

## Grammatically Conditioned Vowel Alternation of Lacid (Lashi) in Kachin State

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### 1 Introduction

#### 1.1 The phenomenon

Lacid (‘Lashi’ in Jingpho/Burmese, Lèqí’ in Chinese) is a Burmish language spoken in Kachin State and Shan State of Burma (Myanmar) and Yunnan Province of China.

In Lacid spoken in Kachin State, some verbs show the alternation in vowel quality. The most striking illustration of the alternation is served by (Realis-) Negative/Positive pairs of verbs, which suggests that the alternation is grammatically conditioned:

- (1) *ʔǎ-ñitF* ‘(He) does not stay.’ / *ñe(:)tF(-taL)* ‘(He) stays.’  
*ʔǎ-tsoL* ‘(He) did not eat.’ / *tsO(:)L(-taL)* ‘(He) ate.’

As (: ) in the above examples show, vowel lengthening is observed in the (Realis-)Positive verbs in data via elicitation. Vowel lengthening is also observed in the cases where the alternation in vowel quality seems absent.

- (2) *ʔǎ-kotF* ‘(He) did not do.’ / *ko(:)tF(-taL)* ‘(He) did.’  
*ʔǎ-myaŋF* ‘(He) did not see.’ / *mya(:)ŋF(-taL)* ‘(He) saw.’

So we might have to treat the alternation in vowel quality as a sub-case of vowel lengthening.

I am still uncertain whether ‘lengthened rhymes’ are surely distinguish from the corresponding ‘unlengthened rhymes’ in rapid speech. So in this presentation I treat only the alternation in vowel quality (henceforth AiVQ), and consider its phonological and grammatical environments.

#### 1.2 Previous description of vowel alternation in the language

Dai & Li (2007) mentions that Leqi verbs show the alternation between ‘short’ and ‘long’ vowels.

The ‘short’-‘long’ pairs they listed (p.17) are as follows:

ɿ-ɿ:	i-i:	i-e:	ei/e,i-ɛ:	e-ɛ:	a-a:	ɔ/o-ɔ:	u-u:	ə-ə:	y-y:	i-ɛ:i	ei-ɛ:i	ei-ɑ:i	ui-ɔ:i
ou-a:u										ɛn-i:n	ɛn-ɛ:n	an-a:n	ɔn-u:n
ɛŋ-i:ŋ	aŋ-a:ŋ	ɔŋ-ɔ:ŋ	uŋ-u:ŋ	əŋ-ə:ŋ	iŋ-i:ŋ							ap-a:p	ɔp-u:p
ɛt-i:t	at-a:t	ɔt-u:t			ak-a:k	uk-u:k	ək-ə:k	ik-ə:k		eʔ,ɛʔ-ɛ:ʔ	aʔ-a:ʔ	uʔ-u:ʔ	əʔ-ə:ʔ

The alternation is grammatically conditioned. Environments of ‘short’/‘long’ rhymes they enumerate (pp.19–27) are summarized as below. (**boldface** and roman numbering by SH.)

*Predicates:*

- When a verb/adjective becomes the predicate of a sentence by itself, it is pronounced as ‘**long**’ (i).
- When a verbal predicate takes a cognate object, the predicate is pronounced as ‘**long**’ (ii), and the object is pronounced as ‘short’.

- When an auxiliary verb and a verb form a complex predicate, **both the auxiliary verb (iii) and the verb (iv) are pronounced as ‘long’**.
- A verb followed by either *pjɛ*<sup>33</sup> ‘PERFECT’ or *a?*<sup>31</sup> ‘IMPERATIVE’ is pronounced as ‘short’, though the ‘short-long’ distinction seems to be gradually lost before *pjɛ*<sup>33</sup>.
- A (simple) predicate with a negative adverb *a*<sup>33</sup> is pronounced as ‘short’.
- In a auxiliary-verb complex accompanied by negative *a*<sup>33</sup>, the auxiliary is pronounced as **‘long’** (v).

*Adverbials*: a reduplicated adjective used adverbially is pronounced as ‘short’.

*Attributives*: when a reduplicated adjective is used as an attribute to a noun, only **the final element of reduplication is pronounced as ‘long’** (vi).

*Complements*: a verb/adjective used as a complement of a predicate is pronounced as **‘long’** (vii), except that it is followed by *pjɛ*<sup>33</sup> ‘PERFECT’.

*In compounding*: a verb/adjective morpheme in compound (noun) is pronounced as ‘short’.

*In affixation*: when an adjective is prefixed by *a*<sup>33</sup>- or suffixed by *-tse*<sup>53</sup> to derive a noun, the adjective is pronounced as ‘short’.

### 1.3 Phonology and transcription

#### ■ Syllable Structure C(y)(w)V(C)/QT

C=Consonant, V=Vowel, Q=Voice Quality Feature of Vowel, T=Tone

- Initial=C(y), Rhyme=(w)V(C)

#### ■ Consonants

		LABIAL	DENTAL	ALVEOLAR	PALATAL	VELAR	GLOTTAL
NASAL		<i>m</i>		<i>n</i>	<i>ɲ</i>	<i>ŋ</i>	
STOP/	<i>unasp.</i>	<i>p</i>	<i>ts</i>	<i>t</i>	<i>c</i>	<i>k</i>	<i>ʔ</i>
AFFRICATE	<i>aspirated</i>	<i>ph</i>	<i>tsh</i>	<i>th</i>	<i>ch</i>	<i>kh</i>	
FRICATIVE		<i>f</i>	<i>s</i>		<i>ʃ</i>	<i>x</i>	<i>fi</i>
LATERAL				<i>l</i>			
FLAP				<i>r</i>			
APPROXIMANT		<i>v</i>			<i>y</i>		

- *v*- [ʏ](before -ë)~[v](before other rhymes)
- Initial clusters with glide -*y*- *my*-, *py*-, *phy*-, *ky*-, *khy*-

#### ■ Vowels

	FRONT	CENTRAL	BACK
CLOSE	<i>i</i>		<i>u</i>
MID-CLOSE	<i>e</i>	<i>ë</i>	<i>o</i>
MID-OPEN		<i>Ē</i>	<i>O</i>
OPEN		<i>a</i>	

- Glide -*w*- (realized as [-*u*-]) cooccurs only with *i*, *e*, *a*

#### ■ Voice Quality Feature [-creaky] (V) vs. [+creaky] (V̄)

- [+creaky] vowels do not cooccur with initials /*ph*-, *tsh*-, *th*-, *ch*-, *kh*-, *f*-, *s*-, *ʃ*-, *x*-, *fi*-/

#### ■ Tone Falling(F)21, Low(L)22–33, High(H)44.

## 2 Phonological environment of AiVQ

### 2.1 AiVQ rhymes

(3)

<b>-i<sub>1</sub></b> [i]		<b>-it<sub>2</sub></b> [it]							
-e <sup>1*</sup> [e]		-et <sup>2</sup> [et]		-eʔ [eʔ]		-en [en]			
-a [A]	-ap [Ap]	-at [At]		-aʔ* [Aʔ]	-am [Am]	-an [An]	-aŋ [Aŋ]		(-ai)
-ë [ə]		<b>-ëk<sub>3</sub></b> [ək]				<b>-ëŋ<sub>4</sub></b> [əŋ]			
-Ě* [ɜ]		-Ěk <sup>3*</sup> [ɜk]				-Ěŋ <sup>4*</sup> [ɜŋ]			
-u [u-Y]		<b>-uk<sub>5</sub></b> [ʊk]		-uʔ [uʔ-Yʔ]		<b>-uŋ<sub>6</sub></b> [ʊŋ]			
-o <sub>7</sub> [o]	-op [ɔp]	-ot [ot]	<b>-ok<sub>8</sub></b> [ouk]	-oʔ [ɔʔ]	-om [ɔm]	-on [on]	-oŋ <sup>6*</sup> [ouŋ]		
-O <sup>7*</sup> [ɔ]				-Oʔ <sup>8*</sup> [auʔ]					
<b>-wi<sub>9</sub></b> [ui]		<b>-wit</b> [uit]				<b>-win*</b> [uin]			
-we <sup>9</sup> [ue]									
-wa* [uA]								<b>-waŋ*</b> [uAŋ]	

- -X<sub>n</sub> can be AiVQ rhyme, that is, rhyme of a ‘basic’ form of the alternation.
- -X<sup>n</sup> can be rhyme of an ‘alternate’ form corresponding to the AiVQ rhyme subscripted by the same number as the superscript.
- -X\* can be neither AiVQ rhyme, nor rhyme of a cognate (i.e. not borrowed) common noun.

Below are the examples of each alternation pattern. Lhv.,Zwa.,WB. and OWB. indicate the corresponding Lhaovo, Zaiwa, Written Burmese and Old Written Burmese forms respectively. Zaiwa forms are from Yabu (1982), except those with (ZYVC), which are from Huáng Bù Fán (1992). WB and OWB forms put in braces are transliterated by the system shown in the end of the handout.

#### 1. i / e

- (4) ʔǎ-ŋiF / ŋeF ‘to be small’ Lhv. ŋayF; Zwa. ŋeF; WB. ငဝ် {ngay’}  
 ʔǎ-viL / veL ‘to be far’ Lhv. vayL; Zwa. weL; WB. ငဝ် {we:}  
 ʔǎ-ŋiH / ŋeH ‘to burn’ Lhv. ŋaH  
 ʔǎ-siF / seF ‘to know’ Lhv. seH; Zwa. seH; WB. ငဝ် {si}

When the initial is either palatal or with glide -y-, AiVQ usually does not occur (with a few exceptions). Let us label them as ‘Y class’.

- (5) ʔǎ-yiL / yiL ‘to laugh’ Lhv. yiF; Zwa. wuiL; WB. ငဝ် {ray’} /yiL/  
 ʔǎ-kyiL / kyiL ‘to be large’ Lhv. yiL; WB. ငဝ် {krii:}  
 ʔǎ-myīL / myīL ‘to attain’ Lhv. myiF; WB. ငဝ် {mii} /hmiL/

#### 2. it / et

- (6) ʔǎ-ñitF / ñetF ‘to stay’ Lhv. naF; Zwa. ñiF; WB. ငဝ် {ne} < OWB. {niy’}  
 ʔǎ-šitL / šetL ‘to die’ Lhv. šitF; Zwa. šiF; WB. ငဝ် {se} < OWB. {siy’}  
 ʔǎ-pyitL / pyetL ‘to give’ Lhv. pyitL; Zwa. pyiL; WB. ငဝ် {pe:} < OWB. {piy’}  
 ʔǎ-myitF / myetF ‘to forget’ Lhv. myitH; Zwa. miH; WB. ငဝ် {me.}

cf. *ʔă-phyetF/phyetF* ‘to cut’ Lhv. *phyitH*; Zwa. *phyitH*; WB.  $\text{Ⴄဝ်}$  {phrat’}  
*ʔă-cetF / cetF* ‘to love’ Lhv. *citH*; Zwa. *citH*; WB.  $\text{Ⴄဳ}$  {khyac’}

### 3. *ək / Ěk*

(7) *ʔă-pəkF/pĚkF* ‘to shoot’ Lhv. *pakF*; Zwa. *pikL*; WB.  $\text{Ⴄပ}$  {pac’}  
*ʔă-ləkF / lĚkF* ‘to weigh’ Lhv. *lakF*; Zwa.(ZYYC) *lik<sup>21</sup>* (*kə<sup>55</sup>*)  
*ʔă-lĕkF / lĚkF* ‘to mix; to be dirty’ Lhv. *lakH*  
*ʔă-kĕkF/kĚkF* ‘to wrap’ Lhv. *kakH*

### 4. *əŋ / Ěŋ*

(8) *ʔă-myĕŋF/myĚŋF* ‘to howl, sing’ Lhv. *myaŋF*; Zwa.(ZYYC) *mjiŋ<sup>51</sup>*; WB.  $\text{Ⴄဉ်}$  {mraN~’}  
*ʔă-sĕŋL / sĚŋL* ‘to be long’ Lhv. *xaŋF*; Zwa. *xiŋF*; WB.  $\text{Ⴄဉ်}$  {rhaN~’}  
*ʔă-ŋĕŋH / ŋĚŋH* ‘to be fed up’ Lhv. *ŋaŋL*; Zwa.(ZYYC) *ŋɿŋ<sup>55</sup>*  
*ʔă-pyĕŋH/pyĚŋH* ‘to be full’ Lhv. *pyaŋH*; Zwa. *pyiŋH*; WB.  $\text{Ⴄဉ်}$  {praN~’}

### 5. *uk / ok*

(9) *ʔă-yukF / yokF* ‘to grow’ Lhv. *yaukF*; Zwa. *yu?L*  
*ʔă-kyukF/kyokF* ‘to fear’ Lhv. *kyaukF*; Zwa. *kyu?L*; WB.  $\text{Ⴄကဝ်}$  {krok’}  
*ʔă-kyukF/kyoukF* ‘to dry (vt.)’ Lhv. *kyaukH*; Zwa.(ZYYC) *kju<sup>755</sup>*; WB.  $\text{Ⴄကဝ်}$  {khrok’}  
*ʔă-šokF / šukF* ‘to drink’ Lhv. *šaukH*; Zwa. *šu?H*; WB.  $\text{Ⴄဆဝ်}$  {sok’}

### 6. *uŋ / oŋ*

(10) *ʔă-luŋF / loŋF* ‘to be hot’ Lhv. *lauŋF*  
*ʔă-ʔuŋL / ʔoŋL* ‘to succeed’ Lhv. *ʔauŋF*; Zwa. *ʔuŋF*; WB.  $\text{Ⴄအဝ်}$  {@ong’}  
*ʔă-ʔuŋH / ʔoŋH* ‘to sell’ Lhv. *ʔauŋL*; Zwa. *ʔuŋL*; WB.  $\text{Ⴄရဝ်}$  {rong’:  
*ʔă-thuŋH/ thoŋH* ‘to pound’ Lhv. *thauŋL*; Zwa. *thuŋL*; WB.  $\text{Ⴄထဝ်}$  {thong’:

### 7. *o / O*

(11) *ʔă-loF / IOF* ‘to come’ Lhv. *loF*; Zwa. *loF*; WB.  $\text{Ⴄလ}$  {laa}  
*ʔă-tsoL/ tsOL* ‘to eat’ Lhv. *tsoL*; Zwa. *tsoL*; WB.  $\text{Ⴄစ}$  {caa;}  
*ʔă-yoH/ yOH* ‘to get’ Lhv. *yoH*; Zwa. *woH*; WB.  $\text{Ⴄရ}$  {ra}  
*ʔă-voF / vOF* ‘to rain’ Lhv. *voF*; Zwa. *woF*; WB.  $\text{Ⴄဝ}$  {rwa}

### 8. *ok / O?*

(12) *ʔă-ŋokF / ŋO?F* ‘to weep’ Lhv. *ŋukF*; Zwa. *ŋauF*; WB.  $\text{Ⴄငို}$  {ngui}  
*ʔă-chokL / chO?L* ‘to be sweet’ Lhv. *chukF*; Zwa. *chuiL*; WB.  $\text{Ⴄချို}$  {khyui}  
< OWB. {khyuiw’}
*ʔă-khyokH/ khyO?H* ‘to break (vt.)’ Lhv. *khyukH*; Zwa. *khyuiL*; WB.  $\text{Ⴄချို}$  {khyui;}  
*ʔă-thokH / thO?H* ‘to touch’ Lhv. *thukH*; Zwa. *thauH*; WB.  $\text{Ⴄတို့}$  {tui.}

### 9. *wi / we*

(13) *ʔă-pwiH/ pweH* ‘to happen; become’ Lhv. *pøH*  
*ʔă-ŋwiH/ ŋweH* ‘to be sleepy’ Lhv. *ŋøH*

## 2.2 Question: do AiVQ rhymes constitute natural class?

■ From the viewpoint of modern Lacid:

(14)	AiVQ rhymes	non-AiVQ rhymes
open rhymes	-i(with non-Y class initials), -o, -wi	-i(with Y class initials), -ë, -u, -e, -a -we
-k	-ëk, -uk, -ok	
-ŋ	-ëŋ, -uŋ	-aŋ
closed	-t	-et, -at, -ot
rhymes	-n	-en, -an, -on
	-p	-ap, -op
	-m	-am, -om
	-ʔ	-uʔ, -oʔ

Hypothesis 1: ‘Closed AiVQ rhymes are  $i/\ddot{e}/u/o + -k/\eta/t$ .’

→ A counterexample **-ot** exists, and it does not make a natural class. (-t/-n show asymmetry.)

### ■ From the viewpoint of PLB

(PLB forms are based on Matisoff(2003), related to Lacid forms via WB forms.)

(15)	AiVQ rhymes	non-AiVQ rhymes
open rhymes	-i(<*-i/*-ay, with <u>Lcd.</u> non-Y class), -o<*-a/*-wa, -wi(<?)	-i(<*-i/*-ay, with <u>Lcd.</u> Y class), -ë(<*-wəy), -u(<*-u), -e(<?), -a(<?), -we(<?)
*-y	-it(<*-əy)	
*-w	-ok(<*-əw)	
*-k	-ëk(<*-ik), -uk(<*-uk)	-uʔ(<*-wak), -oʔ(<*-ak)
closed	*-ŋ	-aŋ(<*-aŋ/*-waŋ)
rhymes	*-t	-et, -at, -ot
	*-n	-en, -an, -on
	*-p	-ap, -op
	*-m	-am, -om

Hypothesis 2: ‘Closed AiVQ rhymes are those corresponding to PLB  $*i/\ddot{e}/u + *-k/\eta/y/w$ .’

→ A little more natural than hypothesis 1.

As for open rhymes, there still remain the following puzzles.

- -uʔ(<PLB \*-wak), -oʔ(<PLB \*-ak), -aŋ(<PLB \*-aŋ/\*-waŋ) are non-AiVQ rhymes, but -o(<PLB \*-a/\*-wa) is an AiVQ rhyme.
- -uk(<PLB \*-uk), -uŋ(<PLB \*-uŋ) are AiVQ rhymes, but -u(<PLB \*-u) is a non-AiVQ rhyme.

And we still must refer the modern Lacid context, that is, whether the initial belongs to Y class or not.

## 3 Grammatical environment of AiVQ

### 3.1 Comparison to Lhaovo tonal alternation

#### ■ Lhaovo tonal alternation (Sawada(2005) etc.)

(16) Patterns:  $F \rightarrow L$ ;  $L \rightarrow H$ ;  $H \rightarrow H$ (vacuous)

Environments:

1. in the final syllable of verb(+auxiliary) which stands as the predicate of positive Realis (Informative) sentences (*Realis environment*: (i),(ii),(iv),(vii) in p.2.)

2. in the final syllable of verb(+auxiliary) which stands as the predicate of attributive clauses, or in the nominal head of attributive phrases (*Attributive environment*: (vi) in p.2.)
3. in each final syllable of all but the last verb constituting a verb concatenation (*Conjunctive environment*: (iii),(v) in p.2.)
4. before instrumental case-marker (Instrumental environment).

Lacid AiVQ occurs in the environments 1.-3. above.

#### ■ Realis environment

(17)	Lhaovo	Lacid	
ReaLiS(-positive)	<b>naL</b> (raH)	<b>ñetF</b> (taL)	‘(He) stays.’
(Realis-)NEGative	mă-naF	?ă-ñitF	‘(He) does not stay.’
IrReaLis	<mă->naF-neŋH	<?ă->ñitF-ña?H	‘(he) will <not> stay.’
IMPerative	naF (ña?F)	ñitF (ña?H)	‘Stay!’
Negative-IMPerative	tă-naF	?ă-ñitF-caH	‘Don’t stay!’
HORTative	naF-laŋL	ñitF-šaŋH	‘Let’s stay!’
OPTative	<mă->naF-šoŋL	ñitF-păcaH	‘May <not> (he) stay!’

- Realis environment is indicated by (R) in glosses of the examples below.

#### ■ Attributive environment ((A) in glosses.)

- (18) Lhv. *yaŋFguŋL-meŋF naL ?auL-reF mauH kyayF laukL .* • **naF** ‘stay’ > **naL**  
 Lcd. *yaŋLguŋF-moL ñetF yo?F-riL moH kyeF myOL .* • **ñitF** ‘stay’ > **ñetF**  
 Yangon-LOC stay(A) time-ACC job very many(R)  
 ‘When (I) lived in Yangon, I have a lot of jobs.’
- (19) Lhv. *ŋoF(-ñaF) yoŋL chě-khyoH mă-loL ruF paL .* • **loF** ‘come’ > **loL**  
 Lcd. *ŋoF ñaŋL xitL-khyoL ?ă-IOF tsiF seF .* • **loF** ‘come’ > **IOF**  
 I(-TOP) he here-ALL not-come(A) NMZR know(R)  
 ‘I know that he did not come here.’
- (20) Lhv. *?ăñiHne?H cøH\*-loL-raH kyauŋL-suL-pyuF tă-yaukF*  
 Lcd. *?ăñiHnabF cuH\*-IOF-taL kyuŋL-soH-suL tă-yukF*  
 yesterday arrive(&)-come(A)-LINKER road-walk-person one-CL:human  
 ‘A traveler who arrived yesterday.’

- In Lhv., \* indicates that TA applied vacuously.
- In Lcd., \* indicates that it is a non-AiVQ rhymes put in the grammatical environment of AiVQ.

#### ■ Conjunctive environment ((&) in glosses.)

- (21) Lhv. *yamF pyo?L-kyoH\*-loH-vaH .* • **pyo?F** ‘collapse’ > **pyo?L**; **kyoH** ‘fall’  
 Lcd. *yomL pyo?F\*-kyOH-loH-pyeL .* • **pyo?F** ‘collapse’; **kyoH** ‘fall’ > **kyOH**  
 house collapse(&)-fall(&)-go-RLZN  
 ‘The house has collapsed.’
- (22) Lhv. *yoŋL chě-khyoF mă-ŋoH\*-liH-kaL kyoH-ke?H .* • **kyoL** ‘hear’ > **kyoH**  
 Lcd. *ñaŋL xitL-khyoL ?ă-ŋoH\*-riH-kaL kyOL-katF .* • **kyoL** ‘hear’ > **kyOL**  
 he here-ALL not-get(&)-come-QUOT hear(&)-put.in(R)  
 ‘(I) heard that he could not come here.’
- (23) Lhv. *tŋHpaukH ŋe?H-yěreL mă-paL-kyoL .* • **paF** ‘know’ > **paL**  
 Lcd. *sokHpukF ŋapF-lokFñe?H ?ă-seF-kyoL .* • **siF** ‘know’ > **seF**  
 book read-though not-know(&)-hear  
 ‘Though (I) read the book, (I) did not understand.’

### 3.2 Positioning abstract elements triggering alternation

In the analysis of Lhaovo tonal alternation in Sawada (2005), I posited the abstract element TA which triggers tonal alternation and functions as grammatical markers (as well as zero-sentence markers for realis-negative and imperative sentences). I analyze AiVQ in Lacid in the same fashion, positing the abstract element VA.

(17')	Lhaovo	Lacid	
RLS	naF-TA (raH)	ñitF-VA (taL)	'(He) stays.'
NEG	mǎ-naF-φ	ʔǎ-ñitF-φ	'(He) does not stay.'
IRL	naF-neŋH	ñitF-ɦaʔH	'(he) will stay.'
IMP	naF-φ (ɦaʔF)	ñitF-φ (ɦeʔH)	'Stay!'
NIMP	tǎ-naF-φ	ʔǎ-ñitF-caH	'Don't stay!'
OPT	naF-šoŋL	ñitF-pǎcaH	'May <not> (he) stay!'

• Lacid auxiliaries such as *-koH* 'PLURAL SUBJECT', *-pyeL* 'REALIZATION', *-shiH* 'still' come between the verb and Realis marker (=VA) as the corresponding Lhaovo auxiliaries do. Therefore, AiVQ never occurs before auxiliaries.

(19')	Lhv.	ŋoF(-ɦaF)	yoŋL	chě-khyoH	mǎ-loF-φ-TA	ruF	paF-TA .
	Lcd.	ŋoF	ñaaŋL	xitL-khyoL	ʔǎ-loF-φ-VA	tsiF	siF-VA .
		I(-TOP)	he	here-ALL	not-come-NEG-ATTR	NMZR	know-RLS
							'I know that he did not come here.'

(18')	Lhv.	yaŋFguŋL-meŋF	naF-TA-TA	ʔauL-reF	mauH	kyayF	laukF-TA .
	Lcd.	yaŋLguŋF-moL	ñitF-VA-VA	yoʔF-riL	moH	kyeF	myoL-VA .
		PN-LOC	stay-RLS-ATTR	time-ACC	job	very	many-RLS
							'When (I) lived in Yangon, I have a lot of jobs.'

• The effects of Lhaovo TAs cannot be accumulated. (Sawada(2006)) The same thing also applies to Lacid VAs.

(22')	Lhv.	yoŋL	chě-khyoF	mǎ-ʔoH-TA-liH-φ-kaL	kyoH-TA-keʔH-TA .
	Lcd.	ñaaŋL	xitL-khyoL	ʔǎ-ʔoH-VA-riH-φ-kaL	kyoL-VA-katF-VA .
		he	here-ALL	not-get-&-come-NEG-QUOT	hear-&-put.in-RLS
					'(I) heard that he could not come here.'

### 3.3 Question: What is the sources of abstract elements TA/VA?

Dai&Li (2007) argues that Leqi 'long' vowels were introduced as means of compensating the loss of verbal affixes (pp.27–28).

I also think that the common source(s) of TA/VA is/are the lost grammatical form(s), which existed in the stage of their proto language (i.e. proto-Lhaovo-Lacid).

- Shown in 3.1, the environments of the alternations can be reduced to three, (except for idiosyncratic one of instrumental case-marker in Lhaovo), which suggests that the number of lost grammatical form (e.g., affixes) as possible sources of TA/VA could also be reduced to three at most. There might be homophonous sources (or merely a single source) .

cf. WB. ᨧᩣ᩠ᨦ /ʔiC/ < OWB. ᨧᩣ᩠ᨦ {e@} ' (POSITIVE-)REALIS', 'GENITIVE'

- Patterns of Lhaovo tonal alternation suggest that the form(s) might have had the tone of highest pitch. (Roughly speaking, TA 'raises' the pitch of preceding syllable.)
- Patterns of Lacid AiVQ suggest that form(s) might have had a relatively wide aperture. (VA at least increases the aperture of vowel of preceding AiVQ rhyme.)

- The problem of this approach might be that we must allow VA to affect the vowel of closed rhymes across their final consonants.

## Abbreviations

& ... Coordinator of verbs	LOC ... Case marker: Locative	QUOT ... Quotation marker
ACC ... Case marker: Accusative	NEG ... Sentence marker: Negative	RLS ... Sentence marker: Positive
ALL ... Case marker: Allative	Realis Informative	Realis Informative
ATTR ... Marker of Attributive element	NMZR ... Nominalizer	RLZN ... Auxiliary: Realization
CL ... Classifier noun	PN ... Proper noun	TOP ... Topic Indicator

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## Appendix: Sawada's Burmese transliteration system

### Consonant letters and symbols

{k} က	{kh} ခ	{g} ဂ	{gh} ဃ	{ng} င
{c} စ	{ch} ဆ	{j} ဇ	{jh} ဈ	{N} ည / {n} ဉ
{T} ဋ	{Th} ဌ	{D} ဍ	{Dh} ဎ	{N} ဏ
{t} တ	{th} ထ	{d} ဒ	{dh} ဓ	{n} န
{p} ပ	{ph} ဖ	{b} ဗ	{bh} ဘ	{m} မ
{y} ယ	{r} ရ	{l} လ	{w} ဝ	
{-y} ယ	{-r} ရ		{-w} ဝ	
{s} သ	{h} ဟ	{L} ဌ	{@} အ	
	{-h} ဟ			

### Vowel letters and symbols

{i} ိ	{u} ီ		
{-a} ူ	{-i} ေ	{-u} ေ	
{ii} ိ	{uu} ီ	{e} ဳ	{o} ဴ
{-aa} ူ	{-ii} ေ	{-uu} ေ	{-e} ဳ
		{-o} ဴ	{-o'} ဴ

### Symbols participating in rhyme notation

<i>rhyme symbols</i>	<i>tone marks</i>	<i>vowel killer</i>
	<i>Creaky</i>	<i>Heavy</i>
{-Y} ံ	{-M} ့	{-} း
		{-} ္
		{-} ်
<i>superscript letter</i>		
{ng} ျ		