CHAPTER 5

THE PHONETICS AND PHONOLOGY OF TONES IN MIZO: A BRIEF SURVEY

As has been explained at length in the study so far, downdrift and downstep are all part of the post-lexical phonology of a language. In addition to this, it is discussed that declination is a pure phonetic effect. The post-lexical tonology of Thadou exhibit properties of downstep and downdrift within its utterances, however, declination is restricted to L tones only. Therefore, it was hypothesized in the previous chapter that declination target L tones alone, as H tones are highly involved in the phonology of Thadou. Hence, a look at another related language is imperative and in this chapter this is undertaken through Mizo. The aim is to see whether declination effects both the tones. And if so, why does this happen? As is necessitated by the study, a sketchy look at the possible post-lexical phonology of Mizo is undertaken.

5.1 Introduction to Mizo Language

Mizo is also a Tibeto-Burman language belonging to the Kuki-chin sub group. It is spoken in the state of Mizoram in the North-East of India. It is also spoken in the adjacent states of Manipur, Tripura, Assam and Nagaland. Even though small in number there are Mizo speakers in Myanmar and Bangladesh as well. The language Mizo was earlier known as Lushai/ Lusei as initially, the state of Mizoram was part of Assam and was known as the Lushai Hills. According to George A. Grierson’s Linguistic Survey of India (1904):

The Lushai Hills have been a scene of various migrations, new tribes at different times pushing the former inhabitants westwards and northwards… Between 1840
and 1850 they (the Lusheis) obtained final and complete possession of the North Lushai Hills, having pressed the former possessors, the Thados, before them into Cachar.

Grierson classifies Lushai under the Central Chin subgroup. If one goes by David Bradley’s (1997) classification of Kuki-Chin languages, Mizo falls under the southern group. However, a much recent work by Kenneth VanBik (2006) confirms it to be a central Kukish or Kuki-Chin language.

5.2 Mizo: A Review

Though a lot of work has been done on the language, it is needless to say that, a study on declination in Mizo has not been undertaken so far. This chapter shall focus on the declination facts as well as the other post-lexical tonal phenomena in the language. But, before moving on to the main topic, an overview of Mizo phonology is imminent. The following section is initiated towards that end.

5.3 An Overview of Mizo Phonology

5.3.1 Segmental Inventory of Mizo

5.3.1.1 Consonants

Mizo has thirty consonants. However, /p,t,k,ʔ,l,r,m,ŋ/ are the only consonants that are attested in syllable final position. The language has pre aspirated sonorants. The consonantal inventory of Mizo is given in Table 9.

Table 9

Consonantal Inventory of Mizo (Vijayakrishnan & Temsunungsang, 2012)

<table>
<thead>
<tr>
<th>Labial</th>
<th>Labio-Dental</th>
<th>Dental</th>
<th>Alveolar</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plosive</td>
<td>p pʰ b</td>
<td>t tʰ</td>
<td>d</td>
<td>k kʰ</td>
<td>?</td>
</tr>
<tr>
<td>Trill</td>
<td></td>
<td>tr trʰ</td>
<td>r rʰ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affricate</td>
<td></td>
<td>ts tsʰ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricative</td>
<td></td>
<td>f v</td>
<td>s z</td>
<td>h</td>
<td></td>
</tr>
<tr>
<td>Lateral</td>
<td></td>
<td>tl tlʰ</td>
<td>l lʰ</td>
<td>n nʰ</td>
<td>η η</td>
</tr>
<tr>
<td>Nasal</td>
<td>m mʰ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.3.1.2 Vowels

According to the studies of Lalrindiki Fanai (1989, 1992), Mizo has five pure vowels – /i, e, a, o, u/ and their longer counterparts- /i:, e:, a:, o:, u:/; ten diphthongs- /ui, ai, ei, oi, au, eu, ou, ia, ua/ and four triphong- /iai, uai, uau, iau/.

5.3.2 Tones in Mizo

There are four lexical tones in Mizo. They are- High (H), Low (L), Rising (LH) and Falling (HL). Examples of the four tonal contrasts are given in Table 10.

Table 10

<table>
<thead>
<tr>
<th></th>
<th>H</th>
<th>L</th>
<th>LH</th>
<th>HL</th>
</tr>
</thead>
<tbody>
<tr>
<td>lei ‘tongue’</td>
<td>lei ‘bridge’</td>
<td>lei ‘to buy/ earth’</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>man ‘to arrest/catch’</td>
<td>man ‘cost of’</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>-</td>
<td>-</td>
<td>maŋ ‘dream’</td>
<td>maŋ ‘to become extinct’</td>
<td></td>
</tr>
</tbody>
</table>

Some of the plots for words recorded and analysed with my informants are illustrated in Figure 42. The plots show pitch tract of words in isolation.
Figure 42. Praat diagrams showing pitch contours for different tones in Mizo.

Though, there are disyllabic and tri-syllabic words in Mizo, it is mostly a mono-syllabic language. The tonal patterns permissible within syllables has been described by Fanai (1989) and Vijayakrishnan (2014) which can be summed up in Table 11.

Table11

Tone distribution in Mizo syllables (Adopted from Sarmah & Wiltshire, 2010)

<table>
<thead>
<tr>
<th>Syllable Types</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monosyllable</td>
<td>H  F  L  R</td>
</tr>
<tr>
<td>Disyllable</td>
<td>HH  HL  HR  FL  LL  LH  LR  LF  RR</td>
</tr>
<tr>
<td>Trisyllable</td>
<td>LLL  LHH</td>
</tr>
</tbody>
</table>

Note: In the table F refers to Falling tone, HL and R refers to Rising tone, LH.
So far, the basics of segmental and suprasegmental phonology of Mizo has been discussed. However, a closer look at the tonal properties within the lexical component is indispensable before moving on to the analysis of post-lexical tonology of Mizo. The following sections discusses the nature of tones within the verb-stems as well as within the morphological derivations in Mizo.

5.4 Verb-Stem alternations

As mentioned earlier, verb-stem alternation is a property of Kuki-Chin languages. Mizo also exhibit properties of verb-stem alternation. According to William Bright (1957) Mizo has two forms of verbs classified as Stem1 and Stem2 which are used in different contexts. Classification of verb into Stem1 and Stem2 is based on the grammatical properties of the verbs dependent on their syntactic distribution. According to Lalrindiki Fanai (1989, 1992) these ‘verb conversions’ into ‘Form I’ and ‘Form II’, as she names them, involves a morpho-phonological process in which Form II is derived from the verb root Form I. Form I is used in active constructions, while Form II is used in passive constructions; conditional clauses as well as infinitival constructions also use Form II (Fanai, 1992).

Table 12

Tonal Changes in Verb Alternates in Mizo (data adopted from Fanai (1992))

<table>
<thead>
<tr>
<th></th>
<th>Stem1</th>
<th>Stem2</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>HL → L</td>
<td>fô:p</td>
<td>fôʔ</td>
<td>to kiss</td>
</tr>
<tr>
<td></td>
<td>fê:k</td>
<td>fêʔ</td>
<td>to chop</td>
</tr>
</tbody>
</table>
The verbs in Mizo have been systematized into lexical classes based on their conversion facts (Fanai, 1992; Vijayakrishnan, 2014). The categories can be summarized as follows.

Class 1: Non-alternating verbs

<table>
<thead>
<tr>
<th>H → L</th>
<th>lúm</th>
<th>lúm</th>
<th>to make/ prepare</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>kál</td>
<td>kàl</td>
<td>to go</td>
</tr>
<tr>
<td>L → L</td>
<td>aù</td>
<td>aùʔ</td>
<td>to call</td>
</tr>
<tr>
<td></td>
<td>mhù:</td>
<td>mhùʔ</td>
<td>to see</td>
</tr>
<tr>
<td>LH → L</td>
<td>hǎ:l</td>
<td>hǎ:l</td>
<td>to burn/ light</td>
</tr>
<tr>
<td></td>
<td>thǒu</td>
<td>thòʔ</td>
<td>to rise</td>
</tr>
<tr>
<td>HL → HL</td>
<td>pû:k</td>
<td>pû:k</td>
<td>to borrow</td>
</tr>
<tr>
<td></td>
<td>sû:t</td>
<td>sû:t</td>
<td>to cancel/ retreat</td>
</tr>
<tr>
<td>L → HL</td>
<td>pè:</td>
<td>pè:k</td>
<td>to give</td>
</tr>
<tr>
<td></td>
<td>sì:</td>
<td>sì:k</td>
<td>to butt/ horn</td>
</tr>
<tr>
<td>LH → HL</td>
<td>á:</td>
<td>á:t</td>
<td>to be mad</td>
</tr>
<tr>
<td></td>
<td>ĭè:</td>
<td>ĭè:t</td>
<td>to move/ stir</td>
</tr>
</tbody>
</table>

Class 2: Glottal stop insertion and neutralization of stop in the coda

hràlʔ ‘to sell’
phàrʔ ‘to spread out’
bù:k ‘to weigh/compare’
pû:k ‘to borrow’
sû:t ‘to cancel/retrieve’
sit ‘to be dissatisfied’
a. Glottal stop insertion  b. Neutralization of stop in the coda

há:u hàʔ ‘to scold’   kit kîʔ ‘to cut/axe down’
núar nûrʔ ‘to sulk’   fô:p fôʔ ‘to kiss’
pè:l pèlʔ ‘to pass’   vâ:k vâʔ ‘to crawl’

Class 3: Neutralization of tone

hè:k hè:k ‘to accuse/speak against’   hû:k hû:k ‘to growl (e.g., tiger)’
dô:t dô:t ‘to suck’   khà:r khà:r ‘to close (a door)’

Class 4: /k/ and /t/ insertion; vowel shortening and L → HL tone change

a. /k/ insertion
là: là:k ‘to take’   bia bîak ‘to speak/consult’
b. /t/ insertion
tlí: tlhît ‘to pour’   dô: dô:t ‘to lie’
c. Vowel shortening and L → HL
là:m lôm ‘to celebrate’   zô:n zôn ‘to share (an umbrella)’

The verb conversation facts reveal that the stem2 form which is phonologically derived from stem2, always ends on the low tone (or a falling tone) (Vijayakrishnan, 2014). Also, according to Fanai (1992), tones in verbs are derived cyclically.

5.5 Morphological derivations in Mizo

In Mizo, derived words are realized intact without any tonal variations in them (Fanai, 1992). Some of the instances were analyzed and the results concur to it. Examples of morphological derivations are given below. Instances are of words derived through the
process of affixation (examples adapted from Fanai, 1992). The adjectival suffix /-ōm/ and the nominal suffix /-ná/ attaches to stem 2 forms of verbs.

I. In derivations...

a) dém + ōm → démōm ‘blameworthy’

\[\text{Pitch (Hz)}\]
\[\text{Time (s)}\]
\[1.817, 2.752\]
\[\text{démom}\]

b) rîn + ōm → rînōm ‘trustworthy’

\[\text{Pitch (Hz)}\]
\[\text{Time (s)}\]
\[10.5002097, 11.4282675\]
\[\text{rinom}\]

c) īnhřû:k + ná → īnhřû:kná ‘with which to wipe’

\[\text{Pitch (Hz)}\]
\[\text{Time (s)}\]
\[18.843309, 19.7553908\]
\[\text{inhru:kna}\]
As seen in I(a-d), when the adjectival suffix /-om/ with an LH tone and the nominal suffix /-na/ with an H tone are added to the root words with an HL tone, the roots are realized as such without any tonal alternation. Even no re-syllabification is evidenced during the derivational process. Take for instance I (a), when the adjectival suffix /-om/ is added to the verb form /dêm/ ‘to blame’, the coda of the first syllable is not re-syllabified to become the onset of the following suffix.

It is understood that the lexically specified tones remain intact throughout the lexicon without any simplification under morphological derivation process. The four tones are attested intact within the lexical phonology of Mizo. Except for the cyclic tonal derivations within the verb forms (Fanai, 1992), tonal alternations do not affect the lexical phonology of Mizo.

Having established the lexical characteristics of tone in Mizo, the post-lexical tonology of Mizo is analyzed next.

5.6 Tonal Alternations in Mizo

As we have seen in Thadou, Mizo also has instances of tonal alternations. Examples of tonal alternations within phrases are given below:
II. Instances where L tone precedes

a) $L + HL \rightarrow L - HL$  \( (ká)\  kè:l\ mî:t\quad (\text{‘my’ goat’s gallbladder’})

\[ 
\begin{array}{c}
\text{Pitch (Hz)} \\
\hline
150 & 200 & 250 & 300 \\
\hline

dotted line \\
\hline
\end{array}
\]

\( ka\ kè:l\ mî:t \)

b) $L + LH \rightarrow L - LH$ \( kè:l\ tě\quad (\text{‘small goat’})

\[ 
\begin{array}{c}
\text{Pitch (Hz)} \\
\hline
150 & 200 & 250 & 300 \\
\hline
\hline
\end{array}
\]

\( kè:l\ tě: \)

c) $L + L \rightarrow L - L$ \( kè:l\ trò:\quad (\text{‘good goat’})

\[ 
\begin{array}{c}
\text{Pitch (Hz)} \\
\hline
150 & 200 & 250 & 300 \\
\hline
\hline
\end{array}
\]

\( kè:l\ trò: \)
d) \( L + H \rightarrow L - H \)  
\[ \text{'soft goat'} \]

As seen in II (a-d), when preceded by an L tone, the tones of all the words are realized as they would in isolation.

III. Instances where H tone precedes

a) \( H + HL \rightarrow H - HL \)  
\[ \text{(kà) zo:ŋ mì:t ‘(my) monkey’s gallbladder’} \]

b) \( H + LH \rightarrow H - LH \)  
\[ \text{bé:l tè: ‘small pot’} \]
c) \[ H + L \rightarrow H - L \] \( \text{bé:l trà:} \) ‘good pot’

\[ \begin{array}{c|c}
\text{Pitch (Hz)} & 300 \\
\hline
150 & \text{bé:l tra:} \\
\end{array} \]

d) \[ H + H \rightarrow H - H \] \( \text{bé:l né:m} \) ‘soft pot’

\[ \begin{array}{c|c}
\text{Pitch (Hz)} & 300 \\
\hline
150 & \text{bé:l ne:m} \\
\end{array} \]

Even when preceded by an H tone as in III (a-d), the tones of all the words are realized as they would in isolation. Let us now observe what happens to /pâ:/ ‘father’ with an HL tone when followed by other syllables with different tones.

IV. Instances where HL tone precedes

a) \[ HL + HL \rightarrow H - HL \] (kâ) \( \text{pá: mî:t} \) ‘(my) father’s gallbladder’

\[ \begin{array}{c|c}
\text{Pitch (Hz)} & 300 \\
\hline
150 & \text{ka pa: mî:t} \\
\end{array} \]
b)  $\text{HL} + \text{LH} \rightarrow \text{H} - \text{LH}$ (ká) pá: ūi  ‘(my) father’s dog’

diagram

\[ \text{Pitch (Hz)} \]
\[ \text{Time (s)} \]

\[ \text{ka pa: ui} \]

\[ \text{Pitch (Hz)} \]
\[ \text{Time (s)} \]

\[ \text{ka pa: ke:l} \]

c)  $\text{HL} + \text{L} \rightarrow \text{H} - \text{L}$  (ká) pá: kè:l  ‘(my) father’s goat’

\[ \text{Pitch (Hz)} \]
\[ \text{Time (s)} \]

\[ \text{ka pa: ke:l} \]

d)  $\text{HL} + \text{H} \rightarrow \text{H} - \text{H}$  (ká) pá: bél  ‘(my) father’s pot’

\[ \text{Pitch (Hz)} \]
\[ \text{Time (s)} \]

\[ \text{ka pa: be:l} \]

As we can see in IV (a-d), when followed by any other syllable the HL tone becomes a level H tone by delinking and deleting the L tone from its syllable. This can be represented in the following way:

\[ \text{Diagram} \]
\[ H \quad \sigma \quad L \]

\[ + \]

\[ \text{Symbol} \]
V. Instances where LH tone precedes

a) \( \text{LH + HL} \rightarrow \text{L} - \text{HL} \) (kà) üì mì:t ‘(my) dog’s gallbladder’

\[
\begin{array}{c}
\text{Pitch (Hz)} \\
\text{ka ui mì:t}
\end{array}
\]

b) \( \text{LH + LH} \rightarrow \text{LH–LH} \) üì tê ‘small dog’

\[
\begin{array}{c}
\text{Pitch (Hz)} \\
\text{ui te:}
\end{array}
\]

c) \( \text{LH + L} \rightarrow \text{LH – L} \) üì trà: ‘good (breed) dog’

\[
\begin{array}{c}
\text{Pitch (Hz)} \\
\text{ui tra:}
\end{array}
\]
The LH rising tone when followed by an H as in V (d) or an HL tone as in V (a), it becomes an L tone by delinking and deleting the H tone from its syllable. But when followed by an L as in V (c) or an LH tone as in V (b), the tones of the syllables are realized as such without any change.

This delinking and deletion of H tone could be to avoid clash between the two H tones which may come together otherwise. This could be attributed to Obligatory Contour Principle (OCP). OCP states that two consecutive identical features are banned in underlying representations. However, this rule applies only to the LH-H/HL sequence in Mizo, as we can see that identical tones are acceptable in other instances. These tonal alternations are applicable within Noun Phrases only. As was explicated in section 5.5 tonal alternations do not take place within lexical categories.

In fact, the contour tone simplification is the sole typological rule in the post-lexical component of Mizo grammar. Unlike Thadou, where de-linking results in the phonological process of downstep and alternating H and L tones leading to the phonological process of downdrift, the post-lexical tonology of Mizo is quite simple. The
phonological processes of both downstep and downdrift affecting the realization of H tone is absent in Mizo. Mizo exhibits simplification of compound tones without affecting the realization of either H or L tones.

It is this major difference in the post-lexical tonology of the two languages that forced the examination of phonetic declination in them. The next section deals with an analysis of declination in Mizo in L tone and H tone sequences.

5.7 Declination in Mizo

Let us now check for declination in Mizo. All like tone sequences such as utterances with all L tone syllables and all H tone syllables were prepared to check for declination in Mizo as well. Mostly, phrases with two to five syllables are examined.

5.7.1 Declination in utterances with all L tone

1. pàhnih ‘two’

Figure 43. pàhnih ‘two’

Figure 43 shows the pitch tract in the utterance pà hnih ‘two’. As seen, there is quite a prominent declination between the syllables. Even if both the syllables have L tone, the second syllable has less F0 as compared to the first. The slope value between the syllables is -14.65.
2. kè pänhìh
   leg two
   two legs

\[ y = -7.4526x + 214.26 \]

**Figure 44. kè pänhìh ‘two legs’**

Figure 44 is of an utterance with three syllables and the pitch tract can be seen to be declining throughout the utterance. There is a slope value of -7.45.

3. sò:m hnhìh pàrùk
   ten  two  six
   ‘twenty six’

\[ y = -5.6536x + 213.88 \]

**Figure 45. sò:m hnhìh pàrùk ‘twenty- six’**
Figure 45 gives the pitch tract of the utterance *sò:m hníh pà rùk* ‘twenty-six’. Here again the trendline can be seen to be declining steadily and has a slope value of -5.65.

4. *kè sò:m hníh pàrùk*

   leg ten two six
   ‘twenty-six legs’

*Figure 46. kè sò:m hníh pàrùk* ‘twenty-six legs’

Pitch tract and trendline of the utterance *kè sò:m hníh pàrùk* ‘twenty-six legs’ are given in figure 46. The utterance is five syllables long and the slope value of the pitch tract is -4.41.

All the figures show declination among L tone sequences. Here again a small calculation can be done to check for the rate of fall. Table 13 shows an analysis of the slope values of the frequency fall among Mizo utterances. The negative value of the slope prove that pitch falls across utterances. From the table it is clear that the slope value decreases as the number of syllables in an utterance increases. Just as in Thadou the utterance length and rate of declination are inversely proportional to each other.
Table 13

*Slope values of L tone sequences*

<table>
<thead>
<tr>
<th>Utterance</th>
<th>No. of Syllables</th>
<th>Slope value</th>
</tr>
</thead>
<tbody>
<tr>
<td>pà hnih ‘two’</td>
<td>2</td>
<td>-14.65</td>
</tr>
<tr>
<td>kè pà hnih ‘two legs’</td>
<td>3</td>
<td>-7.45</td>
</tr>
<tr>
<td>sò:m hnih pà rûk ‘twenty-six’</td>
<td>4</td>
<td>-5.65</td>
</tr>
<tr>
<td>kè sò:m hnih pà rûk ‘twenty-six legs’</td>
<td>5</td>
<td>-4.41</td>
</tr>
</tbody>
</table>

Having analyzed declination among L tone sequences, the declination facts of H tone sequences can be seen in the next section.

### 5.7.2 Declination in utterances with all H tones

Recall that declination among H tones were confined in Thadou. Let us now examine the nature of H tones declination in Mizo.

5. bé:l túŋ
   pot tall
   ‘tall pot’

![Figure 47. bé:l túŋ ‘tall pot’](image-url)
Figure 47 is of a di-syllabic phrase *bê:l túŋ* ‘tall pot’. Unlike in Thadou, the H tone sequences can be seen to decline here. The pitch tract also has a slope of -7.27.

6. lálí bê:l hlúi
   lali pot old
   ‘Lali’s old pot’

![Lali's old pot](image1)

**Figure 48.** lálí bê:l hlúi ‘Lali’s old pot’

Figure 48 illustrates the pitch tract of the utterance *lálí bê:l hlúi* ‘Lali’s old pot’. Even this figure shows declination among the H tone sequences. There is a slope of -5.12 in this utterance.

7. lálí nú bê:l hlúi
   lali mother pot old
   Lali’s mother’s old pot

![Lali's mother's old pot](image2)

**Figure 49.** lálí nú bê:l hlúi ‘Lali’s mother’s old pot’
Figure 49 shows the pitch tract of an utterance with five syllables. The pitch declines throughout the utterance and has a slope value of -4.38.

The figures show that Mizo has declination among both Low and High tones.

Table 14 gives the slope values of utterances with all H tones.

Table 14

*Slope value of pitch tracts in H tone sequences*

<table>
<thead>
<tr>
<th>Utterance</th>
<th>No.of Syllables</th>
<th>Slope value</th>
</tr>
</thead>
<tbody>
<tr>
<td>bél túŋ ‘tall pot’</td>
<td>2</td>
<td>-7.27</td>
</tr>
<tr>
<td>láli bél hlüi ‘Lali’s old pot’</td>
<td>4</td>
<td>-5.12</td>
</tr>
<tr>
<td>láli nú bél hlüi ‘Lali’s mother’s old pot’</td>
<td>5</td>
<td>-4.38</td>
</tr>
</tbody>
</table>

The slopes have negative values confirming declination in phrases. H tone syllables behave the same way as L tone syllables in Mizo. Just as in the case of L tones, the length of utterance and declination rate are inversely proportionate i.e. longer the utterance lesser the declination rate. Unlike Thadou, declination among L tone and H tone sequences are almost similar and natural processes in Mizo. It is hypothesized that declination of H tones in Thadou is restricted due to the phonological downtrending properties of downdrift and downstep which mostly affects the H tones. The nature of post-lexical phonology in Mizo is examined further to see if the processes of downdrift and downstep are present in Mizo or not.

### 5.8 Downdrift in Mizo

Downdrift in Mizo is analyzed through the study of utterances with alternate sequences of H and L tones. Downdrift should show a lowering of pitch in the subsequent H tone than a preceding H tone if L tone intervenes.
1) zóːŋ pà thúm
   monkey three
   ‘three monkeys’

Figure 50. zóːŋ pà thúm ‘three monkeys’

Figure 50 illustrates the pitch tract of the utterance zóːŋ pà thúm ‘three monkeys’ with an H-L-H sequence (both the original pitch contour and the graphical representation of mean F0s). As can be seen, the third syllable having an H tone has almost the same frequency as the initial syllable, which also has an H tone. This shows that there is no downdrift in the utterance among the H tones even if there is an intervening L tone in it.
2) lálá hùan záu tàk
lala garden vast EXG
‘Lala’s vast garden’

*Figure 51.* lálá hùan záu tàk ‘Lala’s vast garden’

Pitch tract of the utterance lálá hùan záu tàk ‘Lala’s vast garden’ is given in figure 51. As seen, in the sequence H-H-L-H-L, the fourth syllable which is an H tone does not downdrift even when there is an L tone preceding it. This figure also shows that there is zero downdrift in the language.
5.9 Downstep in Mizo

Mizo do not exhibit properties of downstep. As seen in section 5.6- IV (a), there is no downstep in a combination of HL+ HL tones, but only de-linking.

(1) ka + pâ: + mî:t → ká pâ: mî:t
   1PRO father gallbladder ‘my father’s gallbladder’

Figure 52. ká pâ: mî:t ‘my father’s gallbladder’

Figure 52 illustrates the pitch tract of the utterance ká pâ: mî:t ‘my father’s gallbladder’.

/pâ:/ meaning ‘father’ has an HL tone in isolation, but only H tone surfaces in the utterance. Moreover, the L tone does not seem to affect the HL tone on the following word /mî:t/ and is not downstepped.

(2) ka + pâ: + bé:l → ká pâ: bé:l
   1PRO father pot ‘my father’s pot’

Figure 53. ká pâ: bé:l ‘my father’s pot’
Figure 53 shows yet another instance confirming the absence of downstep in Mizo. This figure shows the pitch tract of the utterance ká pá: bé:l ‘my father’s pot’ having a combination of H+ HL+ H tones. The L tone on the second syllable is not realized nor is its presence felt on the following tone. The H tone following the HL tone does not downstep. Hence we can conclude that downstep is not one of the post-lexical properties of Mizo.

Thus it can be concluded that Mizo has declination among both L and H tones, although it does not show instances of the phonological properties of downdrift or downstep. As Mizo is devoid of phonological downtrending phenomena, declination has full potential to equally affect both L as well as H tones.

5.10 Conclusion

Analysis of Thadou in Chapter 2 has led us to the fact that the phonological properties of downstep and downdrift are present in the post-lexical phonology of Thadou. However, the phonetic property of declination which is a universal phenomenon is restricted to L tones alone and is very rare among the H tones as was delineated in Chapter 3. This phenomenon is attributed to the fact that H tones undergo a lot of phonological reformatting in a complex way through the processes of downdrift and downstep and it is this phonology that constrain the implementation of declination to occur in H tones.

An analysis of a related language, Mizo, was undertaken for more clarification on the declination facts and it is found that both L tones and H tones decline equally in Mizo. The phonological properties of the language was also examined. It is observed that
the phonological phenomena of downdrift and downstep are absent in Mizo. This creates ample space for H tones to decline in the language as they are not involved in any complex phonology in the language. In short, it can be concluded that, as Mizo is deprived of post-lexical phonological properties, declination has full potential to affect both L and H tones equally.

The post-lexical tonology of Kuki-Chin languages are scarcely investigated. It would be interesting to find out more languages that behave differently because of their difference in phonetics and phonology of post-lexical tones as we saw in Thadou and Mizo. Languages with complex phonology seem to severely constrain the phonetics of implementation and vice-versa. It would be worth exploring more tonal languages and typologize them based on the complexities in their phonetics and phonology.

Another issue worth investigating would be the interaction of all the downtrending phenomena. It would be illuminating to develop a model which could account for the interaction of the phonological properties of downstep and downdrift and the phonetic property of declination and predict the pitch trend based on their interactions.