

## Proto-Tibeto-Burman \*r in Tiddim Chin and Lushai

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1. Introductory. Tiddim Chin (TC) and Lushai (L), both of the Kuki-Chin-Naga (K-N) subgroup of Tibeto-Burman (TB), are similar enough phonologically that pairs of cognate words are often easy to find. It is not unusual for words to take exactly the same form (exclusive of tone) in both languages, eg: TC -vom, L vôm "black, dark," TC /maŋ, L mǎŋ "dream," TC /phow, L phów "dry". But the cognate-hunter's job is complicated by a number of discrepancies between the two phonological systems. Among these are the TC initial g-, not found in L (excepting a small number of recent loanwords), and the following L initials, all missing in TC: r-, f-, t(h)r-, t(h)l-, hr-, hl-, and a voiceless nasal series.

Benedict 1972 (STC) states, "Lushei lacks initial g-, but has maintained d- and b- in some roots."<sup>1</sup> It appears that the presence of g- in TC is not, as might be supposed, due to better preservation in that language of the \*voiced initials. Rather, in a number of cognate sets, TC g- corresponds to L (and hence TB) r-. TC also has a velar stop g in word-final position; additionally, it will be seen that the mutation of \*r in TC explains one other of the phonological discrepancies listed above, the missing t(h)r- in TC.

2. TC -k, L -r. Some TC final -k are simply equivalent to L -k:





TC	L	proto-TB, other
/baak <sup>2</sup> "bat(animal)"	bǎak id.	STC #325 *ba:k
/maak "soon, brother-in-law"	mǎak-pa id.	STC #324 *ma:k
-tak "right, correct"	tǎk "real, true"	STC p.52 *tyak
-thak "hot (as chili)"	thǎk id.	STC #465 *m-sak
/ook "be caught"	ôok "catch, be caught"	
/naak "rib"	nǎak "side(of the body)"	
-sak "hard, rigid"	sǎk id.	
-vok "pig"	vǎk id.	STC # 43 *pwak
/vaak "walk"	vǎak "walk, go"	
/gaak "wait"	hǎak id.	
-zak "with full force"	zǎk intensive adverbial	

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 These undoubtedly derive from proto \*-k. But contrast the following:

TC	L	proto-, other
-zaak "spread (as blanket)"	z <sup>á</sup> ar "spread, hang (cloth)"	STC p.138 *ya:r~*yar, Jg yan "unrolled, spread out," T g-yor-mo "sail"
-zuak "sell"	zu <sup>á</sup> r id.	STC p.51 K-N *ywar, cf. Mikir dzor, Siyin yuak
\naak "nose"	hn <sup>à</sup> ar id.	STC p.16 K-N *s-na:r, #101 *s-na
-thak "new"	th <sup>á</sup> r id	STC p.147 *sar~*šar, cf. T gsar
-paak "flower(n.)"	p <sup>á</sup> ar id. (n. and vb.)	STC #1 *ba:r, cf. Siyin pak
-aak "fowl"	? <sup>á</sup> ar id.	Siyin a~ak
\miik/šii "ant"	f <sup>á</sup> ŋ-hm <sup>ì</sup> ir id.	
-daak "bell, gong"	d <sup>á</sup> r id.	
/xaak "to close"	kh <sup>á</sup> ar id.	(note that TC <u>x-</u> is the phonemic (and historical) equivalent of L <u>kh-</u> )
-aak \sii "star"	? <sup>á</sup> ar-s <sup>ì</sup> i id.	
-hak "difficult"	h <sup>á</sup> r id.	
_hak "wake up"	h <sup>à</sup> r? id.	
\haak "lead(metal)"	h <sup>à</sup> ar "Pewter, solder"	
/kiik "again"	k <sup>ì</sup> ir "return"	
-laak "expose" }	l <sup>á</sup> ar "bright, show"	
-lak "show" }		
/nuak "sulk"	n <sup>ú</sup> ar id.	
-naak "source"	hn <sup>á</sup> r <sup>3</sup> "headwaters"	
-phaak "leprous"	ph <sup>á</sup> ar "leprosy, mange"	
-taak "old"	t <sup>á</sup> r id.	
/peek "flat"	p <sup>è</sup> er "flat, thin"	Siyin p'iak
-baai -bek "red-vented bulbul"	tl <sup>á</sup> i-ber? id.	Haka ktlai-bizr (for first syllable, see section 4 below)

It is fairly clear that TC -k has two sources, \*-k and \*-r. Note also the indications that Siyin has a similar development of \*-r in the roots "sell," "flower," "fowl," and "flat, thin". This was mentioned in Benedict 1941, "siyin -ak, probably -a', for final -r represents an unusual type of substitution."<sup>4</sup> However, -ak and -a? are definitely distinctive in TC, eg. \_hak "wake up" (above) versus \_ha? "clear away, cleanse"; and I would suggest that TC (and probably also Siyin) -k = L -r represents, not a "substitution," but a regular sound change (this will be expanded upon below).

3. TC initial g-. TC g- corresponds to L r- in the following roots:

TC		L	
-gu? "bone"	rù?	id.	proto-, other STC #6 *g-rus, cf. Siyin a-nu, Karen xwi, Ch  kwət (GSR #486)
-gua "rain"	ruá?	id.	STC #443 *r-wa (-ŋ), cf. Siyin nua, Digaro kəra, Ch  giwo (GSR #100)
-gua "bamboo"	ruá	id.	STC #44 *g-p(w)a, cf. Siyin nua, Jg k wa, Angami Naga kera, Rengma khega (STC cites the L as ruá < *r-wa)
-gaal "enemy, war"	ráal	id.	STC p.71 *(g-)ra:l, cf. T hgran "vie", ral-gri "sword" (gri "knife"), also Thado  al, Siyin gal (STC cites the TC form as ga:l < *ra:l, the only mention in that work of this development)
-guk "six"	rùk	id.	STC #411 *d-ruk, cf. Jg kru, B khrauk (instances of "replacement of *d- by k- before root-initial *r" <sup>5</sup> ), also Matisoff 1972: Lolo-Burmese *C-krok
-gam "forest, land"	rám	id.	Ao arem "forest," Liangmai charam "land," Mikir ram "jungle" cf. also Ch  gliem (GSR #655)
-gan "livestock"	rán	id.	
guu/ guuk <sup>6</sup> "be stolen"	ruu/ruuk	id.	STC P.144 K-N *m-ru:k, Haka ruk Lakher p ru; STC #33 *r-kaw, Jg legu
-gaai "conceive"	rái "conceive, pregnant"		cf. Mzieme nlaigailak "pregnant"
\gaal "beyond, on the other side"	ràal "from a distance, on the opposite bank".		
/gaau "evil influence"	ráu "evil spirit (causing stiff necks)"		
-gual "companion, friend"	rúal "even, level, same age"		
/gam "dry"	hràm	id.	
-gil "abdomen"	ríil "entrails"		cf. Angami ra, Ao tarú-Lotha erru, Sangtam ghu "intestines" Thado a-gil, Siyin gil "stomach"
-ge? "castration"	tíil rək "castrate" (tíil "testicle", rək "cut a notch")		
-guul "snake"	rúul	id.	STC #447 *b-ru:l, but cf. Gyarung khorei

.ga? "bear fruit"	rã? "(bear) fruit" (n. and vb.)	STC p.17 *(b-)ras, T hbras "rice", also cf. Puirōn takra "fruit"
-sa-gi "seven"	sã-rĩ id.	cf. Puiron sari, Meluri teru, Ntenyi tughu, Manipuri taret, Nocte ingit (aparently un- related to TB *s-nis)

Although L lacks reflexes of the following two roots, the TC initial seems to have some connections with \*r-:

gag "father's sister's husband" cf. STC #205 \*ryaŋ, amended to \*Źraŋ, T Źaŋ "uncle", B ahrag "master, lord". It is unclear what relation Benedict intends this to have with his K-N root \*traŋ, set up on the basis of Haka (k-)traŋ, Chawte raŋ~oraŋ, Laiyo raŋ, Thado gag, Siyin gaŋ. Finally, note that Siyin has g- for TC g-, L r- in the above roots "bone", "rain", "bamboo", "enemy, war", and "abdomen".

gip "lac, cf. STC #347 \*krep, B khrip "lac(insect)", Jg krep~ǰə krep "bug", Rawang rap "lac insect", rip "flying ant".

In explaining the equation of TC g- with L r-, we must first decide whether to attribute the TC initial to a simple change \*r- > g-, or to the influence of a velar prefix or prefixes.

There is certainly evidence for a velar prefix in some of the above roots. Benedict reconstructs such prefixes in "bone", "bamboo", "enemy, war", and allows for replacement of the dental prefix in "six" by a velar. Velar prefixes may also be indicated by the Digaro form for "rain" and the Gyarung for "snake". But to explain all TC g- as the result of a prefix is untenable, simple because I have been unable to make any other equation than TC g- = L r- between these two phonemes. TC g- has no equivalent in L other than r-, and L r- corresponds to nothing in TC except g-. To explain this in terms of prefixes would require making the unlikely statement that every word with initial \*r- acquired a velar prefix in proto-TC. Undoubtedly some words with \*r- did have velar prefixes; what is unsatisfactory is calling on such prefixes as the cause of the TC sound change. I would suggest that in TC the distinction between \*r- and \*k-r- is neutralized. Evidently neither \*k- nor any other prefix had an effect on initial \*r- in TC (other TC initials remain to be investigated).

Positing a simple sound-change TB \*r > TC g will also explain the final-position equation TC -k = L -r: \*r became a velar stop in TC, voiced initially but necessarily voiceless finally (TC, like other TB languages, has no voicing contrast in final stops). As in the case of the initial-position correspondence, there is no need to reconstruct velar affixes to account for the TC velar (whether there were in fact such affixes in proto-TC is another matter). The simplest explanation of the facts assembled thus far is that all TB \*r, root-initial and final, > TC g, which has the allophone -k finally.

Note that this excludes TB medial \*-r- in initial clusters (as distinct from combinations of prefix plus root initial), on which, see below. I must also stress that this, and all other conclusions reached in this paper, are provisional, on two accounts: first, the development of \*r will ultimately have to fit in whatever can be discovered about the historical sources of the rest of the TC sound system. Secondly, I have been confined, on the TC side, to the relatively small body of data to be found in Henderson 1965, plus a few forms from Ono 1965. Anything approaching a definitive study will have to include more data.

A shift from \*r to g is somewhat out of the ordinary. STC does not reconstruct any specific phonetic shape for TB \*r: there is no need to, since it can be shown that \*r is in most cases distinct from \*l and other continuants. In the absence of any specification, one might assume that \*r was some form of dental/alveolar approximant or trill. Its interchange with \*l in, eg. Garo would support such an assumption. But there are also indications of a velar/uvular point of articulation for \*r: its normal reflex in both Karen and Lahu is the velar  $\gamma$ . Within the K-N subgroup, some Naga languages have some type of voiced velar corresponding to r, as in the following examples:

Mao inghü "jungle", Sema ayeghü "land", vs. Zeme ram, Nruang-hmei rümkiang "land", Tangsa jarü "forest", cf. also the root "forest, land", p. 3.

Mao ingho, Sema apoghü, vs. Sangtam mürü "snake", cf. also p.4, STC #447 \*b-ru:l. Sangtam gha vs. Ao aru, Chokri rü "reap"

Gangtam ghü, Sema tsoghü vs. Ao rü, Chokri thürü "sew", possibly related to STC #456 "drup, T h<sub>u</sub>drub "sew".

Finally, recall that Siyin has ŋ- and Thado has g- in some of the roots on pp. 3-4.

Similar developments are indicated in the forms from Ngawn and Chinbok cited in Ono 1965:

	L	TC	Chinbok	Thado	Siyin	Ngawn
"bone"	ru <sup>?</sup>	gu <sup>?</sup>	gu	-	a-ŋu	ŋuk
"enemy"	raal	gaal	ga	ɣal	ŋal	ŋal
"abdomen"	riil	gil	-	a-gil	ŋil	-
"steal"	ruu(k)	guu(k)	am-guk	-	-	ŋuk
"snake"	ruul	guul	-	-	-	ŋul
"bamboo"	rua	gua	gɔ	-	ŋua	-
"forest, land"	ram	gam	-	-	-	ŋam
"rain"	rua	gua	khɔ	-	ŋua	-
"father's sister's husband"	-	gag	-	gan	ŋag	-

It thus appears that TB \*r was shifted to a velar continuant (or derived from a proto-velar allophone) in many K-N languages. It was further modified by nasalization in

Si Yin and Ngawn, and by what might be called occlusivization in TC, Chinbok, Thado and possibly others (eg. Rengma khega "bamboo", possible from \*r-wa via \*\*k-r-wa). Note that a similar tendency to occlusivization seems to be at work in L and TC, which have the shifts \*s- > th-, \*v- > z-, and \*w- > v- (L and TC v- is spelled w- in STC).

4. Medial \*r-. In section 3, it was stated that no prefix had any effect on initial \*r- in TC. There are three apparent exceptions to that rule:

	TC		L	
	-haaŋ	"brave"	hráŋ	id.
	-hiŋ	"alive"	hríŋ	"give birth" also "green"
	ˋhi	"to be"	--,	but cf. T srid, "existence" (suffixed -d), B hri "to be"

"To be" is reconstructed in STC, based on the T and B forms, as \*s-ri (#264). A similar analysis of the other two roots would suggest that the L initial hr- is the result of devoicing of the initial \*r- caused by the prefix \*s-. The TC forms would then show further devoicing of \*r- to h-, or else reinterpretation of the prefix \*s- as root initial which then becomes h- (for this letter type of development, cf. TC -ha "tooth" < TB \*s-wa, STC #437). Under this analysis, the above three roots would represent exceptions to both of my hypotheses concerning initial \*r-: we would have a second TC reflex of \*r- and it would be the result of the effects of a prefix. But STC's treatment of the element \*s- in "to be" may simply be a consequence of a principle stated in the main text, "The combinations dr-, sr-, and sl- are to be construed as make up of prefix + initial \*r- or \*l-."<sup>7</sup> This assumption is retracted in a footnote<sup>8</sup>; and the root "alive, green" (TC -hiŋ, L hríŋ), at first reconstructed \*s-riŋ ~ \*s-raŋ, STC #404, is emended to \*sriŋ<sup>9</sup>. "To be" could well be similarly emended; compare:

its B reflex hri with B hraŋ "alive" < \*sriŋ STC #404, and its T reflex srid with T sram "otter" < \*sram STC #438 (emended from \*s-ram)

The point is that in all these roots we have not initial \*r-, but \*r- as medial in an initial cluster.

Let us pursue the development of medial \*r- (as distinct from initial \*r-, prefixed or not). First, consider the following examples in which TC k-, x- corresponds to L kə, kh-:

	TC		L		proto-, other
ˋkaap	"shoot at"		kâap	id.	STC #219 *ga:p
-kam	"mouth, speech"		kám	id.	STC #329 *r-ka(:)m, but cf. Jg n-gam "precipice"
_kaaŋ	"burn"		kàaŋ	id.	STC #330 *ka:ŋ, #331 *kaŋ, but cf. Rawang degaŋ "toast"
ˋkal	"kidney"		kǎl	id.	STC #12 *m-kal or *s-ga:l

I would suggest provisionally that these represent proto-K-N \*g-, as distinct from K-N \*k-, as in the following:

TC	L	proto-, other
/xaa "bitter"	khàa <sup>10</sup> id.	STC #8 *ka
-xat "one"	khàt id.	STC p. 94 *kat, K-N *khat, Lepcha kat
-xuaŋ "drum"	khúaŋ id.	
/xam "replete"	khăm "satiated"	
-xua "village"	khúa id.	STC #444 *r-wa~*g-wa

It is at any rate clear that TC and L maintain a plain/aspirate distinction in initial stops. Just how this does or does not relate to the proto TB voiced/voiceless distinction is outside the scope of this paper.

The previous two sets of roots contrast with the following, which show evidence of medial \*r-:

TC	L	proto-, other
_kap "to cry"	tràp id.	STC #116 *drap, cf. Siyin kap, Jg khrap, Thado kap, Angami kra
\kaau "evil spirit"	tràu id.	
-kaŋ "stretch"	tráŋ "be distended (as breast with milk)"	
-xaŋ "grow"	thráŋ id.	STC #382 *krug, for the vowel c Bodo, Dimasa gakhrap, Haka than
va-khu "dove"	thré-ro id.	STC #118 *kruw
\xaal "groin"	thraal id.	STC cites the TC form under #12 *m-kal or *s-ga:l, but the L form would indicate K-N kraal
\xaŋ "period of sleep"	thràŋ-khàt "a sleep" (khat "one")	
\xia/xiat "chop, fell"	thriat "pull to pieces, clear or cut down"	

It thus appears that medial \*r- simply disappears in TC, while in L it survives and shifts the initial member of the cluster to a homorganic point of articulation.<sup>11</sup> The same effect can be seen in words with proto-labial stop initials:

TC	L	proto-, other
\phaa "good"	thraa id.	STC #129 *pra, cf. Digaro pra, Thado əpha
\phal "winter"	thrál id.	STC p.42 K-N *phral, Siyin phal

To complete the picture, there is evidence that medial \*-l- behaves similarly, with both initial velar stops:

		L		proto-, other
\ xaa "mc on"	thl <sup>à</sup>	id.		STC #144 *s-gla
-xaa "spirit"	thl <sup>á</sup>	id.		STC #475 *(m-)hla, but L thla > *khla; a footnote adds "perhaps *s-hla or *s-kla is to be preferred."
xa "wing"	thl <sup>à</sup>	id.		? perhaps related to STC #86 *g-lak "hand, arm", reanalyzed as in Jg ləta <sup>2</sup> "hand" < *glak
/xow "to weed"	thl <sup>ów</sup>	id.		
xum "sweet"	thl <sup>úm</sup>	id.		STC p.75 *klum, Siyin thum
and with labials:				
/puuk "fall" (Intr.)	tl <sup>ù</sup> /tl <sup>úuk</sup>	id.		
/phuuk "fell"	thl <sup>ù</sup> /thl <sup>úuk</sup>	"down, over, so as to cause to fall"		
-baai-bək "red-vented bulbul"	tl <sup>ái</sup> -ber <sup>?</sup>	id.		cf. Haka ktlai-biæ <sup>r</sup>

Here again, the medial liquid has vanished in TC and has shifted the initial stop in L.

Having established the contrast between the reflexes of \*(k-)r- and \*kr-, \*gr-, we can now turn back and offer an explanation of some apparently anomalous facts that have already been presented. The three roots on p.6, "brave", "alive", and "to be" fit in well with the pattern for proto-clusters: assuming that each root is reconstructed with initial \*sr- or \*ʃr-, the medial \*-r- can be said to have dropped in TC and remained as medial in L. Conversely, TC gip "lac" (p.4) should reflect root-initial \*r-, but STC reconstructs a cluster in \*drep. The TC form may be the result of reanalysis of the cluster \*kr- to prefix plus root, as \*k-rep: such a development must be reflected in Rawang rap, rip.

5. Conclusion. The correspondences described in this paper are summarized in the following charts:

	<u>Simple initials</u>		<u>Initial clusters</u>				
	TC	L	medial: * <u>-r-</u>		* <u>-l-</u>		
*g- (or K-N *k-)	k	k	initial:	TC	L	TC	L
*k- (or K-N *kh-)	x	kh	*g-	k	tr	k	tl
*r-			*k-	x	thr	x	thl
*g-r-, *k-r-	g	r	*b-, *p-	p(h)	t(h)r	p(h)	t(h)l



Finals

	TC	L
*-k	k	k
*-r	k	r

6. Afterword. The foregoing was originally presented at the Eleventh International Conference on Sino-Tibetan Languages and Linguistics, October 20-22, 1978, at the University of Arizona, Tucson. There has been no revision; however, I would like to take this opportunity to note that the equation TC g-, -k = L r has been made previously (mostly in passing) by others--see, e.g. Edward J. Hillard, 1974, "The Rhymes of Proto-Chin" (photocopy). Ono 1965 states the correspondence explicitly for his proto-Chin initials reconstruction. Finally, I must thank Tony Woodbury for first drawing my attention to the equivalence of the finals TC -k and L -r.

Footnotes

1. STC p. 21
2. I have converted all TC and L forms to the spelling used in Bright's "Word List", with the exception of the TC tone marks, retained from Henderson 1965. Note also the typographical substitutions a for a, V: for STC's V (in proto-forms), and the abbreviations T for (Written) Tibetan, B for (Written) Burmese, Jg for Jinghpaw (= Kachin), and GSR for Karlgren 1957.
3. Lorrain 1940 glosses hnár as both "nose" and "headwaters". The form I cite for "nose" is from Bright.
4. Benedict 1941, vol. 14 p. 42.
5. STC p. 95.
6. Many L and TC verbs have both a primary and a secondary form; I have included the secondary only when it is of particular interest, as in this case, where the final -k o<sub>2</sub> the secondary form may correspond to the final in the Haka form ruk. For the conditions determining the use of primary or secondary form, see Lorrain, p. xiii.
7. STC p. 42.
8. STC p. 107.
9. STC p. 108.
10. Lorrain gives this word as kha (short vowel); the form with long vowel, agreeing with TC, is from Bright.
11. Lorrain spells L tr- as t̚, which would seem to indicate a retroflex stop; however Weidert 1975 describes tr- as an "alveolar flapped plosive" and tl- as an "alveolar lateral plosive". Whether these two initials are to be considered as clusters or as single phonemes in modern L, it is clear that their historical sources are clusters.

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