'Upward-Curling' Realization of Tone *L* in Lhaovo(Maru) Language
浪莪语低调向上现象

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Introduction

Lhaovo(Maru)[*1], a Burmish language spoken in Kachin State and Shan State of Burma(Myanmar) and Yunnan Province of China, shows three-way tonal opposition in non-checked syllables: Falling(F)21; Low(L)22–33; High(H)44.

loF 'to come back'	*loL* 'anymore'	*loH* 'to go back'
ăl̥oF 'shape'	*lo̥L* 'trousers'	*lo̥H* 'moon, month'
khyaŋF 'thread'	*khyaŋL* 'to be bad'	*khyaŋH* 'sieve'
ʔauF 'bowels'	*ʔauL* 'head'	*ʔauH* 'egg'

When two consecutive *L* syllables appear in certain environments, the first *L* is 'realized with a slight upward curl at the end ...'(a phrase borrowed from Matisoff(1973), p.21)

In this paper, we argue that this allotonic phenomenon is sensitive to grammatical configuration. Also, we argue that it serves as evidence for the existence of checked syllables with tone *L*, which has not been acknowledged in the previous studies of the language.

1 Environments of UC

First, let us observe the environments where Upward-curling(hereafter UC) occurs.

1.1 Compound nouns

UC is commonly observed in compound nouns. When the first two syllables of a compound noun are $L + L$, UC usually occurs in the first *L* syllable, as in (1), (2).
(In the below examples, ⁄ indicates UC occurs, and × indicates it does not occur before another *L*.)

(1) **nuŋL**⁄ **-šoL**   'beef'
      cattle   -meat

(2) **kauL**⁄ **-khuŋL**   'ferry'
      cross   -hole

A toneless weak syllable is counted as a 'pre-syllable' attached to the following syllable with tone, and does not block UC, as in (3).

(3) **săyoL**⁄ **vŏkauŋL**   'forestal village'
      forest   -village

[*1] 'Lhaovo' is the ethnonym, and 'Maru' is the name of this language in Jinghpaw and Burmese. Hereafter I will use only 'Lhaovo'. Lhaovo has an orthography invented in 1968, and the name of the language itself is spelt 'Lhaovo'. In the author's phonemic transcription, it is transcribed *loŋFvoF*.

(Hereafter, 'syllables with L' are taken as including those with a 'pre-syllable'.)

When the first three syllables of a compound noun are $L+L+L$, UC occurs only in the first L, not the second L, as in (4).

(4) **moL**↗**toL**× **-kauL** *-tseŋF*   'road bridge'
     motorcar   -cross   -bridge

It still remains unclear whether constituency or linear order is relevant to the occurence of UC.

1.2 N+V collocations/idioms

Another environment of UC is inside of N+V collocations/idioms. When a monosyllabic N and a monosyllabic V constituting a collocation/idiom have $L + L$, UC usually occurs in the first L syllable , as in (5)–(7).

(5) **toŋL**↗ **j<u>au</u>L**   '(I/you/he etc.) talked.'
                j<u>au</u>F-TA[*2]
     word   speak-RLS

(6) **myiL**↗ **matL**   '(I/you/he etc.) made a fire.'
                matF-TA
     fire   blow-RLS

(7) **myitL**↗ **lauŋL**   '(He etc.) is worried.'
                lauŋF-TA
     mind   hot-RLS

1.3 Verb strings

When the first two syllables of a verb string have $L + L$, UC usually occurs, as in (8).

(8) **thoL**↗   **-ʔauŋL**× **-tsoL**[*3] *-moʔF*
     thoF-TA
     convey-&[*3] -sell   -eat   -person
     'those who convey (timbers), sell (them) and earn their livelihood'

When the two syllables which stands non-initially in a verb string are $L + L$, UC usually does not occur, as in (9).

(9) *liH* **-myoŋL**× **-naL**   '(They) are coming and looking (at it).'
            -myoŋF-TA   *-stayF*-TA
     come   -see-&   -na-RLS

When an N+V collocation (and maybe also an N+V idiom) having $L + L$ is followed by a verb with L, UC only occurs in N, not V, as in (10a). But if N+V is intervened by another element with non-L, UC occurs in V, as in (10b).

(10)   a. **myiL**↗ **matL**× **-t<u>o</u>L** *-keʔF*   '(My sons,) make a fire!'
                     matF-TA   *-keʔF-ϕ*
          fire   blow-&   put   -Plural-IMP

[*2] TA is an abstract element triggering tonal alternation $F{\to}L/L{\to}H/H{\to}H$ to the preceding syllable. In the example TA is the marker of Positive Realis sentence (RLS). TA also functions as marker of attributive element (ATTR), and coordinator of verbs (&). (cf. Sawada(2005))

[*3] In Lhaovo, verb strings consisting of two verbs are classified into two types: verb concatenations and compound verbs. Verb concatenations are the coordinations of verbs and verb coordinator TA usually intervenes in the verbs, triggering tonal alternation in the verb immediately preceding it. On the other hands, compound verbs are supposed to be formed in the lexicon and TA does not intervene.

However, there exist a few verbs like *tsoL* 'to eat' which seem to constitute concatenation with the preceding verb and nevertheless TA does not intervene in them.

b. *myiL* *myeʔF* **matL**↗ **-toL** *-keʔF*   '(My sons,) make a fire quickly!'
              matF-TA   *-keʔF-ɸ*
  fire   quickly   blow-&   put   -Plural-IMP

1.4 Verb-marker combinations

If a verb with L is followed by a clause/sentence marker with L, UC usually occurs in the verb, even though the verb is non-initial element in a verb string. See (11) and (12).

(11) *myiH-tsømF*   **tsoL**↗   **-laŋL** *-seʔF*   'Let's eat supper.'
     night-meal   eat   -HORT -Urgent

(12) *săyoF-khyoF*   **yeL**↗   **-yaŋL**   …   'Go to the forest and ...'
     forest-ALL   go   -Conjunctive

1.5 Across the phrase boundary

Where two phrases are adjacent to each other, and the rightmost syllable of the first phrase and the leftmost syllable of the second phrase have both tone L, UC usually does not occur in the former L, as in (13). (| shows phrase boundary.)

(13) *thoL*   *-loF*   **-yaŋL**× | **ʔauŋL** *-zoH*   *-naL*
    thoF-TA   *-zoL*-TA *naF*-TA
    convey-&   come_H -Conjunctive   sell   -eat-&   live-RLS
    '(They) come conveying (timbers), sell (them) and earn on their livelihood.'

1.6 Juxtaposition of words

Where two words are juxtaposed to each other, and the rightmost syllable of the first word and the leftmost syllable of the second word have both tone L, UC usually does not occur in the former L. (| shows boundary of juxtaposed words.)

(14) *yŏ* **thauŋL**× | **paL**   'rice field and field'
    rice.field   field

(15) **naL**↗ **-ɣiL**× | **-naL**↗ **-ɣaŋL**× | *-loL*   '(It) came to grow up.'
    naF-TA   *-naF*-TA *-ɣaŋF*-TA   *-loF*-TA
    live-&   -big   -live-&   -long-&   -come_H-RLS

In summary, UC tends to occur phrase-initially except the case of verb-marker combinations.

2 UC as evidence for the existence of checked *L* syllables

Now, let us turn to argue about UC as evidence for the existence of checked L syllables.

2.1 Previous descriptions about tones of checked syllables

Previous studies equally say that checked syllables of the language show two-way tonal opposition. Let us review previous descriptions about tones of checked syllable briefly.

2.1.1 Burling(1967)

He describes the tonal opposition of non-checked (= open and nasal) syllables as follows:

> Each open and nasal syllable carries one of three easily distinguisheable tones:

- /à/ Low falling and a bit shorter than the other tones. It differs from /ā/ more in its falling contour and its shortness than in pitch.
- /ā/ Mid, level and moderately long.
- /á/ High level and moderately long. /á/ and /ā/ differ only in pitch. (p.21)

Burling's 'Low falling', 'Mid level' and 'High level' are corresponding to the author's *F*, *L*, *H*, respectively.

As for checked (= stopped) syllables, he describes:

> Stopped syllables may carry one of two contrasting tones, high or low. ... In syllables with glottalized initial consonants however, and the associated glottalized voice quality of the vowel, no contrasting tones occur in stopped syllables.[*4]
>
> The possible stopped tones will be written as follows, S serving as a cover term for any stop:
>
> - /à S/ Low stopped tone. Can occur with all initial consonants except the glottalized series.
> - /á S/ High, stopped tone. With non-glottalized initials.
> - /a S/ In syllables with a glottalized initial, (stop, affricate, nasal, or l?).[*5] (pp.21–22)

Burling's 'Low stopped tone' corresponds to the author's *F*, and 'High stopped tone' corresponds to the author's *H*.

2.1.2 Yabu(1992)

In his description of a dialect of the language spoken in Tongkyi village, northern Shan State, Yabu describes tonal system as follows:

> There are three tonemes: Low-level, High-level and High-falling. Closed syllables ending in p,t,k,ʔ lack High-Falling and only have the High vs. Low opposition.
>
> Low-level: /a/ [˧], /aN/, /aS/
> High-level: /á/ [˥], /áN/, /áS/
> High-falling: /â/ [˥˩], /âN/
> (N=/m, n, ŋ/, S=/p, t, k, ʔ/) (p.169, translated by the author)

Yabu's 'High(-level)' closed syllables of the type correspond to the author's *H*, but 'Low(-level)' closed syllables correspond to the author's *L*, unlike Burling's treatment.

2.1.3 Dài(2005)

In his grammar of a dialect called *Làngsù*, the tonal system is describes as below:

> Unchecked rhymes occur with all of three tones, but checked rhymes occur only with High-level and Low-falling tones. See below:

Tone / Rhyme	High-level ˥	High-rising ˦	Low-falling ˩
Unchecked	na˥ 'day'	na˦ 'become crazy'	na˩ 'father's sister'
Checked	nat˥ 'mouth'	—	nat˩ 'to pull'

(p.18, translated by the author)

Dài's treatment of checked syllables is same as Burling's.

2.2 Two types of checked *L* syllables

As far as a dialect in Kachin State is concerned, some checked syllables show three-way tonal opposition, contrary to the previous studies reviewed above.

[*4] The statement is incorrect, because there are a few counterexamples to it: ɣitF 'to start' vs. ɣitH 'front'; ʔăñukF 'color' vs. ñukH 'finger'; yitF 'liquor' vs. yitH 'urine'.
[*5] It should be identified as /á S/.

mukF 'mushroom'	*mukL* 'rain'	*mukH* 'cake'
myitF 'earth'	*myitL* 'grandchild'	*myitH kayF* 'great-grandchild'
myoʔF citF 'blind man'	*citL* 'parrot'	*myoʔF citH* 'eyeball'

Furthermore, a checked L syllable not only suffers UC by the L syllable immediately following it (as in (16)), but also triggers UC in the L syllable immediately preceding it (as in (17)), just as a non-checked L syllable does.

(16) **mukL** ↗   -*phyoL*   'midair'
      sky   summit

(17) *yoŋL* ↗   -**myitL**   '(non-speaker's) grandchild'
      PRF[*6]   -grandchild

Lhaovo checked L syllables have two major types as below.

1. Syllables corresponding to Modern Burmese(ModB) non-checked syllables: *-ukL* corresponding to ModB /*-oH*/ {-ui:}(<OWB {-uiw'}), and *-itL* corresponding to ModB /*-eH*/ {-e:}(<OWB {-iy'}). [*7]

   - *mukL* 'sky, rain', ModB /*moH*/ မိုး{mui:}, OWB {muiw'}, Zaiwa /*mau21*/
     mukL ↗ *ɣuL* 'it rains.' (rain+fall)

   In this example, if the noun had tone F or H, UC could not occur in it.

   - *tsukL* 'to govern, ruler', ModB /*soH*/ စိုး{cui:}, OWB {cuiw'}, Zaiwa /*tsau21*/ 'government official'
     tsukL ↗ *tsoL* 'man of noble class' (ruler+son)

   - *ʔămyukL* 'kind, race', ModB /*ʔămyoH*/ အမျိုး{@a_myui:}, OWB {@a_mluiw'}
     ʔămyukL ↗ *ʔăpøL* 'descent' (race+group)

   - *pukL* 'insect', ModB /*poH*/ ပိုး{pui:}, Zaiwa /*pau21*/

   - *šŏ ɣukL* 'bone', ModB /*ʔăyoH*/ အရိုး{@a_rui:}, Zaiwa /*ʃŏ21 vui21*/

   - *kyukL* 'to break', ModB /*coH*/ ကျိုး{kyui:}, Zaiwa /*kjui21*/

   - *pyitL* 'to give', ModB /*peH*/ ပေး{pe:}, OWB {piy'}, Zaiwa /*pji21*/
     ŋo̲L ↗ **pyitL** '(He) lent (it).' (lend+give)

   - *myitL* 'grandchild', ModB /*myiH*/ မြေး{mre:}, OWB {mliy'}
     yoŋL ↗ **myitL** '(non-speaker's) grandchild'

   - *myitL* 'to ask', ModB /*meH*/ မေး{me:}, Zaiwa /*mji21*/
   - *kyitL* 'copper', ModB /*ciH*/ ကြေး{kre:}, OWB {kriy'}, Zaiwa /*kji21*/

Note: Checked L syllables of the type are limited to the case where the initial consonant is non-aspirated and the vowel is [−*creaky*]: If the initial is aspirated or the vowel is [+*creaky*], the tone H, not L corresponds to ModB Heavy tone, as in the examples below.

[*6] *yoŋL-* (often weakened to *yă-*) 'he/she' is used as a prefix attached to kinship terms and indicates that it is not the speaker's relative. Note that it has a distinct tone from *yoŋH-* 'his/her'. On the other hand, *ŋaH-* 'my' is used to indicate the speaker's relative: *ŋaH-myitL* 'the speaker's grandchild'.

[*7] In examples below, ModB forms are given in phonemic transcription (//), Burmese script and transliteration ({ } in the author's system: see Appendix). Old Written Burmese(OWB, Nishi(1999a,b)'s term) forms are given only in transliteration. Zaiwa forms are taken from Huáng(1992), unless the source is specified.

- *(loʔF)ñ<u>u</u>kH* 'finger', ModB */(leʔ)hñoH/* (လက်)ညှိုး{(lak')N˜hui:}, Zaiwa */(loʔ21)ŋj<u>u</u>i21/*
- *ʔăphukH* 'grandfather', ModB */ăphoH/* အဖိုး{@a_phui:}
- *c<u>i</u>tH* 'to lend/borrow (money)', ModB */chiH/* ချေး{khye:}, Zaiwa */tʃ<u>i</u>21/*
- *chitH* 'medicine', ModB */sheH/* ဆေး{che:}, Zaiwa */tʃhi21/*

2. Syllables derived from checked syllables inherently *F* via grammatically conditioned tonal alternation (Sawada(2005)):

- *matL<matF*-TA 'to blow, to play (wind instruments)', ModB */hmouʔ/* မှုတ်{mhut'}, Zaiwa */mut21/*
  khăl<u>o</u>ŋL mă-matF '(He) did not play the flute.' ;
  khăl<u>o</u>ŋL↗ matL (<matF-TA) '(He) played the flute.'

In the former sentence of the example above, the tone of *matF* 'to play (wind instruments)' remains unchanged and it does not trigger UC in *khăl<u>o</u>ŋL* 'flute'. But in the latter sentence, the marker of Positive Realis sentence TA triggers tonal alternation, the tone of the verb alternates to *L*, and triggers UC.

- *ɣeʔL<ɣeʔF*-TA 'to bark', Zaiwa */vap21/*
  lăkhaL mă-ɣeʔF 'The dog did not bark.' ; *lăkhaL↗ ɣeʔL* 'The dog barked.' ;

- *chukL<chukF*-TA 'to be sweet', ModB */choL/* ချို{khyui}, Zaiwa */tʃhui21/*
  toŋL mă-chukF '(voice is) not soft' ; *toŋL↗ chukL* '(voice is) soft.'

- *kaukL<kaukF*-TA 'to pick up', ModB */kauʔ/* ကောက်{kok'}
- *voʔL<voʔF*-TA 'to shoulder, to carry', ModB */ɣweʔ/* ရွက်{rwak'}, Zaiwa */vaʔ21/*
  ma-kaukL voʔF '(He) did not pick up and carry (it).' ;
  kaukL↗ voʔL '(He) picked up and carried (it).'

- *napL<napF*-TA 'to sink, to drown', Zaiwa */nop21/*
- *šitL<šitF*-TA 'to die', ModB */t̠eL/* သေ{se}, Zaiwa */ʃi21/*
  mă-napL šitF '(He) did not drown.' ; *napL↗ šitL* '(He) drowned.'

- *yoʔL < yoʔF*-TA 'to lick', ModB */yeʔ/* လျက်{lyak'}, Zaiwa */joʔ21/*
  mă-yoʔF '(He) did not lick.' ; *yoʔL↗ naL* '(He) is licking.' (lick+stay)

- *kyaukL<kyaukF*-TA 'to fear', ModB */cauʔ/* ကြောက်{krok'}, Zaiwa */kjuʔ21/*
  mă-kyaukF '(He) does not fear.' ; *kyaukL↗ phoŋL* 'he feared (it) and ran away.'

- *peʔL<F*-TA 'to beat', Zaiwa */pat21/*
  mă-peʔF '(He) did not beat.'; *peʔL↗ šeL* '(The tiger) beated (the cattle) and dragged (it).'

- *kyoʔL<F*-TA 'to be cool', Zaiwa */kjoʔ21/*
  mă-kyoʔF '(It) is not cool.' ; *kyoʔL↗ loL* '(It) becomes cool.'

- *ɣ<u>i</u>tL<F*-TA 'to begin', Zaiwa */xi51/*
  mă-ɣ<u>i</u>tF '(It) did not begin.' ; *naL↗ ɣ<u>i</u>tL* '(They) began to live.' (stay+begin)

There are several instances falling in neither case above:

- *leʔL* 'second eldest', ModB */laʔ/* လတ်{lat'} 'middle'
  payL↗ leʔL 'the second eldest sister' (elder.sister+second.eldest)

- *myitL* 'mind', Zaiwa */myit21/* cf. Jingpho. *myitL*
  myitL↗ lauŋL '(He) is worried.' (mind-hot)

- *ʔauL* ↗ **naukL** 'brain', ModB /*ʔouₙH-hnauʔ*/ ဦးနှောက်{uu:nhok'}, Zaiwa /*ʔu21 nuʔ55*/

- *veŋL* ↗ **tukL** 'belly', Zaiwa /*wa̰mL tauL*/ (Yabu)

- *payL* ↗ **ceʔL** 'duck'

- *khauŋL* ↗ **papL** 'owl'

Though the first type shows limited distribution and the second type is derivative in nature, it does not mean that checked L syllables can be ignored in the phonological structure of the language.

Phonology (Sawada1999, slightly modified)

Syllable Structure: *C(C)V(C)/QT*

    C = Consonant: /*m*, n*, ñ, ŋ*; p*, ph, t*, th, k*, kh, ʔ*; ts, tsh, c, ch; f, v, s, š, x, ɣ, ɦ; l, r, y***/ (* stands as initial/final. ** stands as initial/medial/final.)

    V = Vowel: /*a, au, o, ø, e, u, i*/ (/*au*/ is counted as a single phoneme.)

    Q = Voice Quality Feature: [±*creaky*] ([+*creaky*] does not cooccur with /*ph, th, kh, tsh, ch, s, š, f, ɦ, ʔ,*/)

    T = Tone: Falling(*F*)21, Low(*L*)22–33, High(*H*)44.

Syllable Weakening: 'Weak' syllables without inherent tone are either inherently weak ones or those 'weakened' by syllable weakening. 'Weakened' syllables are often found in noun compounding.

Abbreviations

&	Coortinator of verbs	PRF	Prefix
H	with the feature [+Home position]	RLS	Sentence marker: Positive Realis Informative
HORT	Sentence marker: Hortative		
IMP	Sentence marker: Imperative		

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Appendix: Sawada's Burmese transliteration system [†] used only for OWB [#] used only for ModB.

Consonant letters and symbols

{k}	က	{kh}	ခ	{g}	ဂ	{gh}	ဃ	{ng}	င
{=k}	္က	{=kh}	္ခ	{=g}	္ဂ	{=gh}	္ဃ		

{c}	စ	{ch}	ဆ	{j}	ဇ	{jh}	ဈ	{N~}	ည	{n~}	ဉ
{=c}	္စ	{=ch}	္ဆ	{=j}	္ဇ	{=jh}	္ဈ				

{T}	ဋ	{Th}	ဌ	{D}	ဍ	{Dh}	ဎ	{N}	ဏ
{=T}	္ဋ		*1		*2		*3	{=N}	္ဏ

{t}	တ	{th}	ထ	{d}	ဒ	{dh}	ဓ	{n}	န
{=t}	္တ	{=th}	္ထ	{=d}	္ဒ	{=dh}	္ဓ	{=n}	္န

{p}	ပ	{ph}	ဖ	{b}	ဗ	{bh}	ဘ	{m}	မ
{=p}	္ပ	{=ph}	္ဖ	{=b}	္ဗ	{=bh}	္ဘ	{=m}	္မ

{y}	ယ	{r}	ရ	{l}	လ	{w}	ဝ
{-y}	ျ	{-r}	ြ	{=l}	္လ	{-w}	ွ

[†]{sh}	ၐ	[†]{S}	ၑ	{s}	သ	{h}	ဟ	{L}	ဠ	{@}	အ
				*4		{-h}	ှ				

*Consonant Ligatures

*1 {T=Th} ဋ္ဌ   {N=Th} ဏ္ဌ   *2 {D=D} ဍ္ဍ   {D=Dh} ဍ္ဎ

*3 {N=D} ဏ္ဍ   *4 {s=s} သ္သ

Vowel letters and symbols

		{i}	ဣ	{u}	ဥ				
{-a}	○	{-i}	ိ	{-u}	ု				

		{ii}	ဤ	{uu}	ဦ	{e}	ဧ	{o}	ဩ
{-aa}	○ာ	{-ii}	ီ	{-uu}	ူ	{-e}	ေ○	{-o}	ေ○ာ
								[#]{-o'}	ေ○ာ်

Symbols participating in rhyme notation

rhyme symbols			tone marks			vowel killer
(< variant of ○ယ်)	(< anusvāra)		*Creaky* (< ○အ်)	*Heavy* (< visarga)		(virāma)
{-Y}	ဲ	{-M}	ံ	[#]{-.}	့	{-:}	း	{-'}	်

superscript letters

{ng^}   ၚ   [†]{r^}   ႜ

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