A first look at tone in Myebon Sumtu Chin
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Introduction
1.1 Sumtu Chin
Sumtu belongs to the southern Chin sub-branch of the Kuki-Chin (Bradley 2002) branch of Tibeto-Burman, spoken in four townships (Kyaukpyu, Ann, Minbya and Myebon) of Rakhine State. Perhaps 2,800 households people speak Sumtu, amounting to a speaker-population of perhaps 20,000, though no accurate figures exist. Sumtu (whose ISO 639-3 code csv is pending approval) is currently not listed in the most recent edition of the SIL Ethnologue (Lewis 2009) The closest language to Sumtu which is listed in the SIL Ethnologue is Asho (ISO 639-3 csh) which is unintelligible to Sumtu speakers. Another closely related language Laitu (which will be clj) is also unlisted in the Ethnologue.

Although there are around 50 ethnic groups which identify themselves as ‘Chin’, the diversity and sub-grouping hierarchy of this branch of Kuki-Chin-Naga is poorly understood, and much basic comparative linguistic research remains to be done. Chin languages have tone systems with complex sandhi patterns, as well as a system of verb-stem alternations in certain Chin languages which may yield information about some of the earliest tonal splits in Sino-Tibetan. As a result of the Burmese military regime’s previous attempts to discourage the promotion of minority ethnic identities and assimilate minority ethnic groups into the wider Burmese and Rakhine Buddhist culture, the rate of transmission of Chin languages to new generations has slumped. Although the government does allow ethnic Chin to list Chin on their identity cards, many Chin in large regions of Burma are no longer familiar with Chin history or traditions and have become assimilated into Rakhine or Burmese society.

1.2 Background to the present study: Ritual Sumtu
Ritual Sumtu is a critically endangered speech form known by three aged spirit mediums - all aged in their seventies or eighties - living in Minbya and Myebon townships. When they die, ritual Sumtu will live on only partially in fragments known by others in the community. The inspiration for a project to document this disappearing speech form was the grandfather of near-native Sumtu speaker Mai Ni Ni Aung, who is able to recite the names of 22 generations of her mother’s clan history and 15 of her father’s clan history. She learnt this from her grandfather who was a spirit medium
until his conversion to Christianity in the 1940s, but who in old age still chanted the family history to his grandchildren, which is how Mai Ni Ni learnt about it.

1.3 Tone in Chin languages
Chin languages are known for having beguilingly complex tone systems. Underlying lexical tone may be straightforward, but surface phonetic representations may be complex, subject to a number of syntactic and phonological processes. Of the reasonably closely related Chin language Daai, Hartmann (2002:81) writes: 'In the Daai orthography, tone is not marked. There was once an attempt to mark tone; it has since been abandoned, as tone differs from village to village.' Similarly, writing on Khumi tone, Peterson (2010:81) records five underlying tonal contrasts, but notes elsewhere (Peterson to appear) that the surface realisation of these underlying tones and their interaction with each other yields a system which is fairly convoluted, depending heavily on the morphosyntactic environment of nominal and verbal roots. Complex tone sandhi processes have also been reported and described to varying degrees of completeness for the Northern Chin languages Lai (Hyman & VanBik 2002, 2004; VanBik 2009), Mizo, Zahau, Thado, Zo, Tedim and Sizang (Button 2011).

1.4 Chin verb-stem alternations
One apparent asymmetry in the Sumtu Reader corpus was a strong prevalence of low-tone verbs over high-tone verbs, though both are clearly attested. This may be connected to the phenomenon of verb-stem alternations in Chin, a major feature of the lexicon in northern and central Chin languages. The phonetic detail of the two alternatives and the linguistic function of the choice between them are themselves complex subjects of study, and the situation different in each language. For a selection of studies, see Henderson (1965:84-9), Stern (1963:243-51), Chhangte (1993:135-75) and King (2009), Hartmann (2002), Yip (2004).

Hyman & VanBik (2002) report that in the northern Chin language Haka Lai, 80% of verbs have two distinct forms (754 out of a verbal corpus of 910), while in the southern Chin language Daai, 927 out of 1116 verbs documented by Hartmann (2002) have no stem alternation, suggesting that less than 20% of Daai verbs exhibit this phenomenon. Preliminary impressions are that in other southern Chin languages such as Khumi and Sumtu a similar or smaller proportion of verbs in the lexicon have two stems. It will be some time before data can be available to illustrate the situation more fully in Sumtu, but for now it can be assumed that verb-stem alternation affects a minority of verbs in Sumtu. In this paper, because of the lack of clear data, verb-stem alternations are not systematically indicated in glosses.

The Sumtu Reader corpus is not sufficient to draw a comparison between verb-stem alternation in Myebon Sumtu and other Chin languages, be it in terms of the extent of the lexicon in which verb stem alternation is found, or in terms of the phonological nature of the alternation. The examples which were observed in the Sumtu Reader corpus are given below, with the stems glossed as Form I or Form II according to the conventions adopted by the authors just cited. There is insufficient data to classify verb stem pairs into types, but the signs are that the types of alternations are vaguely similar to Hartmann's (2002) description of Daai.
(1) Verb stem alternation in Myebon Sumtu

<table>
<thead>
<tr>
<th>Form I</th>
<th>Form II</th>
<th>gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>ʔok/</td>
<td>ou/</td>
<td>drink</td>
</tr>
<tr>
<td>hleiʔ/</td>
<td>hlei/</td>
<td>buy</td>
</tr>
<tr>
<td>ʔiʔ\</td>
<td>ʔip\</td>
<td>sleep</td>
</tr>
<tr>
<td>kɔʔ\</td>
<td>kɔt\</td>
<td>cross. over</td>
</tr>
<tr>
<td>lɔk/</td>
<td>lɔ/</td>
<td>fetch</td>
</tr>
<tr>
<td>siʔ\</td>
<td>siʔ\</td>
<td>go</td>
</tr>
<tr>
<td>buʔ\</td>
<td>but\</td>
<td>cook</td>
</tr>
</tbody>
</table>

In Sumtu, Stem I is found in finite verbs and Stem II in imperatives: examples in as in the following examples.

(2) a. k-ʔiʔ\  
    I–sleep.I  
    'I sleep.'

    b. ʔip\–hni–e/  
        sleep.II–PERF–IMP  
        'Go to sleep!'

    c. lɔ–i–e/  
        fetch.II–APPL–IMP  
        'Bring it here!'

1.5 Data collection
Pinning down the basics of Sumtu syntax and phonology is a task made maddeningly difficult by the significant differences between the dialects. The situation is complicated, but it seems clear that there are major differences between the dialects of Sumtu both in terms of the tone system and the vowel system more generally. For this study, however, dialect differences did not present a problem because the tone data is based solely on the Myebon dialect of Dong Ling, with whom the author spent a week in Minbya, the base centre of the ritual Sumtu documentation project, in February 2013.

The phonology of spoken Sumtu has been described provisionally by Kerstin Herr (2012) and Kee Shein Mang (2012) of SIL International. Their motive is to develop and promote a standardised orthography for Sumtu. At the time of writing the only material published in Sumtu at the time of writing is a reader, *Sum:tu Hmyow Saw Uk* (Dong Ling 2008), which represents the Myebon dialect of the author, spelt according to principles advised by Khoi Lam Thang, a speaker of a northern Chin language very unlike Sumtu. There are some problems with the orthography, which represents some sounds in a rather counter-intuitive way, but in general it is seems to be an internally consistent representation of the Myebon dialect of Sumtu spoken by its author Dong Ling (known in Burmese as U Daung), aged 75. Further investigation may confirm my suspicion that the Myebon speech of this man may preserve a number of vowel contrasts and consonant clusters which have changed or disappeared in other dialects and in the Myebon dialect spoken by younger speakers. The tonal system is clearly markedly different: on the compound in Minbya, speakers of Minbya dialect identified
the sing-song quality of Myebon intonation as being characteristic of that dialect and different from their own.

The entire text of the *Sumtu Reader* (Dong Ling 2008) was recorded, transcribed and discussed in fine detail with its author during the course of a week, paying special attention to transcribing tones and checking tonal alternations. Recordings were made using a Zoom H4n digital recorder, with supplementary video, and laryngographic recordings of some material.

The *Reader* consists of 68 short lessons with between 8 and 20 sentences in each. Each lesson introduces a particular initial consonant or syllable rhyme. The material included is contrived to illustrate all the sounds of the language, and while such a corpus can only cover a small portion of the language's lexicon, the *Reader* covers a surprisingly wide range of the language's syntactical and morphological forms.

2 Notes on the transcription
There are some interesting aspects of the phonetics of Myebon Sumtu which fall outside the scope of this paper. The details of segmental phonology are not under scrutiny here as tone is the prime focus. Nonetheless, I hope the transcription used here is sufficiently self-explanatory to give a good impression of the phonetics of Myebon Sumtu. IPA values of symbols generally apply, but the following conventions are worth noting.

2.1 Tones
- / and \, or H and L, represent high and low tone, respectively.
- In phonological representations, [T] is a lexically assigned tone

2.2 Vowels
- ei and ou represent the monophthongs [e o] respectively. There are five vowel heights in Sumtu: [i e e a o o u]; the two digraphs are used for ease of transcription without unnecessary diacritics, but these vowels are not diphthongs.
- r represents a central or back half-close vowel [ə~实践中],
- y represents a palatal glide [j] in syllable-initial and syllable-final positions alike

2.3 Consonants
- hm hn hn hy hy represent voiceless sonorants [m n n n i]
- ph th kh represent aspirated stops [pʰ tʰ kʰ]
- A hyphen ‘-’ indicates a morpheme boundary

2.4 Morphophonological structure
A dot ‘.’ in transcriptions represents the boundary between the minor syllable and major syllable of a sesquisyllable. This may or may not coincide with a morpheme boundary, as the examples in (3) show. The vowel of the minor syllable of sesquisyllables is a short, non-distinctive epenthetic [ə] which is not transcribed; only m or n may appear as the final consonant in the minor syllable of a sesquisyllable.
(3) Examples illustrating the transcription of morphophonological structure

a.  msɪ\(\)\(\)  [mɪ\(\)]
salt
‘salt’ – single syllable, single morpheme

b.  ṇ\(\)/.hmɛt\(\)\(\)  [ŋ\(\)/.mɛt\(\)]
chilli
‘chilli pepper’ – one sesquisyllable, one morpheme

c.  m\(\)/-siʔ\(\)\(\)  [m\(\)/.siʔ\(\)]
2.PL.INCL-go
‘we go’ – one sesquisyllable, two morphemes

d. ʔ-m-.khlaʔ\(\)\(\)  [ʔm.kʰlaʔ\(\)]
3.TR-cook
‘he cooks for me’ – one sesquisyllable, three morphemes

e.  m-sɪk\(\)\(\)-aʔ/  [mšik.aʔ\(\)]
TR-pluck-NEG
‘don’t pluck it’ – two syllables, three morphemes

In phonological representations, full syllables are represented as \(\sigma\), and sesquisyllables as \(\sigma . \sigma\), where \(\sigma\) is the minor syllable and \(\sigma\) the major syllable.

3 Lexical tone

There is a simple contrast between HIGH and LOW tone (indicated in transcription with / and \, respectively). Pre-pausal HIGH tone frequently becomes a high-low fall; this entirely predictable phenomenon is not indicated in transcriptions.

After just a few hours of listening closely to Dong Ling’s speech, and mindful of the Minbya dialect speakers’ characterisation of Myebon speech as ‘sing-song’, it became very clear that there was a clear and strong, though not absolute, preference for sequences of alternating high and low tones, be it HLHL or LHLH. What follows is a detailed account, leading to an analysis, of what was in fact happening.

The data in (4) illustrate the lexical tonal contrast observed in a full range of syllable rhymes, including minimal pairs (‘tree’ vs. ‘ginger’; ‘road’ vs. ‘dance’); no distributional asymmetries or constraints have been noted. Syllables may begin with an initial stop, nasal or glottal stop. Initial clusters with l, r, y or w in second position are permitted (in addition to some unusual clusters with initial \(m +\) stop). In the syllable rhyme, a final glottal stop may occur after a vowel or vowel + glide (w or y) combination; otherwise, syllables may end in a final nasal consonant (m, n or ṇ) or stop (p, t or k).
Sumtu may form compound nouns by combining monosyllabic nouns as (5), with apparently no restriction on the ordering or sequence of HIGH and LOW.

4 Agglutinative morphology in Sumtu

Like Burmese, and many Tibeto-Burman languages, Sumtu is highly agglutinating, routinely forming syntactic phrases consisting of a head noun or verb (which may itself be a compound or have some internal structure) with one or more bound functional morphemes attached to the right. Noun phrases consist of a head noun attached to case- or role-marking affixes, postpositions and particles, etc. The head verb or noun or verb may itself be a compound with internal structure. Verb phrases, usually last in the sentence, contain a main verb attached to modal or other auxiliary verbs, as well as particles expressing tense, mode and aspect, direction, mood, etc. These agglutinative patterns are illustrated in the examples throughout this paper.

In this section we look first at the sequences of tones in noun phrases and then verb phrases. Broadly, we observe that affixes attached to nouns and verbs exhibit two distinct patterns of tonal behaviour. Affixes may have a fixed high tone (no affixes with a fixed low tone are attested in the Reader) which is lexically determined and surfaces unchanged as a high tone in the assembled verb phrase. Alternatively, affixes may have no lexically determined tone: the tone assigned in the phrase is contextually determined by the nearest lexically fixed root tone to the left, not necessarily adjacent. The root tone assigns alternating polar opposite tones to adjacent toneless affixes. Examples of noun and verb affixes belonging to both fixed-tone and toneless categories,
and the resulting tone sequences, are illustrated in the following examples, with an analysis at the end of Section 5.

4.1 **Fixed-tone noun affixes**

The fixed-tone noun affixes which are most frequently attested in the *Sumtu Reader* are a plural marker -haʔ/ and a subject marker -lɤʔ/, though the data is not sufficient to offer a fine-grained analysis of the either. In (6),(7) and (8), -haʔ/ indicates the plurality of noun phrases of various shapes, each with a high tone preceding -haʔ/, which keeps its high tone. In (9), high tone -haʔ/ is appended to a low-tone noun. In (10), -haʔ/ appears appended to a low-tone noun.

(6) ?aʔ-sɔ/-haʔ/
   chicken-DIM-PL
   'chickens'

(7) phet/-haʔ/  kiʔ/-haʔ/
   sparrow-PL  parrot-PL
   'sparrows and parrots'

(8) buʔ/-ɔn/-hneʔ/-haʔ/
   rice-curry-remain-PL
   'leftover food'

(9) f̓ʔ/-haʔ/
   cow-PL
   'cows'

(10) ?/.toy/-haʔ/-khɔ/  ?-n/--yap/-pvyʔ/
   egg-PL-also  3-PL-break-all
   'all the eggs are broken too'

Examples (11) to (14) give a similar illustration of the subject marker -lɤʔ/, which also has a lexically fixed high tone, whether preceded by a high tone, as in (11) and (12), or a low tone as in (13) and (14).

(11) yaʔ/-lɤʔ/  f̓ʔ/  ?/-laʔ/-ba/-hn̓i\
    3-SBJ  cow  3-receive-again-PRF
    'He has got his cows back again.'

(12) n\/.-pɔ/-lɤʔ/  waʔ/  ?/-weiʔ/--beʔ/
    2-father-SBJ  net  3-throw-yet
    'Your father is still casting [his] net.'

(13) n\/.-puʔ/-lɤʔ/  ðɔ/  ?-m\/.-tham/-beʔ/-ti/
    2-uncle-SBJ  fish  3-TR-feel-still -QUOT
    'Your uncle is still groping [in the river] for fish, they say.'

(14) k\./-kem\/.-lɤʔ/  ?-m\/.-niʔ/-iʔ/-beʔ/
    1-back-SBJ  3-TR-hurt-APPL-yet
    'My back is still hurting.'
4.2 **Toneless noun affixes**

In the other category, the examples in this section illustrate the tonal behaviour of two noun-phrase affixes, namely -khɔ 'also' and a locative suffix -a, both of which have the polar opposite to whatever is to the left. In (15) and (16), -khɔ is pronounced with a high tone, in both appended to a lexically fixed low tone noun; in (17) and (18), and also in (10) above, -khɔ surfaces with a low tone because it is attached to a lexically fixed high tone noun. In (19), the noun phrase to which -khɔ is attached ends with the fixed high-tone subject marker lɤʔ/, but this too causes -khɔ to surface as LOW.

(15) tɛm\̣/-khɔ/ ?/.-phem\̣/-hni/
    treadle_weight-also 3-old-PRF
    'The treadle weight is old also.'

(16) sim\̣/-khɔ/ siʔ/-i/-bry\̣/-ya/
    knife-also  go-APPL-EXH-EMPH
    'Take the knife [with you] too.'

(17) ?ryʔ/-khɔ\̣/-k\̣/-?ryʔ/-laʔ/
    lullaby-also  1-sing-must
    'I will have to sing [the child] to sleep with a lullaby.'

(18) lɔm\̣/-khɔ\̣/-bin/-txʔ/
    road-also  3-block-too
    'The road is blocked as well.'

(19) k\̣/-tu/-lvʔ/-khɔ\̣/-m\̣/-baʔ/-hyʔ/
    1-grandchild-SBJ-also  3-TR-follow-APPL-again-yet-EMPH
    'My grandchild also came along with me.'

Similarly, the suffix -a is attached to a high-tone noun and so surfaces with a low tone in (20), (21) and (22). In (23), however, -a has a high tone, being affixed to a low-tone noun or, in (24), a noun compound ending with a low tone.

(20) naŋ/-im/-a\̣ n\̣/-siʔ/-hni/-myʔ/
    2-house-LOC  2-go-PRF-Q
    'Did you go to your home?'

(21) lɔm\̣/-a\̣ n\̣/-sɔ\̣/ pr\̣m\̣/-i/-bry\̣/
    road-LOC  2-child carry-APPL-EXH
    'Carry your child along the road.'

(22) kei/-seŋ/-a\̣ naŋ/ n\̣/-myʔ\̣/
    1-nearby-LOC  2  2-exist
    'You are near me.'

(23) kaw\̣/-a\̣  nɔ̣/-sa\̣  tɔŋ/-pɔʔ/-hme\̣
    hearth_frame-LOC  fish-dry  put-RES-IMP
'Put the dried fish up on the hearth-frame.'

(24) pəŋ/-a/ aŋ\ki/ təŋ\-pəʔ/-hme\ wall-LOC shirt hang-RES-IMP

‘Hang the shirt up on the wall.’

In (25), we see -a with a high tone because of a low tone to its left. This time it is not at the right edge of the noun phrase, and is followed by -khɔʔ/, an affix with a high tone which is lexically fixed like -liʔ/ and -haʔ/ above.

(25) ʔuʔ–kan\–a/-khɔʔ/ k\.–plan\–ba/

brick-pond-LOC-from 1-return-again

'I came back again from the brick-built pond.'

(26) contains both -a and -khɔ, attached to a noun phrase which ends in a lexical high tone, which assigns its polar opposite LOW to -a and then HIGH to -khɔ.

(26) ʔ\nem\–sɔ\–a/–khɔ/ n\.–myɛŋ\–i\–my?/

low-DIM-LOC-also 2-fear-APPL-Q

‘Are you afraid down there also?’

4.3 **Fixed-tone verb affixes**

Similarly, a distinction between verb affixes with and without lexically determined tone obtains in verb-phrase morphology. Some affixes have fixed high tone, such as question-marking affix -my/ and negative particle -a?. Both stay high, irrespective of the tone on the left, as is seen in examples (27)-(30), in addition to several further examples throughout this paper. Again, we find no fixed-tone affixes which are not HIGH, though it remains to be seen whether or not this is consistently true and what the implications are.

(27) ʔɛn\ ?/.–pa\–my/

plum 3-blossom-Q

‘Is the plum [tree] in blossom?’

(28) muʔ/ ?/.–pryʔ–hni/–my/

snack 3-finish-PRF-Q

‘Is the snack all finished?’

(29) lay/–a\ sɔŋ\–khɔ/ jom\–laʔ/–aʔ/

field-LOC rice_plant-also bundle-must-NEG

‘[We] don’t have to bundle the rice plants in the paddy field.’

(30) yu\ mxy\–aʔ/–my/

rice_mash exist-NEG-Q

‘Isn’t there any rice mash?’ (for making rice beer)
4.4 Toneless verb suffixes

The *Sumtu Reader* corpus contains a good variety of verb-phrases, illustrating a wide range of affixes. My impression is that a majority of functional verb affixes are of the lexically toneless variety. Two of them, namely the perfect aspect marker -hni and -ba 'again' are illustrated in detail in the examples below. In (31) and (32), -hni occurs HIGH, the polar opposite of a preceding LOW lexical root tone. In (33) and (34) the reverse is true: the root lexical tone is HIGH and adjacent to this on the right, -hni is instead LOW.

(31) pɔnɔm/ k/-hlei/-hni/ cardamom 1-buy-PRF 'I have bought the cardamom.'
(32) ?ay/-te?/ k/-la?/-hni/ plough-but 1-get-PRF 'I have got the plough, however'.
(33) yaʔ/ ?-.htry/-hni/-ay/ 3 3-fall_over-PRF-IRR 'He is [now] about to fall over.'
(34) naŋ/-im/ ?-.sim/-hni/-wayʔ/ 2-house 3-collapse-PRF-IRR 'Your house is about to collapse.'

For similar reasons, -ba occurs HIGH in (35) and (36), but low in (37) and (38). In (36), (37) and (38), the verb with the lexical tone determining the tone of -ba is immediately adjacent to -ba. Note that in (35), -ba is two morphemes away from HIGH tone of the head verb klan/ 'repair'. The tones alternate in polarity to the right from the head, so -ba turns out HIGH (and the toneless affixes either side of it are both LOW).

(35) n-.klan/-laʔ/-ba/-hmay/ 2-repair-must-again-IRR 'You will have have to repair it again.'
(36) kei/-jʔ/ m-khen/-ba/-hme/ 1-cow TR-catch-again-IMP 'Catch my cow again.'
(37) ?aʔ-so/-msip/-ba/-tei/-aʔ/ chicken-DIM cheep-again-still-NEG 'The chicks are not cheeping any more.'
(38) kei/-lvʔ yu/-tay/ k\-.myyn/-ba/-laʔ/ 1-SBJ rice_beer 1-soak-again-must 'I have to soak the rice-beer mash again.'

The verb phrases in examples (39)–(43) all contain -ba and -hni in sequence, as a HL sequence -ba/-hni\ in (39),(40) and (41) and as LH -ba/-hni/ in (42) and (43).
4.5 **Rightward spreading of polarity within noun- and verb-phrases**

Note the prevalence of alternating HLHL or LHLH chains within all the noun phrases and verb phrases in this group of examples, and indeed in examples throughout this paper. These sequences of alternating tones occur because toneless syllables are assigned tones which are the polar opposite of the syllable to the left. Moira Yip (2002:159) refers to polarity in the context of African tone languages: “In some languages, certain affixes have tones that are fully predictable from the tone of the foot to which they attach. [...] Words that end in L take H affixes, and words that end in H take L affixes. This is termed ‘polarity’ [...] .”

(44)a is a representation of a syllable with lexically determined tone T at the head of a Sumtu-style verb- or noun-phrase, followed by a string of four lexically toneless affixes. In (44)b polarity spreads rightwards and tones with alternating polarity are assigned to the toneless syllables, yielding the output HLHLH or LHLHL in (44)c, depending on whether the T is HIGH or LOW, respectively.

(44) a.  

```
   | T | ? | ? | ? | ? |
   | σ | σ | σ | σ | σ |
```

(44) b.  

```
   | T | -T | T | -T | T |
   | σ | σ | σ | σ | σ |
```

(44) c.  

```
   H L H L H L H L
```

(45) is a representation of how the alternating pattern is broken if, in addition to a syllable with T₁ at the head of the phrase, a syllable with a lexically determined tone T₂
occurs later in the chain (three syllables to the right of the head morpheme, in this case), at which point the alternating tone pattern restarts with the tone of that morpheme. (45)c shows the four outcomes which are possible in principle, depending on whether each of $T_1$ and $T_2$ are HIGH or LOW. However, since we find no functional morphemes with lexically determined LOW tone, the patterns where $T_2$ is low are not attested.

(45) a. $\begin{array}{ccc} \text{[T}_1\text{]} & ? & ? \\ \sigma & \sigma & \sigma \end{array}$ $\begin{array}{c} \text{[T}_2\text{]} & ? \\ \sigma & \sigma \end{array}$

b. $\begin{array}{cccc} \text{[T}_1\text{]} & -T_1 & T_1 & \text{[T}_2\text{]} & -T_2 \\ \sigma & \sigma & \sigma & \sigma & \sigma \end{array}$

c. $\begin{array}{cccc} \text{[H]} & L & H & \text{[H]} & L \\ \text{[L]} & H & L & \text{[H]} & L \\ \text{[H]} & L & H & \text{[L]} & H \\ \text{[L]} & H & L & \text{[L]} & H \end{array}$

5 Deracination through grammaticalisation
In this section, we observe a couple of examples of how grammaticalisation affects tone. Words with lexically determined 'root' tone may have grammaticalised forms which have been 'deracinated', or made toneless. Tone loss is apparently the only phonological change wrought by the process of grammaticalisation; segmental phonological material remains unchanged. Note, however, that deracination is not an inevitable part of the process of grammaticalisation, given the existence of functional morphemes which have unchanging, lexically fixed, tone, as seen in 4.1 and 4.3 above.

5.1 Deracinated nouns
The Sumtu word for 'fruit' is 'ʔ.thɛwʔ/, a sesquisyllable with a high tone on the major syllable. In the Sumtu Reader, the names of specific kinds of fruit are all compounds with -thɛwʔ 'fruit' in second position, shown in (46).

(46) Words for fruit in Sumtu

<table>
<thead>
<tr>
<th>thɛwʔ /</th>
<th>fruit</th>
<th>‘fruit’</th>
</tr>
</thead>
<tbody>
<tr>
<td>hɔʔ-thɛwʔ /</td>
<td>mango-fruit</td>
<td>‘mango’</td>
</tr>
<tr>
<td>kom-thɛwʔ /</td>
<td>betel-fruit</td>
<td>‘betel nut’</td>
</tr>
<tr>
<td>pan/siʔ-thɛwʔ /</td>
<td>cucumber-fruit</td>
<td>‘cucumber’</td>
</tr>
<tr>
<td>pay/lom-thɛwʔ /</td>
<td>long_ bean-fruit</td>
<td>‘long bean’</td>
</tr>
<tr>
<td>tat-thɛwʔ /</td>
<td>tat-fruit</td>
<td>‘monkey-head fruit’</td>
</tr>
<tr>
<td>thei-thɛwʔ /</td>
<td>fig-fruit</td>
<td>‘fig’</td>
</tr>
</tbody>
</table>

In these compounds -thɛwʔ is a bound form modifying the head noun to its left. Grammaticalised with the role of generic superordinate noun, it has cast off the lexically determined high tone of takes the polar opposite tone to that head noun, and so each bimorphemic fruit name is either HL or LH, depending on the tone of the head noun, which we assume to be lexically determined. In this role, the lexical high tone of
A first look at tone in Myebon Sumtu Chin

ʔ. thɛwʔ/ 'fruit' has been removed. I use here the term 'deracination' to refer to this removal of lexical tone as a part of grammaticalisation.

5.2 Deracinated verbs

The Sumtu Reader corpus contains many more examples of two verbs which exist in fixed-tone form as verb laʔ/ 'get' and pɔʔ/ 'chase' and also in grammaticalised toneless form as -laʔ/ 'must' or 'can' and resultative marker -pɔʔ.

The verb laʔ/ is very similar to the Burmese verb yá- 'get', which has counterparts in many South-East Asian languages (cf Khmer baan, Thai dây, Vietnamese dựốc, and Cantonese 得 tak (see, for example, Simpson 2001 for a comparative overview). As a main verb in is has meanings like ‘receive’ or ‘get’ as in examples (47), (48) and (49).

(47) t.khiʔ/ laʔ/-aʔ/
    much get-NEG
    ‘He didn’t get much.’

(48) yaʔ/-lsʔ/ khu/ ʔ.-laʔ/-i/
    3-SBJ inheritance 3 -receive-APPL
    ‘He received an inheritance from his parents.’

(49) yaʔ/-lsʔ/ ʃʔya/ ʔ.-laʔ/-ba/-hnʔ/
    3-SBJ cow 3 -get.again-PRF
    ‘He has got his cows back.’

Grammaticalised in serial verb constructions it has modal meanings ‘can’, ‘must’, ‘get (a chance) to’, as in (50)–(53). In these examples, the tone of the verb laʔ/ ‘must’ is determined by rightward spreading polarity from the tone of the head verb, as described in 4.5.

(50) yaʔ/ k/-maʔ/-laʔ/
    3 1-carry-must
    ‘I had to carry him.’

(51) b.ha\ ʔ.-m\.-khlaʔ/-laʔ/
    snack 3-tr-cook-must
    ‘He had to cook the snack.’

(52) yaʔ/ ʔ.-ya/-laʔ/
    3 3-stand-must
    ‘He had to stand.’

(53) hyap\ ʔ.-m\.-pek/-ba\/-laʔ/-hnʔ/-ay/
    fan 3-TR-give-again-must-PRF-IRR
    ‘He will have to give the fan back to me.’

Whether or not the tone of laʔ/ fits in with the alternating tone pattern is itself an indication of the identity of a particular occurrence of laʔ/ as a verb with lexical tone or a
toneless modal verb; in other words an unexpected low laʔ must be a head verb and not a grammaticalised modal verb modifying another head verb within a serial verb construction. Compare the sentences in (54) and (55). As a head verb, laʔ, like its counterparts in the other South-East Asian languages mentioned above, is used idiomatically to mean ‘be alright’ or ‘OK’; in (54) the speaker is saying that whole nominalised clause [yaʔ/-lsʔ/ nɔʔ/ hŋa] 'he borrows the buffalo' is not OK, and so laʔ is the head of the verb phrase laʔ/-aʔ/. As a full ungrammaticalised verb it retains its lexically determined low tone. In (55), in contrast, the auxiliary laʔ is in a serial verb construction headed by the low-tone verb hŋa 'borrow', and so is assigned a high tone by the now familiar process of rightward-spreading polarity. The different structures of this minimal pair of sentences are reflected in their distinctly different meanings.

(54) [yaʔ/-lsʔ/ nɔʔ/ hŋa\] laʔ/-aʔ/
\[3-SBJ buffalo borrow\] can-NEG
‘He cannot borrow the buffalo.’ [e.g. because someone else is using it]

(55) yaʔ/-lsʔ/ nɔʔ/ hŋa/-laʔ/-aʔ\ 3-SBJ buffalo borrow-must-NEG
‘He must not borrow the buffalo.’ [e.g. because he is too young and the buffalo might kick him]

The Sumtu Reader corpus seemingly contains only example of the low-tone verb pɔʔ\ ‘chase’, given in (56).

(56) hou/-haʔ/ pɔʔ/-bxy/-ya/
shout-PL chase-EXH-EMPH
‘shout and drive them out’

However, there are some two dozen examples of verb phrases containing the toneless grammaticalised verb pɔʔ. More data in a wider range of contexts will be necessary to determine its function more precisely, but for the time being it seems to have a resultative function, and is treated as such. In both main verb and functional roles, this verb seems to have much in common with Burmese laiʔ, which means 'follow' as a main verb but has a grammaticalised function somewhat close to resultative in serial verb constructions (see xxx for more). A selection of examples is given below; in (57) to (74), pɔʔ RESULTATIVE occurs with a high tone immediately following a low-tone main verb;

(57) wei/ tuʔ/-pɔʔ/-hme\
cradle rock-RES-IMP
‘rock the cradle’

(58) su/-ʃɤ/ lam\-pɔʔ/-hme
DIST-cow follow-RES-IMP
‘Follow that cow!’

(59) yaʔ/-aʔ/ k/-.pan\-pɔʔ/
3-OBJ 1-call-RES
‘I called over to him.’
A first look at tone in Myebon Sumtu Chin

(60) ʃɤ-\ha?/ k-m/-phlan\-pɔʔ/
cow-PL 1-TR-return-RES
‘I returned the cows [to their home].’

(61) su/-hys?\ lim\-pɔʔ/-hme\ 
DIST-blanket fold-RES-IMP
‘Fold that blanket away.’

(62) nei\-ha?/-khɔ\ jim\-pɔʔ/-e/
PROX-PL-also put_away-RES-EMPH
‘Put those ones away too.’

(63) pi\ n-m/-fim\-pɔʔ/-ay/-y? 
what 2-TR-offer-RES-IRR-Q
‘What will you give [as a present] then?’

(64) ya?/-khɔ\ hay?/-i/-pɔʔ/-e/
3-also beckon-APPL-RES-EXH
‘Beckon him over too.’

(65) pɔŋ\-a/ əŋ\-ki/ tɔŋ\-pɔʔ/-hme\ 
wall-LOC shirt hang-RES-IMP
‘Hang the shirt up on the wall.’

(66) nei\-p\-təŋ/ hmləŋ\-pɔʔ/-bəy/
PROX-way drive-RES-EXH
‘Drive [the buffalo] this way.’

(67) kei/-ʔɔŋ\-shen/-khɔ\ hmluʔ?-pɔʔ/-e/
1-water_pot-also fill-RES-IMP
‘Fill up my water pot too.’

(68) kaw\-a/ ŋə-sə\ təŋ\-pɔʔ/-hme\ 
hearth_frame-LOC fish-dry put-RES-IMP
‘Put the dried fish up on the hearth-frame.’

(69) sək\-you/-khɔ\ k/-lou\-pɔʔ/
tube-bamboo-also 1-bring-RES
‘I brought the bamboo tube also.’

(70) nei\-hew/-tum\ kyt\-pɔʔ/-bəy\ 
PROX-wood-log carry-res-EXH
‘Carry [on your shoulder] this wooden log.’

(71) ʔa\-khɔ\ thyk\-pɔʔ/-bəy\ 
chicken-also shoo-RES-EXH
‘Shoo the chicken away also.’
(72) ?on/-?am/ kup/-pɔ?/-e/ 
curry-pot cover-res-IMP
‘Cover the cooking pot.’

(73) tak\ lou/-pɔ?/-ba/-la/-tei/ 
oar bring-RES-again-NEG-IMP
‘Don’t bring the oar back again.’

(74) tap/-a/-khɔ/ mi/ hmyap/-pɔ?/-bry/ 
hearth-LOC-also fire extinguish-RES-EXH
‘Put out the fire in the hearth also.’

In (75) to (80), pɔ? RESULTATIVE is low, in each case adjacent to a preceding high-tone verb.

(75) khoy\ ji/-a/ n\.-lou/-pɔ?/-ay/-my/?
bgee gather-PURP 2-come-RES-IRR-Q
‘Will you come along to gather honey from the beehive?’

(76) hyɤʔ\ k-m\.-hton/-poh/ 
blanket 1-TR-place-RES
‘I put on another layer of blanket for you.’

(77) ?im/-khɔ/ phek/-pɔ?/-bry/ 
house-also sweep-RES-EXH
‘Sweep the house also.’

(78) su/-?an\ki/ wawt/-pɔ?/-hme/ 
DIST-shirt fetch-RES-IMP
‘Fetch down that shirt.’

(79) pat/-khɔ/ m\.-hla/-pɔ?/-ay/ 
jute-also 1.DU.INCL-split-RES-IRR
‘We will splice the jute also.’

(80) buʔ\ hmap/-pɔ?/-ba/-le/ 
rice snack-RES-again-EXH
‘Have some rice to snack on again then.’

5.3 Morphological deracination: reduplicated adverbs
Adverb formation is another morphological process where grammaticalisation entails deracination of of a lexical tone. Three of the adverbs which appear in the Sumtu Reader data set are listed in (81).

(81) na\na/ 'somewhat'
de\de/ 'firmly'
thin\thin/.hiwʔ\hiwʔ/ 'silently'
Like adverbs in Burmese, these are clearly formed by means of some process of reduplication, though the data set does not confirm the base morpheme for each. In each, we see a sequence of HL alternations. It seems probable that in each case a verbal base morpheme bearing the lexical tone is followed by a deracinated reduplicated form of itself carrying the polar opposite tone of the base morpheme in each case, although more data is needed to confirm this.

6 Sesquisyllables / iambic structure
Like many languages in the mainland South-East Asian Sprachbund, Sumtu words very often follow an iambic pattern and take the form of sesquisyllables, consisting of an unrestricted major syllable which may have the form of any permitted syllable in the language, preceded by a restricted minor syllable comprising a single initial consonant (most commonly ?) and, occasionally, a final nasal m or n. The vowel of the minor syllable is a short epenthetic schwa, which is unmarked in this transcription.

6.1 Tone in lexical sesquisyllables
Sesquisyllabic nouns may be monomorphemic, or fully lexicalised bimorphemes. A selection are show in (82).

(82) Sesquisyllabic lexemes
ʔ/.beŋ\ ‘cheek’
ʔ/.mik\ ‘eye’
ŋ/.hmeŋ\ ‘chilli pepper’
ʔm/.fɛŋ\ ‘tapeworm’
ʔ/.thɛʔ/ ‘fruit’
ʔ/.thi/ ‘blood’
p/.kʰew/ ‘wildcat’
t/.hlay/ ‘yeast’
f/.mi/ ‘child’

Both the minor and major syllable of any sesquisyllable bear a tone, but the two tones are always polar opposites, so the tones of any sesquisyllabic lexeme are always HL or LH; we find no sesquisyllables with two high or two low tones. Given this constraint, we may infer that only one of the two tones is lexically specified, the other being derived from it by polarity. The phonological representation may thus be either of the choices show in (83): either the tone of the minor syllable is lexically determined [T], with the tone of the major syllable determined by polarity spreading to the right in the established way, as in (83)a, or else the tone of the major syllable is lexically determined, with polarity spreading instead to the left, as in (83)b. Note again that in the notation used here, square brackets indicate that a tone is lexically determined.

(83) a. [T] -T or b. -T [T]
| | | | | |
\. \. σ \. σ

We show from further data from verbs and pronouns below that it is the situation in (83)b which in fact applies.

6.2 Singular pronouns and pronominal verb prefixes
The overt singular pronouns of Sumtu are given in (84). The singular pronouns are all high tone. Dual and plural are left aside here, but examined further in section 7 below.

(84) Overt singular pronouns

<table>
<thead>
<tr>
<th>SINGULAR</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>kei/</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>naŋ/</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>jaʔ/</td>
<td></td>
</tr>
</tbody>
</table>

Sumtu drops pronouns which are not stressed or in focus, but pronominal verb prefixes are obligatorily attached to verbs in indicative statements (though not in negative statements or imperatives). The singular pronominal prefixes are given in (85), where V stands for the verb stem to which the prefixes are attached. These are obviously derived from the overt pronoun forms: 1st person kei/ to k-, 2nd person naŋ/ to n- and 3rd person yaʔ/ to ?-.

(85) Pronoun prefixes

<table>
<thead>
<tr>
<th>SINGULAR</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>k-.V</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>n-.V</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>?-.V</td>
<td></td>
</tr>
</tbody>
</table>

6.3 **Tone in singular pronominal prefixes**

A scan through any selection of the example sentences in this paper will show these prefixes in a variety of contexts and with both high and low tones. A pair of examples of each of the three singular pronominal prefixes are reproduced in (86),(87) and (88). The first example in each pair shows a high tone verb stem with a low tone pronominal prefix; in the second example in each pair, the verb stem is LOW, and the pronominal prefix HIGH.

(86) a. k\-myŋ\-ba\-laʔ/
    1-soak-again-must
    'I have to soak again.'

   b. k\-plan\-ba/
    1-return-again
    'I came back again.'

(87) a. n\-myŋ\-i\-mx/?
    2-fear-APPL-Q
    'Are you afraid?'

   b. n\-siʔ\-hni\-mx/?
    2-go-PRF-Q
    'Have you gone?'

(88) a. ?\-ya\-laʔ/
    3-stand-must
    'He has to stand.'
b. ?/.-pny?/-hni/-my/
   3-finish-PRF-Q
   'Is it finished?'

The same pronominal prefixes are also used to express inalienable possession of, for example, body parts and relatives, (for alienable possession the full-form pronouns are used as possessives). Examples of these are given in (89),(90) and (91); each prefix is shown LOW, affixed to a HIGH noun, and HIGH, attached to a LOW noun.

(89) k\-.tu/ k\-.lu\ k\-.hyn\ 1-grandchild 1-head 1-belly 'my grandchild' 'my head' 'my belly'
(90) n\-.ʃɔm/ n\-.si\ n\-.hnɔ\ 2-hair 2-sister 2-ear 'your hair' 'your sister' 'your ear'
(91)ʔ/.-nu/ʔ/.ta\ 3-mother 3-brother 'his mother' 'his brother'

We conclude from the data in this section that the lexical tone of nouns and verbs determines the tone of their pronominal prefixes by the spreading of polarity leftward to the minor syllable of the sesquisyllable of which the noun or verb constitutes the major syllable.

(92)a. is a schematic representation of a phrase-head morpheme with fixed lexical tone [T], surrounded by a lexically toneless minor syllable on the left and a string of toneless agglutinating syllables to the right. (92)b shows the assignment of tone to all toneless syllables, through the spreading of polarity to the left and right from the single lexically determined tone, yielding a string of alternating high and low tones.

(92) a. [T] |
    |   |   |   | |
    . σ σ σ σ σ

b. -T [T] -T T -T
    |   |   |   | |
    . σ σ σ σ σ

Examples of this pattern in context are given in (93), where all tones are determined by polarity spreading outwards from high tone pek/ 'give', and in (94), where polarity spreads outwards from low tone laʔ/ 'receive'.

(93)ʔ/.-mek/-ba\/-laʔ/-hni\/-ay/
   3-TR-give-again-must-PRF-IRR
   'He will have to give it back to me.'

(94)ʔ/.-laʔ/-ba/-hni\
He has received again.'

7 Non-singular pronouns and dual flip-flop

The final tone-related phenomenon examined in this paper is associated with the expression of non-singular verbal subjects. The dual and plural pronouns are shown in (95). The plural second and third person pronouns are composed of the high-tone singular pronouns naŋ/ and yaʔ/ with high tone -hniʔ/ attached; all plural pronouns may additionally be suffixed with the high-tone plural marker -haʔ/ (examined above in section 4.1); the two first person plural pronouns m\hniʔ/ 1.INCL-PL and n\hniʔ/ 1.EXCL-PL seem to be sesquisyllables with the low tone in the minor syllable derived as polar opposite of high tone hniʔ/. The plural pronouns constitute good evidence that -hniʔ/ has a lexically fixed high tone.

(95) Dual and plural overt pronouns

<table>
<thead>
<tr>
<th></th>
<th>DUAL</th>
<th>PLURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 INCL</td>
<td>m\hniʔ/</td>
<td>m\hniʔ/(-haʔ/)</td>
</tr>
<tr>
<td>1 EXCL</td>
<td>n\hniʔ/</td>
<td>n\hniʔ/(-haʔ/)</td>
</tr>
<tr>
<td>2</td>
<td>naŋ\hniʔ/</td>
<td>naŋ\hniʔ/(-haʔ/)</td>
</tr>
<tr>
<td>3</td>
<td>yaʔ\hniʔ/</td>
<td>yaʔ\hniʔ/(-haʔ/)</td>
</tr>
</tbody>
</table>

The dual forms are the same as the plural forms except for tonal changes which are difficult to account for. In the case of the two first person pronouns, the tones flip-flop between the dual and the plural. If we can assume that the plural is unmarked and that the dual is marked and derived, then we may posit a process of tonal flip-flop in which the tones of both the minor syllable (which we assume to be lexically toneless like other minor syllables) and, more significantly, also of the otherwise consistently high-tone hniʔ/ are flipped to derive the HL dual from the LH plural. In the second and third person dual forms, the tone of hniʔ/ remains high and the pronouns naŋ/ and yaʔ/, HIGH in all other contexts, flip to LOW. The one thing which all the dual form pronouns have in common is that the morpheme expressing person, be it a minor syllable (m.- or n.-) or a full syllable (naŋ or yaʔ) must have the polar opposite tone of its counterpart in the plural form of the pronoun. In terms of ranking the phonological rules assigning tones in Myebon Sumtu, this data tells us that the requirement to distinguish the dual from the plural form by changing the tone of the morpheme expressing person can override lexical tone, but that this requirement cannot override the requirement that the two tones in a sesquisyllable be polar opposites.

We turn now to the dual and plural pronominal prefixes, shown in (96). In 6.2 above we established that the tone of minor syllable pronominal prefixes is determined by the leftward spreading of polarity from the lexical tone of the lexically tonal major syllable to which they are attached.

(96) Dual and plural pronominal prefixes

<table>
<thead>
<tr>
<th></th>
<th>DUAL</th>
<th>PLURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 INCL</td>
<td>m.-V</td>
<td>m.-V</td>
</tr>
<tr>
<td>1 EXCL</td>
<td>k.n.-V</td>
<td>k.n.-V</td>
</tr>
<tr>
<td>2</td>
<td>n.n.-V</td>
<td>n.n.-V</td>
</tr>
<tr>
<td>3</td>
<td>?-n.-V</td>
<td>?-n.-V</td>
</tr>
</tbody>
</table>
A first look at tone in Myebon Sumtu Chin

The matrix in (97) shows the full set of pronoun prefixes attached to the low-tone verb siʔ\' 'go'. Here, too, we find evidence in the dual forms to support the hypothesis that the need to distinguish the dual from the plural, overrides the lexically assigned tone of an ordinary verb but not the requirement for maintaining polar opposite tones in sesquisyllables.

(97) Pronominal prefixes with siʔ\' 'go'

<table>
<thead>
<tr>
<th>SINGULAR</th>
<th>DUAL</th>
<th>PLURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 k/.-siʔ\</td>
<td>m.-siʔ\</td>
<td>m.-siʔ\</td>
</tr>
<tr>
<td>2 n/-siʔ\</td>
<td>n-n.-siʔ\</td>
<td>n-n.-siʔ\</td>
</tr>
<tr>
<td>3 ?/-siʔ\</td>
<td>?-n.-siʔ\</td>
<td>?-n.-siʔ\</td>
</tr>
</tbody>
</table>

Further examples in context of dual flip-flop changing the tone of lexically low-tone verbs form LOW to HIGH are shown below. (98)(99) and (100) show siʔ\' in its flipped dual form; (101) and (102) contain two other lexically low tone verbs paʔ\ is ‘pluck’ and hla\ ‘splice’ both changed to high.

(98) han/tah/-a\ k-n\.-siʔ\-/ay/ tomorrow-LOC 1-DU.EXCL-go-IRR ‘We two will go tomorrow.’

(99) pɔw/?u/-hʔ/ nu/?u/ sʔ/-kon\ how/-a/ ?-n\.-siʔ\-/la/ father-SBJ mother child-spouse propose-PURP 3-DU-go-must daughter-in-law. ‘Father and mother had to go to propose [marriage] to [their prospective] daughter-in-law.’

(100) ?a/-khɔn/-khin/ t\.kxy/?-n\.-siʔ/ chicken-crow-time directly 3-DU-go ‘The two of them went right at cock-crow.’

(101) p.t.ka/-pa/ k-n\.-paʔ\ papaya-flower 1-DU.EXCL-pluck ‘We two pluck papaya flowers.’

(102) pat/-khɔ/ m\.-hla/-poʔ/-ay/ jute-also 1.DU.INCL-split-RES-IRR ‘We will splice the jute also.’

Unfortunately, however, the Sumtu Reader corpus contains enough robustly unambiguous data to support the dual flip-flop theory only with lexically low-tone verbs, which, as mentioned previously, disproportionately outnumber high-tone verbs. Only very few high-tone verbs occur in the corpus with a non-singular subject, and there was very limited time to work with its author Dong Ling to elicit clear data to illustrate the dual forms. The high-tone verbs which do occur are kay/ 'be well', shown with a plural subject in (103), khew/ 'hatch' with a plural subject in (104) and ʃɪk/ 'argue', with a dual subject in (105).
Further data elicited on kay/ is shown in (106).

(106) a.  k\-.kay/  
            1-well  
            I am well.

b.  k-n\-.kay/  
     1-DU.EXCL-well  
     'We two are well.'

c.  k-n/.-kay/  
     1-PL.EXCL-well  
     'We (pl.) are well.'

The apparently problematic data are the sesquisyllables in (103), (104) and (106)c, all of which have two high tones, violating what has hitherto seemed a cast-iron requirement that the two tones in sesquisyllables be polar opposites. We must acknowledge first that this is exotic territory because of the rarity of high-tone verbs in the lexicon, and second that Myebon Sumtu is prepared to go to extreme lengths (like overriding lexical tone) to make the dual and plural forms of verbs sound different.

If low-tone verbs are very much the norm, then the HIGH plural pronoun minor-syllable prefix and the marked LOW dual pronoun minor-syllable prefix generated by the dual flip-flop process have, I suggest, become tonally distinctive to the point of being relexified and immutable. Until further data can be obtained and checked carefully, this explanation must remain tentative and provisional, but as the last item in the current catalogue of tonal phenomena observed in Myebon Sumtu Chin, it is an intriguing point on which to close.

8  Phonological representations
In this section I present an overview and summary of the Myebon Sumtu Chin tonal phenomena observed and described in this paper. Three ordered rules determine the tonal output:

(1) OCP operates  
(2) Lexical tone is not deleted  
(3) DUAL must be distinct from PLURAL - this can override (1) or (2)
8.1 **Lexical tone**
Monosyllabic lexemes in Sumtu may have lexically specified tone \([T]\), either **HIGH** or **LOW**.

\[
[T] \\
\sigma
\]

Any sequence of lexically specified tones is permitted. Each instance of \([T]\) may be either **HIGH** or **LOW**.

\[
[T_1] [T_2] [T_3] [T_4] \\
\sigma \sigma \sigma \sigma
\]

8.2 **Toneless morphemes**
Syllables may be lexically toneless – typically functional morphemes.

\[
? \\
\sigma
\]

8.3 **Right-spreading polarity**
Within an agglutinative syntactic phrase, toneless syllables acquire their tone from the nearest \([T]\) to the left, which assigns tones rightwards with alternating polarity to itself.

\[
\sigma \sigma \sigma \sigma \sigma
\]

becomes

\[
[T] -T T -T T \\
\sigma \sigma \sigma \sigma \sigma
\]

A syntactic phrase may contain more than one lexical tone; each may assign tones with alternating polarity to any lexically toneless syllables to the right, until another lexical tone is encountered. Tone assignment spreads to the right edge of the agglutinating morpho-syntactic phrase.

\[
\sigma \sigma \sigma \sigma \sigma
\]

\[
[T_1] -T_1 T_1 [T_2] -T_2 \\
\sigma \sigma \sigma \sigma \sigma
\]
8.4 **Left spreading polarity**
Left-spreading polarity assigns the tone of a lexically toneless minor syllable to the left of a lexically determined root tone.

\[
\begin{array}{c}
? \quad [T] \\
| \quad | \\
(\sigma)
\end{array}
\]

becomes

\[
\begin{array}{c}
-T \quad [T] \\
| \quad | \\
(\sigma)
\end{array}
\]

Both left- and right-spreading polarity in a phrase beginning with a sesquisyllable:

\[
\begin{array}{c}
? \quad [T_1] \quad ? \quad ? \quad [T_2] \quad ? \\
| \quad | \quad | \quad | \quad | \\
(\sigma) \quad \sigma \quad \sigma \quad \sigma \quad \sigma
\end{array}
\]

\[
\begin{array}{c}
-T_1 \quad [T_1] \quad -T_1 \quad T_1 \quad [T_2] \quad -T_2 \\
| \quad | \quad | \quad | \quad | \\
(\sigma) \quad \sigma \quad \sigma \quad \sigma \quad \sigma
\end{array}
\]

8.5 **Dual flip-flop**
In order to maintain a difference between dual and plural forms of low-tone verbs, dual flip-flop may reverse tones in a sesquisyllable

**PLURAL**

\[
\begin{array}{c}
-T \quad [T] \\
| \quad | \\
\sigma
\end{array}
\]

becomes

**DUAL**

\[
\begin{array}{c}
-\{-T \quad [T]\} \\
| \quad | \\
\sigma
\end{array}
\]

and lexical [T] surfaces as -[T].

As [T] is usually low tone,

**PLURAL**

\[
\begin{array}{c}
H \quad [L] \\
| \quad | \\
\sigma
\end{array}
\]

(output is HL)

becomes
A first look at tone in Myebon Sumtu Chin

In high-tone verbs, exceptionally, we find prefixes keep (now lexically assigned) tone

PLURAL [H] [H] - ![exceptional HH (.] σ)
| | | . σ
and

DUAL [L] [H]
| | . σ

8.5.1 Dual flip-flop in pronouns

first-person pronouns:

PLURAL ? [T] → [-T] [T] → DUAL -{-T [T]}
| | | | . σ . σ . σ

second and third person pronouns:

PLURAL [T] [T] → DUAL -{[T]} [T]
| | | . σ . σ

9 Abbreviations

1 first person
2 second person
3 third person
APPL applicative
DIM diminutive
DIST distal
DU dual
EMPH emphatic
EXCL exclamative
EXH exhortative
HIGH high tone
I verb stem I
II verb stem II
IMP imperative
INCL inclusive
IRR irrealis
LOC locative
LOW low tone
10 References