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Subgrouping on the basis of shared phonological innovations: a Lolo-Burmese case study.

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0. Introduction. Through the imaginative and creative work of a small number of scholars[1] the last two decades have seen enormous progress in the reconstruction of Lolo-Burmese. Although little has been done on some languages, for others the basic sound correspondences have already been outlined, and for still others detailed work has already been done. However, despite the advances obvious elsewhere, subgrouping remains more 'suggestive' than 'definitive', the subgrouping work of Shafer (1938, 1955, 1966-7, 1974), Benedict (1972), Matisoff (1972a), Nishi (1975ab), Bradley (1979ab), and others notwithstanding. Thus, it is not the absence of work that leaves us without a definitive subgrouping; instead, this lack of a consensus is a direct consequence of different ideas about what constitutes evidence. What this paper argues, illustrating with examples from the Loloish component of Lolo-Burmese, is that the most useful and the most valid basis for subgrouping is the presence of shared phonological innovations. Other approaches based on other types of evidence are not only of dubious validity but unnecessary; by itself, the evidence provided by shared innovations constitutes a sufficient basis for a principled preliminary subgrouping of Loloish.

1.0 Lexical approaches. The variable nature of the data sources condemns lexical approaches to failure. Thus, for Akha we have several sources including Paul Lewis' valuable Akha-English Dictionary; on the other hand, for Lü-ch'üan we have only Ma Hsüeh-liang's excellent but obviously lexically restricted annotated translation of the Lolo sacred book Performing Rites, Offering Medicines, and Sacrificing Beasts. Similarly, for Lahu we have through Matisoff's works thousands of forms; however, for Jino we have only the 150 or so words of a recent Chung-ko Yü-wen article. Under these conditions, it makes little sense to talk of subgrouping on basis of lexical criteria such as percentages of shared vocabulary, etc.

2.0 Shared retentions. In the literature, one finds cited as potential subgrouping evidence such shared retentions as *b- > b-, *-a > -a, and *-m > -m. However, this use of retentions is simply falacious; retentions provide no evidence of a period of common development unique to the languages involved. Here, the burden of proof to the contrary lies with those that suggest the use of retentions as subgrouping evidence.

3.0 Shared innovations. In contrast to shared retentions, shared innovations are potential evidence of periods of common development and thus valuable for subgrouping. Of course, the more common the phonological change, the more likely that shared innovations are due to parallel but independent development, and, the less likely the change, the less likely that the change occurred more than once. A change such as *-a > -ɔ or *-ak > -aʔ, for example, is common enough that parallel independent occurrences are not unexpected; however, changes such as *pl- > tɬ- or *mp- > b'- are far less likely to have occurred independently more than once.

A prime example of a shared innovation useful for subgrouping is found in Chart 1 below. In Sani (=Nyi) and Ahi there is a tone split in the devoicing of old voiced initials that is correlated with tone; the old voiced initials devoiced under proto-tone 1 but remained voiced under proto-tone 2. This correlation of a devoicing split with tone

PLB	Sani (Ma)	Nyi (Shafer)	Ahi (Yüan)	Ahi (Shafer)	'gloss'
*duŋ^1	tɣ 33	tu-	to 33	to-	'wing'
*byam^1	tɬɪ 33		tɤ 33		'to fly'
*dzam^1	tsɤ 33	tsö-	tsʐ 33	tsö-	'bridge'
*guŋ^1	kɯ 33	kə-	kɤ 33		'body'
*m-dži^1	tsz̊ 33		tɕi 33		'rice wine'
*dza^1	tsa 33	tsa-	tso 33	tso-	'rice; food'
*džway^1	tʂʐ 33	tšə-		tša-	'tusk'
*gray^1	tɕæ 33	ke-		tša-	'star'
*dəw^1				tö-	'short'
*du^1		tu-			'nephew'
*gun^1	qɤ 33		kɤ 33		'use up'
*m-dža^1	tsa 33				'sparrow'
*bum^1	pɤ 33		po 33		'divide; pile up'
*bəw^2	bɣ 11	bu/	bu 21	bö/bu/	'insect'
*dza^2	dza 11	dza/		džo/	'eat'
*ba^2	ba 11	ba/		bo/	'thin'
*gra^2	ga 11	ga/		džo/	'hear'
*bəy^2	bʐ 11	bi/			'give'
*grəy^2	dzz̊ 11	džə/		dži/	'copper'
*dzim^2	dzʐ 11				'unripe, raw'
*bya^2	dla 11	dla/	do 21	do/	'bee'
*daŋ^2	do 11	do/	du 21	du/	'word; speech'
*ba^2	ba 11	ba/		bo/	'chin; cheek'
*grəw^2	gɣ 11	gu/	dzʐ 21	dzö/	'nerve; vein; sinew'
*bəw^2	bɣ 11	(bu-)		bu/	'carry on back'
*bəw^2	bɣ 11	bö/	bu 21	bu/	'long'
*dum^2	dɣ 11				'blunt'
*dzəw^2	dzʐ 11 'an official'				'govern'
*gam^2			gɤ 21	gö/	'give'
*baŋ^2	bo 11	(na-bo/)		(no-bu-)	'deaf'

Chart 1. Sani (Nyi) and Ahi devoicing split correlated with tone. Thurgood (1980:212) contains a discussion of this change.

is quite unexpected typologically since consonants usually affect tones but not vice versa. In effect, however, this characterization is deceptive since each of the 'tones' has its own distinct phonation type and it is the phonation types that affected the variable devoicing of initials. In any case, the fact that Sani and Ahi share this particular

is strong evidence for subgrouping them together.

From a practical viewpoint, such relatively-uncommon innovations are an efficient starting place for an analysis since they are the least likely to have evolved independently. Nonetheless, a single phonological change—no matter how rare and unique—is not by itself a sufficient basis for subgrouping. Even the unique Sani-Ahi split needs substantiation from additional shared innovations. In this case, it is easy to find further evidence; for example, only Sani and Ahi share the change *-ak > -e/-ɛ (Chart 2) and, in addition, numerous other sound changes can be found that are shared only by these two or only by these two and the two languages at the immediately above level of subgrouping.

PLB	Written Burmese	Sani	Ahi	Nasu	Lu-ch'üan	'gloss'
*V-pak	phak	p'e 22s	phie 44s	p'a 44s^{T}	p'a 55c	'leaf' #29 305
*zak	sak	ze 22s	zɛ 44s	dza 55	za 55c	'descend' #121 653
*mak	mak	me 22s	mie 44s	ma 55		'soldier, war' #135 172
*C-sak	sak	se 22s	sɛ 44s	sa 55	sa 55c	'breathe' #123 138
*m-tak	tak	de 44		da 44^{T}	da 22s	'climb' #98

Chart 2. Front vowel reflexes of PLB *-ak.

Notes: The forms listed above are only a subset of the data. The significance of the change is that it divides the Sani-Ahi-Nasu-Lü-ch'üan subgroup into Sani-Ahi and Nasu-Lü-ch'üan.

The numbers preceded by # are from Matisoff 1972a; the numbers underlined are from Bradley 1979a. *C- and *V- are a consonantal and a vocalic tone lowering prefix.

This change is discussed in Thurgood and Javkin (1975).

From a practical point of view, the more common a change, the less useful it becomes for initial subgrouping. The change *-a > -o or -ɔ, for instance, is found in Ahi -o, Mpi -o, Kao's Hani -ɔ, Nasu -o and -u, and Woni -ɔ. This change occurred independently at least two if not three times.

4.0 Subgrouping Loloish. A thorough and definitive subgrouping of Loloish is not completed but, on the basis of the evidence provided by shared phonological innovations, a preliminary subgrouping has been done. What follows is that subgrouping.

4.1 The Sani-Ahi/Nasu-Lu-ch'üan connection. Sani and Ahi were connected by Charts 1 and 2 found in section 3. Both languages are part of a larger subgroup which includes in addition Nasu and Lu-ch'üan. This four language grouping has in common the shared innovations *pl- > tɬ- (Chart 3) and *my- > n- (Chart 4) in addition to more common changes.

PLB	Written Burmese	Sani	Ahi	Nasu	'gloss'
*plu[1]	phru	ɬz̩ 33	t'o 22	t'u 24	'white, silver'
*pluŋ[2]		ɬo 11 ne 44	t'u 21 nie 44	t'o 44 na32s	'face'
*C-plek	phrac	ɬa 22s	t'a 44s	t'ə 55	'become' #68
*blek		dɹ 22s	di 44s		
*m-priŋ[1]	prañ	tɬæ 33			'pus'
*byam[1]	pyam	tɬɹ 33	tɤ 22	d'ɛ 24/213	'to fly'
*m-bliŋ[3]		dlæ 33	dɛ 44	dɛ 44/də 213	'full'
*bya[2]	pya:	dla 11	do 11	d'ɤ 33	'bee'
*m-byaŋ[1]	pyaŋ:[T]			d'a 24	'lazy'

Chart 3. Dental reflexes of original bilabial clusters. Lu-ch'üan would also be expected to have dental reflexes. This parallels the behavior of *my- and *mr- clusters which also have a dental or alveopalatal reflex in these languages.

For an explanation of this change, see Ohala (1978).

PLB	Written Burmese	Sani	Ahi	Nasu	Lu-Ch'üan	Lisu	Lahu	Phunoi	Bisu	Mpi	Akha	'gloss'
*myok	myok	nu 55	nu 55		ṇu 55c	chya[2]-mye[6]	mɔ̀?		mjɔ̀		myoˆ	'monkey' #133
*(s-)myak	myak	ne 44	nie 44	na 32s	na 22s	myá[3]	mɛ̀?		mɛ̀-hmɯ̄		myaˆ	'eye' #145
*mraŋ[2]	mraŋ:	m̥ 55[T]		mu 33[T]		a[1]mu[5]	ɪ́-mû	mɔ̃	?a mɔŋ	mjuŋ[2]	mahˇ	'horse' 6
*mra[2]		na 55[T]			ṇu 33	myá[5]	mâ	bé hno/ be hnu	?aŋ bjà	mja[1]	myaˇ	'many'
*mruk		ŋu 55[I]				maw[6]	mù?		mɔ̀-kà		moˆ	'to weed; grass' #138
*mwat	mwat	n̥ 22s	ni 44s	ñi 55		mrghe[6]	mà?		bɛ̀		mehˆ	'hungry' #132
*mraŋ[3]	mraŋ'	m̥ 44				mu[3]	mu	mu	hmɔ́ŋ < *1	mjoŋ[5] < *1	aˇmah	'high' 758
*mraŋ[1]	mraŋ	n̥ 44				maw[4]	mɔ̀	hmjã	hmjáŋ	mjaŋ	mawˇ	'see' 596
*s-mra[2]	hmya:	na 55				mya[5] < *mra[2]						'arrow'

Chart 4.

Reflexes of *my- & *mr- clusters.

Notes: Numbers preceded by # are the numbers used in Matisoff 1972a; numbers underlined are the numbers from Bradley 1979a.

For an explanation of this change, see Ohala (1978).

The close relationship of Nasu and Lu-ch'üan within the subgroup is reflected in the shared otherwise unique aspirated reflexes for *m-pak type initials (Chart 5).

PLB	Sani	Ahi	Nasu	Lu-ch'üan	'gloss'
*m-pup	bɤ 44	bu 44	b'u 32s		'satiated' #86
*m-puk	gu̇ 44		g'u 32s		'write; make spots' #89
*m-pok		ba 44	b'ɚ 32s		'shoot' #108
*m-tsak				nts'a 22s	'a drop; to drip' #82
*m-dži[1]	tsż 33	tɕi 33	dʐ'i 21	ntʂ'ʐ̣ 11	'rice wine'
*m-taŋ[1]			d'ɔ 213	nt'e 11	'drink'
*m-pyaŋ[1]			d'a 24		'lazy'

Chart 5. Aspirated reflexes of *m-pak proveniences. Those *m-prefixed voiceless initials which are clusters have unaspirated reflexes.

In addition, Nasu and Lu-ch'üan have both merged the tonal reflexes of *s-mak and *s-bak syllables with the tonal reflexes of *C-pak, *C-sak, *rak, *bak, *zak, and *mak syllables (Chart 6).

4.2 The Sani-Ahi-Nasu-Lu-ch'üan/Lisu-Lahu connnection. This still higher level grouping is substantiated by the patterns of tonal reflexes of the formerly checked syllables (Chart 6). For all six languages, there is a three-way tonal split rather than the two-way split found elsewhere in Loloish. In addition the chart shows three other developments of no use for subgrouping: Nasu has innovated a unique 34 tone from *ryak syllables, Lisu has innovated a 3 tone from *(s-)mak and *m-pak syllables, and Lahu has extended its 35 high-rising tone to syllables of the structure *ryak and *C-sak. Aside from these three independent, non-shared innovations, the common tonal splits constitute evidence for subgrouping these six languages together.

4.3 Phunoi and Bisu. The development of certain nasals into corresponding homorganic voiced stops, whatever its ultimate phonological explanation may be, subgroups Phunoi, Bisu, and, according to Bradley, Pyen together (Chart 7). This subgrouping is substantiated by their

Initial Class	Sani	Ahi	Nasu	Lu-ch'üan	Lisu	Lahu
*s-$^{bak}_{mak}$	55	55	55	55c	1	ˊ (35)
*pak *sak *k-rak *s-pak	44	44	32s	22s	2	^? (54s)
*(s-)mak *m-pak					3	
*ryak	22s	44s	34	55c	6	ˊ (35)
*C-sak			55			
*C-pak *rak *bak *zak *mak						ˋ? (21s)

Chart 6.

Tonogenetic Developments of the Checked Proveniences.

Notes: The original syllable is represented here with an *-ak rhyme since the final rhyme variations had no variable effect on reflexes. The tone marks are Chao tone symbols in which the starting point and the ending point of the tone are marked with 1 being low and 5 being high. The -s designates 'stopped' and the -c designates 'constricted'.

*s- = PLB spirantal prefix *(s-) = Proto-Loloish spirantal prefix *C- = tone lowering prefix

similar reflexes for *-im (> -um/-u) and *-ip (> -up/-u) (see Chart 8). The Akha treatment of *-ip (> -u) suggests but certainly does not prove a connection with the Phunoi-Bisu-Pyen subgroup (Chart 3).

4.4 A preliminary subgrouping. In addition to these shared innovations, others are found amply documented in the literature. On the basis of these as well as on the evidence presented here, a preliminary subgrouping can be made (Chart 9).

5.0 Conclusion. This paper first argued that shared phonological innovations should constitute the major if not the sole basis for the subgrouping of Lolo-Burmese. Further, it was argued that at least from a practical viewpoint the more unusual the shared development, the greater its potential value for subgrouping and vice versa. Finally, on the basis of shared phonological innovations, a preliminary subgrouping was done of Lolo-Burmese.

Footnote

[1]Burling 1967; Shafer 1966-7, 1974; Benedict 1972; Matisoff 1972a; Nishida 1966ab, 1967, 1975; Nishi 1975ab; Bradley 1979ab; Wheatley 1980; and others.

PLB	Written Burmese	Phunoi	Bisu	Mpi	'gloss'
*myok	myok	dà bà		sa^{2}po?^{4}lo^{2}	'monkey' 23, #133
(*s-)myak	myak	?ã bja	mè hnɯ	ɲ^{4}tʂho?^{4}	'eye' 91, #145
*s-mra^{2}	hmra:	bəla	blà	mjo^{2}	'arrow' 266
(*s-)mak	?ip mak	jùp ba ba	mè bŵn bŵn	maŋ?^{3}	'dream' 586, #144
*mruk		bò bo	mòkà	ɲaŋ?^{6}	'to weed; grass' 302/621 #138
*mwat	mwat	hã bàt	hàŋ bè	mja?^{1}	'hungry' #132, 637
*C-mi^{2}	mi:	bì	bì thɔ	mi^{2}	'fire' 329
*məw^{2}	mui	mòthà	mùŋ 'smoke'	mi^{2}khwi^{2}	'sky' 321/333
*nat	nat	dàt		nɤ?^{2}	'spirit' 361, #136
(*s-)nak	nak	?ã da		naŋ?^{3}	'black' #142, 503
*nyəw^{1}	nyui 'brown'	?ã hjã		ɲi^{5}	'blue, green' 508

Chart 7.

Reflexes of *C-prefixed nasals.

Notes: In the above for which it is known from other evidence that the prefix is spirantal are marked with *s- or (*s-); if the other evidence only indicates that the prefix was consonantal but of undetermined quality, it is marked with *C-; and, if the Phunoi and Bisu are the only evidence for the prefix it is unmarked.

Numbers preceded by # are the numbers used in Matisoff 1972a; numbers underlined are the numbers from Bradley 1979a.

PLB	Written Burmese	Lahu	Phunoi	Bisu	Akha	Mpi	'gloss'
*yim^{1}	?im	yɛ̀	júm	júm	ym$^{\vee}$	?iŋ?^{6}	'house' 341
*blim^{2}	pim: prim:			plùm	bym$_{\vee}$		'taro' 285
*dim^{1}	tim				dm$^{\vee}$		'cloud' 320-2
*dzim^{2}	tsim	ɔ̀-cɨ̂	chùm		jm$_{\vee}$	ti^{5}	'unripe; raw, green' 764A
*nim$^{1/3}$	nim/nim'	nɛ̀< *1	hnúm	hɲum	nym$^{\vee}$	ɲiŋ$^{3/5}$	'low; short' 759 755
*yip	?ip	yɨ̂?	yùp	yù	yu$_{\wedge}$	?i?^{1}	'sleep' #180 735 773C
*zum^{2}	sum:	yɛ̂	sə		zm$_{\vee}$		'to use' 710
*sum^{2}	sum:	šɛ̄	sùm	sum	sm$_{\vee}$	siŋ^{6}	'three' 480
*dum^{2}	tum:				dm$_{\vee}$	tu^{3}	'blunt' 542
*tsum^{1}	chum:^{T}			tshúm	təm$^{\vee}$		'rice pounder' 240B
*dzum^{1}	cum	ɔ̌-cɛ					'pair' 420A
*lum^{1}		lɛ̀	lúm	lŭm	lm$^{\vee}$	liŋ^{6}	'warm' 516
*pum^{1}	pum		pùm^{T}		bym$^{\vee}$		'pile up' 627A

Chart 8. Phunoi, Bisu, and Akha reflexes of *-im, *-ip, and *-um.

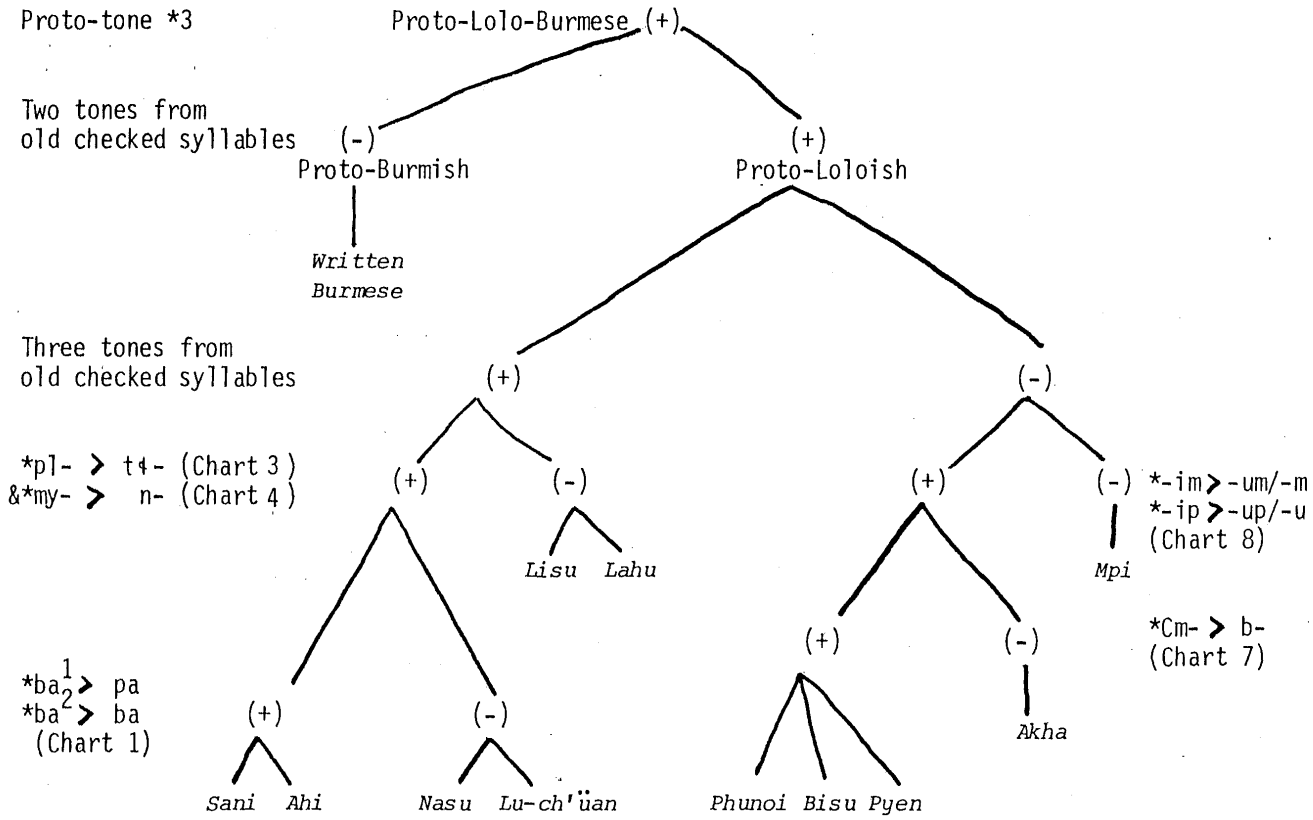

Chart 9: A preliminary subgrouping of Lolo-Burmese. Note that the position of Akha on the chart is only intended to be suggestive.

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