

Making Waves in Proto-Sino-Tibetan: Ripples of PST <WAVE>

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The present study had several beginnings. It first began with a preliminary treatment of the historical development of what is commonly called the "adversative passive" marker of Chinese, 解被 OC¹ */bjai@/ (> MC */bje@/), now pronounced bèi in MSC. When this subject was resumed in more depth in a later paper, the entire word family of 解皮 OC */bjai@/ 'skin' to which 解被 bèi belongs had become the subject. From within that paper arose appreciation of not only the need for an attempt at a comparative treatment of that word family, but of the ultimate profitability of such an endeavor. Looking at lexical data from daughter languages of the ST family, the current paper begins the process of attempting adequate treatment of all the members of this Chinese word family by focusing upon one of its members: 波波 OC */puai@/ (> MC */puai@/ > MSC /po⁴⁴/) 'wave'.²

Semantics: Chinese

One of the supposed paronyms³ in the Eastern Han word family for

¹OC = Old Chinese, MC = Middle Chinese, EM= Early Modern Mandarin (Jin Dai), MSC = Modern Standard (i.e. Beijing) Chinese; ST = Sino-Tibetan, TB = Tibeto-Burman, WT = Written (i.e. Classical) Tibetan. Here and elsewhere, unless otherwise indicated, the OC/MC (c. 1,000 BC) reconstructions are based on those of LI & ZHOU.

²Earlier findings will be incorporated into subsequent treatments in the series of papers planned for this word family.

³One may distinguish here intra-linguistic and inter-linguistic uses of the term "word family". I should like to use the term "paronym" to indicate the intra-lingual (language specific) word family member, reserving Matisoff's term "allofam" for the inter-linguistic word family member. "Paronyms" in Chinese are thus two or more words which were (or may have been) judged in a period relevant to orthography as being sufficiently close *in both sound and meaning* to warrant their being written with the same phonetic component. This common "phonetic" component (主諧字 zhuxiezi) in such cases would actually also be perceived as providing something like a "root" semantic element to the members of its paronym class. Thus, the term paronym is used in preference to a less wieldy term such as "paronymophone". Excluded from the class of paronyms are simple graphical "borrowings" with no semantic basis, although these are sometimes comprehended in

皮 */bjai@/ 'skin' is the noun for 'wave, ripple, surge, flood', defined in SW⁴ as:

*/puai@/ 298



波 水涌流也從水皮聲

Wave: water flows gushing. [Graph] composed of 'water' [semantic determiner], and 'skin' phonetic.

I say here "supposed" because, in his commentary for the word 詖

*/bjai@/ 68



詖 辯論也古文以為頗字從言皮聲

Argue, dispute, debate ...

段玉裁 DUAN Yucai (1815:91) writes something characteristic of some of his oft-seen methodological presuppositions:

此詖字正義。皮、剝取獸革也。被、析也。

凡皮之字皆有分析之意。故詖為辯論也。

This is the 詖 word's correct meaning.

The word 皮 'skin' is 'to take a beast's skin'.

The word 被 [means also] 'to split, separate, divide, analyse'.

Thus, all words written with a 皮 'skin' element

have this 'split, separate, divide, analyse' meaning.

And therefore 詖 has meanings 'argue, dispute, debate ...'

Although DUAN makes this broad statement here, it is nothing peculiar to this particular word or word family, or to his thinking in this particular section of his SW text.⁵ DUAN's great commentary was sprawling enough without endeavouring to present for every member of a given word family what he perceived to be the semantic justification for its membership in that word family. In fact, DUAN inconsistently offers such explanation, and does not offer it at all in the case of our 波 [po⁴⁴] 'wave' word.

the meaning of the Chinese 'word family' (諧聲字 xieshengzi), which gives us yet a third term. It is also possible for words to have distinct phonetic components, and yet still be perceived as both paronymous and parophonous. In this case, such pairs have been termed paronomastic (cf. LI Fanggui 1945:334, cited in Cook 1995:147n1), which is to say that the "meaning" connection between the words is less overt, perhaps traditionally deprecated, or else the result of failure (local variation or redundancy) in the orthography.

⁴For etymological analysis of this morpheme we must begin, as usual, with the great Eastern Han lexicon 《說文解字》 *Shuowen Jiezi* (SW, presented to the emperor in 121AD), in DUAN Yucai's Qing Dynasty recension.

⁵Please see Cook 1995, Section 1, for a discussion of some of the semantic issues in such analyses.

It is in fact hard to imagine what satisfying explanation could surface in 'wave' from a word family with underlying meaning of 'skin'. Of course, if according to DUAN a semantic primitive such as <SPLIT> is at the heart of this family, this could easily be made to diverge by shades of meaning into whatever tributary ideas might be needed.

At one point I entertained a more restricted (and yet, I fear, no more successful) idea for the entire SW 'skin' word family, which resulted in what I perceived to be four natural morpho-phonemic classes, presented here.⁶

The 皮 'skin' Word Family of 《說文解字》 *Shuowenjiezi*

- * /bjai¹/ 36 𠂔 皮 剥取獸革者謂之皮從又為省聲凡皮之屬皆從皮𠂔古文皮𠂔籀文皮
[hide flayed from a beast] <skin>
- * /puai²/* /puai³/ 302/306 籟 簸 揚米去糠也從箕皮聲
[to winnow, separate rice (grain) of its husk; winnowing fan] <break/remove skin>
- * /phuai³/ 306 𠂔 破 石碎也從石皮聲
[smash to pieces, as with a rock; smashed bits, dust] <break skin>
- * /puai²/ 302 𠂔 跛 蹇也從尤皮聲
[lame, limp (w/ blistered foot)] <break skin> (or <move in the dust, crawl, creep, cripple>)
- * /bjai³/ 68 𠂔 𠂔 辯論也古文以為頗字從言皮聲
[argue, dispute, debate ...] <bump heads (and break skin)>
- * /bjai¹/ 36 𠂔 疲 勞也從 14 皮聲
[tired after exertion, weary from work] <hands or feet blistered from work>
- 00 𠂔 鞞 車駕具也從革皮聲 [(鞍轡)
[tack, various leathern equipment for harnessing / driving draft animals; saddle, bridle, harness ...]
<leather, skin>
- 00 𠂔 鉞 大鍼也一曰劍如刀裝者從金皮聲
[a large needle (such as that used by a doctor to drain pus from an abscess); a sword'] <drain blister>
- 00 𠂔 楛 粘也從木皮聲一曰折也
[sticky', name of an evergreen tree like the 杉 'China fir', (its pitch was) used to caulk boats, coffins; also, 離析, 破裂 'split, split up, break into bits ...' (cp. 破); also used for 彼] <sticks to the skin; to form a water-proof skin>

⁶ "##" and "***" here indicate characters in the SW text which unfortunately are not in Modern computer Kaishu encodings; these characters are in my SW encoding. The glosses are those of the 7th c. Song Dynasty text which served as the basis for DUAN's reconstruction. Numerals after the OC reconstructions refer to LI&ZHOU, whose OC tone classes I represent here with superscript. "00" indicates that a given word is not attested early enough to permit an OC reconstruction (by L&Z's criteria), and I have not ventured my own based on MC.

The 皮 Word Family of 《說文解字》(continued)

*/bjai²/ */bjai³/ 55/68 緦被 寢衣長一身有半從衣皮聲
[bed cover half again as long as the body] <skin, leather, covering, cloth ...>

*/phjai¹/ */phjai³/ 36/68 幘帔 弘農謂裙帔也從巾皮聲
[an article of clothing, a cape, shawl, or skirt] <skin, cloth>

00 旛 ## 旛旗披靡也從**皮聲
[banner flag blown in the wind] <skin, cloth>

*/phjei²? 55 緦 ## 條屬從糸皮聲讀若被或讀若水波之波
[a kind of silk ribbon or braid] <skin, cloth>

*/puai¹/ 298 瀾波 水涌流也從水皮聲
[gushing / surging of water, wave] <ripple/inclination in the surface; slope>

*/phuai¹/ 298 坵坡 阪也從土皮聲
[a slope (cp. 陂, 頗)]

*/phuai¹/ 298 陂頗 頭偏也從頁皮聲
[tilting (sloping) of the head; tilted, sloped (cf. 坡, 陂); rather, quite, very ...]

*/pjai¹/ 36 陂阪 阪也一曰沱也從阜皮聲
[uneven, sloped (cf. 陂, 頗); a pool, pond]

*/phjai¹/ 36 擘披 從旁持曰披從手皮聲

[take sthg by the sides, to prevent it from inclining or toppling; funeral implements, silk cords attached to the sides of the hearse for this purpose (柩車兩旁牽挽的帛, 以防傾倚)]

00 駮 ## ** ** 也從馬皮聲
[horse shakes its head; suddenly]

00 鯪 ## 魚名從魚皮聲
[fish name (cf. 波)]

*/pjai²/ 55 徃彼往有所加也從彳皮聲

["the goer has *that* which *augments* ('that which is applied to') him" (i.e. *that* objective thing which he seeks); "a relative term" ('that' relative to 'this'), that, he]


00 賚 ## 迳予也從貝皮聲
[give, pass to]

My concluding thought after all this was that, *if* (and this is a big "if") it is possible for both 'wave' and 'skin' to surface from a common underlying primitive, a primitive such as <SURFACE> might be more satisfying than <SPLIT> (though I won't split hairs here in trying to rigorously distinguish these two close concepts). Suffice it to say that a 'wave' is a surface phenomenon with regard to liquid, just as 'skin' is a surface phenomenon for animal and vegetable bodies.

I will no more delve into the depths of such vasty semantic primitives in this paper, but rather, would prefer to resume what I see as more productive discussion of the concrete natural object 'wave (in a body of water)'. This natural object, as we shall see, is not only exceedingly concrete semantically, but also very simple phonologically, both of which are attributes favorable to a lexical item's extreme longevity.

In closing this Sinitic semantic section, a few more words with regard to historical semantics remain to be said. First, although SW is as usual the first cited text in lexical analyses, the word 波 is also attested in other early texts. It appears, for example in the 《詩經·小雅·漸漸之石》 *Shijing-Xiaoya-Jianjianzhishi* [The Poetry Classic - Secondary Section of Elegance, in the Ode "Gradually, gradually, the stone"], commonly said (e.g. CH 1250) to contain material composed at the end of the Western Zhou, or beginning of the Eastern Zhou, which is to say, somewhere around the middle of the eighth century BC. In later or less reliably dated texts there are extensions of meaning in which 波 means 'water' rather than 'wave' (for these see HYDZD p. 671). Moving in the other direction chronologically, I was unable to find any identification of the word 波 in the oracle bone inscriptions (OBI) at my disposal. For example, looking in LZ in the exceedingly short 'water' section (c. p. 487) presented nothing conclusive in those Shang inscriptions. Granted, I did not really make an exhaustive study of the problem, as I was preoccupied with data relating to other of the ST daughter languages. Certainly, I should not be surprised if someone can identify some OBI character form, either with or without the water radical, with this wave word.

Finally, it must be mentioned that as my computerized concordance of the SW text reveals, there is also in SW a phonetic gloss for one of the related characters:

*/phjei@/? 55  ## 條屬從糸皮聲讀若被或讀若水波之波
[a kind of silk ribbon or braided silk cord]

The phrase 讀若水波之波 shows us that the bisyllabic compound (binom) 水波 [lit. 'water-wave'] may have existed in Han times, though these 讀若 "du ruo" 'read as' phonetic glosses are in some if not many cases considered late intrusions into the original text of 121 AD. It is interesting, nevertheless, to find this binom in the SW text. It was this binom which initially caused me to realize what would turn out be the most profitable vein in the present inquiry. This subject is resumed below with regard to the comparative Sino-Tibetan data.

Phonology: Chinese

The usual OC/MC reconstructions being all well and good, it always seems more satisfying to me to begin with modern synchronic data, and in this regard the following eight "dialect"⁷ readings of 波 are presented (data from LI & ZHOU, p.298.9):

MSC	Wu	Xiang	Gan	Kejia	Yue	Mindong	Minnan
po①	pu①	po①	po①	pɔ①	pɔ①	phɔ①	po①, pho①

The tones here marked "①" are in every case 44 highish even tones on a CHAO scale (1-5, low to high), except for the Xiang (33) and Yue [Cantonese] (53). Thus, for LI&ZHOU the development of a purported OC */puai①/ > MC */puɑ①/ > EM /puɔ①/ in these dialects (neglecting for the moment the questions of lineal descent for Min) involves a voiceless bilabial stop onset which has remained unchanged throughout Chinese history. The coda, on the other hand, was not so fortunate. Although an OC/MC pingsheng tone may very well have had the same quality as that heard today, the OC/MC vowel has been raised in modern dialects under the influence of the older medial high front rounded vowel. Note that for MSC today, articulation of this initial is accompanied by a noticeable labialization of the vowel [pʷo⁴⁴]. The aberrant development of aspiration in the Min forms is problematic, since in LI&ZHOU's tables Min aspirates most regularly develop from both OC aspirates and OC voiced initials. Non-lineal descent MC > Min,⁸ or Min innovation are topics which may be considered later in this regard.

As for the reconstruction of this OC initial, Karlgren (GSR:251) had the following:

波 pwâ > puâ > po ::: wave, surge; to be shaken as on waves.

Karlgren's transcription⁹ may be given in normalized form as follows:

波 pwa > puɑ > po

⁷LI&ZHOU use the groups of YUAN Jiahua 1961.

⁸Cf. Norman 1988:228ff; Branner 2000.

⁹According to Norman [1988:38], Karlgren's phonetic transcription was based on J.A. Lundell's Swedish dialect alphabet.

His reconstruction posits an OC medial bilabial consonantal on-glide which developed into a full vowel in MC, which reconstruction is slightly different from LI&ZHOU's reconstruction, derived from that of WANG Li. The quality of the MC vowel is not disputed in any of the reconstructions listed in YU Naiyong, though there is disagreement relating to the vocalic status of the medial.

According to LI Fanggui's system (1971:265) this OC word would be

波 **par** wave(n.) Chinese (Old) (LI,1971)

where he "provisionally reconstructs" a final *-r, on the basis of contacts with final *-n elsewhere (and so, for LI all OC syllables are closed.) Axel Shuessler (1987:40) and William H. Baxter (1992:1049, cf. pp. 291,413), on the other hand, reconstruct here

波 **paj** wave(n.) Chinese (Old) (Baxter,1992)

Without yet considering the virtues or differences of these two reconstructed final codas, acknowledging the tentative nature of both, we may return for the moment to the reconstructions presented previously, under "The 皮 Word Family of 《說文解字》" above. There it was supposed that for the first two groups, an underlying meaning of <skin> might somehow account for the various surface meanings. And yet turning to the third group, beginning with 波 */pwal/ 'wave, ripple' the meanings seemed more divergent, though perhaps still relating to "surface" phenomena. The pronunciations are more divergent in group 298 as well, its medial bilabial glide being parallel to the 302/306 forms in group 1. We may broadly characterize the overall phonology of all those groups (in accordance with the various reconstructions) in terms of a bilabial stop initial (voiced, voiceless aspirated or plain), a medial glide /j/ or /w/, an open final /a/ and a non-stop tone (all three MC non-stop tones occur in this group). Karlgren (1957) distinguished OC initial voiced aspirates in this series as well, although today this is commonly deprecated by those who would derive MC voiced initial stops from OC voiced initial stops (LI Fanggui, 1971:10ff).

A question which might naturally arise at this point is whether researchers have identified putative cognates to any of the above OC word family syllables in Sino-Tibetan (ST) languages. In fact, the short answer seems to be "no". First (and this is not unusual), I have found no members

of this word family mentioned in connection with cognates in ST languages, not in STC (Benedict 1972), Luce(1981), nor among the works of the usual suspects. Second, looking for parallel constructions in the major branches of Tibeto-Burman (TB), I have as yet found no mention in the literature of anything similar to Sinitic 被 bèi passivization. This 被 problem is looked at in another study in this series. For the present, it seems that with this fuzzy picture of the OC phonology, we might consult the STEDT databases to see what comparative data presents itself, and to what extent such data might prove illuminating of the questions at hand.

The Comparative Evidence: WT, Burmese, Lahu

As mentioned above, it was the binom 水波 /ʃui²¹³po⁴⁴/ [lit. 'water-wave'] encountered in the 讀若 gloss of a word in my electronic 《說文解字》 *Shuowenjiezi* concordance which set off a series of associations in my mind, some of which I have come to suspect may have been fortuitous, but others of which seem well beyond the realm of coincidence.

Tabulated below are 'wave' polysyllables apparent in STEDT's WT lexical data, and perhaps several of these forms will set off similar associations in the minds of other readers:

WT <WAVE> polysyllables

- dba'** ::: [wave, billow, expression of approval, well done]
- dba' klong** ::: [(tumultuous) waves, billow, eddy, whirlpool caused by the waves]
- dba' klong 'khrug ::: [a large lake]
- dba' rlab ::: [waves]
- dba' rlab can ma ::: [hill torrent, rapid mountain stream]
- dba' rlab skyes ::: [spray, sea foam, scum on water]
- dba' tshub ::: [surge, roar, turmoil of waves]
- dpa' rlab dang bcas pa ::: [ocean, having violent waves]
- klung 'bab pa ::: [rushing of a hill torrent, flowing of a river]
- rba** ::: [waves]
- rba klong** ::: [eddy caused by the waves, waves, billow]
- rba klongs** ::: [waves, wave, billow]
- rba rlab ::: [waves, wave, billow]
- rba skya ::: [whitish waves]
- rba thal thal 'ong ::: [waves come flowing past]
- rdo rje rba rlab ::: [vajra wave]
- rdo rje'i rba rlab ::: [wave of the vajra (yantra yoga concluding exercise)]
- chu'i rba rlab ::: [wave]

It is seen that I have isolated WT 'wave' words and expressions which all contain prefixed /ba/ syllables. The two primary syllables are /dba'/ and /rba/, synonyms meaning 'wave'. The first two syllables of /chu'i rba rlabs/ reminded me of Chinese 水波 shui³bo¹, although STEDT currently etymologizes the 'water' syllables in these two words under different roots (note that the WT form has a genetical suffix, lit. 'water's wave'). Neglecting this point for the moment, what about the second syllable? Compare also the following two Chinese binoms, given here with Karlgren's OC transcription:

波浪 pwâ lāng (â = [ɑ])
 波瀾 pwâ glân

Both of these are common modern words for 'wave, billow'; Karlgren glosses each of the three characters in these two binoms as follows (with his OC > MC > Mandarin pronunciations):

波 pwâ > puâ > po ::: wave, surge; to be shaken as on waves GS251;
 浪 lāng > lāng > lang ::: name of a river; place name GS735k,r;
 浪 lāng > lāng- > lang ::: excessive, reckless, dissolute GS735k,(n);
 浪 lāng > lāng- > lang ::: to flow GS735k; Gl. 80;
 瀾 glân > lān ~ lān- > lan ::: big wave GS185k; Gl. 278.

If 水波 shui³bo¹ is not completely satisfying in comparison to WT /chu'i rba/, please compare also 波浪 bo¹lāng⁴ and 波瀾 bo¹lān² with WT /dba' klong/, /rba klong/, /rba klongs/. Although I will not here venture a guess as to the relation between /klong(s)/ and 瀾 or 浪, it does seem that there may be a relation: might the lack of velar nasal in the reconstructed OC forms of the former somehow relate to the presence or absence of the WT -s suffix?

Casting our net yet further abroad into Lolo-Burmese, compare also the following Lahu 'wave' words, excerpted from the *Electronic Dictionary of Lahu* (Matisoff, 2000).

1206	929	bâ	Mpfx	wave; ripple
22999	185	ò-bâ(=nâ)	N	a wave; ripple
23003	185	ò-bâ=ò-bâ-nâ qay ve	Nadv + V	come in waves
1208	929	gì-bâ	N	wave (in water); a ripple
1212	929	gì=bâ-nâ	N	wave; ripple
23000	185	í-kâ?=bâ	N	wave (in water)
23001	185	gì-bâ(=nâ)	N	wave (in water)

The voiced bilabial initials in the above Lahu **bâ** forms (⁵⁴ high-falling tone; **ḡì-bâ**, lit. 'water-wave') fit well with what one would expect from a prenasalized PLB voiced initial.¹⁰ As for the final, when one looks to Burmese itself for support, the findings are not entirely in accordance with expectation. The following forms are cited from PKB-WBRD¹¹:

3591.81168302	phui	bellows ¹² (cf. tam-pûi 'a horn', also 'a wave')
3580.81058248	pûi-cûi-	recklessly
1524.35363832	hlûiŋ	wave, billow

The WB word **tam-pûi** glossed 'a horn' [i.e. a musical horn], and also 'a wave' is interesting, and these meanings are confirmed in Judson's two dictionaries, and in the Myanmar Language Commission (MLC) dictionary. The first syllable is glossed in MLC (p. 172) as meaning 'limpidity; liquid, water' in certain contexts, and this word is the homophonous syllable in 'horn (musical)', which means 'a stick'. In any event, it is the syllable **pûi** with which we are more concerned in **tam-pûi** 'wave'. The final of this word has been related by Matisoff to PTB *-əw, which may present a problem if this is to be related to the OC and WT -a final.

The WB word **hlûiŋ** 'wave, billow'¹³ may remind us of WT **klong(s)** and Chinese 瀾 or 浪, though the regularity of these correspondences remains to be demonstrated. If a WB trisyllabic compound such as **tam-pûi hlûiŋ** 'wave, billow' can be verified (as I only have testimony of the existence of this compound from a single informant), this might also serve to further these suspicions, parallel to other polysyllables seen so far.

¹⁰Cf. STC, p.22.

¹¹This data is here cited from STEDT's electronic version of Paul K. Benedict's *Written Burmese Rhyming Dictionary* (1976), which includes a relational syllable canon. Benedict's source for this data was Judson (1893), against which his cited forms have been verified.

¹² Cp. WT 'bellows':

bud pa ::: [bellows]
 'bud 'dung ::: [trumpet, bellows]
 sbid pa ::: [SA sprid pa, bellows, instrument for blowing a fire]
 sbud mchu ::: [tube or iron mouth of a bellows]
 sbud pa ::: [bellows, skin bellows used in blowing the hearth]
 sprid pa ::: [SA sbid pa, bellows, instrument for blowing a fire]
 tho ba spud pa ::: [hammer and bellows]
 tho ba sbud pa ::: [hammer and bellows]
 sbud pa 'bud pa ::: [blow the bellows]

¹³Cf. MLC, 1996:465.

The STEDT Comparative Data

The following 109 records from the STEDT databases represent data for the narrow 'wave (in a body of water)' semantic domain, sorted by Language Group, and sub-sorted by Language Name.¹⁴ This data set is presented in its entirety so that the reader may have the experience of looking at a relatively unanalysed data-set. Perusal of this data will reveal that although there are a great many more etymological roots in these 109 records than are treated in the present study, interspersed in these forms are certain syllables which may seem familiar indeed. Such views of such a broad sweep of ST linguistic data always sends chills down my spine ... a feeling such as I imagine astronauts might have looking down upon the earth from outer space. Once the reader has had the opportunity to take in the vista of this data, I will present my extraction of the relevant forms into a postulated cognate set below.

STEDT Semantic Set: 'wave (in a body of water)'						
Lexical Entry	Gloss	G	Language Name	Citation	Src ID	Grp
rl+ap	wave	n	*Sino-Tibetan	Coblin 86	158	ST
lã-do	wave		Apatani	Sun J 93 Tani		TANI
(ə-si) si-lap	wave		Bengni	Sun J 93 Tani		TANI
bu-sar	wave		Bokar	Sun J 93 Tani		TANI
bu car	wave	n	Bokar	Dai 92 TBL	0048.24	TANI
té-rtshos	wave		Caodeng	Sun J 97 Cao		TANI
si-per	wave		Milang	Tayeng 76 Mil		TANI
ma ³¹ tci ⁵³ ta ³¹ kui ⁵⁵	wave	n	Darang Deng	Dai 92 TBL	0048.22	DENG
a ³¹ ti ⁵⁵ da ³¹ kom ⁵⁵	wave	n	Geman Deng	Dai 92 TBL	0048.23	DENG
ta:-ku:	wave		Taraon	Anonymous xx Tar		DENG
lyu	wave (that strikes the shore)	n	Taraon	Anonymous xx Tar		DENG

¹⁴Note that in the table headers, **G** = 'grammatical function'; English 'wave' verbal glosses have been consciously excluded from this data set. **Grp** (Group, sub-grouping) abbreviations are explained in **Appendix 1**.

STEDT Semantic Set: 'wave (in a body of water)'						
Lexical Entry	Gloss	G	Language Name	Citation	Src ID	Grp
buan ²²	bubbling, frothing (of liquids, rivers, waves)	n.	Lai (Haka)	Van Bik 00 LED		CHIN
ti: let	wave (in any large body of water)	n.	Lai (Haka)	Van Bik 00 LED		CHIN
let	to flip (cf. wave); to translate	vi, vt.	Lai (Haka)	Van Bik 00 LED		CHIN
tu:i ¹ hual ²	wave		Tiddim	Bhaskararao 96 CDB	1844	CHIN
phaw	wave		Tangkhol	Bhat 69 TNV	100	NAGA
osa	wave		Bodo	Bhat 68 Boro		BG
dəytún	wave		Bodo	Bhat 68 Boro		BG
dəy·haw	wave		Bodo	Bhat 68 Boro		BG
mə·kəw pa·plí	wave		Bodo	Bhat 68 Boro		BG
stököl tī	wave	n	Kanauri	Bailey 11		WH
nüm-hón	a wave (in water)	n	Lepcha	Mainwaring 98	p.373	LEP
tshi ⁵³ lap ⁵³	wave	n	Cuona Menba	Dai 92 TBL	0048.06	TBC
com pa	wave	n	Motuo Menba	Dai 92 TBL	0048.07	TBC
?a ² lon ²	wave		Manang (Gyaru)	Nagano 84 Man	284	TGTM
³ ?alɔŋ	wave		Manang (Prakaa)	Hoshi 84	0615b	TGTM
¹ kyu ³ ?alɔŋ	wave		Manang (Prakaa)	Hoshi 84	0615a	TGTM
syɔŋ·ki pah·k̄bar	wave		Tamang (Sahu)	Taylor 72 TmVo	5.75	TGTM
tahr	wave		Thakali (Tukche)	Hari 71a ThVo		TGTM
t̄hə rlap	wave	n	Tibetan (Alike)	Dai 92 TBL	0048.05	TIB
ba ¹³ lau ⁵³	wave	n	Tibetan (Batang)	Dai 92 TBL	0048.03	TIB
pə ¹³ lɛp ⁵²	wave	n	Tibetan (Lhasa)	Dai 92 TBL	0048.02	TIB
rba rlab	wave	n	Tibetan (Written)	Dai 92 TBL	0048.01	TIB
dba'-klɔŋ	wave, billow	n	Tibetan (Written)	Jäschke 81	p.386	TIB
rba-klɔŋ	wave, billow	n	Tibetan (Written)	Jäschke 81	p.386	TIB
rba-rlábs	wave, billow	n	Tibetan (Written)	Jäschke 81	p.386	TIB

STEDT Semantic Set: 'wave (in a body of water)'						
Lexical Entry	Gloss	G	Language Name	Citation	Src ID	Grp
rba-skya	whitish waves	n	Tibetan (Written)	Jäschke 81	p.386	TIB
dba'-t'súb	surge, roar, turmoil of waves	n	Tibetan (Written)	Jäschke 81	p.386	TIB
rba-klonş	waves	n	Tibetan (Written)	Das 1902	p.935	TIB
wa lep	wave	n	Tibetan (Xiahe)	Dai 92 TBL	0048.04	TIB
phE•lEŋ	wave, current, school of small fish		Limbu	Driem 87 Lim		E
bjü ¹	wave	n	Tangut	LIN 00 PC	S4069	X
pa ¹	wave	n	Tangut	LIN 00 PC	S4921	X
zjnr ² -bjü ¹ -tçhiə ¹	water-wave-foam (or froth)	n	Tangut	LIN 00 PC		X
bjü ¹ pa ¹	wave	n	Tangut	LIN 00 PC		X
yrə rdav	wave	n	Daofu	Dai 92 TBL	0048.12	Q
tʃhə ⁵⁵ tə ⁵⁵	wave	n	Guiqiong	Dai 92 TBL	0048.16	Q
ba ³³ lə ⁵³	wave	n	Muya	Dai 92 TBL	0048.15	Q
tʃə ⁵⁵ fpə ⁵⁵	wave	n	Pumi (Lanping)	Dai 92 TBL	0048.09	Q
tsə çyɛ	wave	n	Qiang (Mawo)	Dai 92 TBL	0048.08	Q
ʒi ¹³ rdʒo ⁵⁵	wave	n	Queyu (Xinlong)	Dai 92 TBL	0048.13	Q
dʒɛ ³³ tɛ ³³ nbu ⁵³	wave	n	Shixing	Dai 92 TBL	0048.17	Q
tʌ ³³ ʂto ⁵⁵	wave	n	Zhaba	Dai 92 TBL	0048.14	Q
tʃə lwek	wave	n	rGyalrong (Maerkang)	Dai 92 TBL	0048.11	RG
tʃə slun	wave	n	rGyalrong (Maerkang)	Dai 92 TBL	0048.11	RG
kəwāŋ	go in circular waves		Jingpho	Matisoff 74 TJLB	246	JG
kha ^{ʔ31} leŋ ³¹	wave	n	Jingpho	Dai 92 TBL	0048.19	JG
kha ^{ʔ31} leŋ ³¹	a wave (in water)	n	Jingpho	Dai 83 Jin	p.228	JG
tçin ³¹ klɔ ^{ʔ55}	wave	n	Dulong	Dai 92 TBL	0048.20	NG
tçhi ³¹ tsha ⁵⁵	wave	n	Nung	Dai 92 TBL	0048.21	NG
lɑi ⁵⁵	wave	n	Burmese (Rangoon)	Dai 92 TBL	0048.27	BM

STEDT Semantic Set: 'wave (in a body of water)'						
Lexical Entry	Gloss	G	Language Name	Citation	Src ID	Grp
hlon ³	wave	n	Burmese (Written)	Dai 92 TBL	0048.26	BM
hlûiŋ	wave, billow	n	Burmese (Written)	Benedict 76 WBur	1524.35 363832	BM
phui	bellows (cf. tam-pûi 'a horn', also 'a wave')		Burmese (Written)	Benedict 76 WBur	3591.81 168302	BM
tam-pûi	a horn; a wave (cp. yoke)	n	Burmese (Written)	Benedict 76 WBur	4097.81 168302	BM
tam-pûi	a horn (musical instrument); a wave, billow, hlûiŋ	n	Burmese (Written)	Judson 93	4097.81 168302	BM
vui ⁵¹ kjun ⁵¹	wave	n	Zaiwa	Dai 92 TBL	0048.30	BM
suei ⁵³ lan ³⁵ tsɿ ³¹	wave	n	Namuyi	Dai 92 TBL	0048.46	YI
ɕuo ³¹	wave	n	Nusu	Dai 92 TBL	0048.34	LO-N
zi ³³ tsi ⁵⁵	wave	n	Yi (Nanhua)	Dai 92 TBL	0048.37	LO-N
ɣu ⁵⁵ la ²¹ ba ²¹	wave	n	Yi (Weishan)	Dai 92 TBL	0048.36	LO-N
ji ¹¹ tsi ⁵⁵	wave	n	Yi (Wuding)	Dai 92 TBL	0048.38	LO-N
ʒɿ ³³ mbo ³³	wave	n	Yi (Xide)	Dai 92 TBL	0048.35	LO-N
ò-chu	roll of fat; wave, ripple; wave		Lahu	Matisoff 87 BP	168	LO-C
ò-chu=bâ-nâ	roll of fat; wave, ripple; wave		Lahu	Matisoff 87 BP	168	LO-C
ò-bâ(=nâ)	roll of fat; wave, ripple; wave		Lahu	Matisoff 87 BP	168	LO-C
ɣì=bâ-nâ	roll of fat; wave, ripple; wave		Lahu	Matisoff 87 BP	168	LO-C
bâ	wave; ripple	n	Lahu	Matisoff 88 DL	p929	LO-C
ò-bâ(=nâ)	wave; ripple	n	Lahu	Matisoff 88 DL	p929	LO-C
ò-bâ=ò-bâ-nâ qay ve	come in waves	v	Lahu	Matisoff 88 DL	p929	LO-C
ğì-bâ	wave (in water)	n	Lahu	Matisoff 88 DL	p929	LO-C
ğì=bâ-nâ	wave; ripple	n	Lahu	Matisoff 88 DL	p929	LO-C
ğì-bâ	a wave; a ripple	n	Lahu	Matisoff 88 DL	p929	LO-C
í-kâ?=bâ	wave (in water)	n	Lahu	Matisoff 88 DL	p929	LO-C

STEDT Semantic Set: 'wave (in a body of water)'						
Lexical Entry	Gloss	G	Language Name	Citation	Src ID	Grp
g̃i-bâ(=nâ)	wave (in water)	n	Lahu	Matisoff 88 DL	p929	LO-C
ɣw ³¹ bɑ ⁵³	wave	n	Lahu (Lancang)	Dai 92 TBL	0048.43	LO-C
ɛ ³³ lɛ ³¹ mi ³¹	wave	n	Lisu	Dai 92 TBL	0048.40	LO-C
ji ³³ læ ²¹ me ²¹	wave; tide		Lisu (Northern)	Bradley 94 Lisu		LO-C
ji ³³ tho ³³	wave and tide		Lisu (Northern)	Bradley 94 Lisu		LO-C
ji ³³ tsi ⁵⁵	great wave; raging billow; tide		Lisu (Northern)	Bradley 94 Lisu		LO-C
ji ³³ tsi ⁵⁵ ku ³³ thu ²¹	rolling waves		Lisu (Northern)	Bradley 94 Lisu		LO-C
ji ³³ tsi ⁵⁵ ku ³³ thu ²¹ ku ³³ thu ²¹	billows; whitecaps surging; waves		Lisu (Northern)	Bradley 94 Lisu		LO-C
dzi ³³ da ²¹	wave	n	Naxi	Dai 92 TBL	0048.45	LO-C
ʒ ³³ lɔ ¹¹ tɕ ⁴⁴ mɔ ³³	wave	n	Yi (Sani)	Dai 92 TBL	0048.39	LO-C
w ⁵⁵ do ⁵⁵	wave	n	Hani (Lüchun)	Dai 92 TBL	0048.41	LO-S
w ⁵⁵ tho ³³	wave	n	Hani (Mojiang)	Dai 92 TBL	0048.42	LO-S
pə ³³ tɕy ³³ ji ⁴⁴ no ⁴⁴	wave	n	Jinuo	Dai 92 TBL	0048.44	JNO
lǎ ³ pɔ ¹	wave		Bwe (Western)	Luce 85	E.10	KAR
thì lēŋ	wave	n	Pa-O	Solnit 89 PaO		KAR
lǎ ⁰ pɔ ¹	wave		Paku	Luce 85	E.10	KAR
lǎ ⁰ pɔ ²	wave		Pho (Delta)	Luce 85	E.10	KAR
lǎ ⁰ pɔ ⁵	wave		Pho (Tenasserim)	Luce 85	E.10	KAR
lǎ ⁰ pɔ ¹	wave		Sgaw	Luce 85	E.10	KAR
lǎ ³ pɔ ⁵⁵	wave (in the ocean)	n	Sgaw (Bassein)	Matisoff 00 FM	0048.50	KAR
po ⁵⁵ no ⁴²	wave	n	Bai	Dai 92 TBL	0048.48	BAI
paj	wave	n	Chinese (Old)	Baxter 92	1049	OC
pwâ/puâ	wave / surge; be shaken as on waves		Chinese (Old/Mid)	Karlgren 57 ANK	251	OC
glân/lân(-)	wave (big)	n	Chinese (Old/Mid)	Karlgren 57 ANK	185k	OC
d'âd/d'âi-	wave	n	Chinese (Old/Mid)	Karlgren 57 ANK	317f-g	OC

The above four OC forms conclude the STEDT Semantic Set for 'wave (in a body of water)'. We may now commence with exhibition of the proposed Cognate Set of 51 records extracted from the above Semantic Set.

STEDT Cognate Set #3583: PST *(P)-ba <WAVE (in a body of water)>						
Reflex	Gloss	G	Language	Citation	Src ID	Grp
bu-sar	wave		Bokar	Sun J 93 Tani		TANI
bu ɕar	wave	n	Bokar	Dai 92 TBL	0048.24	TANI
si-per	wave		Milang	Tayeng 76 Mil		TANI
buan ²²	bubbling, frothing (of liquids, rivers, waves)	n	Lai (Haka)	Van Bik 00 LED		CHIN
phaw	wave		Tangkhol	Bhat 69 TNV	100	NAGA
mə·kəw pa·plí	wave		Bodo	Bhat 68 Boro		BG
syon·ki pah·khar	wave		Tamang (Sahu)	Taylor 72 TmVo	5.75	TGTM
ba ¹³ lau ⁵³	wave	n	Tibetan (Batang)	Dai 92 TBL	0048.03	TIB
pə ¹³ lep ⁵²	wave	n	Tibetan (Lhasa)	Dai 92 TBL	0048.02	TIB
rba rlabs	wave	n	Tibetan (Written)	Dai 92 TBL	0048.01	TIB
dba'-kloŋ	wave, billow	n	Tibetan (Written)	Jäschke 81	p.386	TIB
rba-kloŋ	wave, billow	n	Tibetan (Written)	Jäschke 81	p.386	TIB
rba-rlábs	wave, billow	n	Tibetan (Written)	Jäschke 81	p.386	TIB
rba-skya	whitish waves	n	Tibetan (Written)	Jäschke 81	p.386	TIB
dba'-t'súb	surge, roar, turmoil of waves	n	Tibetan (Written)	Jäschke 81	p.386	TIB
dba'-byi	water-rat?	n	Tibetan (Written)	Jäschke 81	p.386	TIB
rba-kloŋs	waves	n	Tibetan (Written)	Das 1902	p.935	TIB
wa lep	wave	n	Tibetan (Xiahe)	Dai 92 TBL	0048.04	TIB
phE·llEŋ	wave, current, school of small fish		Limbu	Driem 87 Lim		E
bju ¹	wave	n	Tangut (Xi Xia)	LIN 00 PC	S4069	X
pa ¹	wave (b<Chinese)	n	Tangut	LIN 00 PC	S4921	X
zjɿr ² -bju ¹ -tɕhə ¹	water-wave-foam (or froth)	n	Tangut (Xi Xia)	LIN 00 PC		X
bju ¹ pa ¹	wave	n	Tangut (Xi Xia)	LIN 00 PC		X

STEDT Cognate Set #3583: PST *(P)-ba <WAVE (in a body of water)>						
Reflex	Gloss	G	Language	Citation	Src ID	Grp
ba ³³ lɛ ⁵³	wave	n	Muya	Dai 92 TBL	0048.15	Q
tʃə ⁵⁵ fpa ⁵⁵	wave	n	Pumi (Lanping)	Dai 92 TBL	0048.09	Q
dʒɛ ³³ tɛ ³³ nbu ⁵³	wave	n	Shixing	Dai 92 TBL	0048.17	Q
tam-pûi	a wave, billow, hlûin; a horn (musical instrument); (cp. yoke)	n	Burmese (Written)	Judson 93, Benedict 76 WBur	4097.81 168302	BM
yw ⁵⁵ lɑ ²¹ ba ²¹	wave	n	Yi (Weishan)	Dai 92 TBL	0048.36	LO-N
zɿ ³³ mbo ³³	wave	n	Yi (Xide)	Dai 92 TBL	0048.35	LO-N
ò-chu=bâ-nâ	roll of fat; wave, ripple; wave		Lahu	Matisoff 87 BP	168	LO-C
ò-bâ(=nâ)	roll of fat; wave, ripple; wave		Lahu	Matisoff 87 BP	168	LO-C
yì=bâ-nâ	roll of fat; wave, ripple; wave		Lahu	Matisoff 87 BP	168	LO-C
bâ	wave; ripple	n	Lahu	Matisoff 88 DL	p929	LO-C
ò-bâ(=nâ)	wave; ripple	n	Lahu	Matisoff 88 DL	p929	LO-C
ò-bâ=ò-bâ-nâ qay ve	come in waves	v	Lahu	Matisoff 88 DL	p929	LO-C
gì-bâ	wave (in water)	n	Lahu	Matisoff 88 DL	p929	LO-C
gì=bâ-nâ	wave; ripple	n	Lahu	Matisoff 88 DL	p929	LO-C
gì-bâ	a wave; a ripple	n	Lahu	Matisoff 88 DL	p929	LO-C
í-kâ?=bâ	wave (in water)	n	Lahu	Matisoff 88 DL	p929	LO-C
gì-bâ(=nâ)	wave (in water)	n	Lahu	Matisoff 88 DL	p929	LO-C
yw ³¹ ba ⁵³	wave	n	Lahu (Lancang)	Dai 92 TBL	0048.43	LO-C
pə ³³ tɕy ³³ ji ⁴⁴ no ⁴⁴	wave	n	Jinuo	Dai 92 TBL	0048.44	JNO
lɔ̃ ³ pɔ̃ ¹	wave		Bwe (Western)	Luce 85	E.10	KAR
lɔ̃ ⁰ pɔ̃ ¹	wave		Paku	Luce 85	E.10	KAR
lɔ̃ ⁰ pɔ̃ ²	wave		Pho (Delta)	Luce 85	E.10	KAR
lɔ̃ ⁰ pɔ̃ ⁵	wave		Pho (Tenasserim)	Luce 85	E.10	KAR
lɔ̃ ⁰ pɔ̃ ¹	wave		Sgaw	Luce 85	E.10	KAR
lɔ̃ ³ pɔ̃ ⁵⁵	wave (in the ocean)	n	Sgaw (Bassein)	Matisoff 00 FM	0048.50	KAR

STEDT Cognate Set #3583: PST *(P)-ba <WAVE (in a body of water)>						
Reflex	Gloss	G	Language	Citation	Src ID	Grp
po ⁵⁵ no ⁴²	wave	n	Bai	Dai 92 TBL	0048.48	BAI
paj	wave	n	Chinese (Old)	Baxter 92	1049	OC
pwâ/puâ	wave / surge; be shaken as on waves		Chinese (Old/Mid)	Karlgren 57 ANK	251	OC

Etymon Assessment

Having exhibited above the 51 forms in this proposed Cognate Set, a few words must be said with regard to some of its members. First, several of the forms included here present problems in terms of the sound laws which have been proposed up to the present. In particular I am thinking of the finals of the Burmese forms mentioned above, which are included in this Cognate Set only for the sake of discussion, and not because I am convinced that they are in fact cognate syllables (see above, p. 10).

More to the point, however, are several of the Qiangic and Northern-Loloish forms, bearing evidence of prefixation/pre-nasalization:

tʃə ⁵⁵ fpa ⁵⁵	wave	n	Pumi (Lanping)	Dai 92 TBL	0048.09	Q
dʒɛ ³³ tɛ ³³ nbu ⁵³	wave	n	Shixing	Dai 92 TBL	0048.17	Q
ʒɿ ³³ mbo ³³	wave	n	Yi (Xide)	Dai 92 TBL	0048.35	LO-N

Such prefixation fits in nicely with what is known of the origin of Lahu voiced initials, and has parallels in the WT variants **rba** and **dba'**. It is only possible to speculate on etymologies of these prefixal elements, and if forced to guess, I would suggest that some forms suggest that this may be a reduction of a <WATER> morpheme. In any event, this prefixal element is written *(P)- indicating that it is apparently not attested e.g. in Chinese, and so optional. *(P)-ba is reconstructed here, although it seems possible that voicing is progressively assimilated from the prefix, i.e. *(B)-pa.

Several of the other syllables in these compounds present the possibility of future refinement of the reconstruction of another <WAVE> root, that proposed by Coblin (1986, listed first in the Semantic Set above). Other of the bulging, sesqui- and mono-syllables in the above Semantic Set present opportunities for future reconstruction.

Conclusions

The stock of ST roots solidly attested in so many daughter languages is rather limited. Many of the languages considered here are spoken by hill tribes with little recent acquaintance with large bodies of water. As in Lahu, 'wave' words may only survive in extended usages [e.g. "waves/ripples of (body) fat"]. As salient waves are primarily phenomena of large bodies of water (the ocean, large lakes or rivers), this root suggests early strong association of the PST people with such large bodies of water (e.g. that they may have been fishermen). Thus, further widespread cognate sets may be identifiable within the <WATER> semantic domain.

Three strengths of this approach to reconstruction may be emphasized:

- Phonological: simple OC syllable;
- Semantic: concrete natural object;
- Syntactic: cognate polysyllables in the daughter languages.

Satisfying phonological reconstruction cannot be done without reference to morphosyntax. Though one may perhaps arrive at a general picture of the proto- and later sound systems by working only with monosyllables, the syllables themselves cannot be meaningfully reconstructed in isolation from one another. When one examines polysyllabic compounds in the relevant languages, the protean boundaries of the mono-, bulging, sesqui-, and polysyllables come to life. Etymologized polysyllables may even eventually be employed for subgrouping purposes, when sufficient good data has been assembled.

Acknowledgements

I would like thank Prof. James Alan Matisoff for his love of Sino-Tibetan linguistics, for his kind research suggestions, and most of all for the opportunity to work with this priceless data.

This research was supported in part by grants from:

- The National Science Foundation (NSF), Division of Behavioral & Cognitive Sciences, Linguistics, Grant Nos. BNS-86-17726, BNS-90-11918, DBS-92-09481, FD-95-11034 and SBR-9808952;
- The National Endowment for the Humanities (NEH), Preservation and Access, Grant Nos. RT-20789-87, RT-21203-90, RT-21420-92, PA-22843-96 and PA-23353-99.

References (selected; see Appendix 2 for STEDT Data Citations)**BAXTER, William H.**

1992. *A handbook of Old Chinese phonology*. (Trends in linguistics: studies and monographs, 64). Berlin, New York: Mouton de Gruyter.

BRANNER, David Prager

2000 *Problems in comparative Chinese dialectology: the classification of the Miin and Hakka*. Mouton de Gruyter: Berlin, NY. UCB Main Stack PL1510; .B73 2000

BENEDICT, Paul K.

1972 *Sino-Tibetan A Conspectus (STC)*, Contributing editor James A Matisoff. Princeton-Cambridge Studies in Chinese Linguistics. Cambridge: Cambridge University Press. ISBN 0 521 08175 0

BEYER, Stephan V.

1992 *The CLASSICAL TIBETAN Language*. New York: State University of New York Press. ISBN: 0 7914-1099-4.

COOK, Richard S.

1995 *The Etymology of Chinese 辰 Chén*. 《‘辰’字的原始義》。 Monograph Volume of the Biannual Journal *Linguistics of the Tibeto-Burman Area*, James A. Matisoff, editor. (LTBA, Volume 18.2, 278pp., including abstract, end notes, indices, editor's preface, and cumulative LTBA index.

DUAN Yucai 段玉裁

1815 《說文解字注》。 *Shuowen Jiezi - Zhu*. [漢] 許慎著 [清] 段玉裁注。上海古籍出版社，1989. ISBN 7-5325-0487-5/H.6. [Qing rescension of the Classic Eastern Han Lexicon.]

JÄSCHKE, Heinrich August

1883 *Tibetan Grammar*. Bibliotheca Indo-Buddhica No. 60. India: Sri Satguru Publications. Reprinted 1989. ISBN: 81-7030-187-4.

1881 *A Tibetan-English dictionary, with special reference to the prevailing dialects*. London: Routledge and Kegan Paul. Reprinted, Delhi: Motilal Banarsidass, 1995. ISBN: 81-208-0321-3.

KARLGREN, Bernhard

2000 *Grammata Serica Recensa Electronica*. A complete electronic version of Karlgren's classic text, including full color electronic images of the original text, with fully searchable indices and relational syllable canon. Prepared for the STEDT Project by Richard S. Cook, in association with Tor Ulving and Ferenc Taffermer. Berkeley: University of California, 2000.

1957 *Grammata Serica Recensa*. First published by The Museum of Far Eastern Antiquities, Stockholm Bulletin No. 29, Stockholm, 1957. Reprinted by Elanders Boktrycker Aktiebolag, Kungsbacka, 1972. HY: PL1201K341957x.

1954 *Compendium of Phonetics in Ancient and Archaic Chinese*. First published by The Museum of Far Eastern Antiquities, Stockholm Bulletin No. 26, Stockholm, 1954. Reprinted by SMC Publishing Inc., Taipei, Taiwan, R.O.C. 1992. ISBN 957-638-123-1.

1950 *The Book of Odes: Chinese Text, Transcription and Translation*. Stockholm: The Museum of Far Eastern Antiquities, 1950. HY: (W) 439 43.

1940 《中國音韻學研究》，高本漢著：趙元任、李方桂合釋。臺北：商務印書館出版，1940 [1962]. HY: RR R 5120 0253.56. An "amiable 'retouche'" of: *Etudes sur la phonologie chinoise*, par Bernhard Karlgren. [Upsala, K. W. Appelberg]; Leyde, E.-J. Brill; 1915-1926. HY: (W) PL1201.K32

1931 "Tibetan and Chinese." *T'oung Pao* 通報, 2^e serie, Volume 28, pp. 25-70, 1931. HY: (W) 9220 87.

1923 *Analytic Dictionary of Chinese and Sino-Japanese*. First published by the Libraire Orientaliste Paul Geuthner, Paris, 1923. Reprinted by Dover Publications Inc., New York, 1991. ISBN 0-486-26887-X.

LI Fanggui 李方桂

1971 《上古音研究》，李方桂。商務印書館，新華書店，北京，1982. HY: W9220 1281. 清華學報 n.s. 9 (1971), 1-61; translated by Gilbert L. Mattos as "Studies on Archaic Chinese", Li Fang-kuei [LI Fanggui], *Monumenta Serica* 31 (1974-5), pp. 219-87. HY: 5121 4404.

LI Zhenhua & ZHOU Changji 李珍華 (LI&ZHOU)

1993 《漢字古今音表》，〔美〕李珍華，周長楫編撰。北京：中華書局。HY: 5120 4414.

LUCE, Gordon H.

1981 *A Comparative Word-List of Old Burmese, Chinese and Tibetan*. London: School of Oriental and African Studies, University of London. ISBN 0-7286-0084-6.

MATISOFF, James Alan

2000 *The Sino-Tibetan Etymological Dictionary and Thesaurus Database (STEDT)*. Berkeley: University of California. <<http://stedt.berkeley.edu/>>

NORMAN, Jerry

1988 *Chinese*. New York: Cambridge University Press.

SCHUESSLER, Axel

1987 *A dictionary of Early Zhou Chinese*. Honolulu: University of Hawaii Press.

XIA Zhengnong 夏征農

1992 《辭海》。Ci Hai. [Encyclopedic Word Lexicon.] 主編夏征農。上海辭書出版社，1992. ISBN 7-5326-0135-8/Z.12.

XU Liyi 許力以

1993 《漢語大字典》。Hanyu Da Zidian. [Etymoloical Character Lexicon] 主任許力以，主編徐中舒。成都：四川辭書出版社，湖北辭書出版社。ISBN 7-80543-239-2/H.63.

YAO Xiaosui 姚孝遂

1989 《殷墟甲骨刻辭類纂》主編姚孝遂。北京：中華書局，1989. 3 Volumes. ISBN 7-101-00477-6/H.42.

1988 《殷墟甲骨刻辭摹釋總集》主編姚孝遂。北京：中華書局，1988. 2 Volumes. HY: 2086.6 4149.

YU Nae-wing (YU2 Nai3yong3) 余迺永

1993 《新校互註·宋本廣韻》香港中文大學香港。<Xin1 Jiao4 Hu4 Zhu4 - Song4 Ben3 Guang3 Yun4>: 'A New Revision of the Sung Edition of the Kuang-yun Rhyming Dictionary'. Hong Kong: Xiang Gang Zhong Wen Da Xue. (1 vol., ~900pp., hardcover, with indices and English appendix.) ISBN 962-201-413-5

Appendix 1: STEDT Language Sub-Grouping Abbreviations

Grp# = = Group/Sub-group Number; Abbr. = Abbreviation.

Grp#	Abbr.	Group Name			
0.0.0	ST	Sino-Tibetan		6.3.3	LO-S Southern Loloish
0.1.0	TB	Tibeto-Burman		6.4.0	JNO Jinuo
1.0.0	KAM	Kamarupan		7.0.0	KAR Karenic
1.1.0	NA	North Assam		8.0.0	BAI Bai
1.1.1	TANI	Tani		9.0.0	S Sinitic
1.1.2	DENG	Deng		9.0.1	OC Old (Archaic) Chinese
1.1.3	MNP	Monpa		9.0.2	MC Middle (Ancient) Chinese
1.2.0	KCN	Kuki-Chin-Naga		9.0.3	CH Modern Chinese
1.2.1	KUK	Kuki		X.0.0	OTH Other TB
1.2.2	CHIN	Chin		X.1.0	Z Other Languages
1.2.3.0	NAGA	Naga		X.2.0	UNK Unknown/Unevaluated
1.2.3.1	NN	Northern Naga			
1.3.0	MEI	Meithei			
1.4.0	MIK	Mikir			
1.5.0	MRU	Mru			
1.6.0	BG	Bodo-Garo=Barish			
1.7.0	CHR	Chairel			
2.0.0	HIM	Himalayish			
2.1.0	TK	Tibeto-Kanauri			
2.1.1	WH	Western Himalayish			
2.1.2	LEP	Lepcha			
2.1.3.0	TBC	Tibetic=Bodic			
2.1.3.1	TGTM	Tamangic			
2.1.3.2	TIB	Tibetan			
2.1.3.3	BOD	Bodish			
2.2.0	MK	Mahakiranti			
2.2.1	NW	Newari			
2.2.2	KMCS	Kham-Magar-Chepang-Sunwari			
2.2.3.0	KIR	Kiranti			
2.2.3.1	W	Western Kiranti			
2.2.3.2	E	Eastern Kiranti=Rai			
3.0.0	TQ	Tangut-Qiang			
3.1.0	X	Xixia			
3.2.0	Q	Qiangic			
3.3.0	rG	rGyalrong			
4.0.0	JNL	Jingpho-Nung-Luish			
4.1.0	JG	Jingpho			
4.2.0	NG	Nungic			
4.2.1	NUNG	Nung			
4.3.0	LU	Luish			
5.0.0	TJ	Tujia			
6.0.0	LB	Lolo-Burmese			
6.1.0	NX	Naxi			
6.2.0	BM	Burmish			
6.3.0	YI	Yipho=Loloish			
6.3.1	LO-N	Northern Loloish			
6.3.2	LO-C	Central Loloish			

Appendix 2: STEDT Source Bibliography Citations (sorted by citation)

- Anonymous xx Tar** Anonymous. 19xx. *Taraon*. Shillong: Philological Section, Research Dept., North-East Frontier Agency.
- Bailey 11** Bailey, Thomas Grahame. 1911. *Kanauri vocabulary in two parts: English-Kanauri and Kanauri-English*. (RAS Monograph 13.) London: Royal Asiatic Society.
- Baxter 92** Baxter, William. 1992. *A handbook of Old Chinese phonology*. (Trends in Linguistics. Studies and Monographs 64.) Berlin, New York: Mouton de Gruyter.
- Benedict 76 WBur** Benedict, Paul K. 1976. *Rhyming dictionary of Written Burmese*. LTBA. 3.1:1-93.
- Bhaskararao 96 CDB** Bhaskararao, Peri. 1996. *A computerized lexical database of Tiddim Chin and Lushai*. in: Nara and Machida (eds.) *A computer-assisted study of Asian and African Languages*, Tokyo University of Foreign Studies
- Bhat 68 Boro** Bhat, D. N. Shankara. 1968. *Boro vocabulary (with a grammatical sketch)*. (Deccan College Building Centenary and Silver Jubilee Series 59.) Poona: Deccan College Postgraduate and Research Institute.
- Bhat 69 TNV** Bhat, D. N. Shankara. 1969. *Tankhur Naga vocabulary*. (Deccan College Building Centenary and Silver Jubilee Series 67.) Poona: Deccan College Postgraduate and Research Institute.
- Bradley 94 Lisu** Bradley, David. 1994. *A dictionary of the northern dialect of Lisu (China and southeast Asia) [Based on Xu, Mu et al. 1985]*. (Pacific Linguistics Series C-126.) Canberra: Australian National University.
- Coblin 86** Coblin, Weldon South. 1986. *A sinologist's handlist of Sino-Tibetan lexical comparisons*. (Monumenta Serica Monograph Series, Vol. 18.) Nettetal: Steyler Verlag.
- Dai 83 Jin** Dai Qingxia, Xu Xigen, Shao Jiacheng, Qiu Xiangkun. 1983. *Jing-Han cidian -- Jinghpo Miwa ga ginsi chyum -- Jinghpo-Chinese dictionary*. Yunnan Nationalities Press.
- Dai 92 TBL** Dai Qingxia et al. 1992. *A Tibeto-Burman lexicon*. Beijing: Central Institute of Minorities.
- Das 1902** Das, Sarat Chandra. 1902. *A Tibetan-English Dictionary with Sanskrit Synonyms ... Revised by Graham Sandberg and William Heyde*. Calcutta: Bengal Secretariat Book Depot. Reprinted from the first edition by Gaurav Publishing House, New Dehli: 1985,1988,1991
- Driem 87 Lim** Driem, Sjors van. 1987. *A grammar of Limbu*. (Mouton Grammar Library 4.) Berlin, New York, Amsterdam: Mouton de Gruyter.
- Hari 71a ThVo** Hari, Maria. 1971. *A vocabulary of the Thakali language*. Kathmandu: SIL and Tribhuvan University.
- Hoshi 84** Hoshi Michiyo. 1984. *A Praka vocabulary - a dialect of the Manang language*. Anthropological and Linguistic Studies of the Gandaki Area in Nepal II. (Monumenta Serindica No. 12.) Tokyo: ILCAA.
- Jäschke 81** Jäschke, Heinrich August. 1881. *A Tibetan-English dictionary, with special reference to the prevailing dialects*. London: Routledge and Kegan Paul.

- Judson 93** Judson, Adoniram. 1893. *Burmese-English dictionary*. Rangoon: Baptist Board of Publications.
- Karlgren 57 ANK** Karlgren, Bernhard. 1957. *Grammata serica recensa*. Stockholm: Museum of Far Eastern Antiquities, No. 29.
- LIN 00 PC** LIN Ying-chin. 2000. *Xi Xia (Tangut) Reconstructions, after GONG Hwangcherng*. 龔煌城擬音 (1993) 林英津編輯 (1996). Personal Communication.
- Luce 85** Luce, G. H. 1985. *Phases of Pre-Pagan Burma languages and history, Vol. 2*. School of Oriental and African Studies. Oxford: Oxford University Press.
- Mainwaring 98** Mainwaring, G.B. 1898. *Dictionary of the Lepcha language. Compiled by the late General G.B. Mainwaring, revised and completed by Albert Grünwedel, Berlin*. Berlin: Unger Brothers.
- Matisoff 00 FM** Matisoff, James A. 2000. *Elicitation notes with Sgaw-Bassein Field Methods informant Plah Set [native of , Pegu]*. unpublished
- Matisoff 74 TJLB** Matisoff, James A. 1974. *The tones of Jinghpaw and Lolo-Burmese: Common origin vs. independent development*. ALH. 15.2:153-212.
- Matisoff 85 GSTC** Matisoff, James A. 1985. *God and the Sino-Tibetan copula, with some good news concerning selected Tibeto-Burman rhymes*. Journal of Asian and African Studies (Tokyo Foreign Languages University). 29:1-81.
- Matisoff 87 BP** Matisoff, James A. 1987. *Body part card file*. (unpublished).
- Matisoff 88 DL** Matisoff, James A. 1988. *The Dictionary of Lahu*. (University of California Publications in Linguistics, v. 111.) Berkeley, Los Angeles, London: University of California Press.
- Nagano 84 Man** Nagano, Yasuhiko. 1984. *A Manang glossary*. Anthropological and Linguistic Studies of the Gandaki Area in Nepal II. (Monumenta Serindica No. 12.) Tokyo: ILCAA.
- Solnit 89 PaO** Solnit, David. 1989. *Pa-O word list*. ms. (electronic).
- Sun J 93 Tani** Sun, Jackson. 1993b. *Tani synonym sets*. ms. (electronic).
- Sun J 97 Cao** Sun, Jackson. 1997. *(contributed as electronic text documents)*. ms.
- Tayeng 76 Mil** Tayeng, Aduk. 1976. *Milang phrase book*. Shillong: The Director of Information and Public Relations, Gov't of Arunachal Pradesh.
- Taylor 72 TmVo** Taylor, Doreen, Fay Everitt, and Karna Bahadur Tamang. 1972. *A vocabulary of the Tamang language*. Kirtipur, Nepal: SIL and Institute of Nepal Studies, Tribhuvan University.
- Van Bik 00 LED** Van Bik, David and Kenneth Van Bik. 2000. *Lai (Haka-CHin) - English Dictionary*. In preparation.