

# LISU AND PROTO LOLO-BURMESE\*

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**Synopsis:** This paper outlines the relationship between Lisu and proto-Lolo-Burmese. Lisu evidence results in modification of the reconstruction schemas found in the literature for Lolo-Burmese proto prefixes, tones, and rhymes. On the basis of Written Burmese, Lahu, Lisu, and Akha complete reconstructions, particularly with reference to open rhymes, are given in an appendix. With Lolo-Burmese reconstruction still in its infancy, Lisu data provides valuable evidence for tones, prefixes, dental versus palatal affricates, and rhymes. Three Lisu developments are particularly interesting from the viewpoint of general sound change: the effect of various proto prefixes on the tone height of proto checked syllables, the change of the \*-əy rhyme to -u under a specific set of conditions, and the conditioning factors underlying the \*-ak to -æ and -a change.

## 0.0 Introduction

One major thrust of this paper is an examination of the evidence which Lisu offers for the reconstruction of proto Lolo-Burmese; the other major focus is the delineation of the regular correspondences between the proto Lolo-Burmese phonological system and the modern Lisu phonological system.

Lisu data results in modifications of the reconstruction schemas found in the literature with regard to prefixes, tones, and rhymes.<sup>1</sup> In addition, with Lolo-Burmese reconstruction still in its infancy, Lisu provides useful evidence for the voicing of initials and dental versus palatal affricates. Because a number of reliable Lisu sources exist,<sup>2</sup> an outline of correspondences is very useful for further comparative work.

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<sup>1</sup> The most prominent attempts at total or partial Lolo-Burmese reconstruction are: Burling, *Proto-Lolo-Burmese*, (The Hague, 1967); Matisoff, *The Lolo-Burmese Tonal Split Revisited*, (Berkeley, 1972); Shafer, *Introduction to Sino-Tibetan*, (Wiesbaden, 1966); and Nishida's work cited in footnote 2.

<sup>2</sup> Anonymous, *Lt-su yil yil-fa gang-yao* [An outline of Lisu grammar], (Peking,

Examination of the data also reveals a number of sound changes which are interesting in their own right. Three Lisu developments are particularly intriguing from this viewpoint: the effect of various prefixes on the tone height of proto-checked syllables, the change of the \*-əy rhyme to -u under a specific set of conditions, and the conditioning factors underlying the \*-ak to -æ<sup>3</sup> and -a split. Less unusual but still interesting are the various conditioned reflexes among both the sibilants and the resonants.

The reconstructions offered in this paper are based on Lisu data from Anonymous (1959), Burling (1967), Fraser (1922), and Hope (1972).<sup>4</sup> The source of a particular citation is noted by the letter following the abbreviation of the language name. The majority of forms compared are from Written Burmese,<sup>5</sup> Lahu,<sup>6</sup> and Akha<sup>7</sup> although occasionally a form from another language appears. The Written Burmese represents the Burmish side of Lolo-Burmese while the Lisu, Lahu, and Akha are all Loloish languages. The study is divided into prefixes, tones, initials, and rhymes. Prefixes and tones often are discussed in conjunction since their Lolo-Burmese histories are so inextricably interwoven.

### 1.0 Lolo-Burmese Prefixes

Although their morphological function is still somewhat poorly understood, prefixes play a crucial and central role in Tibeto-Burman and thus Lolo-Burmese historical phonology. Fossilized

1959); J. O. Fraser, *Handbook of the Lisu (Yawyiu) Language*, (Rangoon, 1922); E. R. Hope, *The deep syntax of Lisu sentences: a transformational case grammar*, (Australian National University dissertation, 1972); Robbins Burling, *Proto-Lolo-Burmese*, (The Hague, 1967); and Tatsuo Nishida, "A preliminary report on the Lisu language in Tak province, Thailand", (*Tōnan Ajia Kenkyū* 5.2, 1967) and "A comparative study of the Lisu language (Tak dialect)", (*Tōnan Ajia Kenkyū*, Part I: 6.1, and Part II: 6.2, 1967).

<sup>3</sup> For an acoustic explanation of this sound change see Thurgood and Javkin (1975).

<sup>4</sup> The Lisu forms from the above work are cited in the original notation but a comparative chart is given at the end of this paper.

<sup>5</sup> The major source of forms is Paul K. Benedict's *Rhyming Dictionary of Written Burmese* (1976) (compiled about 1941).

<sup>6</sup> The source of Lahu forms is Matisoff's English-Lahu dictionary (forthcoming).

<sup>7</sup> The major source of Akha forms is Paul Lewis' *Akha-English Dictionary*. Data paper No. 70, Southeast Asia Program, Cornell University, Ithaca, N.Y.

remnants of the old system of prefixes can still be seen in Written Tibetan, but Lolo-Burmese retains little overt evidence of the prefixal system that once existed in earlier stages of Tibeto-Burman (TB) and Lolo-Burmese. At most Lolo-Burmese preserves overt evidence of four prefixes. The TB \*a- nominalizer is found in \*a-, \*aŋ, and \*ak- variants. The Lu-ch'üan homorganic nasal which appears before certain stops appears to be a remnant of the \*m- prefix. And the Akha *k'a*<sub>˩</sub> and *sha*<sub>˩</sub> are overt retentions of the \*k- velar animal prefix and the \*sə- 'flesh' prefix. Aside from these, there is little overt preservation of the older prefixes in modern Lolo-Burmese languages.

However due to fossil forms and the systematic effects of former prefixes on tones and the manner of root-initial consonants, a number of prefixes can be reliably recovered at the Lolo-Burmese level. Besides the \*a- and its variants, the \*k- animal prefix, and the \*sə- 'flesh' prefix, the \*m-, \*s-, \*b- and \*r- prefixes can be recovered. In addition tonal evidence also exists for \*b-, \*r-, \*d-, and \*g- as well as \*aŋ- which all had the effect of lowering forms with voiceless initial consonants from the anticipated high-checked class into the low-checked class.<sup>8</sup>

1.1. *Fossil forms.* Fossil evidence exists for a number of prefixes. Due to extremely favorable phonetic environments prefixes are retained sporadically as root-initial consonants in a number of roots. Sometimes the prefix has been treated as a root-initial member of a cluster. Clear examples of this come from Written Burmese:<sup>9</sup>

*r-wa <sup>1</sup>	'rain'	<i>rwa</i>
*k-r-wat	'leech'	<i>krwat</i>
*s-wa <sup>1</sup>	'tooth'	<i>swa</i>
*k-rak	'chicken'	<i>krak</i>
*k-ruŋ <sup>1</sup>	'cat'	<i>kroŋ</i>

<sup>8</sup> No specific evidence exists in Lolo-Burmese for reconstructing an \*l- prefix and, in fact, it is doubtful that \*l- was ever a wide-spread Tibeto-Burman prefix.

<sup>9</sup> Initial clusters have undergone simplification throughout Loloish. Some languages still preserve -y- clusters and Bisu has -l- clusters, but in most instances such clusters have disappeared. Fortunately, such clusters still exist in Written Burmese making it possible for prefix to be interpreted as the initial member of a cluster.

*s-yip	'cause to <sup>10</sup> sleep'	sip
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Another type of fossil form results from pre-emption of the root-initial by a prefix. Again, it only happens—with one or two exceptions—under favorable phonetic conditions. Specifically, the root initial must be a resonant—an *r*-, *l*-, *y*-, or *w*-. Examples can be found throughout Lolo-Burmese.<sup>11</sup>

*m-lum <sup>2</sup>	'warm'	Sani my 55
*m-ləy <sup>1</sup>	'field'	Sani mɪ 44
*s-dza <sup>2</sup>	'feed'	Akha sha
*m-lyak	'lick'	Akha myeu, Bisu <sup>12</sup> bɛ
*b-ləy <sup>2</sup>	'four'	Maru <sup>13</sup> bit
*s-rak	'shameful'	Lisu sá
*s-ra <sup>2</sup>	'poor'	Lisu swá
*m-ləy <sup>2</sup>	'penis'	Atsi nʔyɪ Maru nʔyɪ Lahu nɪ

This is only a partial listing of the fossil forms which can be found throughout Lolo-Burmese. In such forms we find overt evidence of the \*k-, \*r-, \*s-, \*m-, and \*b- prefixes.

1.2. *The \*s- prefix.*<sup>14</sup> This prefix, a reduced form of TB \*sya 'flesh, animal',<sup>15</sup> appears as a body part prefix in some languages and as an animal prefix in others.<sup>16</sup> For general Tibeto-Burman, Benedict (1972) reconstructs the following TB roots with this

<sup>10</sup> This example of pre-emption involves two stages. First, the *yl-* combination of Written Burmese is treated as if it were just an initial vowel; thus, \*yip 'sleep' > WB *ʔip* and \*yim<sup>1</sup> 'house' > WB *ʔim*. This is somewhat parallel to modern Mandarin where there is no contrast between *l/yl* or *u/wu*. Next, the \*s- prefix of \*s-yip 'cause to sleep' is treated as the syllable initial consonant.

<sup>11</sup> The reconstructions given here are PLB.

<sup>12</sup> The *b-* initial in Bisu is a regular reflex of an older \*m-.

<sup>13</sup> For the final *-t*, see Burling (1966).

<sup>14</sup> Curiously, Kun Chang (1973) attacks the credibility of this prefix on the basis, apparently, that a small subset of examples can be found with a prefixal *s-* which are neither animals nor body parts. The evidence is clear, however. See Matisoff (1975: 47–48) for further discussion.

<sup>15</sup> Benedict (1972: 106).

<sup>16</sup> Benedict (1972: 106–7) has more examples and discussion.

prefix: \*s-kra 'hair' (STC #115), \*s-lay 'tongue' (STC #281), \*s-nap 'snot' (STC #102), \*s-na.r ~ \*s-na, 'nose' (STC #101), \*s-nij 'heart' (\*s-nik in PLB) (STC #367), \*s-hwiy 'blood' (STC #222), and numerous others. In addition to its appearance in the above reconstructed forms, the \*s-prefix is found in a broad range of languages in several of the Tibeto-Burman subgroups. Lushai, a Central Kuki language, regularly prefixes *sa-* 'animal' to the words for animals (Benedict, 1972: 107):

*Lushai*

sa-kei	'tiger'
sa-va	'bird'
sa-vom	'bear'
sa-hja	'fish'
sa-hram	'otter'

Akha, a Lolo-Burmese language, regularly prefixes *sha<sub>v</sub>* to words for parts of the body:<sup>17</sup>

*Akha*

sha <sub>v</sub> zaw <sup>^</sup>	'lymph gland'
sha <sub>v</sub> yoe <sup>v</sup>	'bone'
sha <sub>v</sub> tsah <sub>v</sub>	'liver'
sha <sub>v</sub> tsu <sup>v</sup>	'fat'
sha <sub>v</sub> paw <sub>^</sub>	'lung'
sha <sub>v</sub> pya <sub>v</sub>	'thigh'

Notice that in Lushai the *sa-* is an animal prefix, while in Akha *sha<sub>v</sub>* is a body part prefix.

1.3. *The \*k- prefix.* The \*k- prefix occurs most frequently, but not exclusively, with the names of animals. The prefix, once thought to be restricted to Burmese and its dialects,<sup>18</sup> is found in

<sup>17</sup> Noted first in Bradley 1971. Discussed in Matisoff (1973: 16 and 33, footnote 45). More examples can be found in Lewis (1968: 272-275).

<sup>18</sup> Thus, Benedict (1972: 107, fn. 301) describes the distribution thusly: "this prefix is exclusively a feature of Burmese and its dialects (incl. Phön) and does not appear in Maru or the Lolo languages".

closely-related Jingpho with the names of types of flying creatures (birds, bats, insects, etc.) and with the names of a few fish<sup>19</sup> as well as in Akha and Lisu, two Loloish languages. Within Lolo-Burmese, Written Burmese clearly preserves it as a fossil in such words as *krwat* 'leech', *krauy* 'cat', *krwak* 'rat', *kyd* < \*k-la<sup>2</sup> 'tiger', and *kyauk* < \*k-lok 'stone'.<sup>20</sup> Like the \*s- 'flesh' prefix, the \*k- is explicitly preserved in the modern Akha *k'a*<sub>v</sub> (noted in Bradley, 1971). The Akha form is found before the names of animals including *k'a*<sub>v</sub>*hm*<sub>v</sub> 'bear', *k'a*<sub>v</sub>*la*<sub>v</sub> 'tiger', and *k'a*<sub>v</sub>*pa*<sub>v</sub> 'frog'. Several pages of such prefixed roots can be found in Lewis' Akha dictionary. In addition to such overt retention, in certain contexts in Akha and Lisu<sup>21</sup> the \*k- prefix has disappeared, but left behind distinctive tonal reflexes. In Akha, when the \*k- preceded checked syllables with an initial voiced stop, the reflex was mid-tone and unlaryngealized (Bradley, 1971: 16-17).<sup>22</sup> In Lisu, when the \*k- preceded a checked syllable with an initial voiced stop, the reflex was a high-rising laryngealized tone. The \*k- prefix is, like the \*sə- 'flesh' prefix, an irregular secondary development in Lolo-Burmese, but in these languages it does have a distinct tonal reflex.<sup>23</sup>

It has been repeatedly suggested that the animal classifying<sup>24</sup> \*k- prefix is ultimately a borrowing from Mon-Khmer. In 1896 in his article "Outlines of Tibeto-Burman linguistic paleontology" (JRAS, 1896: 31), Bernhard Houghton first suggested the Mon-Khmer source and, since that time, Alton Becker, John Okell,

<sup>19</sup> Matisoff (1969: 198).

<sup>20</sup> More examples are found in Benedict (1972: 107, fn. 301) and Matisoff (1969: 190-199).

<sup>21</sup> For a further discussion of this animal prefix, see Matisoff (1969: 190-199), Smith (1975) for a discussion of the possibility that this prefix was borrowed from Mon-Khmer and the sections immediately following.

<sup>22</sup> In Bradley (1971: 16-17) this is discussed under the designation 'k-dissimilation rule', but in Bradley (1975) the analysis has apparently, and inexplicably, been abandoned.

<sup>23</sup> The PL or PLB reconstruction given is pertinent to the Akha and Lisu forms (not necessarily the WB form). A number of these reconstructions differ with the reconstructions given in TSR.

<sup>24</sup> Clearly forms such as PLB \*k-lok > WB *kyok* 'stone' do not fit into this category and have come from other sources.

## The \*k- prefix

PLB	Written			
<i>PL</i>	<i>Burmese</i>	<i>Akha</i>	<i>Lisu</i>	
*k-nik	hnac-lûm	nui-ma	ni. <sup>2</sup> ma <sup>3</sup>	'heart <sup>25</sup> TRS #146'
*k-r-wak	krwak	ho ca <sub>˩</sub>	h'a <sup>2</sup>	'rat, rodent TRS #188'
*k-~p-rwak	p̄rwak	a-ho		'ant TRS #183'
*k-rap	?ap	a.g'aw <sub>˩</sub> <*rap	waw <sup>2</sup>	'needle TRS #191'
*k-ŋak	hŋak	nga-beh <sup>˩</sup> a <sup>˩</sup> ji <sup>˩</sup>	nyá <sup>2</sup>	'bird TRS #141'
		'maroon oriole'		
*(s-)ŋak	hŋak-pyo-sî	nga <*k-	<sup>26</sup> nga <sup>3</sup> si <sup>3</sup>	'banana TRS #139'
*k-rak	krak	ya~za	a-rgha <sup>1</sup> <*s-?	'chicken; fowl TRS #184'
*kə-lok	kyok	lo		'stone, rock <sup>27</sup> TRS #190'
	< OB klok			
*k-lok	lok		ho <sup>2</sup> (Anonymous)	'maggot TRS #186'

and Jim Matisoff have repeated the suggestion.<sup>28</sup> The borrowing hypothesis is supported by Kenneth D. Smith's (1975) article "The velar animal prefix relic in Vietnam languages" which presents evidence that a \*k- animal prefix is a wide-spread and native element in the Mon-Khmer languages of Vietnam.

This prefixal \*k- appears relatable to WB *kauy* 'body, animal body' which serves a dual function as either a full noun or as a post-nominal animal classifier. WB *kauy* itself comes from an old and reasonably well-established Sino-Tibetan root<sup>29</sup> with the following forms (Benedict, 1972: 181-182, footnote 479): Archaic Chinese<sup>30</sup> \*kîôŋ/kjũŋ<sup>o</sup> 'body, person', PTB \*guŋ, PLB \*guŋ<sup>1</sup> or

<sup>25</sup> The Akha form for 'heart' *nui-ma* is not from a \*-iŋ rhyme. The regular reflex of an \*-iŋ rhyme is *-ah*, while *-ui* is a regular Akha reflex of the \*-ik rhyme. The WB form *hnac-tum*: could also be from \*s-nik.

<sup>26</sup> The Lisu tone comes from a proto-Loloish \*(s-) prefix. This is the regular Lisu reflex for \*(s-) prefixed checked forms which originally had voiced initials.

<sup>27</sup> The Akha final is the regular reflex of an \*-ok rhyme.

<sup>28</sup> Alton Becker and John Okell have suggested that WB *kauy* might be a Mon-Khmer borrowing, but given the sets assembled below it would have to be an extremely early borrowing.

<sup>29</sup> Benedict's forms have been augmented by my own.

<sup>30</sup> Ultimately from Karlgren's *Grammata Serica*.

\*gɔŋ;<sup>1</sup> Rāwang *guy* 'body, animal, self', Mutwang dialect *gog* 'body', Atsi *kuy*, Lisu (Fraser) *gaw*,<sup>3</sup> Akha *g'aw*, Sani *kw* 33, Nasu *gy* 21, Ahi *ky* 22, and Lahu *-qŋ*.<sup>31</sup> The most obvious hypothesis is that the prefixal \*k- represents the reduction of an earlier full morpheme of the general shape \*gɔŋ,<sup>32</sup> while the fuller forms, which occur both as nouns and as noun classifiers, represent an unreduced form of the same morpheme. Alternately, of course, it is possible to view the \*k- prefix and the WB form *kauy* as completely unrelated with the first being a Mon-Khmer borrowing and the second a native root.

## 2.0 The Lisu Tones

Lisu tones have three pitch levels (low, mid, and high) each of which may or may not be accompanied by laryngealization on the vowel. The Fraser, Anonymous, and Burling works use a six tone analysis, while the Hope analysis factors out the laryngealization and thus views Lisu as having just three tones. Hope's three tone analysis is the most useful from a diachronic perspective.

2.1. *Laryngealization.* Two clear sources of laryngealization on Lisu vowels exist. The chief source is the loss of root final consonants. The syllable structure in Lisu is CV(?) plus a tone. Other

<sup>31</sup> Bradley (1975: set #497) equates WB *kauy* and Lahu *khe*, but these are clearly not phonologically cognate.

<sup>32</sup> This hypothesis necessitates an explanation of why \*gɔŋ serves as a preposed nominal classifier at one stage, but as a postposed nominal classifier at another. In defense of the claim that a single morpheme has occurred in both positions, it must be noted that such pre- and post-head distributions reflecting earlier word order changes are found throughout Tibeto-Burman.

Three examples which come quickly to mind are given below. One, in Bauman (1975b, 1976) we find that Tibeto-Burman subject and object agreement markers occur both pre- and post-verbally. Two, in Matisoff's (1975: 78) discussion of Lahu versatile verbs we find that "about a dozen occur regularly *before* their head-verb, while all the others come *after* their head. In the Maru language of East Bengal (a divergent member of the Kukish branch of TB), Lorenz Löffler reports that the semantic equivalents (and sometimes the etymological cognates) of Lahu pre-head auxiliaries typically occur *after* the verb-head, and vice versa." Three, in the Karenic subgroup, the basic word order is SVO, while elsewhere in Tibeto-Burman the typical word order is SOV.



than the glottal stop no final consonants have been retained. In the proto-system however, the root-final stops \*-p, \*-t, and \*-k were present. Although in some cases even this laryngealization has subsequently been lost, it is quite clear that the loss of the finals \*-p, \*-t, and \*-k resulted in a laryngealized vowel:

*lak	Li(A) lɛ̃ <sup>6</sup>	Li(B) læʔ	Li(F) lá <sup>6</sup>	Li(H) læ̃	'hand'
*myok	mi <sup>6</sup>	myoʔ	myē <sup>6</sup>	mywè̃	'monkey'

Notice that the laryngealization (symbolized by [-]) has been lost from the Lisu (A) form lɛ̃<sup>6</sup> 'hand'. Except for this type of loss, all proto-checked syllables other than those with a high tone reflex have modern laryngealized vowels.

The other clear source of laryngealization is proto-tone 3 forms which usually have laryngealized Lisu reflexes.<sup>33</sup>

2.2. *Tonal reflexes of non-checked rhymes.* Three Lolo-Burmese proto-tones are reconstructed. Robert Shafer and Stuart Wolfenden, pioneers in Sino-Tibetan studies, argued that the tones are ultimately phonologically conditioned, but for the first two tones all the conditioning factors are lost by the Lolo-Burmese period. The third tone, typified by the Burmese 'creaky' tone, despite only being found in the Lolo-Burmese subgroup of Tibeto-Burman and despite being largely of secondary origin, must also be reconstructed at the Lolo-Burmese level. The origins of this third tone have recently been clarified in Thurgood (1976). In short three open tones must be reconstructed for Lolo-Burmese.

The phonologically conditioned distribution of the original three proto-tones set forth in Table 1 is essentially identical with that found in Burling (1967): a high tone [´], a mid tone [with and without laryngealization [-]), and a low tone [˘]. These same tones are also included among the reflexes of stopped proveniences. Several languages still retain a three-tone system with no evidence

<sup>33</sup> Other sources of laryngealization exist. Pre-spirantization of proto-tone 1 words, prefix pre-emption of tone 1 words, and the former presence of a prefix before proto-tone 1 words all appear to affect laryngealization, but a paucity of examples exists. Disyllabic compounds often have otherwise unexpected laryngealization on the first constituent.

of the effects of prefixes on tones; thus, for Burmese, Akha, Phunoi, and Bisu the tonal correspondences are monotonously straightforward.<sup>34</sup>

<i>PLB</i>	<i>Written Burmese</i>	<i>Akha</i>	<i>Phunoi</i>	<i>Bisu</i>
*1	(unmarked)	- ˇ	55	55
*2	- ^	- ˇ	11	11
*3	- ˘	(unmarked)	33	33

In other languages, however, certain proto-tones split and frequently the split was conditioned by the presence or absence of a \*s- prefix.

2.3. *Tonal reflexes of checked syllables.* Two basic principles pertain to tonogenesis, the development of tones: root initial segments affect the pitch height (*registre, hauteur*), and root final segments affect the contour (*inflexion*).<sup>35</sup> Predictably Lolo-Burmese prefixes affect the pitch height but not the tonal contour.<sup>36</sup> 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.<sup>37</sup> Instead all the tonal reflexes of checked proveniences can be explained in terms of phonetic conditioning. 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. This principle is the foundation for the distribution of tones in Lolo-Burmese. The major division among reflexes of checked proveniences is between those with originally voiced initials and those with originally voiceless initials. Disregarding the effect of various prefixes for a moment, the basic tonal distribution in Lisu is:

<sup>34</sup> The Akha tones are indicated with the *háček* above the line indicating high tone and on the line indicating low tone. The numerals are Chao tone numbers where higher pitch is indicated with higher numbers and lower pitch with lower numbers, on a 1 to 5 scale.

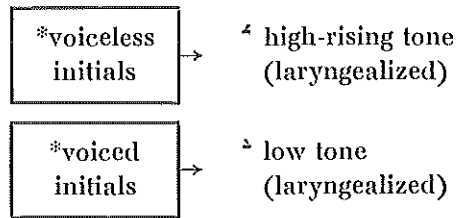
<sup>35</sup> Haudricourt (1954) illustrates these for Vietnamese.

<sup>36</sup> The Lahu high-rising tone requires the interaction of both an initial and a final.

<sup>37</sup> Some minor debate exists concerning the exact level the tonal split occurred at, but this does not affect the basic argument.

Table 1. Open Rhyme Tonal Correspondences

Proto-Tone	Initial Class	Written Burmese	Lahu (Matisoff)	Lisu (Standardized)	Altha
*1	*voiced	□ unmarked (low)	` (low-falling)	□ unmarked (mid)	Burling: Lewis: , H (high)
	*voiceless				
	*spirantal prefix				
*2	*voiced	^ (breathy)	^ (high-falling)	, (low)	, L (low)
	*voiceless				
	*spirantal				
	*spirantal prefix				
*3	*all initials	ɔ (creaky)	□ unmarked (mid)	□ (laryngealized)	□ (mid) □ unmarked



The high-rising tone comes exclusively from checked proveniences. Diachronically it comes from old voiceless initials and the low tone results from old voiced initials.

Forms which would be expected to appear laryngealized as the high-rising tone [˥] and the low tone [˩] occasionally lose their laryngealization and thus become a simple high tone [˥] or a simple low tone [˩], respectively.

2.4. *Prefixes and tone height.* Matisoff's *The Loloish Tonal Split Revisited* quite clearly set forth principles underlying the Loloish tonal split in checked syllables: voiceless consonants induced a higher pitch on the following vowel than did voiced consonants, but the tonal reflexes were not determined just by the voiced or voiceless character of the proto-initial. In addition the proto-system had a number of prefixes whose properties also affected tone height. These are still largely preserved in Written Tibetan and consist of voiced and voiceless stops, nasals, spirants, and at least one vocalic prefix. The general effect of this prefixation is predictable: voiced prefixes tend to result in a lowered tone height and voiceless prefixes tend to result in a raised tone height.

2.5. *Lisu tonal reflexes: the checked syllables.* Lisu has four distinct tones resulting from the interaction of the root-initial consonants, the prefixes, and the former checked syllables. Three distinct tone raising prefixes are found in the Lisu evidence: \*s-, the \*k-, and the \*(s-). By definition, the \*s- is reconstructed to the PLB level, while the \*(s-) only reconstructs to the proto-Loloish level. Frequently the \*(s-) is the reduction of the former full morpheme \*sya 'flesh; animal'; it occurs most often with animal names and parts of the body. Like the pair of \*s- prefixes, the \*k- sometimes

reconstructs to the PLB level and sometimes only reconstructs to the Loloish or even a smaller subgrouping level; thus, with some forms the WB, Lisu, and Akha forms all reflect a \*k-, but with others only the Akha form may reflect an earlier \*k-. Two distinct tone lowering prefixes can be distinguished on the basis of their Lisu reflexes: the \*C- & \*V- and the \*m-. The \*C- & \*V- act identically; the effect of both is to lower an item from the high to the low tone class.<sup>38</sup> The \*m- prefix lowers an item from the high-rising class to the mid tone class while voicing the initial. All three tone raising prefixes are distinct in front of forms from an original voiced root-initial consonant. The \*s- prefix raises tones from the lowest tone class to the highest tone class before nasals, voiced stops, and \*l- initials; the \*s- also pre-empts a root-initial \*r-, \*w-, or \*y-. The \*k- prefix raises forms with a voiced initial into the high-raising class. The \*(s-) prefix raises items to the mid tone class.

Two distinct stopped sources exist for the mid tone laryngealized reflex: a nasal prefix before a former voiceless stop and a spirantal prefix before either a voiced nasal or stop. While correlating specific changes with specific prefixes can be done some confidence, the mechanisms for these changes are somewhat more speculative. The \*m-, the nasal prefix, voiced the root-initial before subsequently dropping and the newly voiced root-initial caused the tone to lower. [\*m-tak 'ascend' Li(F) dá<sup>3</sup>; \*m-tsik 'angry' Li(F) dzî<sup>3</sup>; \*m-puk 'write' Li(F) baw<sup>3</sup>; \*m-krit 'grind' Li(F) jē<sup>3</sup>; \*m-twak 'emerge' Li(F) daw<sup>3</sup>; \*m-pup 'satiated' Li(F) bi<sup>3</sup>].

The Loloish spirantal prefix, a prefixed full morpheme at the earliest stages of Loloish, had the effect of raising a voiced nasal from the low-tone laryngealized class into the mid-tone laryngealized class. [\*s-)nak 'black' Li(F) ná<sup>3</sup>; \*(s-) mak 'dream' Li(F) myá<sup>3</sup>; \*(s-) myak 'eye' Li(F) myá<sup>3</sup>; \*(s-)nök 'bean' Li(F) a<sup>1</sup>naw<sup>3</sup>; \*(s-) mut 'blow' Li(F) mū<sup>3</sup>].

I suspect that the prefix devoiced the root-initial nasal before subsequently dropping, the voiceless nasal caused the tone to raise, and then the voiceless nasal revoiced. A parallel change occurred when the Loloish spirantal prefix preceded a voiced

<sup>38</sup> \*C- is a cover symbol for the voiced prefixes \*b-, \*r-, \*d-, and \*g-.

Table 2. The influence of prefixes on tone height; the Lisu reflexes of PLB checked syllables

	ˊ High tone (1) <sup>39</sup>		↑
unprefixed voiceless initials	ˆ High-rising (2) (laryngealized)	*C- & *V- *m-	↑
	ˉ Mid tone (3) (laryngealized)		↑
unprefixed voiced	ˆ Low tone (6) (laryngealized)		*s- (PLB) *k- *(s)- 'flesh'
Initial type	reflex	tone lowering prexes	tone raising prefixes

*Tone lowering prefixes:*

- \*C- voiced stop
- \*V- vocalle
- \*m- nasal

*Tone raising prefixes:*

- \*s- spirantal
- \*k- velar animal prefix (and other  
voiceless stops)
- <sup>40</sup>\*(s)- 'flesh' prefix

Prefixes which do not affect the tone height of the reflex are not shown on the chart above.

stop or resonant. [\*(s-)pök 'explode; gun' Li(F) paw<sup>3</sup>; \*(s-) gyit 'move to' Li(F) chi<sup>3</sup>; \*(s-)gak 'branch' Li(F) si<sup>2</sup>la<sup>6</sup>ka<sup>3</sup>; \*(s-) gyak 'cubit' Li(F) cha<sup>3</sup>; \*(sə-) wat 'flower' Li(F) si<sup>2</sup>vé<sup>3</sup>; \*(s-) dzak 'boil (cook)' Li(F) tsa<sup>3</sup>; \*(s-) dzik 'joint' Li(F) tsit<sup>3</sup>si<sup>3</sup>]. In contrast to the initial nasal which revoiced, the initial stop remained voiceless.

The major source of the high-rising tone (phonetically 3–5) is those checked proveniences with voiceless initials. Those forms

<sup>39</sup> The number in parentheses is the Anonymous and the Fraser tone number for the Lisu reflexes.

<sup>40</sup> The \*(s-) only reconstructs to the proto-Loloish level.

beginning with unprefixal voiceless stops had an aspirated reflex in modern Lisu. [\*kak 'basket' Li(F) hka<sup>2</sup>tu<sup>2</sup>; \*pyak 'destroy' Li(F) hpyá<sup>2</sup>; \*sut 'sweep' Li(F) si<sup>2</sup>; \*šak 'separate; tear' Li(F) hha<sup>2</sup>]. A spirantal prefix before a form beginning with a voiceless root-initial stop produced modern unaspirated initials. [\*s-tak 'carry' Li(F) tá<sup>2</sup>; \*s-tit 'sink' Li(F) ti<sup>2</sup>; \*s-krok 'frighten' Li(F) chaw<sup>2</sup>; \*s-tsak 'drop' Li(A) tse<sup>2</sup>]. All of the above are reconstructed with \*s- since there is no way to differentiate between the PLB and the proto-Loloish prefix before a voiceless provenience. An additional source for high-rising reflexes of checked proveniences exists: the \*k- prefix which raises the tone from an expected low-tone laryngealized to a high-tone laryngealized reflex. In a number of cases the \*k- prefix can be identified with the voiceless velar animal prefix, but in other cases its significance is now lost. Of particular interest in identifying the exact phonetic nature of the prefix is the pair of Lisu forms Li(F) kaw<sup>3</sup> and Li(H) ?wé both meaning 'ladle'. 'Ladle' is reconstructed PLB \*k-yok (cf. WT *skyogs*); the Hope form has the expected tonal reflex, but it is the Fraser form where the prefix has pre-empted the initial that is interesting because of the retention of the k- prefix. [\*kə-rap 'needle' Li(F) waw<sup>2</sup>; \*k-nyap 'pinch' Li(H) nywé (for further examples see 'The \*k- prefix' section above)].

While for Lisu the above items clearly must be reconstructed with the \*k- prefix, it is clear that this \*k- prefix varied with the \*s- prefix within Loloish. Semantically it makes sense for the velar animal prefix and the \*s- flesh prefix to vary and extra-Loloish evidence shows such variation (cf. Written Tibetan *snjig* 'heart' where the Lisu evidence indicates a \*k-nik 'heart' reconstruction).<sup>41</sup> Because of the Lisu and/or Akha evidence I reconstruct a \*k- prefix for a number of words, but for non-Lisu, non-Akha forms the prefix may well have been an \*s-.

Two related sources of high tone reflexes of stopped proveniences exist. Neither has been noticed previously. The PLB spirantal prefix before a voiced initial—nasal or non-nasal—produced a high tone reflex. [\*s-gak 'branch' Li(A) si<sup>2</sup>ka<sup>1</sup>; \*s-brik

<sup>41</sup> Similarly on the basis of Akha tonal evidence the \*k- prefix may be reconstructed. The \*k- prefix before a voiced checked provenience in Akha produced a mid tone unlaryngealized tone. [cf. \*k-nik 'heart' Akha a-nui M-M].

'able' Li(H) pó; \*s-dok 'burn' Li(F) a'taw<sup>1</sup>; \*s-gyak 'cook' Li(F) cya<sup>1</sup>; \*s-dzak 'join' Li(F) tsa<sup>1</sup>; \*s-grip 'lac' Li(A) ci<sup>1</sup>; \*s-gyit 'move' Li(A) tʃə<sup>1</sup>; \*s-dok 'poison' Li(F) taw<sup>1</sup>; \*s-lak 'youth' Li(F) ra<sup>6</sup>gu<sup>4</sup>la<sup>1</sup>]. Likewise a PLB \*s- before a nasal produced a high tone reflex. [\*s-nak 'deep' Li(F) ná<sup>1</sup>; \*s-nyit 'squeeze' nyi<sup>1</sup>]. Similarly the PLB spirantal prefix before a resonant initial not only produced the high tone reflex but also frequently pre-empted the initial. [\*s-yip 'cause to sleep' Li(F) shi<sup>1</sup>; \*s-rak 'shameful' Li(F) shá<sup>1</sup>taw<sup>3</sup>].

2.6. *Matisoff's prefixes.* In his discussion of prefixal influences on Loloish tonal reflexes, Matisoff (1972) established the following prefixes:

*m-	'a nasal prefix'
*C-	'a voiced consonantal prefix'
*V-	'a vocalic prefix'
*s-	'a spirantal prefix'
*H- (*?-)	'a glottal prefix'

Specific sets of correspondences correlate with the \*m-, the \*C-/\*V-, the \*s-, and the \*H- (\*?-) prefixes.

Despite the fact that a large amount of additional research has been done since (1972) *The Loloish Tonal Split Revisited* (TSR) was published, Matisoff's work remains largely unaltered. Thus far it only needs to be augmented in two minor ways. First, several of the anomalous Lisu and Akha forms in TSR can now be explained in terms of the Loloish \*k- 'animal' prefix. Second, where Matisoff reconstructs both \*H- (\*?-) and \*s- at the Lolo-Burmese level, I reconstruct the former as PLB \*s- and the latter as PL (proto-Loloish) \*s-. My changes are relatively minor; the replacement of \*H- (\*?-) by PLB \*s- is a change in the phonetic nature of the prefix posited and, the PLB \*s- being replaced by a PL \*s- is only a minor change in the level of the reconstruction. The actual correspondence sets are virtually unchanged.

For proto-Lolo-Burmese, only a single 'glottalizing' prefix, the \*s-, needs to be reconstructed. Matisoff (1972) posits two, the \*s- and an \*?- (\*H-), but it will be shown below that at the Lolo-



Burmese level there is no contrast between the \*s- and \*ʔ- prefixes; instead Matisoff's correspondence sets reflect the contrast between a PLB \*s- and a PL (proto-Loloish) \*s-.<sup>42</sup> Further, it can be demonstrated that the single PLB glottalizing prefix should be reconstructed as an \*s- not a \*ʔ- (\*H-).

First, the correspondence sets only require the reconstruction of a single glottalizing prefix—it is not necessary to reconstruct both an \*s- and a \*ʔ- (\*H-). Matisoff's \*ʔ- and \*s- prefixes contrast only minimally (1972: 18):

In fact, there is every reason to believe that before stop-initialled roots the \*s- and \*H- [\*ʔ-] prefixes had merged completely by PLB times.

This PLB contrast is exemplified only before nasal or resonant initials.

The careful reexamination of the actual correspondence sets used to establish Matisoff's PLB \*s- reveals that his PLB \*s- is better reanalyzed as a PL (proto-Loloish) \*(s-). These sets represent the reduction of a full morpheme PLB \*sya to a prefix at the PL stage (or later); note that the sets pattern tonally exactly like TSR #185 \*(sə-) wat 'flower': WB *wat-cham*, Lahu *ʃí-vêʔ*, Lisu *si<sup>2</sup>vé<sup>3</sup>* where the full morpheme is still overtly retained. If we examine the nine nasal initial roots found in *The Loloish Tonal Split Revisited* (supplemented by additional Lisu (Fraser) forms not found in TSR), we discover that at least 8 of the 9 sets have a prefix restricted to Loloish.

Matisoff explicitly notes that the \*(s-) is found only in Loloish for 4 of the 9 sets. With these four he uses the parenthesized \*(s-) to indicate the exclusively Loloish nature of the prefix; with these, the WB cognate has a plain rather than the aspirated nasal which an \*s- prefix would have produced. Thus, in these instances the \*(s-) is uncontestedly restricted to Loloish:

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<sup>42</sup> Following the convention established in Matisoff's *The Loloish Tonal Split Revisited* (1972), a PLB \*s- indicates an \*s- prefix reconstructed for proto-Lolo-Burmese while a \*(s-) indicates that the \*s- prefix is only found in the Loloish subgroup.

<i>PLB</i>	<i>WB</i>	<i>Lisu(Fraser)</i>	<i>Akha</i>	
* <i>(s-)</i> nök	nok	a <sup>3</sup> naw <sup>3</sup>	a <sup>˥</sup> nui <sup>˥</sup>	'bean TSR #140'
* <i>(s-)</i> nak	nak	ná <sup>3</sup>	na <sup>˥</sup>	'black TSR #142'
* <i>(s-)</i> mak	mak	myá <sup>3</sup>	ma <sup>˥</sup>	'dream TSR #144'
* <i>(s-)</i> myak	myak	myá <sup>3</sup>	mya <sup>˥</sup>	'eye TSR #145'

For another four of the nine nasal sets the Lisu and/or the Akha tonal reflexes explicitly indicate their proto-root was \**k-* prefixed—not \**s-* prefixed—at the earlier stage relevant to the modern tonal reflex:

<i>PLB</i>	<i>WB</i>	<i>Lisu</i>	<i>Akha</i>	
* <i>s-</i> ɲak	ɲjak			'bird TSR #141'
* <i>k-</i> ɲak		nyá <sup>2</sup>	nga-ceh <sup>˥</sup> -beh <sup>˥</sup> ceh <sup>˥</sup> leh <sub>˥</sub>	
* <i>s-</i> ɲak	ɲjak-	nga <sup>3</sup> si <sup>5</sup>		'banana TSR #139'
* <i>k-</i> ɲak	pyô sí		nga- beh <sup>˥</sup>	
* <i>s-</i> nik	hnac-lúm			'heart TSR #146'
* <i>k-</i> nik		ni <sup>2</sup> ma <sup>3</sup>	<sup>44</sup> nui-ma	
* <i>(s-)</i> nyap	ńap/hńap			'be pinched between
* <i>k-</i> nyap		nywé (Hope)		two objects; shoes TSR #147'

Finally, this leaves only a single nasal initial root with the desired Written Burmese/Loloish correspondence:

* <i>s-</i> mut	hmut	mū <sup>3</sup>	mi <sup>˥</sup>	'blow TSR #143'
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Since only this set supports positing the correspondence at the PLB level rather than the PL level, and since it is quite possible that the aspirated initial in WB is unconnected with the Loloish tonal reflexes, the \**s-* should be reconstructed as a PL rather than a PLB prefix.

The resonantal initialled roots readily succumb to a similar

<sup>43</sup> TSR reconstruction should be \*(*s-*)nök not \*(*s-*)nok (Matisoff, personal communication).

<sup>44</sup> The Akha vowel descends from an earlier \**-ik* rhyme contra TSR which reconstructs a \**-iŋ* rhyme.

analysis.<sup>45</sup> The forms Matisoff reconstructs with a PLB \*s- continue to be reconstructed with a PLB \*s-:

*s-rak	WB hrak	Lisu <sup>46</sup> shá <sup>1</sup> taw <sup>3</sup>	Akha	'ashamed TSR #182'
			sha <sub>Λ</sub> daw <sup>ν</sup>	
*s-rik	WB rac	<sup>47</sup> Lisu shi <sup>1</sup>	Akha yeu <sub>Λ</sub>	'twist TSR #130'

The forms reconstructed with a prefixed \*?- should also be reconstructed with a PLB \*s-. In the first two examples, this is clear from the preservation of the spirantal prefix in the modern root-initial consonant:

<sup>3</sup> *s-yik	WB ?ac-kui	Lisu shi <sup>1</sup>		'elder sibling TSR
*?u-yik		Lisu a <sup>1</sup> yi <sup>6</sup>	Akha a <sub>Λ</sub> yui <sub>Λ</sub>	#172 & Appendix'
*s-yip	WB sip	Lisu shi <sup>1</sup>	Sani ši 55	'cause to sleep; sleep
*yip	WB ?ip	Lisu yi <sup>6</sup> ta <sup>1</sup>	Sani ji 22s	TSR #180'

In the other examples, no phonological residue identifies the prefix as spirantal rather than glottal, but the tonal reflexes pattern identically with both of the posited prefixes; consequently, either PLB \*s- or \*?- should be posited, but not both.

Second, given that only one glottalizing prefix needs to be reconstructed at the PLB level, there are compelling arguments for reconstructing an \*s- rather than a \*?- (\*H-). Fossil forms, the phonetics, and historical evidence all argue for positing an \*s-.

Fossil forms found both in Written Burmese and Loloish languages preserve a spirantal initial; this is particularly instructive in the case of simplex/causative pairs since it is known that causation was originally marked by the TB \*s- prefix:

*s-yip	WB sip	Lisu shi <sup>1</sup>	Sani ši 55	'cause to sleep
				TSR #180'
*yip	WB ?ip	Lisu yi <sup>6</sup> ta <sup>1</sup>	Sani ji 22s	'sleep TSR #180'
*s-dza <sup>2</sup>		Lisu cha <sup>1</sup>	Akha sha	'feed'
*dza <sup>2</sup>	WB câ	Lisu dza <sup>6</sup>	Akha dza <sub>Λ</sub>	'eat'

<sup>45</sup> Except for TSR #171 'eight', #174 'night/spend the night', #175 'stand', and #176 'stomach' which are discussed in section 3.2.8.

<sup>46</sup> Contra TSR, the Lisu reflex is completely regular.

<sup>47</sup> The Lisu doublet necessitates positing both a prefixed and an unprefixed provenience.

A number of other forms have preserved evidence of an earlier spirantal prefix:

*s-yik	Lahu ví	Lisu shī <sup>1</sup> ~	'elder sibling TSR #172'
		a <sup>1</sup> yi <sup>6</sup> <*yik	
*s-rak		Lisu shá <sup>1</sup> -taw <sup>3</sup>	
		Akha sha <sub>Δ</sub> daw <sup>∞</sup>	'ashamed TSR #182'
*s-ra <sup>2</sup>	WB hrâ	Lahu hā Lisu sha <sup>1</sup>	'poor'
*s-rɔy <sup>1</sup>	WB hrwe	Lahu ši Lisu shī <sup>3</sup>	'gold; yellow'
*s-rik	WB rac <*rik	Lisu shī <sup>1</sup> Lh ši <sup>1</sup>	'twist TSR #130'
*(s-)ra <sup>1</sup>	WB ra <sup>1</sup>	Lahu šɔ Lisu sha <sup>3</sup>	'collect'
*s-ra <sup>1</sup>	WT sra-ba	Lahu hā Lisu sha <sup>1</sup>	'difficult; hard'
*s-riŋ <sup>1</sup>	WB hraŋ	Lahu ši~yi <*riŋ <sup>1</sup>	
		Lisu shī <sup>3</sup>	'long'

Historically, little wide-spread comparative support for a TB glottal prefix has been found, but the PTB \*m- 'stative' and the \*s- 'causative/transitive/directive' prefixes are widely-attested. Matisoff (1969, 1970) does argue that WT ɸ- was a glottal stop which ultimately correlates with the preglottalization that contributed to the development of the Lahu high-rising tone, but the evidence is not persuasive. Once it is discovered that only a single glottalizing prefix is needed at the PLB level, it is much more reasonable to simply posit the widely attested \*s-.

Phonetically, arguments can be made for an \*s- prefix over a \*ʔ- prefix. Matisoff (1972: 18) writes:

... evidence from WB and Lahu simplex/causative verb pairs allows us to set up *glottalization* as the marker of causitivity at the PLB stage. [italics Matisoff's].

Specifically, Matisoff suggests that in most environments PLB \*s- and \*ʔ- (\*H-) had merged to \*ʔ- by PLB times; but this hypothesis faces several problems. First, the phonetic change of \*s- to \*ʔ- is implausible. Second, positing (1972: 18) "*glottalization* as the marker of causitivity at the PLB stage" forces Matisoff to propose the following temporally ordered sequence of steps (1975: 97): \*\*s-yip > \*ʔyip 'put to sleep TSR #180' > WB sip and Sani

šī 55. Here, rather than  $*s- > *ʔ- > \text{WB } s-$  and Sani š-, it is far more likely that the  $*s-$  remained an  $*s-$  throughout.

Undoubtedly, a consideration behind Matisoff's decision to posit a prefixal glottal stop (descended from an earlier  $*s-$ ) is the overt glottalization found on the vowels of Atsi and Maru forms which had an earlier  $*s-$  prefix, e.g. Atsi  $nʔap$  and Maru  $nʔeʔ$  'snot' < PTB  $*s-$ nap (STC #102). Thus, at this point it is extremely important to note precisely what Burling's glottalized series of initial stops designates. The following passage makes it clear that, more than anything else, the designation indicates a *vowel* quality difference (1967: 18):

The middle series of stops, those marked on the chart as 'glottalized' have less familiar phonetic characteristics. These stops are unaspirated and unvoiced, but the more striking phonetic characteristic of the series is the quality which they impose upon the following vowel. These vowels have the voice quality which has sometimes been termed 'creaky' in southeast Asian languages . . .

However, if etymologically induced terminological similarities are ignored, the creaky vowel quality of the Atsi and Maru vowels is as easily attributed to an earlier  $*s-$  prefix as to an earlier  $*ʔ-$  prefix; PLB creaky tone is itself an excellent example of creakiness derived from an earlier  $*s-$  prefix. Similarly, Matisoff's (1970) glottal dissimilation, an analysis of the origins of the Lahu high-rising tone, can be readily reformulated for an  $*s-$  prefix instead of a glottal prefix. Despite the fact that the  $*s-$  is not phonetically 'glottal', it is the quality of the  $*s-$  which produces glottalization or creakiness on the vowel that seems relevant to the origins of the Lahu high-rising tone; thus, the Lahu high-rising tone developed from  $*s-$  prefixed checked syllables with originally voiced initials.

Benedict presented what I believe to be the correct solution in the *Conspectus* (1972: 35, fn. 115):

It now seems that the  $*s-$  prefix served rather to glottalize the following initial at the PLB stage, e.g. Atsi  $nʔap$ , Maru  $nʔeʔ$  'snot' < TB  $*s-$ nap . . .

The writer prefers to regard glottalization and aspiration here as alternative developments from TB prefixed \*s-, since a series such as [W]B *hnap* < \*nʔap < \*s-nap seems unlikely.

While it is not clear phonetically why it is so, the \*s- prefix correlates with the glottalized or creaky vowel quality throughout Lolo-Burmese.

2.7. *Summary.* The above argumentation and evidence may be summarized by the following chart:

Matisoff's PLB \*H- (\*ʔ-) is replaced by PLB \*s-  
 Matisoff's PLB \*s- is replaced by PL \*(s-)

With the few exceptions noted above, the correspondences are still the same, and the alteration of the schema found in TSR is minor. The positing of two separate spirantal prefixes, one at the PLB level and one at the PL level, accounts for the patterns of the correspondence sets without forcing one to posit a PLB glottal prefix. In particular, it allows the positing of the \*s-/\*m-alternation to mark causative/simplex verb pairs, a probability supported by a great deal of evidence.

### 3.0 Initials

Lolo-Burmese may be reconstructed with just a voiced and a voiceless series of initials:

*p-	*t-	*ts-	*c-	*k-
*b-	*d-	*dz-	*dʒ-	*g-
*m-	*n-			*ŋ-

In addition there were various clusters including a velar series:

*ky-/*kl-/*kr-	Lisu <i>ch-</i>
*gy-/*gl-/*gr-	Lisu <i>ʃ-</i>
*kw-	Lisu <i>k-</i>

A series of palatalized bilabials as well as \*ny- and \*ly- clusters also existed.

In various languages this two-manner series has developed into a three-manner (or, in Nasu, a four-manner series) through the influence of prefixes on the root-initial consonants. If we examine the reflexes of the original proto-series in Written Burmese, Lahu, Lisu, Nasu, and Akha the relationship between root-initials and prefixes becomes clear. Without prefixal interference the original proto-series would result in the following reflexes redistributed in Akha and Written Burmese. In Akha, some of the original voiced stops are now voiceless and some of the original voiceless stops are now voiced. In WB,<sup>48</sup> unprefixated voiceless stops became voiceless aspirated and unprefixated voiced stops became voiceless unaspirated; however, due to the interaction with prefixes, some former voiceless stops are now voiceless unaspirated, while some former voiced stops are now voiceless aspirated. Nasu has a four-manner series which distinguishes unprefixated voiced, unprefixated voiceless, \*m- prefixated, and \*s- prefixated proveniences. Lahu has a modern voiced series descended largely from the \*m- prefixated initials, a voiceless unaspirated series from the merger of the old voiced series with the \*s- prefixated proveniences, and an aspirated series descended from old voiceless unprefixated proveniences. Lisu merges the old voiced series with the \*m- prefixated reflexes while keeping the \*m- and \*s- prefixated reflexes separate.

<i>PLB</i>	<i>Written</i>				
	<i>Burmese</i>	<i>Lahu</i>	<i>Lisu</i>	<i>Nasu</i>	<i>Akha</i> <sup>49</sup>
*b	p	p	b	b	b
*p	ph	ph	ph	ph	p

Without prefixes a simple two-stop series has emerged. However, the introduction of prefixes considerably complicates this picture. The \*m- prefix and the \*s- prefixes have also had their effect:

<sup>48</sup> WB also has a small number of voiced initials through the voicing of certain initials in various types of juncture.

<sup>49</sup> Aspirated and non-aspirated stops are in complementary distribution in Akha. The aspirated stops occur with non-laryngealized vowels and the unaspirated with laryngealized vowels.

	<i>Written</i>				
<i>PLB</i>	<i>Burmese</i>	<i>Lahu</i>	<i>Lisu</i>	<i>Nasu</i>	<i>Akha</i>
*b	p	p	b	---	b
*m-	p	b	b	b'	b
p	---	---	---	---	---
*s-	ph	p	p	p	p
b		---	---	---	
p	ph	ph	ph	ph	p

As the chart shows the aspirated series comes from the proto-voiceless series, the unaspirated series comes from a spirantal prefix before either a proto-voiced or a proto-voiceless initial, and the voiced series comes from both the old voiced series and the effect of the nasal prefix on the old voiceless series.

Thus from the earlier PLB two-manner series<sup>60</sup> came a modern Lisu three-manner series:

p-	t-	ts-	c-	k-
ph-	th-	tsh-	ch-	kh-
b-	d-	dz-	ǰ-	g-

As the chart shows the aspirated series comes from the proto-voiceless series, the unaspirated series comes from a spirantal prefix before either a proto-voiced or a proto-voiceless initial, and the voiced series comes from both the old voiced series and the effect of the nasal prefix on the old voiceless series. In addition Lisu has a number of secondary sources of stop initials, but there are too few examples to make the sources clear.

3.1. *Spirants.* At the proto-Lolo-Burmese (PLB) stage three spirants are reconstructed: \*s-, \*š-, and \*z-. For the most part

<sup>60</sup> Phonetically the PLB two-manner series undoubtedly had aspirated and unaspirated voiceless stops in complementary distribution with the aspirated stops occurring initially and the unaspirated after certain prefixes.



these not only have different reflexes in Lisu, but also different reflexes depending on the dialect of Lisu. Nonetheless the distinction between dental and palatal spirants can be recovered from the patterning of Lisu reflexes.<sup>61</sup> In addition to the spirantal initials a PLB and a proto-Loloish spirantal prefix also existed. In some instances the PLB \*s- is apparently distinguishable from the proto-Loloish \*(s-).

3.1.1. *The \*s- reflexes.* Here the correspondences are relatively clear:

	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>	
*s-	s-	s-	sh-/sy-	sy-	*-ak, *-at
*s-	s-	š-	s-	sy-	*sw-, *su-, *su-
*s-	s-	s-	s-	s-	elsewhere

The cases where the \*s- has a š- reflex represent palatalization. The \*-ak and \*-at rhymes became the front vowels -æ and -e during the loss of their finals; subsequently these front vowels served to palatalize \*s- in some contexts.

3.1.2. *The \*š- reflexes.* These split beautifully depending upon whether the \*s- preceded a back vowel or a front vowel.

	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>	
*š-	f-	š-	sh-/sy-	sy-	*back vowel
*š-	x-	x-	hh-/hw-	x-	*front vowel
			h-		

This is illustrated by the following sets:

*šam <sup>1</sup>	xo <sup>3</sup>	xwō	haw <sup>4</sup>		'iron'
*ša <sup>2</sup>	xua <sup>5</sup>	xwà	hwa <sup>5</sup>	xwà	'meat'
*g-šak			hha <sup>6</sup>		'pluck'
*šak	xa <sup>2</sup>		hha <sup>2</sup>	xá	'tear; separate'

These appear to be assimilatory changes.

<sup>61</sup> Akha is an excellent source for the \*s- and \*š-. The \*s- goes to s- in Akha and the \*š- goes to š-. It should be noted, however, that some Akha š- initials come from prefix pre-emption of the root initial by a spirantal prefix [cf. \*š-dza<sup>2</sup> 'eat' Akha sha M].

3.1.3. *The \*z- reflexes.* This initial has distinctly different reflexes in each of the dialects of Lisu, but the key to understanding the nature of the fluctuation is Burling's description of ř-, the reflex of \*ž- in his Lisu work (1967:23): “/ř-/ varies from a voiced apical rill spirant to a voiced retroflex continuant”. This variation is seen in the modern reflexes.

	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>	
*z-	z-		r-	y-	*-ak
*z-	z-	ř-	r-	z-	*-a
*z-	z-		rz-	ž-	elsewhere

Examples of this correspondence include:

*zak	ze <sup>6</sup>		rzá <sup>6</sup>	yà	'descend'
*za <sup>2</sup>	za <sup>6</sup>	řà	rza <sup>6</sup>	zà	'son; person; child'
*zum <sup>2</sup>	ze <sup>6</sup>		rze <sup>6</sup>	zwè	'use'
*zəy <sup>3</sup>	zu <sup>3</sup>		rzu <sup>3</sup>		'wheat'

From the pattern of reflexes in the Lisu data it is possible to recover the nature of the proto-initial. In fact, just from the Anonymous data alone it is possible to tell exactly what sibilant a given item began with.

3.1.4. *The spirantal prefixes: PLB \*s- and PL \*(s-).* In a large number of cases, the spirantal prefixes PLB \*s- and proto-Loloish \*s- pre-empted an initial \*r- or \*y-. Before front vowels no difference exists between the reflexes of the two prefixes, but before back vowels with a \*r- as the root-initial they are distinct.

*s-/*(s-)	f-	š-	sh-	sy-	*front vowel
*s-	f-		sh-	s-	*back vowel
*(s-)	x-		hw-	x-	*ra

Examples of a pre-empting \*s- prefix before front vowels include:

*s-rəy <sup>1</sup>	fə <sup>3</sup>	sṛ	shī <sup>3</sup>	syi	'gold; yellow'
*s-yip			shī <sup>1</sup>	syí	'put to sleep'
*s-riŋ <sup>1</sup>	fə <sup>3</sup>		shī <sup>3</sup>	syí	'long'
*s-yik			shī <sup>1</sup>	syí	'twist, turn'

The two prefixes are distinct before \*ra with \*PLB \*s- remaining a sibilant and PL \*(s-) becoming an *æ*-. Perhaps this is due to the fact that the \*ra had become \*ya by the time that the proto-Loloish \*s- pre-empted it.

*s-rak		shá <sup>2</sup> taw <sup>3</sup>	sá-tú	'shameful'
*s-ra <sup>3</sup>	ɸua <sup>3</sup>	sha <sup>3</sup>		'collect'
*s-ra <sup>2</sup>	ɸua <sup>1</sup> (xua <sup>1</sup> )	sha <sup>1</sup>		'difficult; hard'
*s-ra <sup>2</sup>	ɸua <sup>1</sup>	sha <sup>1</sup>	swá	'poor'
*(s-)ra <sup>2</sup>	xua <sup>1</sup>	hwa <sup>1</sup>	xwá	'win'
*(s-)ra <sup>1</sup>	xua <sup>3</sup>	hwa <sup>3</sup>	xwa	'seek'

Notice that 'poor' and 'win' form an etymological minimal pair.

3.2. *Resonantal reflexes.* Some of the most interesting correspondences are found among the resonants. Reflexes of \*y-, \*w-, \*r-, and \*l- exist.

3.2.1. *The \*y- reflexes.* The \*y- has quite regular reflexes in Lisu.

	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>	
*y-	Ø <sup>52</sup>	y-	y-	?-	*-ip
*y-	ʒ-	y-	y-	?-	*other front vowels

Thus:

*yip	e <sup>6</sup>	yiʔtá	yi <sup>6</sup> ta <sup>1</sup>	ʔl-tá	'sleep'
*yit	ʒi <sup>6</sup>	yiʔ	yi <sup>6</sup>		'drunk'
*s-kyok > *kyok > *k-yok				ʔwé	'ladle'
*yik	zi <sup>6</sup> za <sup>6</sup>		a <sup>1</sup> yi <sup>6</sup>		'younger sibling'

The form in the ladle example, despite the notation ʔwé, is before a modern front vowel.

Reflexes of \*y- before a back vowel are quite similar to the pattern for \*z-, and in the case of \*ʔzəy<sup>1</sup> the initial pattern itself exactly like a \*y- initial before a back vowel does, despite the fact that clearly it must be reconstructed \*ʔzəy<sup>1</sup>. The pattern for \*y- before back vowels is:

<sup>52</sup> This symbol indicates that the initial disappears. If there were no examples the space would have been left blank.

\*y-      ž-      ř-      r-      z-      \*back vowel

Examples include:

*yu <sup>1</sup>	žu <sup>4</sup>	řu	ru <sup>4</sup>	zwu	'seize; carry; take'
*sə-yok	žo <sup>3</sup>	řô	raw <sup>3</sup>		'person, clf.'
*yaŋ <sup>1</sup>		â-řô	a <sup>3</sup> raw <sup>3</sup>		'sheep'
*s-zəy <sup>1</sup>	zo <sup>3</sup>		raw <sup>3</sup>	zu	'little'

3.2.2. *The \*w- reflexes.* The \*w- provenience has multiple reflexes in modern Lisu, and many of the modern Lisu w- initials come from other sources. The modern Lisu w- has two distinct allophonic variants: [v] before front vowels and [w] before back vowels. The normal Lisu reflex of \*w- is /w-/.  
 Before the following rhymes \*w- went to γ-: \*-əy, \*-ik/t, and \*-an. The respective examples are:

*wəy <sup>2</sup>	γə <sup>5</sup>	rgh <sup>5</sup>		'far'
*wəy <sup>1</sup>			γə	'complementizer, imperative'
*wik/t		rgh <sup>6</sup>		'wear'
*wan <sup>1</sup> > *we		rghe <sup>4</sup>		'load; burden'

While the first three examples are obvious since the \*w- goes to γ- before a front vowel, the last one requires an explanation. Here the \*-an regularly has a front vowel reflex of -e. Thus for \*wan<sup>1</sup> 'load; burden' the \*-an rhyme goes to -e, the \*w- goes to γ- as expected, and a front vowel after γ- regularly becomes a schwa.<sup>53</sup>

Another fascinating set of examples exists:

*k-rap	γo <sup>6</sup>		waw <sup>2</sup>	'needle'
*sə-rap	γo <sup>3</sup>			'embrace'
*d-wan <sup>1</sup>	γo <sup>4</sup>	wō	waw <sup>4</sup>	'bear'

Here the Anonymous dialect has a γ- corresponding to the w- initials in the Burling and Fraser dialects. In all three cases the

<sup>53</sup> I suspect that after a γ- Lisu front vowels are always reduced to a schwa. In both Burling and Hope the phonemicization reflects this directly, but the notation in Anonymous and Fraser tends to obscure this.

expected Anonymous reflex is a w- initial; the \*w- normally goes to w- before back vowels and the \*r- initials also go regularly to w- before back vowels. Even in the Anonymous dialect all \*r- initials before back vowels go to w- reflexes except in the above cases. The conditioning factor is obviously the \*-ap and \*-am rhymes since both go to an -o reflex. The major significance of the three examples above is that they represent the only exceptions to two otherwise general rules: \*w- initials go to γ- only before certain front vowels and all \*r- initials go to w- before back vowels. Notice the \*r- and \*w- merger involved.

3.2.3. *The \*r- reflexes.* The \*r- initial has several distinct reflexes in Lisu, but nowhere does it have a r-reflex in modern Lisu. The modern Lisu r- found in Fraser's grammar descends from the \*z- and \*y- initials not from the \*r- initials! The reflexes of \*r- are γ-, w-, and in one case, y-.

The \*rak rhyme 'loom' gives the modern Lisu forms: Li(B) ya<sup>?</sup> and Li(F) ya<sup>6</sup>. Here the \*-ak rhyme has served to palatalize the \*r- initial. Note that this set of examples parallels the set discussed under the \*z- initials where \*zak 'descend' goes to Lisu (Hope) ya<sup>6</sup> under the influence of the \*-ak rhyme.<sup>54</sup>

The \*r- initial goes to γ- before all -a reflexes in the modern Lisu high tone. Thus \*kə-rak > \*ʔə-rak 'chicken' (LiA) a<sup>1</sup>γa<sup>1</sup>, Li(F) a<sup>1</sup>rgha<sup>1</sup>, and Li(H) á-γá as well as \*b-rak > \*ʔə-rak 'stone' Li(A) γa<sup>1</sup>, Li(F) rgha<sup>1</sup>hchi<sup>3</sup>, and Li(H) γá both have the γ-reflex and a modern high tone. With these exceptions, all the \*r- initials went to w- before back vowels:

*ruŋ <sup>1</sup>	u <sup>5</sup>	wu <sup>5</sup>	vwù	'sell'
*ra <sup>3</sup>	wa <sup>3</sup>		wá	'get; obtain'
*rəw <sup>2</sup>		waw <sup>5</sup> taw <sup>3</sup>		'bone'
*sə-ru <sup>3</sup>		wu <sup>1</sup>		'crazy'
*raŋ <sup>2</sup>	o <sup>5</sup> phyε <sup>5</sup>	waw <sup>5</sup>	vwù-phyà	'vegetable'

Although this is not an exhaustive list of examples, the pattern is clear. Notice that in the Anonymous dialect there are no w-

<sup>54</sup> The \*-ak rhyme also serves to palatalize the \*s- reflexes. See the sections above.

initials before the back vowels -u and -o. It is not clear whether this is a function of the transcription or a real dialectal difference.

Before front vowels \*r- went to  $\gamma$ -. Notice that \*w- initials also went to  $\gamma$ - before front vowels.

*rəy <sup>2</sup>		rg <sup>h</sup> <sup>5</sup>		'run'
	tho <sup>6</sup> - $\gamma$ ə <sup>6</sup>	htaw <sup>6</sup> -rg <sup>h</sup> e <sup>6</sup>	- $\gamma$ ə	'read'
*rəy <sup>2</sup>		thò		

Here only a pair of good examples has been left in tact by subsequent changes in Lisu, but the parallels with \*w- initials and the sets themselves allow the correspondence to be set up with confidence.

In short, the \*r- rhyme went to  $\gamma$ - before front vowels and w- before back vowels with only three rather well-defined exceptions. The exceptions involve the palatalizing of the \*r- to y- before the \*-ak rhyme, the \*r- going to  $\gamma$ - before the reflexes of the \*-ap rhyme, and \*r- going to  $\gamma$ - before those proveniences (\*ʔə-rak) which have the high tone modern Lisu  $\gamma$ á reflex.

3.2.4. *The merger of \*w- and \*r- reflexes.* With the exception of the well-defined cases already documented above the reflexes of \*r- and \*w- have totally merged in Lisu. Before front vowels both the \*r- and \*w- have gone to  $\gamma$ - and before back vowels both \*r- and \*w- have gone to w-. Indeed, one suspects after trying to determine the order of the various historical changes that a form like \*way<sup>1</sup> 'buy' went through a series of changes whereby it went from having the \*w- initial, to a stage where it had a  $\gamma$ - initial, to a modern reflex where it is written wù. Regardless of whether \*way<sup>1</sup> 'buy' followed this particular path or not, it is clear that the \*r- and \*w- initials underwent a merger which left only a subset of residue forms reflecting the original distinction.

3.2.5. *The f- reflex.* Obviously f- is not a resonant, but it has been included in this section because of its apparent resonant-like parentage. No f- initials occur in Fraser (1922), and most of the f- initialled forms are Chinese borrowings. Two sets with good etymologies do exist, but the f- still appears largely due to Chinese

influence. Its occurrence is restricted to forms which, aside from the borrowings, had a laryngealized w- or u- initial at some point in their derivation.

*u <sup>3</sup>	a <sup>1</sup> fu <sup>3</sup>	á-γá-fû	hu <sup>3</sup>	fwu	'egg'
*ru <sup>1</sup> <sup>3</sup>			hu <sup>3</sup>	fwu	'snake'

In the last example the \*r- goes to w- before the -u, and the laryngealization comes from the loss of the final -l. Note the f- does not appear as the initial in Fraser, the oldest transcription.

3.2.6. *The \*l- reflexes.* With the sole exception of three forms every \*l- and \*s-l- initial has a modern Lisu l- reflex.

3.2.7. *The \*k- prefix as a source of h- reflexes.* Normally all \*l- initials, pre-spirantized or not, go to the modern Lisu l-, but three clear cases exist where an \*l- initial goes to h-.

*k-luk	ho <sup>2</sup>				'maggot'
*k-la <sup>3</sup>	ha <sup>4</sup> ba <sup>4</sup>	hā-bā	h'a <sup>4</sup> ba <sup>4</sup>		'moon'
*k-ləy <sup>1</sup>	-he <sup>4</sup>		-h'i <sup>4</sup>	-hi	'wind'

Obviously the \*k- prefix results in the h- reflex. The \*k- prefix is supported by the tone of Li(A) ho<sup>2</sup> 'maggot' and extra-Lolo-Burmese evidence (Benedict, 1972). This change has both Akha and Lahu correlates. In addition the \*k- prefix before a \*y- and \*r- also has an h- reflex.

*k-yim <sup>1</sup>	he <sup>4</sup>	h'i <sup>4</sup>	hi	'house'
*k-r-wak	hɛ <sup>2</sup> phu <sup>5</sup>	h'a <sup>2</sup>	-h <sup>1</sup>	'rat; rodent'

The k- prefix can be seen in the Written Tibetan form *khyim* 'house'.<sup>55</sup>

3.2.8. *\*ry- clusters and their reflexes.* The tonal and the initial reflexes of \*ry- pattern uniquely in Loloish:

<sup>55</sup> This is another clear example of a cluster-initial consonant being reanalyzed as a prefix plus an initial.

<i>PLB</i>	<i>OB</i> <sup>56</sup>	<i>WB</i>	<i>Lahu</i>	<i>Lisu</i>	<i>Akha</i>	<i>Sani</i>	<i>Nasu</i>	
*rya <sup>1</sup>	ryā	ra	ha	h'yá <sup>4</sup>	ya <sup>ˇ</sup>	ha 33	xõ 33	'hundred'
*rya <sup>1</sup>	ryā	ra	hε	h'a <sup>4</sup>	ya <sup>ˇ</sup>			'(dry-crop) field'
		(now spelled ya)						
*ryak	ryak	rak	há	h'yá <sup>6</sup>	ya <sub>˩</sub>	he 22s	xã 34	'day; night, spend the night' #174
*ryap	ryap	rap	hú	h'i <sup>6</sup>	yaw <sub>˩</sub>	hy 22s	xy 34	'stand' #175
*s-ryat <sup>57</sup>	hryat	hrac	hí	h'i <sup>6</sup>	yeh <sub>˩</sub>	he 22s	xε 34	'eight' #171
*rwa <sup>1</sup>		rwa		mrgh <sup>58</sup> h'a <sup>4</sup>		ha 33		'rain'

The unique patterns indicate that the reflex initials result not from the effect of an old spirantal prefix, but correlate with the unique \*ry- initial. The initial patterns and tonal patterns are unique to this initial cluster and to \*rw- in \*rwa<sup>1</sup>, 'rain', which underwent a similar development.<sup>58</sup>

Speculatively, what occurred was what Boodberg (1937) termed dimidiation. The root initial *r-* in the *ry-* or *rw-* developed into a 'prefix', a phonologically independent syllable and this 'prefix' affected the root initial before dropping. The process provides an interpretation for the unique initial and tonal reflexes. The \*r- affected the initials like a prefix might be expected to, but affected the tonal reflexes in an unusual way; in certain languages the reflexes pattern like the unprefixing roots. Whether or not the above serves as an 'explanation', the odd reflexes correlate with the \*ry- and \*rw- initial clusters.

#### 4.0 Rhymes

The rhymes are neither as clear nor as exceptionless as the initials and tones, but the outline is quite clear. The rhymes are divided

<sup>56</sup> The Old Burmese forms and the original observation that such rhymes pattern uniquely comes from Yoshio Nishi's paper "About OB *ry-*"; the Old Burmese forms are also noted in Bradley (1971: 9).

<sup>57</sup> The *s-* in Atsi *sll* and Maru *se?* 'eight' may be the original \**s-* prefix or they may be a regular development from a voiceless *r-* initial.

<sup>58</sup> The set Lahu *ɔ̄-fl-qō*, Sani *hl-ma* 22s-33, and Lisu *h'i<sup>6</sup>hchi<sup>6</sup>* 'stomach' TSR #176 does not fit into this schema without additional data.



into open rhymes, nasal rhymes, and checked rhymes depending on the nature of the final on the provenience.

4.1. *Open rhymes.* Eight open vowel rhymes are reconstructed for Lolo-Burmese:

*-i	* <i>-əy</i>	*-u	* <i>-əw</i>
	* <i>-ay</i>		* <i>-aw</i>
		* <i>-a</i>	* <i>-ul</i>

Several of these have multiple reflexes in Lisu.

4.1.1. *The \*-a rhyme.* The \*-a rhyme goes to an -a reflex without exception.

4.1.2. *The \*-aw and the \*-u rhyme.* These rhymes have been set up traditionally as separate. However, a strong complementary distribution exists between those sets reconstructed for \*-aw and those for \*-u. The \*-aw rhyme goes to -o except after velars where the normal reflex is -u. The \*-u rhyme invariably has a -u reflex, but restricted distribution.

4.1.3. *The \*-əw rhyme.* This fascinating rhyme has multiple Lisu reflexes about which several generalizations might be made. The reflexes of \*-əw are several types of high unrounded vowels, -u, and -o. In terms of the Lisu reflexes, following a bilabial or palatal initial one of the high unrounded vowels is the reflex, but after the dental and the velar reflexes one of the rounded back vowels is the reflex. However, one exception does exist to the generalization. The form \**məw*<sup>2</sup> 'sky' has the forms: Li(B) *mù* and Li(F) *mù*. This may, in part, be a function of the tone, but that is not clear. Similarly, the tone appears to be important in the case of differentiating between the -u and -o reflexes. The cases of -o are all tone 2 proveniences. Quite obviously a number of questions about the \*-əw rhyme remain to be answered, and in addition the actual nature of the form we reconstruct as \*-əw remains a mystery. The sets are:

*šəw <sup>2</sup>			h'aw <sup>5</sup>		'penis'
*rəw <sup>2</sup>			waw <sup>5</sup>		'bone'
*ŋəw <sup>1</sup>	ŋu <sup>4</sup>	ŋū	ngu <sup>4</sup>		'weep'
*kəw <sup>2</sup>	khu <sup>5</sup>	khù	hku <sup>5</sup>	khwù	'steal'
*kəw <sup>2</sup>		khù	hku <sup>5</sup>	chì <sup>1</sup>	'smoke'
*m-kərəw <sup>2</sup>			a <sup>1</sup> gu <sup>5</sup>		'dove'

The above sets have velar reflexes. Only the Hope form *chì* 'smoke' does not have a velar reflex. Here, something caused the form to palatalize, but it is not clear what.

The primary conditioning factor for the distribution of \*-əw reflexes in Lisu is obviously the place of articulation of the initial consonant in modern Lisu rather than the place of articulation of the proto initial. The examples after the palatal initials:

*s-nəw <sup>2</sup>		nyi <sup>1</sup>		'awaken'
*kyəw <sup>1</sup>		hchi <sup>4</sup>		'sweet'
*krəw <sup>1</sup>		hchi <sup>3</sup>		'horn'
*yəw <sup>1</sup>	zu <sup>4</sup>	yi <sup>4</sup>		'leak'

The only dental example is:

*təw <sup>2</sup>	tho <sup>5</sup>	htaw <sup>5</sup> -	thù-	'book; paper'
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The bilabial examples are:

*pəw <sup>2</sup>	phù	hpū <sup>5</sup>	phwì	'price'
*pəw <sup>2</sup>			phì	'great grandfather'
*bəw <sup>2</sup>	bù	bi <sup>5</sup>		'long'
*s-məw <sup>1</sup>	mù	mi <sup>3</sup> chī <sup>5</sup>		'mushroom'
*məw <sup>2</sup>	mu <sup>5</sup>	mù	mu <sup>5</sup> mð	'sky'

These reflexes are fascinating even if not what one would expect. The pattern is there, but I have no explanation of it.

4.1.4. *The \*-i, \*-əy, and \*-ay rhymes.* The most typical reflex of all these rhymes is a modern Lisu -i. An m- or γ- tends to produce an -ə reflex, while after modern aspirated velars, palatals, and spirants a high unrounded back vowel like -u is common.

Although the comments above hold with a large degree of accuracy, a great deal of unexplained variation does exist.

4.1.5. *The -u reflexes of \*-əy, \*-i, and \*-ay rhymes.* This is one of the more fascinating reflexes found in Lisu.

*k-ri <sup>2</sup>	u <sup>5</sup>		wu <sup>5</sup>	wù	'big'
*ray <sup>2</sup>			wu <sup>1</sup>		'bold'
*sə-rəy <sup>1</sup>			ū <sup>3</sup>		'count'
*s-zəy <sup>1</sup>	zo <sup>3</sup>		raw <sup>3</sup>	zu	'little'
*way <sup>1</sup>	u <sup>4</sup>	wū	wu <sup>4</sup>	wu	'buy'
*zəy <sup>3/1</sup>	zu <sup>3</sup>		rzu <sup>3</sup>		'wheat'

All of these sets have a back vowel reflex where a front vowel reflex would normally be expected.<sup>59</sup> Unfortunately I have no explanation of this set of reflexes.

4.1.6. *Reflexes of the \*-ul rhyme.* This rhyme needs to be reconstructed not because any cases exist where the final -l is retained, but because these rhymes have a distinct pattern of reflexes. These rhymes have an -ol or -ul rhyme in Written Tibetan but the -l final is found nowhere in Lolo-Burmese. The only consistent reflex of the \*-ul rhyme is the Written Burmese -we. In Lisu the range of reflexes is considerable.

*m-rul <sup>1</sup>			hu <sup>3</sup>	fwu	'snake'
*r-mul <sup>1</sup>			mū <sup>3</sup>		'body hair'
*r-kul <sup>2</sup>	tʃi <sup>1</sup>	cḡ	chi <sup>1</sup>		'sweat'

There is nothing unusual about the range of reflexes for this particular rhyme; the \*-əy and \*-əw rhymes have equally diverse sets of reflexes. Clearly the \*-ul rhyme or some equivalent must be established.

4.2. *Nasal rhymes.* Eight nasal rhymes are clearly reconstructed at the proto Lolo-Burmese level:

<sup>59</sup> An almost perfect parallel exists in Lahu where \*-əy goes to -ɔ after an \*l-initial that was preceded by a spirantal prefix at an earlier point in its history.

*-in	*-im		*-uj	*-um
	*-ij			
		*-an	*-am	
		*-aj		

Not surprisingly, there is an uneven distribution of proto-proveniences. The \*-aj rhymes, for example, are easy to find while the \*-in rhyme has only one clear Lisu example.

4.2.1. *The \*-in, \*-ij, and \*-im rhymes.* Tibeto-Burman \*-in and \*-ij both merged throughout Lolo-Burmese to \*-ij, while Tibeto-Burman \*-i.n became Lolo-Burmese \*-in. However, this difference is not reflected at all in the Lisu reflexes, and for all of these the commonest reflex is a high unrounded vowel.<sup>60</sup>

4.2.2. *The \*-uj, \*-aj, and \*-am rhymes.* These have gone to -o and -u vowels. In Fraser's grammar he talks about the difficulty of keeping the vowels -o and -u separate while Hope simply treats them both as allophones of the phoneme /-u/. In the diachronic data, the -u occurs as a reflex after velars and the -o occurs elsewhere (except in Hope, of course).

4.2.3. *The \*-un rhyme.* Only three examples of this rhyme, all of the form \*gun<sup>1</sup> goes to Lisu gwu, exist. Because these sets are suspicious, this rhyme has not been set up.

4.2.4. *Basic Table of Nasal Rhyme Reflexes.* Aside from the exceptions listed in the text above, this chart is accurate. Sets which deviate from this chart, but where the deviation is conditioned by a reconstructed y-medial are not included.

<sup>60</sup> In Written Burmese these differences are directly reflected. TB \*-in and \*-ij > WB -ań, but TB \*-i.n goes to WB -in. Similarly, TB \*-it and \*-ik > WB -ac, but TB \*-i.t goes to WB -it.

	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>
*-iŋ	}	i	i	i
*-in				
*-im				
*-aŋ	o	o	aw/u	u
*-uŋ	o/u	u	aw/u	u
*-am	o/u	o	aw/u	we
*-an			e/ye	
*-um	(see f below)			

4.2.5. *The \*-an rhyme.* This rhyme produces a front vowel, reflex, typically an -e or -ε. Quite interestingly it patterns just like the \*-at rhyme in this respect indicating that it is the place of articulation of the final rather than its nasality which governs the nature of the reflex.

4.2.6. *The \*-um rhyme.* Examples exist, but not enough to establish a pattern. The reflexes are -we, -y, and -u.

4.3. *The Checked Rhymes.* In contrast to some of the nasal rhymes just discussed, the checked rhymes (stopped) have clear reflexes in modern Lisu. In addition, the reflexes of the \*-ak rhyme represent a difficult to explain sound change. The stopped rhymes set up at the Lolo-Burmese level are those found in Matisoff's *The Loloish Tonal Split Revisited*.

*ik	*-it (*i.t)	*-uk	*-ut
	*-ip		*-up
		*-ok	*-ök
	*-ak *-at *-ap		
	*-wak *-yak		

Not surprisingly some of these are far more sparsely attested than others, but all of them appear to be sound and necessary.

Aside from the specific set of conditioning factors underlying the \*-ak to -æ and -a split, discussion of the stopped rhyme reflexes is unnecessary since the data is found in the source above.

	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>
*-ak	ɛ/a	æ/a	á/a	æ/a
*-yak	i		rghe	
*-at	e	e	e	e
*-yok	i		ye/ē	we
*-wak	o	o	aw	
*-ok	o	o	aw	u
*-uk	o	o	aw	u
*-ap	o	o	aw	we
*-ut	} i	} i	} i	} i
*-up				
*-ik				
*-it				
*-ip				

4.3.1. *The \*-ak rhyme.* The \*-ak rhyme has two distinct reflexes in Lisu:<sup>61</sup> -æ and -a. The basic conditioning factor is the relative frontness or backness of the proto-consonant which they followed. With the exceptions to be noted below, \*-ak rhymes following bilabial or dental initials have -æ reflexes, and \*-ak rhymes following palatal or velar initials have -a reflexes. The data contains 20 examples of the first situation, and 19 examples of the second situation.

Three classes of 'exceptions' to the above front to -æ and back to -a generalization exist. When a proto-bilabial cluster like \*my- or \*py- results in a Lisu reflex with a -y-medial a unique pattern emerges:

*my-	Li <sub>A</sub> -yɛ	Li <sub>B</sub> -ya	Li <sub>F</sub> -ya	Li <sub>H</sub> -a
*py-				

(The medials are from the proto-medial). Here only four sets exist, but they are well-established. The second set of 'exceptions' deals with \*r- initials. After \*ry- the reflex is the expected -æ, but after \*r- the reflex is -a. The third set of 'exceptions' has to

<sup>61</sup> The Anonymous reflex is actually -ɛ rather than -æ.

do with dental affricates. After dental affricates the \*-ak rhyme again patterns uniquely:

\*dz-                      Li<sub>A</sub> -ε                      Li<sub>F</sub> -a

Here, only three examples are found, but they are well-established.

The \*-ak rhyme has either a -æ or -a reflex in Lisu conditioned by the nature of the proto-initial. Essentially, the distinction follows a front-back distinction with the qualifications stated above.

4.3.2. *The \*-yak and \*-yok rhymes.* Strictly speaking these may not be rhymes, but rather combinations of \*-ak and \*-ok rhymes with a y-initial or a y-medial, but from the standpoint of exposition it is most convenient to classify them as rhymes.

4.3.3. *The rhymes with -i reflexes.* Here, the -i reflex is meant to symbolize a conditioned high unrounded vowel. All five of these rhymes have good, clear sets supporting the reconstruction and the Lisu reflex. Here they are grouped together not because there was a paucity of examples, but rather because the merger was so complete. The reflexes are subject to the same fluctuation that all -i reflexes are subject to. That is, for example, after ch- the -i becomes -i.

4.3.4. *The rest.* A number of rhymes are not included on the table. Particularly, \*-ek, \*-et, \*-i.t, and \*-ök are not listed. In Lisu, the reflexes of these cannot be differentiated from \*-ik, \*-it, \*-it, and \*-ok, respectively.

## 5.0 Conclusions

In one sense the conclusions of a paper like this are stated throughout the whole—not at the end. But, in another sense, it is useful to summarize what Lisu contributes to Lolo-Burmese reconstruction. Lisu illustrates the interconnection between prefixes and tone height while providing evidence for the s- and k- prefixes where they were not seen before. Lisu preserves spirantal and affricate differences which are merged in many other languages as well as suggesting a modification of the system of proto rhymes.

In terms of Lisu historical phonology, the relationship between Lisu and proto Lolo-Burmese has been outlined here. An attempt has been made to set forth the initial, tonal, and rhyme correspondences in an explicit manner where ever that seemed reasonable. This study is 'preliminary', but only in the sense that further work in Lolo-Burmese has to modify some of the conclusions reached here. One thing this study points out clearly is that Lolo-Burmese reconstruction is still in its infancy—a tremendous amount of work remains to be done.

*Standardization:*

Data from four authors, each with his own notation, is used in this study. For comprehensibility, the data has been standardized. This was done only to the extent that such standardization could be done mechanically. For several things, Fraser (1922) seems to have used one symbol in complementary distribution to stand for more than one sound. This is noted.

*Tones.* These may be mechanically translated from one system to the other. Hope has one additional tone, a high-fall tone symbolized by ^, but this is clearly a sandhi tone originating from a mid tone in sentence final position.

<i>Standardized</i>	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>	
´	1	´	1	´	High 55
ˆ	2	ˆ	2	ˆ	Mid-Rise 35
–	3	^	3	–	Mid
					Laryngealized
	4	–	4		Mid
˘	5	˘	5	˘	Low 21
˙	6	–?	6	˙	Low
					Laryngealized

*Consonants.* Hope indicates the palatal series by the use of a -y-. Fraser's sh- and sy- appear in what is essentially complementary distribution and thus they have been treated as allophones of the same phoneme /ʃ-/. Likewise, his w- and v- have been phonemicized into /w-/.



<i>Standardized</i>	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>
x-	x-	x-	hh-	x-
h-	h-	h-	h-	h-

Fraser's hh- versus h- distinction has been standardized on the basis of the reflexes in the other dialects.

<i>Standardized</i>	<i>Anonymous</i>	<i>Burling</i>	<i>Fraser</i>	<i>Hope</i>
ɣ-	ɣ-	ɣ-	rg-	ɣ-
ɣə			rghe	
-ə			-rghe	
ɣ <sup>i</sup>			rg	
-i			-rg	
š-	f-	š-	sh-/sy-	sy-
c-	tʃ-	c-	ch-	ty-
ch-	tʃh-	ch-	hch-	thy-
j-	dʒ-	j-	j-	dzy-
ř-		ř-	rz-	
w-	u-	w-	w-/v-	v-

#### *Vowels*

æ		æ	á	æ
ɛ			ye	
i	u		i	i
o	o		aw	
u		u	ũ	
we			ē	we

#### *The data*

A modern Lisu form normally only has three parts: a tone, an initial, and a final. Thus there are only three things which can fail to correspond as expected. Items which deviate from the expected form by more than one feature have not been included. Deviant initials are marked by a superscript I, deviant finals by F, and deviant tones by T.

Reconstructions designated with RB (for Robbins Burling's *Proto-Lolo-Burmese*) represent a thorough reworking of Burling's

early reconstructions in light of subsequent discoveries and in light of the Written Burmese evidence. In addition, missing Lisu forms have been added. Reconstructions found in James A. Matisoff's *The Loloish Tonal Split Revisited* (TSR) are generally not included below. Such reconstructions are only added in order to supply a missing form or to voice a disagreement with some aspect of the analysis found there.

The sets:

ABLE \*s-brik (TSR 68) WB phrac Lh pí Li<sub>H</sub> pó Ak pyeu LS  
BE AFRAID/FRIGHTEN (TSR 104) \*s-krok Li<sub>F</sub> c̣à \*grok WB  
krok Li<sub>A</sub> jò Ak gu LS

The \*grok is an additional form necessary to account for the Anonymous and the Akha forms.

AFTERWARD/NEXT ONE \*s-nak (TSR 151) WB nak-phran  
'tomorrow' Li<sub>A</sub> ká-né Li<sub>F</sub> ká-né Ak na-ya-k'o LS-LS-LS

Lh né-qlhò? 'next year' and Sani na 44 'next' come from a variant with a medial -y-, \*s-nyak.

ANGRY \*m-tsik (TSR 77) Li<sub>F</sub> dzi

ANIMAL see CHILD

ANT \*p-rwak (TSR 183) WB p̄rwak Lh p̄ú-γ̄ò? Li<sub>B</sub> b̄ò- Li<sub>F</sub>  
b̄ò-l̄q̄ Ak a-ho H-M

ANTELOPE \*hya<sup>2</sup> RB Lh há Li<sub>B</sub> hyà Li<sub>F</sub> h'yà Li<sub>H</sub> hyà Ak ha L

ASCEND \*m-tak (TSR 98) Li<sub>F</sub> d̄q̄ \*s-tak 'carry' Li<sub>F</sub> t̄q̄

ASHAMED see SHAMEFUL

ASK \*s-na<sup>1</sup>-\*n̄oy<sup>3</sup> RB Lh na-ni Li<sub>A</sub> n̄g-ni Li<sub>B</sub> n̄g-nyí Li<sub>F</sub> n̄g-ni  
Li<sub>H</sub> na-nȳ Ak na-ha H-L

AWAKEN \*s-n̄ow<sup>2</sup> WB hn̄úi Lh n̄ō Li<sub>F</sub> ȳl̄-nyí gi Ak noe L

BAMBOO \*wa<sup>2</sup> RB WB w̄á Lh v̄á Li<sub>H</sub> -w̄á Ak za L

BANANA \*(s-)\*ɲak (TSR 139) Li<sub>A</sub> ɲa Li<sub>B</sub> ɲa-sú Li<sub>F</sub> ɲa-sí<sup>5</sup>  
Li<sub>H</sub> ɲa-ma Ak ɲa M < \*k-ɲak WB h̄ɲak-pyo-sí

BARK OF A TREE \*s-kuk (TSR 71) WB khok Li<sub>F</sub> -k̄ó Ak  
a-h'o H-HS

BARKING DEER \*kȳy<sup>1</sup> RB WB khye Lh chi Li<sub>B</sub> ch̄x̄ Li<sub>F</sub>  
chi Li<sub>H</sub> chi Ak ci-ha H-L

BASKET \*kak (TSR 7) Li<sub>F</sub> kh̄q̄-tu

BEAN \*(s-)nök (TSR 140) WB nok Lh nô? Li<sub>A</sub> á-nq Li<sub>B</sub> á-nq  
Li<sub>F</sub> á-nq Ak a-nui H-HS

A parenthesized s- indicates that the WB cognate has a plain rather than aspirated nasal; i.e., the s-prefix only in Loloish, not Burmish. This form was reconstructed \*(s) -nok in TSR, but the Akha form shows the \*-ök rhyme.

BEAR \*d-wam<sup>1</sup> WB wam Lh yê<sup>I</sup> Li<sub>A</sub> γo-phà Li<sub>B</sub> wo-phà Li<sub>F</sub>  
wo-phà Ak hm H

BEE \*bya<sup>2</sup> RB WB pyâ Lh pê Li<sub>A</sub> á-byè Li<sub>B</sub> byà Li<sub>F</sub> byè  
Li<sub>H</sub> byà Ak bya L

BELOW \*ok (TSR 173) Li<sub>A</sub> ò-s<sub>1</sub> Li<sub>F</sub> wù-pó Ak la-o L-LS

In TSR not this variant but rather \*ʔok is set up. The Lisu forms show the need to set up the \*ok variant as well as showing that the Akha forms cited as variants of the \*ʔok provenience could simply be from different proveniences.

BIG \*k-ri<sup>2</sup> RB WB krí Li<sub>A</sub> ù Li<sub>F</sub> wù Li<sub>H</sub> wù Akha hui L. The  
\*k- prefix is dropped in Lisu and Akha.

BIRD \*s-ɲak (TSR 141) WB hɲak \*k-ɲak Lh ɲâ? Li<sub>A</sub> nyé Li<sub>B</sub>  
nyé Li<sub>F</sub> nyé Li<sub>H</sub> nyé Ak nga-ceh M-H

The initial is not irregular, but regular with the \*ɲ-palatalizing before the \*-ak rhyme. In addition, in TSR the Lolo-Burmese prefix is reconstructed \*s- on the basis of Written Tibetan sɲag 'sing; voice', but I reconstruct a \*k- on the basis of the tonal reflex in Lisu. The \*k- is certainly plausible since it could be the Lolo-Burmese voiceless velar animal prefix found before the names of animals. Compare \*kə-lok 'maggot', \*k-rak 'chicken', and \*k-rwak 'rat, mouse'. Compare also Akha k'a L found in front of the animal names.

BITE \*C-kwap. (TSR 90) WB kwap Li<sub>A</sub> khò Li<sub>F</sub> khò Li<sub>H</sub> khù  
Ak kaw LS

The suggested \*C-krap version would be palatalized in Lisu.

BITTER \*ka<sup>2</sup> RB

WB khâ Lh qhâ Li<sub>A</sub> khwà Li<sub>B</sub> khwà Li<sub>F</sub> khwà Li<sub>H</sub> khwà  
Ak k'a L

BLACK \*(s-)nak (TSR 142) Li<sub>F</sub> nq Ak na HS WB nak

BLANKET \*M-pap (TSR 78) Lh á-bô? Li<sub>A</sub> ž'í-bu Li<sub>F</sub>  
yí-bu<sup>F</sup>

The Fraser form is incorrectly cited in TSR. The set is tentative

due to the large number of Lisu forms meaning cape, clothing, blanket, etc., and the irregular Lisu finals.

BLOOD \*swəy<sup>2</sup> RB WB swê Lh ši Li<sub>B</sub> šù Li<sub>F</sub> sî Li<sub>H</sub> ši Ak shi L

BLOW (s-)mut (TSR 143) WB hmut Li<sub>F</sub> m̄ Ak mi HS

BLUNT \*dum<sup>2</sup> RB WB t̄m Li<sub>B</sub> dù-le Ak yaw-dm M-L

BOAT \*s-ləy<sup>1</sup> WB a-hle Lh hə-lò?-qō Li<sub>F</sub> l̄

It is the first syllable of the Lahu form which is cognate.

BODY \*guy<sup>1</sup> WB a-koŋ Li<sub>F</sub> ḡ Ak g'aw H

A g' (voiced velar fricative) is the regular reflex of \*g- without a -r- or -w- glide in Akha.

BOIL \*s-tsu<sup>1</sup> RB WB tshu Li<sub>B</sub> ts̄ Li<sub>F</sub> ts̄

The Fraser form was incorrectly cited under \*s-gyak 'cause to boil' in TSR.

BOIL see COOK

BOLD \*ray<sup>2</sup> WB r̄i Li<sub>F</sub> n̄-wù

BONE \*rəw<sup>2</sup> RB WB r̄i Lh -γ̄ Li<sub>F</sub> wò Ak yoe L

BOOKS/PRINTED MATTER \*təw<sup>2</sup>; READ \*rəy<sup>1</sup> WB th̄i; r̄e Lh th̄-γ̄? Li<sub>A</sub> th̄-γ̄ Li<sub>F</sub> th̄-γ̄ Li<sub>H</sub> th̄-γ̄ 'paper'

The second syllable of the Lahu form is not related to WB r̄e 'read', but may be related to WB rac 'wind around, encircle'.

BORROW \*kyəy<sup>2</sup> RB WB khȳ Lh ch̄i Li<sub>F</sub> chi Li<sub>H</sub> chi

BOWELS \*u<sup>1</sup> RB WB u Li<sub>B</sub> wu Li<sub>F</sub> wu Ak u<sup>T</sup> L

BRAIN \*s-nok (TSR 156) WB ū-hnok Li<sub>F</sub> wú-ní'

In TSR this form was listed under the open tone variant. Actually it could fit with either form, but in either case the final is not quite what is expected.

BRANCH (TSR 43) \*s-gak. WB a-khak Lh qá Li<sub>A</sub> sí-ká \*(s-)gak. Li<sub>F</sub> sí-l̄-ka

Here the difference between the Anonymous and Fraser forms requires that two different proto-forms be set up. In TSR the Fraser form is cited under \*s-gak, but it should be under \*(s-)gak.

BREAK IN TWO/BRITTLE (TSR 40) \*tsat or cat. WB tshat

Lh ch̄? Li<sub>H</sub> chw̄ Ak tseh HS \*C-tsat or \*C-cat. Li<sub>F</sub> chw̄

Note that the Akha and Lisu initials do not agree. Normally both Akha and Lisu preserve the distinction between the dental and palatal affricates, but before some rhymes with front vowel reflexes there is disagreement.

BRIDGE \*jam<sup>1</sup> RB Lh cò Li<sub>F</sub> gò-jɛ Ak dzim H

Again, both Lisu and Akha disagree.

BUMP/COLLIDE (TSR 80) \*gruk Li<sub>H</sub> jwù \*N-kruk. Lh gá?  
Li<sub>F</sub> jwe<sup>F</sup>

The Hope form necessitates the \*gruk variant. The Fraser form makes the -r- medial necessary rather than just hypothetical.

BUNCH \*wəy<sup>1</sup> Lh vî Li<sub>A</sub> γi Li<sub>F</sub> xə<sup>1</sup>

BURN/CAUSE TO BURN (simplex-causative; TSR 62) \*duk  
WB tok Lh tò? Li<sub>A</sub> dò Ak do LS \*s-duk Li<sub>F</sub> á-tó Li<sub>H</sub> á-tú 'fire'

BUY \*way<sup>1</sup> RB WB wai Lh vi Li<sub>A</sub> u Li<sub>B</sub> wu Li<sub>F</sub> wu Li<sub>H</sub> wu  
Ak zeu H

CALL \*kwaw<sup>1</sup> RB WB khau Lh qho Li<sub>A</sub> khḡ Li<sub>B</sub> khu Li<sub>F</sub> khu  
Li<sub>H</sub> khwu Ak ku H

The laryngealization in the Anonymous is unexplained.

CARRY see ASCEND

CAT \*k-ruŋ WB kroŋ

CATCH see SEIZE

CAUSE \*sə-dzəy<sup>1</sup> WB ?ə-tse Lh ci Li<sub>A</sub> tsɿ Li<sub>F</sub> tsɿ

CAVE/GROTTO see STONE

CHAFF \*pway<sup>2</sup> WB phwâi Lh vâ?-phî Li<sub>B</sub> dza-phò Ak pui L

CHANGE INTO \*s-lay<sup>2</sup> WB hlâi Li<sub>F</sub> lí Li<sub>H</sub> lwí

CHASE \*m-rak (TSR 162) Lh γà? Li<sub>A</sub> gḡ Li<sub>F</sub> gḡ Li<sub>H</sub> gḡ Ak g'a  
LS 'hunt'

Here the initial and the nasal prefix fused giving the Lisu g-initial. The Lahu and Akha initials show no trace of the \*m-prefix.

CHICKEN \*kə-rak > \*ʔə-rak (TSR 184) WB krak Lh γâ? Li<sub>A</sub>  
á-γá Li<sub>F</sub> á-γá Li<sub>H</sub> á-γá Ak ya M~za M

The -ə is necessary to prevent the initial \*r- from becoming an h-. In both the Lahu and WB forms the \*k- remained a \*k- but in Lisu it progressed to a \*ʔə-. The Akha tone is regular.

CHILD \*za<sup>2</sup> RB WB sâ Lh yâ Li<sub>A</sub> zà Li<sub>B</sub> ʔà Li<sub>F</sub> rà-nwɛ̄ Li<sub>H</sub>  
zà-nwɛ̄ Ak za L

The second syllable of the Fraser and Hope forms means 'shoot, sprout' and is from \*s-nyok. The \*za<sup>2</sup> means 'child, man, person, young animal, etc.'

CHIN/CHEEK \*ba<sup>2</sup> RB WB pâ Lh pâ- Li<sub>B</sub> bà- Li<sub>H</sub> bà- Ak ba L

- CHOOSE \*səy<sup>1</sup> WB siy Lh ši Li<sub>A</sub> si Li<sub>F</sub> sɿ  
 CLEAR/PURE \*say<sup>2</sup> WB sâi Li<sub>F</sub> si-ša (first syllable)  
 CLEAR WEATHER \*m-ba<sup>3</sup> WB pa' Lh ba Li<sub>F</sub> ba Li<sub>H</sub> ba Ak  
 ba 'shine'  
 COLD \*grak (TSR 99; Sino-Tibetan Conspectus fn. 124) Li<sub>F</sub>  
 jyə  
 COLLECT/GET/OBTAIN \*ra<sup>3</sup> 'get, obtain' WB ra' Lh ya Li<sub>A</sub>  
 wa Li<sub>H</sub> wa Ak za<sup>I</sup> M \*(s)-ra<sup>3</sup> 'collect' WB ra' Lh šə Li<sub>A</sub> šwa  
 Li<sub>F</sub> ša  
 COMFORTABLE/PLEASANT/EASY \*sa<sup>1</sup> RB WB sa Lh ša Li<sub>A</sub>  
 sa Li<sub>F</sub> sa Li<sub>H</sub> sa Ak sa H  
 COME \*la<sup>1</sup> RB WB la Lh là Li<sub>A</sub> la Li<sub>B</sub> la Li<sub>F</sub> la Li<sub>H</sub> la Ak la H  
 COMPLEMENTIZER, IMPERATIVE \*wəy<sup>1</sup> Lh vi; vè Li<sub>H</sub> γə  
 COOK \*s-gyak (TSR 61) WB khyak Lh cá Li<sub>A</sub> cá Li<sub>F</sub> cyá Li<sub>H</sub> cá  
 Neither of the Lisu forms cited in TSR is correct. The tsu form  
 goes with \*tsu<sup>1</sup> 'boil' and the tsə form presumably comes from  
 \*(s-)dzak.  
 COPPER \*grəy<sup>2</sup> RB WB krê Lh kî Li<sub>A</sub> jì Ak gui L  
 COUNT \*sə-rəy<sup>1</sup> WB ?ə-re Li<sub>A</sub> u  
 CRAZY \*sə-ru<sup>2</sup> WB ?ə-rû Lh γû Li<sub>F</sub> wú Ak u L  
 The Lahu form is not preglottalized.  
 CROOKED/WINDING \*gok (TSR 2) WB kək Lh qə? Li<sub>A</sub> gò  
 Li<sub>F</sub> gò Ak g'o LS GIVE BACK/RETURN \*C-kok (TSR 34) Lh  
 Lh qhə? Li<sub>F</sub> khò Ak k'o LS  
 CRY see WEEP  
 CUBIT \*(s-)gyak (TSR 100) Li<sub>F</sub> ca  
 CUSTOM/HABIT/LAW \*ləy<sup>2</sup> WB le'<sup>T</sup> Lh ð-lí Li<sub>H</sub> yí-lí  
 DAY \*nəy<sup>3</sup> RB WB ne' Li<sub>A</sub> ni Li<sub>F</sub> nyi Ak nah M  
 DAY/SPEND THE NIGHT \*ryak (TSR 174) OB ryak WB rak  
 Lh há Li<sub>F</sub> hyə̀ Ak ya LS Sa he 22s Na xǎ 34  
 DECAY/PUS \*cwəy<sup>2</sup> WB tshwê Li<sub>F</sub> bì-chì Li<sub>H</sub> chì  
 The first syllable of the Fraser form comes from \*bup 'rot; pus'.  
 DEEP \*s-nak Lh ná Ak na LS Sa ne 55 Li<sub>F</sub> nǎ  
 DEER see ANTELOPE  
 DESCEND \*zak (TSR 121) Li<sub>A</sub> zè Li<sub>F</sub> řǎ̀ Li<sub>H</sub> yǎ̀  
 DESTROY \*pyak (TSR 64) Li<sub>F</sub> phyé  
 DIE \*šəy<sup>1</sup> RB WB se Lh ši Li<sub>A</sub> ši Li<sub>B</sub> šu Li<sub>F</sub> ši Li<sub>H</sub> ši Ak shi H  
 DIFFICULT/POOR/SAD \*s-ra<sup>2</sup> WT sra-ba WB hrâ 'be scarce'

Lh hā Li<sub>A</sub> šwá Li<sub>F</sub> šá Li<sub>H</sub> swá Ak sha L Sani ša 55

DIG \*m-du<sup>2</sup> RB WB tū Lh dū Li<sub>B</sub> dù Ak du L

DIVIDE/APPORTION (simplex-causative) \*bum<sup>1</sup> WB ʔə-pu

Lh pè 'to share; divide' Li<sub>A</sub> by<sup>T</sup> Li<sub>F</sub> bwe Li<sub>H</sub> bwe \*s-bum<sup>1</sup> WB

ʔə-phum 'sort' Li<sub>A</sub> py Li<sub>F</sub> pwe

DOG \*kwəy<sup>2</sup> RB WB khwê Lh phî Li<sub>A</sub> khî-gà Ak kui L

DOVE \*m-krəw<sup>2</sup> RB WB khrûi; khyûi Lh gû Li<sub>F</sub> á-gù Ak gu L

As far as the Lisu form is concerned this form could also be reconstructed with the \*ky- initial. Either initial normally palatalizes in Lisu. The nasal prefix seems to fuse with the initial to produce a voiced velar stop. Compare 'chase'.

DREAM \*(s-)mak (TSR 144) WB mak Lh mâ? Li<sub>B</sub> mya Li<sub>F</sub> myə Ak ma HS

The emergence of the -y- in the Lisu forms apparently represents a secondary palatalization paralleling the normal development in Lepcha and the occasional development in Tibetan (WT) (Paul Benedict, personal communication).

DRINK \*m-day<sup>1</sup> RB Lh dō Li<sub>A</sub> do Li<sub>B</sub> do Li<sub>F</sub> do Li<sub>H</sub> du Ak daw H

DROP (TSR 82) \*m-tsak WB ʔə-tsak Lh jâ? Ak dza HS \*s-tsak Li<sub>A</sub> tsé<sup>2</sup>

DRUNK \*yit (TSR 163) WB yac Li<sub>A</sub> ži Li<sub>B</sub> yi Li<sub>F</sub> yì Ak yeh LS

DUNG \*kyəy<sup>2</sup> RB WB khyê Li<sub>B</sub> chî Li<sub>F</sub> chî Ak ce L

EAR \*s-na<sup>2</sup>-\*s-baŋ<sup>1</sup> RB WB nâ Lh nâ-pə Li<sub>A</sub> ná-pə Li<sub>F</sub> ná-pə Li<sub>H</sub> ná-pu Ak na-baw L-H (< \*baŋ<sup>1</sup>)

The second syllable of all the Loloish forms means 'lobe'.

EASY see COMFORTABLE/PLEASANT

EAT/FEED (simplex-causative) \*dza<sup>2</sup> 'eat'. WB tsā Lh câ Li<sub>A</sub> dzà Li<sub>B</sub> dzà Li<sub>F</sub> dzà Li<sub>H</sub> dzà Ak dza L \*s-dza<sup>2</sup> 'feed' Lh cā Li<sub>F</sub> cá<sup>1</sup> Li<sub>H</sub> tsá Ak sha M

EGG \*u<sup>3</sup> RB WB u' Lh u Li<sub>A</sub> -fū Li<sub>B</sub> -fū Li<sub>F</sub> xū Li<sub>H</sub> fwū Ak u<sup>THS</sup>

EIGHT \*s-ryat (TSR 171) OB hryat WB hrac Atsi sīt Maru se? Lh hí Li<sub>F</sub> hì Ak yeh LS Sa he 22s Na xé 34

EMBRACE/HOLD IN ARMS \*k-rap WB thak-krap \*sə-rap Li<sub>A</sub> yo \*s-rap Li<sub>F</sub> só

The Fraser form was listed erroneously under 'rub, stroke' in

TSR. Notice the prefixal variation, particularly, the \*k- and \*s- substitution.

EMERGE \*m-twak (TSR 102) Li<sub>F</sub> dɔ

EMPTY \*gaŋ<sup>2</sup> RB WB kân Lh qò Li<sub>A</sub> gò Li<sub>B</sub> yí-gò

EXCEL \*s-lwan<sup>1</sup> WB hlwan Li<sub>F</sub> myæ̀-łe

EYE \*(s-)myak (TSR 145) WB myak Li<sub>F</sub> myæ̀ Ak mya HS

FAR \*wəy<sup>2</sup> RB WB wê Lh ví Li<sub>A</sub> γò Li<sub>B</sub> γò Li<sub>F</sub> γò

FAT/GREASE \*tsi<sup>1</sup> RB WB tshi Li<sub>A</sub> tshì Li<sub>B</sub> tshə Li<sub>F</sub> tshi Li<sub>H</sub> tshì; tshì Ak tsi H

The laryngealization on the Anonymous form is odd. The tones on the Hope forms are sandhi tones or mistakes.

FEAR see BE AFRAID

FEMALE SUFFIX \*ma<sup>3</sup> RB WB ma' Li<sub>A</sub> -mā Li<sub>B</sub> -mā Li<sub>F</sub> -mā Li<sub>H</sub> -mā Ak ma M

FIELD see GROUND

FISH RB \*ŋa<sup>2</sup> WB ŋâ Lh ŋâ \*s-ŋa<sup>2</sup> Li<sub>A</sub> ŋwá Li<sub>B</sub> ŋwá Li<sub>F</sub> ŋwá

FIVE \*ŋa<sup>2</sup> RB WB ŋâ Lh ŋâ Li<sub>A</sub> ŋwà Li<sub>B</sub> ŋwà Li<sub>F</sub> ŋwà Li<sub>H</sub> ŋwà Ak ŋa L

FLOWER \*(sə-)wat (TSR 185) Li<sub>F</sub> sɿ-ve

FLY \*hyam<sup>1</sup> RB WB pyam Li<sub>A</sub> bi Li<sub>B</sub> byø Li<sub>F</sub> be Li<sub>H</sub> bywe

FOOT \*krəy<sup>1</sup> RB WB khre Lh khi-še Li<sub>A</sub> chɿ-phé Li<sub>F</sub> chɿ-phé Ak kui H

FOUR \*b-ləy<sup>2</sup> WB lê Maru bit Lh ð Li<sub>A</sub> li<sup>T</sup> Li<sub>F</sub> li<sup>T</sup> Ak oe L

There are irregularities with this word throughout Loloish.

FOWL see CHICKEN

FRIEND \*kyaŋ<sup>2</sup>-\*pak WB khyân; phak Lh ð-chô Li<sub>F</sub> chò-phá Li<sub>H</sub> chwè-phê<sup>T</sup>

FROG \*s-pa<sup>2</sup> RB WB phâ Lh pā Li<sub>A</sub> ó-pá Li<sub>B</sub> wú-pá Li<sub>F</sub> ú-pá Ak pa H

FRUIT/SMALL ROUND OBJECT \*si<sup>2</sup> RB WB sí Lh í-šǐ Li<sub>A</sub> sǐ-sǐ Li<sub>B</sub> só-sò Li<sub>F</sub> si Li<sub>H</sub> sǐ Ak a-si H-L

It is the first syllable of the Lisu forms which is cognate.

FULL see SATIATED

GOAT \*V-cit (TSR 27) WB tshit Lh á-chè? Li<sub>A</sub> á-chì Li<sub>F</sub> á-chì Li<sub>H</sub> á-chì Ak ci LS

All the Lisu forms except Fraser have lost their laryngealization.



GOLD/YELLOW \*s-rəy<sup>1</sup> RB WB hrwe Lh š̌i Li<sub>A</sub> š̌i Li<sub>B</sub> š̌u  
Li<sub>F</sub> š̌i Li<sub>H</sub> ši Ak shi H

GRANDFATHER, GREAT \*pəw<sup>2</sup> Li<sub>H</sub> phì

GRASS/WEED \*mruk (TSR 138) Lh mù? Li<sub>A</sub> mò Li<sub>B</sub> mò Li<sub>F</sub>  
mò Ak mo LS

This set is not related to 'shoot/sprout' as suggested in TSR.

GRIND \*m-krit (TSR 94) Li<sub>F</sub> jwe

GROUND/FIELD \*rya<sup>1</sup>-\*mrəy<sup>1</sup> RB OB ryā WB ra~ya 'field'

Lh he mi- Li<sub>A</sub> ha-m̄ Li<sub>B</sub> ha; m̄ Li<sub>F</sub> ha-mi Li<sub>H</sub> mi- Ak ya H

GUN/EXPLODE \*(s)-bök (TSR 108) WB phok Li<sub>A</sub> pō Li<sub>F</sub> pō

Li<sub>H</sub> pu Ak beu HS

HAIL \*wa<sup>2</sup>-\*si<sup>2</sup> Lh vā-š̌i Li<sub>F</sub> wà-si Li<sub>H</sub> wà-si

The second morpheme means 'small round object' (see 'fruit').

HAIR \*tsam<sup>1</sup> RB WB tsham Li<sub>A</sub> ó-tshe Li<sub>F</sub> tshē

HAIR OF BODY \*r-mul<sup>3</sup> WB mwê<sup>T</sup> Lh mu Li<sub>B</sub> m̄ Li<sub>F</sub> m̄

HAND \*lak (TSR 166) WB lak Li<sub>A</sub> l̄ Li<sub>B</sub> l̄ Li<sub>F</sub> l̄ Li<sub>H</sub> l̄

HAWK/KITE \*dzwan<sup>1</sup> RB WB tswan Lh á-cè Li<sub>F</sub> dzē Ak dze H

HEAD/TOP \*sə-u<sup>2</sup> RB WB ?ə-û Li<sub>A</sub> ó-gù Li<sub>B</sub> wú-du Li<sub>F</sub> wú-du

Ak u L

HEAR \*gra<sup>2</sup> RB WT sgra 'sound, noise' WB krâ Lh kâ Li<sub>A</sub>

pā-jà Li<sub>F</sub> pā-jà Li<sub>H</sub> bæ-dzà<sup>1</sup> Ak ga L

HEART \*k-nik (TSR 146) WB hnac-lûm Li<sub>A</sub> n̄-mā Li<sub>B</sub> n̄-mā

Li<sub>F</sub> n̄-mā Li<sub>H</sub> n̄-mā Ak a-nui M-M

Despite the Written Tibetan form *sn̄ȳiŋ* 'heart', this form is reconstructed with a \*k- prefix and an \*-ik rhyme. The Akha and Lisu tones indicate the \*k- prefix, and the stopped nature of the WB and Lisu forms require a \*-ik.

HEAVY \*ləy<sup>2</sup> RB WB lê Li<sub>A</sub> lì Li<sub>B</sub> lì Li<sub>F</sub> lì Li<sub>H</sub> lì

HELP \*m-kra<sup>1</sup> Lh ga Li<sub>A</sub> ži-jwa Li<sub>F</sub> ja Ak ga H

HIGH \*mraŋ<sup>3</sup> RB WB mraŋ<sup>1</sup> Li<sub>A</sub> m̄ Li<sub>B</sub> m̄ Li<sub>F</sub> m̄

HOLE/HOLLOW \*kuŋ<sup>3</sup> 'hole' Lh ð-qhə Li<sub>A</sub> kh̄ Li<sub>B</sub> khu Li<sub>F</sub>

khu Li<sub>H</sub> khw̄ \*s-kuŋ<sup>2</sup> 'hollow' WB khōŋ Lh qō

HORN \*krəw<sup>1</sup> WB khruì Lh ð-khə Li<sub>F</sub> wú-chī \*kyəw<sup>1</sup> WB

khyui Ak coe H

HORSE \*mraŋ<sup>2</sup> RB WB mrāŋ Lh í-mû Li<sub>A</sub> á-mò Li<sub>B</sub> á-mò

Li<sub>F</sub> á-mù Li<sub>H</sub> á-mù Ak mah L

HOT \*tsa<sup>1</sup> Lh cha Li<sub>A</sub> tshā Li<sub>F</sub> tsha Li<sub>H</sub> tsha Ak tsa H

HOUSE \*k-yim<sup>1</sup> WT khyim Li<sub>A</sub> he Li<sub>F</sub> h'i Li<sub>H</sub> hi  
A \*yim<sup>1</sup> variant also exists.

HUMAN CLASSIFIER see PERSON, CLASSIFIER

HUNDRED \*rya<sup>1</sup> RB OB ryā WB ra Lh ha Li<sub>A</sub> he Li<sub>B</sub> hya  
Li<sub>F</sub> h'yæ Li<sub>H</sub> hya Ak ya H

I \*ŋa<sup>1</sup> RB WB ŋa Lh ŋà Li<sub>A</sub> ŋwa Li<sub>B</sub> ŋwa Li<sub>F</sub> ŋwa Li<sub>H</sub> ŋwa  
Ak ŋa H

INSECT \*bəw<sup>2</sup> WB pūi Lh p̄i Li<sub>B</sub> bù 'silk' Li<sub>F</sub> bi-di 'bug'  
Ak boe L

INTERROGATIVE MARKER \*la<sup>2</sup> RB WB lâ Lh lâ Li<sub>A</sub> là Li<sub>B</sub> là  
Li<sub>F</sub> là Li<sub>H</sub> là

INTESTINES see BOWELS

IRON \*šam<sup>1</sup> RB WB sam Lh šo Li<sub>A</sub> xo Li<sub>B</sub> xwo Li<sub>F</sub> xo Ak  
shm H

JOIN \*s-dzak (TSR 44) WB tsak Lh cá Li<sub>F</sub> tsá Ak tsa LS  
Mistakenly marked as tonally deviant in TSR.

JOINT \*(s-)dzik (TSR 45) Lh cí Li<sub>F</sub> ts̄i; ts̄i Ak a-tsui H-LS

KITE see HAWK

KNIFE \*ta<sup>2</sup> WB thâ Li<sub>A</sub> á-thà Li<sub>F</sub> thà Li<sub>H</sub> á-thà

KNOT \*tum<sup>2</sup> WB thûm Li<sub>F</sub> thwè Li<sub>H</sub> thwè Ak tm L

KNOW \*syəy<sup>2</sup> RB WB si' Lh ši Li<sub>A</sub> sí Li<sub>B</sub> sí Li<sub>F</sub> só Li<sub>H</sub> só

LAC \*s-grip (TSR 46) WB khrip Lh a-kí Li<sub>A</sub> cí

LADLE \*kyok > \*k-yok WT skyogs WB yok Li<sub>F</sub> kq Li<sub>H</sub> ?wó

In the WB neither the s- nor the cluster initial k- was kept.  
In Fraser the k- prefix pre-empted the initial after having raised  
the word to the mid tone class. In Hope the k- prefix raised  
the tone to the high-rising class. The Fraser form is important  
in that it preserves the only overt evidence for the k- prefix  
aside from tones and altered initials.

LEAF \*V-pyak (TSR 29) WB phak Li<sub>A</sub> phyè Li<sub>F</sub> s̄i-phyæ Li<sub>H</sub>  
yí-phyà Ak a-pa H-LS

The Lisu form, marked deviant in TSR, is regular.

LEAK \*yəw<sup>1</sup> RB WB yui Li<sub>A</sub> ži Li<sub>F</sub> yi Ak yoe H

LEARN \*saŋ<sup>1</sup> WB saŋ Li<sub>A</sub> sɔ̄ Li<sub>F</sub> sɔ̄ Li<sub>H</sub> su Ak saw H

LEECH \*k-r-wat WB krwat (TSR 167)

LEND see BORROW

LEND \*s-ŋa<sup>2</sup> RB WB hŋâ Lh ŋā Li<sub>A</sub> ŋwá Li<sub>B</sub> ŋwá Li<sub>F</sub> ŋwá Li<sub>H</sub> ŋwá Ak ŋa L

LICK \*m-lyak (TSR 179) Li<sub>F</sub> l̥ Akha myeu LS Bisu b̥

LIE DOWN (SLEEP)/PUT TO SLEEP (simplex-causative) (TSR 180). \*yip WB ʔip Lh yì? Li<sub>A</sub> -è-tá Li<sub>B</sub> yì-tá Li<sub>F</sub> yì-tá Sa ji<sub>22s</sub> Li<sub>H</sub> ʔi-tá Ak yu LS \*s-yip WB sip Lh í Li<sub>F</sub> ší Li<sub>H</sub> ší Sa ši 55

The \*s-yip provenience was \*ʔyip in TSR.

LITTLE \*s-zəy<sup>1</sup> WT ziy Li<sub>A</sub> ž̥ Li<sub>F</sub> r̥ Li<sub>H</sub> z̥

The pre-glottalized z- patterns like a Lisu y- initial.

A LITTLE \*nyak (TSR 158) WB nyak Li<sub>A</sub> n̥

LIVER \*siŋ<sup>2</sup> RB WB s̄n Lh ɔ-š̄é Atsi siŋ Li<sub>F</sub> si-phyé

The second morpheme in the Lisu form looks like \*C-pyak 'leaf', but without the tone lowering prefix. Note the form is not laryngealized. Lisu forms which either have a palatal reflex or a reflex with a -y- medial lose their laryngealization.

LOAD/BURDEN \*wan<sup>1</sup> WB wan Lh ɔ-vi<sup>F</sup> Li<sub>F</sub> γə Ak yeh H

LONG \*s-riŋ<sup>1</sup> WB hraŋ Lh yì; ši Li<sub>A</sub> n̥ Li<sub>H</sub> n̥

The Lahu forms are what one would expect if there was both a prefix pre-empted and a non-prefix-pre-empted variant.

LOOM/WEAVE/SPIN \*rak (TSR 192) Li<sub>B</sub> y̥ Li<sub>F</sub> y̥

LOSE \*C-pyok WB phyok Li<sub>A</sub> pḥ-e Li<sub>F</sub> pḥ-e

LOUSE \*šan<sup>1</sup> RB Lh še Li<sub>F</sub> xi \*šan<sup>2</sup> WB s̄n Ak sheh L

MACHINE \*C-cak (TSR 33) WB cak 'wheel' Lh cà? Li<sub>A</sub> cḥè Li<sub>F</sub> chy̥è Li<sub>H</sub> cḥà-ḷè

This is an early loan from Sanskrit through Pali. It fits all the correspondence patterns except one: all the other forms with a palatal reflex are delaryngealized.

MAGGOT \*k-luk (TSR 186) WB lok Lh pù -lú-qā Li<sub>A</sub> hó Ak a-lu H-M

In TSR the Akha form lu-tah HS-L is given, but this must be from \*sə-luk since the regular reflex of \*kə-luk would be lu M. Notice that the Akha form comes from \*kə- while the Lisu comes from a plain \*k- prefix.

MANY \*mra<sup>2</sup> RB WB myá Lh mâ Li<sub>A</sub> my̥ Li<sub>F</sub> my̥è Li<sub>H</sub> my̥à Ak mya L

Note the Lisu vowel parallels the behavior of \*-ak after a -y- medial.

MEAT \*ša<sup>2</sup> RB WB sâ Lh ð-šā Li<sub>A</sub> xwà Li<sub>B</sub> xwà Li<sub>F</sub> xwà  
Li<sub>H</sub> xwà Ak sha L  
The Akha sha L is obviously the s-flesh prefix and still is  
retained as such in Akha.

MILK see SUCK

MONKEY \*myok (TSR 133) Li<sub>A</sub> m̄ Li<sub>B</sub> myò Li<sub>F</sub> mywè Li<sub>H</sub>  
mywè

MOON \*k-la<sup>3</sup> WB la' Lh ha-ba Li<sub>A</sub> ha-ba Li<sub>B</sub> ha-ba Li<sub>F</sub> h'a-ba  
Ak la M (< \*la<sup>3</sup>)

It is the first syllable of these forms which is 'moon'.

MOVE TO (TSR 112) \*s-gyit Li<sub>A</sub> cí \*(s-)gyit Li<sub>F</sub> c̄i \*C-kyit  
Li<sub>F</sub> ch̄i

The Fraser form c̄i was incorrectly placed under \*?gyit in TSR.  
Notice that this is exactly the type of word that one would  
expect to have a number of directional and relational prefixes  
associated with.

MUSHROOM \*s-məw<sup>1</sup> RB Li<sub>B</sub> m̄ Li<sub>F</sub> m̄-ch̄i Ak hm H

WB also has a tone 2 variant hm̄i and Lahu has a non-pre-  
glottalized tone 1 form m̄.

NAME \*s-miŋ<sup>3</sup> RB WB hmañ' Lh me Li<sub>B</sub> myò Li<sub>F</sub> myè Li<sub>H</sub> mywè  
\*miŋ<sup>1</sup> WB mañ Ak mah H

NEEDLE (TSR 191) \*kə-rap WB zap Li<sub>F</sub> wó \*rap Lh γò?  
Li<sub>A</sub> γò Ak a-g'aw L-LS

NOSE \*s-na<sup>1</sup> RB hna Li<sub>B</sub> na-bi Li<sub>F</sub> na-bwe Ak na-meh H-H

NOT \*ma<sup>3</sup> RB WB ma' Lh mâ Li<sub>A</sub> mâ Li<sub>B</sub> mâ Li<sub>F</sub> mâ Li<sub>H</sub> mâ  
Ak ma L

OBTAIN/GET see COLLECT

OLD (OF PEOPLE) \*maŋ<sup>2</sup> RB WB mâŋ Lh mò Li<sub>A</sub> mò Li<sub>B</sub>  
mò Li<sub>F</sub> mò Li<sub>H</sub> mù Ak mo L

ONE \*ti<sup>2</sup> WB th̄i 'single' Li<sub>A</sub> th̄i Li<sub>F</sub> th̄i Li<sub>H</sub> th̄i Ak ti L

A stopped variant also exists: \*C-fik.

OPEN \*pwaŋ<sup>3</sup> WB phwaŋ' Lh phə Li<sub>F</sub> ph̄ Ak pah M

OWNER \*siŋ<sup>1</sup> WB sañ Li<sub>F</sub> s̄i-phà Ak sah H

OVERTAKE \*s-mi<sup>1</sup> RB WB hmi Lh γà?-mi Li<sub>B</sub> ḡà-mə Li<sub>F</sub>  
ḡà-mi' Ak mi H

The first morpheme in the two part examples is 'chase'.

PAIR \*dzum<sup>1</sup> RB WB tsum Li<sub>A</sub> dze Li<sub>F</sub> dze \*dzum<sup>3</sup> Lh ce Ak dzm M

PARROT \*gyəy<sup>2</sup> RB WB kyê Lh cí Li<sub>B</sub> á-jù Ak -je L

PENIS \*m-ləy<sup>2</sup> Atsi nʔyì Maru nʔyì Lh nī

PENIS \*šəw<sup>2</sup> WB sūi Lh šō 'testicles' Li<sub>F</sub> x'ò

PERSON \*tsaj<sup>1</sup> -( \*za<sup>2</sup> ) RB WB tshaj Lh chə-yâ Li<sub>A</sub> tshq-zà Li<sub>B</sub> tsho Li<sub>F</sub> là-tsho Li<sub>H</sub> là-chu<sup>1</sup> Ak tsaw H-L

PERSON, CLASSIFIER \*sə-yok RB WB yok 'man' Li<sub>A</sub> žq Li<sub>B</sub> řq Li<sub>F</sub> r̄q Li<sub>H</sub> z̄q

The first morpheme, \*sə-, is probably a reduction of \*su<sup>1</sup> below.

PERSON, CLASSIFIER \*su<sup>1</sup> WB su 'who' Lh šu Li<sub>A</sub> s̄q Li<sub>F</sub> s̄q Li<sub>H</sub> sw̄q

PICK UP \*k-rok (TSR 187) WB kok Lh γô? Li<sub>A</sub> go Li<sub>F</sub> gq Ak g'o HS

In Lahu the prefix dropped after changing the word's tone class. In Lisu it not only changed the word's tone class but also fused with the initial. In WB it pre-empted the initial producing an original voiced stop. Likewise in Akha it fused with the initial; a k- prefix would normally put a form into the mid tone unlaryngealized class.

PILE see DIVIDE

PINCH/HOLD CHOPSTICKS \*k-nyap (TSR 147) WB hnyap nyap Lh nô? Li<sub>A</sub> nyó Li<sub>H</sub> nywé

Instead of the \*s- prefix in TSR I have set up a \*k-. A form ch̄j-n̄j was cited here in TSR, but it belongs with \*s-nip 'squeeze'.

PLACE/BETWEEN \*s-gra<sup>2</sup> WB khrâ Lh ð-kā Li<sub>F</sub> -cá

PLENTY \*gum<sup>1</sup> WB kum Li<sub>F</sub> ḡq

PLUCK \*pyak (TSR 17a) Lh phô?<sup>F</sup> Li<sub>A</sub> pí Ak pya HS

PLUCK see TEAR/SEPARATE/PLUCK

POISON/TO POISON \*s-dok (TSR 113) Li<sub>F</sub> tó

POOR/SAD see DIFFICULT

PORCUPINE \*s-bru<sup>1</sup> RB WB phru Li<sub>B</sub> p̄q Li<sub>F</sub> p̄q Ak pu H

A Lahu form p̄u comes from an unprefix variant.

POUR \*šwan<sup>2</sup> WB swân Li<sub>F</sub> xò Ak sheh L

A stopped variant also exists: \*C-šat.

PRICE \*pəw<sup>2</sup> RB WB phûi Lh phû Li<sub>B</sub> phù Li<sub>F</sub> phù Li<sub>H</sub> phwì  
Ak poe L

PUT/PLACE/LEAVE \*s-ta<sup>2</sup> WB thâ Lh tã Li<sub>F</sub> tá

PUT TO SLEEP see LIE DOWN

RAIN \*rwa<sup>1</sup> WB rwa Li<sub>F</sub> mì ha Sa ha 33

RAT/RODENT \*k-r-wak (TSR 188) WB krwak Li<sub>F</sub> h'æ̃ Ak  
ho-ca M-LS

READ see BOOK

REAP \*ri.t (TSR 169) WB rit Lh γə? Li<sub>F</sub> γ̣̣̣ Li<sub>H</sub> γ̣̣̣ Lushai riit  
The -ə vowel is the normal reflex of a front vowel preceded by  
an \*r- initial. The only indication of an r- which was in a cluster  
is the -ə which it left behind before dropping in many cases.  
The Hope data is good for this. The length in the above example  
correlates with the presence or absence of the -t in WB; a long  
rhyme gives WB -it and a short rhyme WB -ac.

RED \*s-ni<sup>1</sup> RB WB ?ə-ni Lh ni Li<sub>B</sub> ṇ̣̣ Li<sub>F</sub> ṇ̣̣ Ak ne H

RICE (UNCOOKED) \*dza<sup>1</sup> RB WB tsa-pâ Lh cà Li<sub>A</sub> dza Li<sub>B</sub>  
dza Li<sub>F</sub> dza-phu Li<sub>H</sub> dza

RIDE (A HORSE) \*dzi<sup>2</sup> RB WB tsí Lh cí Li<sub>B</sub> dzè Li<sub>F</sub> dzì  
Li<sub>H</sub> dzì Ak dzi L

RIPE/GROWN \*s-miŋ<sup>3</sup> RB WB hmaí' Li<sub>A</sub> ṃ̣̣-šə̣̣̣ Li<sub>B</sub> ṃ̣̣ Li<sub>F</sub> ṃ̣̣  
Ak myah M

RIVER \*laŋ<sup>1</sup> RB Lh lô<sup>T</sup> Li<sub>A</sub> lo-ká Li<sub>B</sub> lo Li<sub>F</sub> lo Ak law H

This root occasionally also means 'valley'.

ROT/PUS see DECAY/PUS

ROT/PUS \*m-bup (TSR 75) WB pup Lh bù? Li<sub>F</sub> bì-chì Ak  
bu LS

RUN \*rəy<sup>2</sup> Lh γ̣̣̣ Li<sub>F</sub> γ̣̣̣

see POOR

SALT \*tsa<sup>2</sup> RB WB tshâ Li<sub>A</sub> tshà-bo Li<sub>F</sub> tshà-bo Li<sub>H</sub> tshạ̣̣̀-bu  
The laryngealization in the Hope example may be from the  
voicing in the immediately following segment.

SATIATED/FULL \*m-pup (TSR 86) Lh bù? Li<sub>A</sub> ḅ̣̣ Li<sub>B</sub> ḅ̣̣  
Li<sub>F</sub> bí<sup>3</sup> Li<sub>H</sub> ḅ̣̣

SEE \*mraŋ<sup>1</sup> RB WB mraŋ Lh mò Li<sub>A</sub> mo Li<sub>B</sub> mo Li<sub>F</sub> mo  
Li<sub>H</sub> mu Ak maw H

SEEK/LOOK FOR \*(s-)ra<sup>1</sup> WB hra Li<sub>A</sub> xw<sub>A</sub> Li<sub>F</sub> xw<sub>A</sub> Li<sub>H</sub> xw<sub>A</sub>  
Ak sha H

At a higher level of reconstruction this root is undoubtedly \*šra.

SEIZE/TAKE/CARRY \*yu<sup>1</sup> RB WB yu Lh yù Li<sub>A</sub> žu Li<sub>B</sub> řu  
Li<sub>F</sub> ru Li<sub>H</sub> zvu Ak yu H

SELL \*ruj<sup>2</sup> RB WB rôŋ Li<sub>A</sub> ù Li<sub>F</sub> wù Li<sub>H</sub> wù

SEPARATE see TEAR

SEVEN \*ši<sup>2</sup> RB Lh ši Li<sub>A</sub> ši Li<sub>B</sub> šù Li<sub>F</sub> ši

SHAMEFUL \*s-rak (TSR 182) WB hrak Lh yà?-tò Li<sub>F</sub> šǎe-tq  
Li<sub>H</sub> sá-tú Ak sha-daw LS-H

Note that this form, too, could be reconstructed \*srak at a higher level of reconstruction. Lolo-Burmese tends to met-analyze initial clusters as a prefix plus a root initial.

SHARPEN \*ʔə-swəy<sup>2</sup> WB ʔə-swê Lh Li<sub>F</sub> sí Ak sí L

SHEEP \*yaŋ<sup>1</sup> RB Lh yò Li<sub>B</sub> ǻ-řo Li<sub>F</sub> ǻ-ro Ak yaw H Sani žo 33  
A late loan from Chinese (Paul Benedict).

SHOOT/SPROUT (TSR 148) \*nyok Li<sub>H</sub> yí-nwé \*(s-)nyok Li<sub>F</sub>  
rà-nwǧ 'child' Li<sub>H</sub> nwǧ 'sprout'; zà-nwǧ 'child'

WB a-hnyok 'sprout' goes with either of these reconstructions. This set is not related to the set for 'grass/weed' as suggested in TSR.

SHOVE/PUSH \*dwan<sup>2</sup> WB twân Li<sub>F</sub> dwè Ak deh L

SIBLING, ELDER (TSR 172) \*s-wyik Lh ð-ví Li<sub>F</sub> ší Li<sub>H</sub> ší  
Ak a-yui L-LS \*yik WB ʔac-kiu Li<sub>A</sub> žǻ Li<sub>F</sub> á-yǻ

These forms show no evidence of the -w- medial. The Lisu forms cause the \*s- prefix rather than the \*ʔ- prefix to be set up. The Akha form fits just as well with either reconstruction.

SIBLING, YOUNGER \*ni<sup>3</sup> RB Lh ð-ni-pa Li<sub>A</sub> ni-zà Li<sub>B</sub> nyǻ  
Li<sub>F</sub> nyǻ Li<sub>H</sub> nyǻ-zà \*ni<sup>1</sup> WB nyi Ak nyi H

SICK \*na<sup>1</sup> RB WB na Lh à-nà Li<sub>A</sub> na Li<sub>B</sub> na Li<sub>F</sub> na Li<sub>H</sub> na  
Ak na H

SINK/SOAK (simplex-causative) (TSR 109) \*s-dit Li<sub>A</sub> tí 'soak'  
\*(s-)dit Li<sub>H</sub> tí 'sink' \*s-tit Lh tí? Li<sub>F</sub> tí<sup>2</sup> Li<sub>H</sub> tí \*m-tit Ak dui  
HS 'soak in water'

Both of the first two variants must be set up because of the Lisu forms. Again, however, this is the type of word that would be expected to have multiple prefixes.

SKY \*məw<sup>2</sup> RB WB mûi Lh mû- Li<sub>A</sub> mî- Li<sub>B</sub> mù- Li<sub>F</sub> mù;  
mî- Li<sub>H</sub> mð- Ak m L

SLAVE RB \*gywan<sup>1</sup> WB kywan Lh cè \*s-gywan<sup>1</sup> Li<sub>F</sub> cɔ̄-pa

SLEEP see LIE DOWN

SMALL ROUND OBJECT see FRUIT

SMOKE \*kəw<sup>2</sup> RB WB mî-khûi Lh mû-qhò Li<sub>B</sub> mù-khù Li<sub>H</sub> chî<sup>I</sup>  
In the Hope form something caused the initial to palatalize,  
although what is unknown.

SNAKE \*m-rul<sup>1</sup> RB WB mrwe Lh há-vì Li<sub>F</sub> x̄ Li<sub>H</sub> fwu

In Lahu and Lisu the \*m- prefix is dropped without a trace.

SMIFF/SMELL \*nam<sup>1</sup> WB nam Lh nù Li<sub>F</sub> nwe \*nam<sup>2</sup> WB  
nâm Li<sub>H</sub> nwè

SON see CHILD

SON-IN-LAW \*s-mak (TSR 153) WB sa-mak Lh ð-má Li<sub>A</sub>  
mé Li<sub>H</sub> mwé<sup>F</sup>

With TSR I set up the \*s- initial because of the Lisu reflex's  
tone, but perhaps the correct reconstruction is Benedict's  
\*z-mak. The reflex is 'odd'.

SPIT \*s-twəy<sup>2</sup> WB thwê Li<sub>F</sub> t̄ Li<sub>H</sub> t̄

SPLIT \*kway<sup>2</sup> WB khwâi Li<sub>A</sub> khì Li<sub>B</sub> khò Li<sub>F</sub> khì Li<sub>H</sub> khò

SPROUT see SHOOT

SQUEEZE (TSR 159) \*s-nyit WB hnyac WB hnip 'crush,  
oppress' Lh ní Li<sub>F</sub> nyí Ak nyeh LS (\*(s-)nip) Li<sub>F</sub> chi-ni 'shoes'.  
The first syllable of the Fraser form means 'foot'.

STAND \*s-tu<sup>1</sup> RB WB ?əthu Lh tu Li<sub>B</sub> t̄ Ak tu H

STAND \*ryap (TSR 175) OB ryap WB rap Lh hú Li<sub>A</sub> h̄ Li<sub>F</sub>  
h'̄ Ak yaw LS

The Lisu vowels suggest the Lisu may have come from a \*ryap  
variant reflected in the Nung r̄ip.

STEAL \*r-kəw<sup>2</sup> RB WT rku khûi Lh qhò Li<sub>A</sub> khù Li<sub>B</sub> khù  
Li<sub>F</sub> khù Li<sub>H</sub> khwù Ak k'oe L

STICK RIGHT ON THROUGH/STAB (TSR 21) \*tsap Lh chò?  
Li<sub>A</sub> tshó Li<sub>F</sub> tshó Ak tsaw HS. STICK ON \*kyap WB khyap  
Li<sub>F</sub> chwé Ak caw HS

These roots are apparently word-family variants.

STICKY \*s-nyak (TSR 154) Lh né Li<sub>F</sub> nó



STIR/MIX \*C-krök (TSR 36) Lh khò? Ak kaw-keu HS-LS

The Lisu examples cyà and kyà cited here have finals which are too aberrant to be part of the same root.

STOMACH \*? (TSR 176) Lh ò-fi-qō Li<sub>F</sub> hì-chì, Sa hI-ma 22s-33

STONE \*luj<sup>1</sup> (TSR 190) Jinghpo n-lùṅ Mk ar-loṅ Li<sub>A</sub> lo-tshí

The Akha form cited under this root in TSR actually comes from \*kə-lok (cf. OBklok).

STONE/CAVE/GROTTO/COMPOUND \*b-rak > \*ʔə-rak (TSR 190) WT brag WB hrak 'compound' Lh há Li<sub>A</sub> γá 'grotto'

Li<sub>F</sub> γá Li<sub>H</sub> γá

The semantic connection is seen in the full Lahu word há-qō which means 'rock hollow'.

STOP \*na<sup>2</sup> RB WB nā 'rest; perch' Li<sub>B</sub> nā 'rest' Li<sub>F</sub> nā Li<sub>H</sub> nā Ak na L

STUDY see LEARN

SUCK/MILK (TSR 73) \*C-cup Lh chò? Li<sub>B</sub> chṽ Li<sub>F</sub> chí \*s-cup Li<sub>F</sub> chí Ak cu HS

The Lisu Fraser form may go only with the \*s-cup variant, although TSR suggests it fits with both.

SUPPORT/PROP UP \*s-tok WB thok Lh tō? Li<sub>F</sub> tó

SWEAT \*r-kul<sup>2</sup> WT rṅul WB khwê Lh kī Li<sub>A</sub> cí-ží Li<sub>B</sub> cú Li<sub>F</sub> cí Ak ku L

SWEEP \*sut (TSR 120) Li<sub>F</sub> sí

SWEET \*kyəw<sup>1</sup> RB WB khyui Lh chə Li<sub>B</sub> chu Li<sub>F</sub> chi Ak coe H

TAIL \*r-mi<sup>2</sup> RB WB mrí Lh mē Li<sub>A</sub> é-mí Li<sub>B</sub> mó Li<sub>F</sub> mí Ak mi L

TAKE see SEIZE

TEACH \*s-ma<sup>2</sup> RB WB hma<sup>T</sup> Lh mā Li<sub>A</sub> má Li<sub>B</sub> má Li<sub>F</sub> má Li<sub>H</sub> má Ak meh<sup>FL</sup>

TEAR/SEPARATE/PLUCK (TSR 127) \*C-šak 'pluck' WT gšag-pa Lh šá 'pluck' Sani še 22s Li<sub>F</sub> xà 'pluck (also cited as 'tear')' \*šak 'tear; separate' Li<sub>A</sub> xá Li<sub>F</sub> xá Li<sub>H</sub> xá 'tear; separate'

The only difference in the two sets of forms is the presence of the voiced consonantal prefix g- in the provenience.

TEN \*tsay<sup>1</sup> RB WB tac-tshai Lh chí Li<sub>A</sub> tshí Li<sub>B</sub> tshi Li<sub>F</sub> tshi Li<sub>H</sub> tshi Ak tshe H

The rhyme in this form is 'odd' throughout Loloish.

THICK \*tu<sup>1</sup> RB WB thu Lh thu Li<sub>A</sub> th̩ Li<sub>B</sub> thu Li<sub>F</sub> thu Ak tu H  
 THIN \*ba<sup>2</sup> RB WB pâ Lh pâ Li<sub>A</sub> bà Li<sub>B</sub> bà Li<sub>F</sub> bà Ak ba L  
 THORN \*cu<sup>2</sup> RB WB tshû Lh chú Li<sub>B</sub> tshù<sup>1</sup> Li<sub>F</sub> chù Li<sub>H</sub> chwù  
 TIGER \*k-la<sup>2</sup> RB WB kyâ Lh lâ Li<sub>A</sub> là Li<sub>B</sub> lâ-ma Li<sub>F</sub> là Li<sub>H</sub>  
 là-ma

The laryngealization on the Burling form comes from the next morpheme. Combined with the low tone on the first syllable the form has a phonetic glottal stop.

TONGUE \*s-ly<sup>1</sup> RB WB hly<sup>1</sup> Lh ha-te Li<sub>B</sub> la-chø Ak la H  
 TOOTH \*s-wa<sup>1</sup> WB swa

TRAP \*tuŋ<sup>1</sup> WB thoŋ tho Li<sub>F</sub> wə-thu 'set a trap' Ak tah H  
 TWIST \*s-rik (TSR 130) WB rac (-rik) Lh ší Li<sub>H</sub> ší Ak yeu LS  
 The Lisu form is incorrectly labelled irregular in TSR.  
 TWO \*ni<sup>2</sup> Lh nî Li<sub>A</sub> nì Li<sub>B</sub> nyì Li<sub>F</sub> nyì<sup>F</sup> Li<sub>H</sub> nyì Ak nyi L

UNDERSTAND see KNOW

UNRIPE/GREEN \*dzim<sup>2</sup> WB tsîm Lh ð-ci<sup>F</sup> Li<sub>F</sub> dzì Ak jm L  
 Notice that the Akha and Lisu initials disagree.

UNTIE/LOOSEN \*prəy<sup>1</sup> RB WB phre Lh phi Li<sub>B</sub> phø Li<sub>F</sub> phi  
 Li<sub>H</sub> phø Ak pui H \*brəy<sup>1</sup> WB pre Li<sub>F</sub> bi Li<sub>H</sub> bæ

This looks like a simplex-causative pair, but at a higher level of reconstruction.

URINE \*zəy<sup>2</sup> WB sê Lh yî Li<sub>F</sub> ři

USE \*zum<sup>2</sup> WB sûm Lh yê Li<sub>A</sub> zè Li<sub>F</sub> řè; rè Li<sub>H</sub> žwè Ak zm L  
 The first Lisu Fraser form is the expected reflex.

VEGETABLE \*raŋ<sup>2</sup> WB râŋ Lh γð-cá Li<sub>A</sub> ð-phyè Li<sub>F</sub> wò Li<sub>H</sub>  
 wù-phyà Ak g'aw L

WAIST \*gyok or \*jok (TSR 6) Lh cò? Li<sub>F</sub> jù-tsi Ak jo LS  
 TSR lists the Fraser form as coming from an open rhyme variant. While that is possible, it fits quite regularly with the stopped rhyme variant.

WALK \*swa<sup>2</sup> RB WB swâ Li<sub>A</sub> šy̌ Li<sub>F</sub> šè Li<sub>H</sub> šwè

WARM \*lum<sup>1</sup> WB lum Lh lè Li<sub>A</sub> ly Li<sub>F</sub> lwe Ak lm H \*s-lum<sup>3</sup>  
 WB hlum' 'warm up' Li<sub>H</sub> lwɛ 'warm up'

Another WB form hlum exists pointing to a \*s-lum<sup>1</sup> variant, as well as another Li<sub>H</sub> form lwè pointing to a \*lum<sup>2</sup> variant (cf. Sani mγ<sub>65</sub>).

WASH \*tsəy<sup>2</sup> WB tshê Lh chí Li<sub>A</sub> tshì Li<sub>F</sub> tshì Li<sub>H</sub> tshì Ak tsi L  
 WEAR \*wik/t (TSR 181) γɿ

## WEED see GRASS

WEEP \*ŋəw<sup>1</sup> RB WB ŋui Li<sub>A</sub> ŋu Li<sub>B</sub> ŋu Li<sub>F</sub> ŋu Ak ŋoe H

WHEAT/BARLEY \*zəy<sup>3</sup> Lh yi Li<sub>A</sub> zɿ Li<sub>F</sub> řɿ Sani zi 33

WHITE/SILVER \*pru<sup>1</sup> RB WB phru Lh phu Li<sub>A</sub> phɿ Li<sub>F</sub> phu  
Li<sub>H</sub> phwu Ak pyu H

WIDE \*wəy<sup>1</sup> Lh fe Li<sub>F</sub> h'i

An etymological f- initial in Lahu results only from pre-glottalization of a \*w- initial.

WIGGLE (simplex-causative) \*(s)-lik WB lac Li<sub>H</sub> lwi<sup>1</sup> \*kə-lik  
Lh hɿ? Li<sub>H</sub> lwi

The Lahu fits just as well with either Lisu form.

WIN \*(s)-ra<sup>2</sup> WB ra' Lh γá Li<sub>A</sub> xwá Li<sub>F</sub> xwá Li<sub>H</sub> xwá Ak g'a L  
( < \*ra<sup>2</sup> ); za M ( < \*(s)-ra<sup>2</sup> )

The Lahu form is also non-pre-glottalized. The WB 'creaky' tone is unaccounted for.

WIND \*k-ləy<sup>1</sup> RB WB le Lh -hə Li<sub>A</sub> -he Li<sub>F</sub> -h'i Li<sub>H</sub> -hi Ak leh H  
Neither the WB nor the Akha forms show evidence of the \*k- prefix.

WING \*duŋ<sup>1</sup> RB WB toŋ Lh tò- Li<sub>B</sub> du-lə̀ Li<sub>F</sub> du-lə̀ Ak dah H  
The second morpheme of the Lisu forms means 'hand'.

WOMAN/DAUGHTER \*mi<sup>2</sup>-n RB WB mîn-ma' Lh yâ-mî Li<sub>B</sub>  
-mə- Li<sub>F</sub> rà-mì'-rà Li<sub>H</sub> á-mì Ak mi L

The suffixal nature of the -n was pointed out to me by Paul Benedict. No trace of the -n remains in Loloish.

WORK/LABOR \*wa<sup>2</sup> Lh vâ Li<sub>A</sub> wà Li<sub>F</sub> wà Li<sub>H</sub> wà

WORM \*di<sup>1</sup> RB WB ti 'earthworm' Lh pû-ti Li<sub>B</sub> -di Li<sub>F</sub> -di

WRITE \*m-puk (TSR 89) Li<sub>F</sub> bɿ

## YELLOW see GOLD

YOU \*naŋ<sup>1</sup> RB WB naŋ Lh nə Li<sub>A</sub> nɿ Li<sub>B</sub> nu Li<sub>F</sub> nu Li<sub>H</sub> nwu  
Ak naw H

YOUTH \*s-lak (TSR 177) Lh há Li<sub>F</sub> læ Na hla 44

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