

TONE AND STEM2-FORMATION IN HAKHA LAI

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Two recent issues of *LTBA* (20.2 and 21.1) contain studies which discuss the segmental properties of stem2 verb forms in Hakha Lai, a Tibeto-Burman language of the Kuki-Chin subgroup spoken in Chin State, Burma, and parts of Mizoram State, India (see especially Melnik 1997, Patent 1997 and Peterson 1998). As in other Kuki-Chin languages, verbs have two forms in Hakha Lai which appear in different morphological and syntactic environments. The examples in Peterson (1998), for example, show that stem2 is required when verbs are transitivized by causative, applicative, comitative and other extensions. When transitivity is not an issue, the choice of stem1 vs. stem2 is determined by a complex interplay of mood, polarity, and clause type (e.g. main vs. subordinate). In this case, as shown by Kathol and VanBik (2001), the stem form will be determined by the relevant factor which has widest scope. Thus, as seen in (1), the negative conditions a stem1 form, e.g. **tláá** ‘fall₁’:

- (1) ʔa tláá láv ‘he didn’t fall’
 3s fall₁ NEG

In (2), however, subordinate clauses such as those introduced by /tík-ʔáʔ/ ‘when’, require stem2, e.g. **tláak** ‘fall₂’:

- (2) ʔa tláak láv tík-ʔáʔ ‘when he didn’t fall’
 3s fall₂ NEG when

Due to its wider scope, the stem2 requirement of the subordinate clause overrides the stem1 requirement of the negative.

Whereas past studies have focused on the segmental phonology, morphology, and syntax of the stem1/stem2 opposition, the purpose of this short note is to complement these studies by demonstrating the important role of tone in stem2 formation. By taking tone into consideration, we can demonstrate the following:

- All but a small (predictable) class of stem2 forms have a rising (R) tone.
- The tonal *and* segmental properties of stem2 are largely predictable from the tone and syllable structure of the stem1 form.
- Over 80% of Hakha Lai verbs (at present 754 out of a lexicon of 910 verbs) have a distinct stem2 form (sometimes marked only by tone), while the remaining verbs, ending in a glottal stop or glottalized sonorant (which appear to have been historically conditioned by a transitivization process), are “invariant”.

To see this, we begin in (3) with an indication of the different syllable structures found on stem1 verb forms:

(3) *Stem1 Verb Shapes*

- a. CVV : **tîi** ‘melt’, **hmuú** ‘see’, **pee** ‘give’
 CVD : **nàm** ‘stink’, **thlán** ‘sweat’, **tser** ‘shine’
 CVVD : **noòl** ‘apologize’, **boóm** ‘help’, **tsheen** ‘be steep’
- b. CVT : **róp** ‘decay’, **zút** ‘leak’, **ték** ‘run’
- c. CVVT : **doop** ‘suck’, **luut** ‘enter’, **faak** ‘ache’

In the above schemata, D = one of the seven sonorant codas /m, n, ŋ, l, r, y, w/, while T = one of the three stop codas /p, t, k/. (As we shall see, T may also stand for a glottal stop or a glottalized sonorant in stem2 forms, which, like /p, t, k/, are obstruents in Hakha Lai.) Vowels are long in open syllables, while length is contrastive in closed syllables.

As indicated by the accent marks over the last vowel of each verb, the “smooth” syllable types in (3a) show a three-way tonal opposition: F(alling), marked by a grave accent, R(ising), marked by an acute accent, and a low level tone (L), which is unmarked. Although there is no underlying tonal opposition on stopped syllables, Hyman and VanBik (2002) show the CVT syllables in (3b) have an underlying R tone, while the CVVT syllables in (3c) have an underlying L tone. Both F and R tones are subject to tonal alternations whose interesting complications are discussed in Hyman and VanBik (2002).

With this background, we are now ready to show how stem2 forms are predictable on the basis of the stem1 inputs.

First, although we can treat all of the “smooth” syllables of (3a) as a class, we shall begin with stem1 verbs which end in a nasal. As seen in the following examples, the verbs in (4a) change their tone to R in stem2, while those in (4b) both change their tone to R and acquire glottalization.

(4) Stem2 formation: Stem1 has shape CVN or CVVN

	<i>stem1</i>	<i>stem2</i>	
a.	dàm	dám	'be healthy'
	tlum	tlúm	'erode'
	sèn	sén	'be red'
	mìn	mín	'slide (land)'
	hlèŋ	hlén	'deceive'
	piŋ	pín	'be tight'
	laàm	laám	'dance'
	hruum	hruúm	'growl (tiger)'
	fuùn	fuún	'pack'
	soon	soón	'be leaning'
	hreèŋ	hreén	'tie'
	tlaaŋ	tlaán	'be parallel'
b.	lúm	lúmʔ	'stumble'
	hlón	hlónʔ	'throw'
	phóŋ	phóŋʔ	'loosen'
	boóm	bómʔ	'help'
	phaán	phánʔ	'arrive'
	toóŋ	tóŋʔ	'touch'

The two stem2 formations are clearly conditioned by tone: In (4a), stem1 verbs with F or L tone change their tone to R, and /ŋ/ becomes [n] (which various scholars take as evidence of an historical alveolar suffix). In (4b), stem2 verbs which already have R tone, glottalize the final nasal. (A long vowel is not permitted before a glottalized sonorant—or glottal stop—and is therefore shortened.) The table in (5) shows the number of verbs we have found with each of the above syllable- and tone-patterns. As seen, there are no exceptions to the above generalizations.

(5)

stem1 T	m/m		n/n		ŋ/n		m/mʔ		n/nʔ		ŋ/ŋʔ	
F	25	33	14	11	39	46	0	0	0	0	0	0
L	11	7	2	6	11	12	0	0	0	0	0	0
R	0	0	0	0	0	0	8	21	5	16	14	7

Table 1. *Stem1 verb ends in a nasal* (first column under each pairing refers to stem1 CVN, second to stem1 CVVN)

Verbs ending in liquids show the same pattern, as seen in (6).

(6) Stem2 formation: Stem1 has shape CVL or CVVL

a.	hàl	hàl	'ask'
	tshol	tshól	'bounce'
	hàr	hár	'be difficult'
	tser	tsér	'shine'
	haàl	haál	'be thirsty'
	pool	poól	'be gray'
	khaàr	khaár	'close'
	laar	laár	'be popular'
b.	tál	tálʔ	'kill'
	mér	mérʔ	'turn, twist'
	veél	vélʔ	'beat up'
	suúr	súrʔ	'squint (eyes)'

Again, F and L stem1 verbs change their tone to R, while R stem1 verbs acquire glottalization. As shown in (7), there are only two exceptions to this generalization (**zuùl/zúlʔ** 'follow', **phùr/phúrʔ** 'carry on back'):

(7)

stem1 T	l/l		r/r		l/lʔ		r/rʔ	
F	10	18	18	34	0	1	1	0
L	9	9	10	2	0	0	0	0
R	0	0	0	0	8	7	1	5

Table 2. *Stem1 verb ends in a liquid* (first column under each pairing refers to stem1 CVL, second to stem1 CVVL)

The last group of CVD/CVVD verbs consist of those which end in a glide /y, w/. The examples in (8) show that the generalization mostly holds:

(8) Stem2 formation: Stem1 has shape CVG or CVVG

a.	phùy	phúy	'spit out'
	bay	báy	'limp'
	sàw	sáw	'boil (water)'
	pew	péw	'jump, hop'
	kaày	kaáy	'climb'
	fooy	foóy	'be easy'
	haàw	haáw	'cut down'
	reew	reéw	'dry out'
b.	tháy	tháy?	'hear'
	láv	láv?	'disappear'
	tlaáy	tláy?	'catch'
	tsheéw	tshéw?	'split up, share'

However, this time there are 10 exceptions.

(9)

stem1 T	y/y		w/w		y/y?		w/w?	
F	11	20	8	15	0	3	6	1
L	7	7	5	8	0	0	1	0
R	0	0	0	0	3	5	2	6

Table 3. *Stem1 verb ends in a glide* (first column under each pairing refers to stem1 CVG, second to stem1 CVVG)

As seen in (9), four F stem1 verbs of the shape CVVy inexplicably undergo glottalization in stem2 formation: **ɲaày/ɲáy?** 'listen to, yearn for', **saày/sáy?** 'carve', **tshaày/tsháy?** 'shoot with sling shot'. In addition, there are six F stem1 verbs of the shape CVw which have a stem2 of the shape CV?: **làw/ló?** 'be similar', **làw/ló?** 'pick fruit', **thàw/thó?** 'rise', **thlàw/thó?** 'weed', **tsàw/tsó?** 'dig', **tràw/tró?** 'pick (flowers)'. A seventh verb, **ɲaàw/ɲáw?** 'be bald', is also exceptional.

Turning to CVV verbs, Table 4 summarizes stem2 formation:

(10)

stem1 T	CVVt	CVVk	CVt	CVk	CV?
F	20	0	5	0	2
L	17	15	0	0	2
R	12	7	1	4	1

Table 4. *Stem1 verb has the shape CVV (stem2 shown in bold above)*

First, 59 CVV verbs of all three tone classes form their stem2 by adding **-t**, as illustrated in (11a).

(11) Stem2 formation: Stem1 has shape CVV

a.	teè	teet	'be small'
	hnii	hniit	'blow (nose)'
	phoó	phoot	'distribute'
b.	tlaá	tlaak	'fall'
	pee	peek	'give'

In addition, as seen in (11b), 22 L and R tone CVV stem1 verbs form their stem2 by adding **-k**. (No F tone CVV stem1 verbs have been found to take **-k**.) As seen, the tone of CVVt and CVVk verbs is L, in accordance with the general observation that all underlying CVVT words have L tone in Hakha Lai (cf. stem1 CVVT verbs below). We consider the remaining 15 verbs to be exceptional. Five F CVV verbs take **-t**, but shorten their vowel in stem2: **baà/bát** 'owe', **puù/pút** 'carry', **raà/rát** 'come', **saà/sát** 'be hot', **thruù/thrút** 'sit down'. Four R CVV verbs take **-k** with vowel shortening: **tuú/túk** 'strike', **saá/sák** 'build', **suú/súk** 'pound', **tsuú/tsúk** 'bite (snake)'. Finally, five verbs of all tone classes exhibit a short vowel plus glottal stop in stem2: **triì/tríʔ** 'be afraid', **thiì/thíʔ** 'die', **nii/níʔ** 'laugh, smile', **tshia/tshiáʔ** 'put (place)', **hmuú/hmúʔ** 'see'. In all of these exceptional cases, the stem2 tone is R, the only lexical tone permitted on CVT syllables.

Finally, consider Table 5 which indicates how CVV and CVVT verbs form their stem2:

(12)

stem1 -C	CVT/CV?	CVT/CVT	CVVT/CV?	CVVT/CVVT
-p	12	4	5	4
-t	24	4	18	13
-k	32	6	24	9

Table 5. *Stem1 verb has the shape CVT or CVVT*

As indicated, 68 CVT verbs form their stem2 by replacing T by glottal stop. This is illustrated in (13a).

(13) Stem2 formation: Stem1 has shape CVT

- | | | | |
|----|--------------|--------------|------------------|
| a. | róp | róʔ | ‘be small’ |
| | thát | tháʔ | ‘kill’ |
| | fék | féʔ | ‘be sturdy’ |
| b. | tsháp | tsháp | ‘add’ |
| | lwát | lwát | ‘be free’ |
| | ʔúk | ʔúk | ‘dominate, rule’ |

Another 14 CVT verbs, however, do not change in stem2, illustrated in (13b). The same CV? stem2 form is preferred in the majority of cases (47) where stem1 has the shape CVVT, as seen in (14a). A large minority of these (26), however, preserve the oral stop in stem2.

(14) Stem2 formation: Stem1 has shape CVVT

- | | | | |
|----|--------------|--------------|----------------|
| a. | kaap | káʔ | ‘shoot’ |
| | hruut | hrúʔ | ‘be crazy’ |
| | beek | béʔ | ‘lean against’ |
| b. | doop | doóp | ‘suck’ |
| | hraat | hraát | ‘be rough’ |
| | phuuk | phuúk | ‘uproot’ |

In all cases, the stem2 tone is R. This is not surprising when the syllable structure is CVT (which only allows R tone), but it is surprising when the syllable structure is CVVT—which otherwise only allows L tone (Hyman & VanBik 2002).

This last observation points to a general “conspiracy” concerning tone and stem2 formation in Hakha Lai: stem2 should be distinct from stem1. We saw this earlier in the case of stem1 CVD and CVVD: Those which have F or L tone change their tone to R in stem2 (in addition, final /ŋ/ becomes [n]). Those which are already R in stem1, keep this R, but add glottalization, without which the stem1/stem2 forms would be identical. The same point can be made concerning the stem1 CVVT verbs in (14b). For some reason they do not take glottal stop, but rather keep their T (and vowel length) in stem2. If these latter forms had remained L tone, there would have been no difference between their stem1 and stem2 forms. Thus, the one place where CVVT can take other than L tone, namely the R tone in (14b), is driven by the pressure to overtly mark stem2, thereby keeping it distinct from the corresponding stem1 form. The only exception in all of the above data concerns the 14 CVT/CVT verbs, which are identical in both forms.

As seen in the above demonstration, tone is extremely important in predicting stem2 forms in Hakha Lai. All stem2 verbs are R tone, and only 14 verbs have stem2 forms that are not distinct from the corresponding stem1. In addition to these, however, there are 139 verbs which have the shape CV? or CVD? in all environments, e.g. *dí?* ‘finish’, *khúnu?* ‘put into’, *hrén?* ‘lock’, *kúl?* ‘surround’, *kár?* ‘increase’, *fóy?* ‘trap’, *káw?* ‘bite’. (Curiously, we have no example of an invariant verb of the shape CVŋ?.) Many of these invariant stems are (di-)transitive, suggesting an earlier transitivity process marked by /-2/. (cf. Peterson 1998, VanBik 2001, who show that verb stems followed by a valence increasing extension must be in stem2 form). Most of the verbs that have “intransitive meanings” actually must occur in the reflexive, suggesting transitivity, e.g. *dó?* ‘be beautiful’, *hŋí?* ‘be asleep’, *pán?* ‘be cheerful’, *ŋén?* ‘be slow’. But some invariant verbs are clearly intransitive and non-reflexive, e.g. *hér?* ‘be necessary’, *téy?* ‘be sharp’, *tshá?* ‘be thick’, *rél?* ‘be ready’. The historical implications of all of these findings must be considered in a wider comparative context, the subject of the second author’s forthcoming dissertation.

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