq* < **^hzak* < **sgrak* :: lc Hani *čāq* :: wBrm *k^hjak* < **grak* ‘cook, boil-’ :: 燂 *gyek* (jué) < **gjak* < **grak* defined as
 炊 *č^hphi* (chuī) ‘cook-’ :: 煮 *čpɕ* (zhǔ) < **kja^c* < **sgra^c* ‘cook, boil-’

For the Hani, Bisu and Burmish forms in #1496, Matisoff’s theory would require this cascade of changes: *^hzak* > *^hcak* > *^ccak* > *^cc^hak* > *^cc^hāk* > *^chāk*.

Matisoff’s theory cannot conceive of aspiration developing except from a

voiceless proto-initial (or in rare cases another process, cf. #1324 below), and therefore must assume the unlikely conversion of the voiceless strident prefix into a voiced prefix (here as “*c*”).

My analysis is simply: $^hzak > zak > c^h\acute{a}k$.

*N_b-

#1221 $^Nk^h\acute{q}$:: Y35 $^Ng\acute{u}$:: wNaxi $g\ddot{v} < ^Ng\acute{u}q$ ‘jab, poke-’

#1230 $^Nk^h\acute{a}q$:: Y35 $^Ng\acute{o}$ Y37 $g\ddot{a}q$ Y22 $^Ng\acute{a}$ Y25 $\check{z}\acute{e}q$:: Lisu $\cdot g\acute{a}q$:: Jino $\cdot k\acute{a} < ^Ngak$
:: #1811 sNusu $\cdot k^h\acute{a}q$:: nBsh $*k^h\acute{a}t < *gat$ ‘hunt, chase-’ (cognate?)

#1758 $^Np^h\acute{q}$:: Y35 $^Nb\acute{1} < ^Nbiq$ ‘overflow-’ cf. Y37 $b\acute{1}$, Lahu $b\acute{1}$, lcHani $b\acute{1} < ^Nbi^c$

Comments: In this set Y38 has undergone the same aspiration-process which I have proposed for cYB itself at an earlier stage, and because of the prenasalization we can still find overtly voiced initials in other YB languages. In this set Y38’s neo-aspiration has affected the other tone categories too, cf. some examples:

#1228 $^Nt^h\ddot{v}$:: Y35, Y22 Ndu Y36 $d\ddot{e}$ Y37 $d\ddot{a}$ Y39 $d\ddot{a}$:: Lisu $d\ddot{v}$
:: lcHani $d\acute{1}$ Jino $t\#^c < *d\#^c$ (cf. #1571) ‘hit, strike-’

#1370 $^Nt^h\ddot{v}$:: Y35 $^Nd\acute{o}$ Y36 $d\acute{u}$ Y37 $d\acute{a}$:: Lisu do :: lcHani $d\acute{o}$
:: Lahu do :: Jino $t\acute{a} < *d\acute{a}$:: wNaxi $t^h\#q$:: Gazhuo $t\acute{o}$ ‘drink-’

#1694 $^Nk^h\ddot{v}$:: Y35 $^Ng\acute{o}$ 36 $\gamma\acute{u}$ 37 $g\acute{a}$ 39 $k\acute{o}$ 22 $^Ng\ddot{d}$ 25 $k\acute{u}$ 26 $g\ddot{d}$
:: Lisu go Lahu γo :: lcHani $\gamma\acute{o}h$? ‘drag-’

#1711 $^Nk^h\ddot{v}$:: Y37 $\cdot g\acute{a}$ 39 $k\acute{o}$ lcHani γo Tujia $\gamma\acute{a}$ ‘inhale-’

#1588 $^Nc^h\acute{1}$:: Y35 $^N\check{z}\acute{1}$ 36 $\check{z}\acute{1}$ 39 $\check{z}\acute{1}$:: Lisu $\check{z}\acute{1}$ ‘endure-’

#1726 $^Nt^h\ddot{v}$:: Y39 $\hat{n} \cdot d\ddot{v}$:: Lisu $d\ddot{u}$:: Lahu $^Nd\acute{o}$:: Naxi $\cdot d\ddot{v}$
:: mjHani $\cdot t^h\ddot{u}$? ‘think-’

#1742 $^Nc^h\ddot{v}$:: Y35 $z\acute{o}$ Y37 $\check{z}\acute{a}$ lcHani $z\acute{o}$ cNusu $z\acute{q}$ LC-Ach $\check{z}\acute{a}^c\eta$ ‘learn-’

*c_b-

264 $b\acute{q}$:: Y35 $b\acute{1}$ Y36 $b\ddot{y}q$ Y37 $b\acute{a}q$ Y39 $b\acute{a}q$:: Jino $\cdot p\acute{e}$:: Bogar $\cdot buk$ ‘hoof’

#1254, 1548 $d\acute{e}q$:: Y35 $^Nd\acute{1}$ Y37 $d\ddot{a}q$ Y39 $d\acute{a}q$:: Lisu deq :: Jino $t\acute{\phi}$:: Gazhuo $t\acute{e}q$
:: Lisu $t\#h$:: $< ^ctap$ wBrm $tap < ^cdap / ^ctap$
:: Y37 $t\acute{q}$ ($< ^htap$) :: ZW $^ht\acute{a}p$ ‘wear-’

#1324 (—) Y35 $g\acute{u}q$ Y36 $g\ddot{v}q$:: Lisu $\check{z}\acute{1}q$:: Jino $\check{c}\acute{u}$ Bakeo Lahu $k\#q$

(also possibly Gyarung $\cdot \check{c}op$) $< ^cgrup$

:: ZW $k^hj\acute{u}p$ wBrm $\cdot k^hj\acute{u}p$ cNusu $k^hr\acute{q} < *k^hruq < *grup$:: Drung $kr\#p$

:: lcHani $g\ddot{u}q$, byHani $g\ddot{v}q$:: Lüsü $^N\check{z}\acute{\#}$:: wTib $^Ndruq < ^Ngrup$ ‘sew-’

In LTSP #63, Matisoff, confronted with the existence of both Hani *gũq* and wBrm *·k^hjup*, derives the latter from “**[?]grup*”, by which we are to understand that a glottal stop before a voiced initial will turn it into a voiceless *aspirated* stop. I would rather think such a prefixed element would prevent, not cause aspiration. Matisoff further reconstructs a “**[?]drup*” type to account for Lahu *tó* which I would say is a completely different etymon.

- #1385 *·gũq* :: Y37 *gòq* Y39 *kuq* Y25, Y26 *gũq* :: lcHani *ɣũq*
 :: Lahu *kòq* < **^cguk* ‘return-(intr.vb.)’ (cf. tr.vb. #1382)
- #1700 *gũq* :: Y35 *gũ* 37 *gũq* Y39 *·kuq* 22 *gǔ* 25 *gũq* 26 *gũq* :: Lisu *goq*
 :: lcHani *ɣũq* :: Gazhuo *k^hòq* :: Lahu *kòq*
 :: wNaxi *gũ* eNaxi *gũ* :: wBrm *kok* < **^cguk* ‘bend-(vi)’
- #1500 *bĩq* :: Y35 *bĩ* Y36 *bĩq* :: mjHani *pĩq* :: Lahu *·pèq* < **^cb-*
 :: Gazhuo *pĩèq* :: 關 *b^híc* (pì) < **bek* ? ‘split open-’
- #0098 *žũq* :: Y35 *žũq* Y36 *žò* Y37 *žũq* Y39 *žuq* :: Lahu *čòq* :: Jino *·čó*
 :: Akha *žòq* :: cNusu *žuq* :: Stau *žo* :: Lüsu *žó* < **^cgjuk*
 cf. Taraon *·kr#* < **gruk* (or **^cgjuk* ?) ‘waist’

Comments: This last group, which Matisoff reconstructs with plain voiced stops, has a prefix before the stop in my reconstruction in order to account for the lack of aspiration, just like in Tibetan. Occasionally direct attestation of such prefixes in present-day cognates can be found¹⁵, just as Matisoff would need to find them for the apparently even larger set of low-tone aspirates, but the acceptability of my reconstruction will rest more on: 1) the demonstration of a sufficient number of voiced stop initials in TB cognates in the low-tone aspirates set, where Matisoff posits a basic TB voiceless stop (prefixed in cYB), and, more importantly 2) the mechanism’s basic simplicity and historical corroboration in the Sino-Tibetan area—as compared to the complexity and lack of corroboration for Matisoff’s theory.

Abbreviations used:

Brm: Burmese, Bsh: Burmish, by=Biyo (Hani); c: Common, JP: Jingpo, LC-A: Long-Chuan Achang, lc=L ũ hūn (Hani), ls=Lhasa, TB: Tibeto-Burman, Tib: Tibetan, vi: intransitive verb, vt: transitive verb, w: written, XD-A: Xian-Dao

15. E.g. Quèyũ *žčĩ* ‘waist’ (cf. *ž^hĩ* ‘six’). Qiangic languages such as this appear to be more closely related to the YB group than are other branches of TB (Bradley 1997 p.2). The *ž* prefix is phonologically very similar to the following *č*, which may be the result of assimilation, in which case it would be hard to say what the original form of the prefix was.

Achang, YB: Yipo-Burmic, YY & YZ: see “Sources Used” (below), ZW: Zaiwa. The Yipoish languages for which Chinese sources use the blanket term 彝語 are referred to herein by using the numbers attached to them in YY & YZ, thus: Y22=大方, Y23=南澗, Y24=南華, Y25=彌勒, Y26=墨江, Y35=喜德, Y36=巍山, Y37=南華, Y38=武定, Y39=撒尼. The reader can thus quickly consult these two large comparative dictionaries.

Segmental / diacritical transcriptions:

-ʰ, -h : tone marks

≡ = any high central vowel

ⁿC- = homorganic prenasalisation of the stop C

C = undefined consonant

ʒ- = dz-, ʒ̣- = dž-

ṁ = nasalising of vowel; -ṁ = raised vowel

My Lahu e/o are often transcribed by others as ε/ɔ

An earlier version of this paper was presented at the 33rd International Conference on Sino-Tibetan Languages and Linguistics, Thailand - Oct. 2000. I thank participating members for their comments at that time.

REFERENCES

- Benedict, Paul K. (Contributing editor: James A. Matisoff) 1972. *Sino-Tibetan: A conspectus*. Cambridge: Cambridge University Press. (=STC)
- Bradely, David 1978. *Proto-Loloish*. Scandinavian Inst. of As. Studies: Monograph Series #39. London: Curzon Press.
- . 1997. “Tibeto-Burman languages and classification.” in *Papers in Southeast Asian Linguistics* No. 14: Tibeto-Burman Languages of the Himalayas. (Australian National University—Pacific Linguistics—Series A-86), p. 1-72.
- Chén Kāng 1990. “Yíyǔ zìdòngcí yǔ shìdòngcí de xíngtài biāozhì jí qí yóulái,” *Mínzú yǎnwén* 1990.2:40-45.
- Chén Qíguāng 1991. “Huánán yì-xiē yǔyán de qīngzhuó duìzhuǎn”, *Mínzú yǎnwén* 1991.6:1-11.
- Clerk, F. V. 1911. *A manual of the Lawngwaw or Maru language*. Rangoon: American Baptist Mission Press.
- Dài Qīngxià, Cui Zhichāo 1985. *Achāngyǔ jiǎnzhi*. Beijing: *Mínzú chūbǎnshè*.
- Dempsey, Jakob 1995. *A Reconsideration of Some Phonological Issues Involved in Reconstructing Sino-Tibetan Numerals*. University of Washington Ph.D. dissertation.
- . 2001. “Remarks on the vowel-system of Old Burmese”, *Linguistics of the Tibeto-Burman Area* 24.2.
- . 2003a. “Analysis of Rime-Groups in Northern-Burmish”, *Linguistics of the Tibeto-Burman Area* 26.1.
- . 2003b. “On the origin of the [+tense] feature in Jingpo syllables,” *36th International Conference on Sino-Tibetan Languages and Linguistics*, Melbourne, Australia.
- Diffloth, Gérard 1980. the Wa Languages. *Linguistics of the Tibeto-Burman Area* 5.2.
- Fù Mǎoji et al. 1991. *Zāngmǐǎnyǔ yǔyán hé cǐhuì*. Beijing: Zhōngguó shèhuì kēxué chūbǎnshè. (=YY)
- Handel, Zev 2003. “Northern Min tone values and the reconstruction of “softened initials”, URL: faculty.washington.edu/zhandel/Handel_Minbei.pdf
- Henderson, Eugénie J.A. 1986. *Some hitherto unpublished material on Northern (Megyaw) Hpun*. In: McCoy/Light 1986:101-134.
- Huáng Bùfán (ed.) 1992. *Zāngmǐǎn yǔzú yǔyán cǐhuì*. Beijing: Zhōngyāng mínzú xuéyuàn. (=YZ)
- Lewis, Paul 1986. *Lahu-English-Thai Dictionary*. Chiang Mai: Thailand Lahu Baptist Convention.
- Li, Fang-kuei 1977. *A Handbook of Comparative Tai*. Honolulu: University Press of Hawai’i.
- Lǐ, Yǒngsuì 1992. “MiǎnYíyǔ shēngdiào bǐjiào yǎnjiù”, *Mínzú yǎnwén* 1992.6:11-24.
- . 1996. “Gòngtóng MiǎnYíyǔ shēngmǔ lèibié tànsuǒ”, *Mínzú yǎnwén* 1996.1:1-9.
- Matisoff, James 1972. *The Loloish tonal split revisited* (=LTSR). Center for S. & S. E. Asia Studies, UCB - Research Monograph Series, #7.
- . 1988. *The Dictionary of Lahu*. Berkeley: University of California Press.

-
- , 2003. *Handbook of Proto-Tibeto-Burman*. Berkeley: University of California Press.
- McCoy, John / Light, Timothy (eds.) 1986. *Contributions to Sino-Tibetan Studies*. Cornell Linguistic Contributions, v. 5. Leiden: E. J. Brill.
- Sūn Hǒngkāi, Liú Lù 1986. *Nǚzú yǔyán jiǎnzhì*. Beijing: Minzu chubanshe.
- Thurgood, Graham 1977. "Lisu and Proto-Lolo-Burmese", *Acta Orientalia* (Copenhagen) 38: 147-207.
- Wáng Fǔshì & Mǎo Zōngwǔ 1995. *Miǎoyáo yǔ gǔyīn gòunǐ*. Beijing: Zhōngguó shèhuì kēxué chūbǎnshè.
- Wáng Jūn et al. (eds.) 1984. *ZhuàngDòng yǔzú yǔyán jiǎnzhì*. Beijing: Míngzú chūbǎnshè.
- Xú, Xíjiān et al. 1992. *Hàn-Zài cídiǎn*. Chengdu: Sìchuan míngzú chūbǎnshè.
- Yabu, Shiro 1982. *A Classified Dictionary of the Atsi or Zaiwa Language...* Tokyo: Institute for the Study of Languages and Cultures of Asia and Africa, Tokyo Gaigokugo Daigaku.

彝緬語系中塞尾韻的聲調起源

田雅客

元智大學

摘 要

本文對彝緬語系裡的“入聲”音節(字尾有塞音)，特別是在平常與古全濁聲母有關係的“低音處”中表現送氣全清塞音聲母那一類的字(例如“六”)，提議一個新的，同時也希望是一個更簡單的來源。從東亞各種語系的證據裡可以更清楚瞭解到，筆者所提議的語音發展過程其實在漢藏語系地區早已到處存在。

關鍵詞：彝緬語系，聲調起源，藏緬語系，歷史音韻學

(收稿日期：2005.3.23；通過刊登日期：2005.11.22)