

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

<i>Form I</i>	<i>Form II</i>	<i>gloss</i>
ʔok/	ou/	drink
hleiʔ/	hlei/	buy
ʔiʔ\	ʔip\	sleep
kəʔ\	kət\	cross.over
lək/	lɔ/	fetch
siʔ\	sit\	go
buʔ\	but\	cook

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\
 1-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, spelled 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 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 [ẹ ọ], respectively. There are five vowel heights in Sumtu: [ị ẹ ẹ ạ ɔ̣ ọ ụ]; 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 [ə̣ ~ ɤ̣].
- *y* represents a palatal glide [j] in syllable-initial and syllable-final positions alike.

2.3 Consonants

- *hm hn hn hn hy* represent voiceless sonorants [m̥ n̥ ŋ̥ l̥]
- *ph th kh* represent aspirated stops [p^h t^h k^h]
- 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 [ə̣] 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. msi\ [m̄si\]
 salt
 ‘salt’ – single syllable, single morpheme
 - b. ŋ/.hmət\ [ŋə/.m̄ət\]
 chilli
 ‘chilli pepper’ – one sesquisyllable, one morpheme
 - c. m/.-siʔ\ [mə/.siʔ\]
 2.PL.INCL-go
 ‘we go’ – one sesquisyllable, two morphemes
 - d. ʔ-m-.khlaʔ\ [ʔəm.k^hlaʔ]
 3-TR-cook
 ‘he cooks for me’ – one sesquisyllable, three morphemes
 - e. m-sik\-.aʔ/ [m̄sik.aʔ]
 TR-pluck-NEG
 ‘don’t pluck it’ – two syllables, three morphemes

In phonological representations, full syllables are represented as σ , and sesquisyllables as (. σ), where . is the minor syllable and σ 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 ŋ) or stop (p, t or k).

(4) LOW and HIGH tone lexical items

	LOW		HIGH	
open syllable	hmu\	‘kite (bird)’	hmu/	‘feather’
	ʃɿ\	‘cow’	li/	‘crossbow’
	phɔ\	‘arrive’	lɔ/	‘bring’
	plɔw\	‘speech’	yoy/	‘rope’
final glide	hlaiʔ\	‘remove (clothing)’	ʃay/	‘make’
final glottal stop	ʔɿʔ\	‘warm’	kiʔ/	‘parrot’
	hyɿʔ\	‘blanket’		
	laʔ\	‘receive’		
final glide + glottal	pɿyʔ\	‘run out’	klɿyʔ/	‘flute’
	khiwʔ\	‘point’		
final nasal	lɔm\	‘dance’	lɔm/	‘road’
	thiŋ\	‘ginger’	thiŋ/	‘tree’
	klem\	‘weaving stick’	khem/	‘bite’
final stop	khek\	‘hold’	phet/	‘sparrow’

Sumtu may form compound nouns by combining monosyllabic nouns as (5), with apparently no restriction on the ordering or sequence of HIGH and LOW.

(5) Noun-noun compounds

ʔun\-thiŋ/	coconut-tree	‘coconut tree’
klem\-thiŋ/	ironwood-tree	‘ironwood tree’
ʔɔn/-yoŋ/	curry-plant	‘curry plant’
wɔt\-sɔ/-haʔ/	wear-DIM-PL	‘clothes’
ʃ.mi/-sɔ/	child-DIM	‘child’

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 *-lɿʔ/*, 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) ʔa\-sɔ/-haʔ/
chicken-DIM-PL
'chickens'
- (7) phet/-haʔ/ kiʔ/-haʔ/
sparrow-PL parrot-PL
'sparrows and parrots'
- (8) buʔ\-ʔɔn/-hneŋ/-haʔ/
rice-curry-remain-PL
'leftover food'
- (9) ʃɿ\ -haʔ/
cow-PL
'cows'
- (10) ʔ/.toy\ -haʔ/-khɔ\ ʔ-n/.-yap/-pxyʔ\
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 *-lɿʔ/*, 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/-lɿʔ/ ʃɿ\ ʔ/.-laʔ\ -ba/-hni\
3-SBJ cow 3-receive-again-PRF
'He has got his cows back again.'
- (12) n\.-pɔ/-lɿʔ/ wa\ ʔ/.-weiʔ\ -beʔ/
2-father-SBJ net 3-throw-yet
'Your father is still casting [his] net.'
- (13) n/.-pu\ -lɿʔ/ ŋɔ/ ʔ-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/.-kɛm\ -lɿʔ/ ʔ-m\.-niʔ/-i\ -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 the tonal behaviour of two noun-phrase affixes, namely -khə 'also' and a locative suffix -a, both of which have the polar opposite to whatever is to the left. In (15) and (16), -khə 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, -khə surfaces with a low tone because it is attached to a lexically fixed high tone noun. In (19), the noun phrase to which -khə is attached end with the fixed high-tone subject marker lɿʔ/, but this too causes -khə to surface as LOW.

- (15) tɛm\~khə/ ʔ/.~phɛm\~hni/
treadle_weight-also 3-old-PRF
'The treadle weight is old also.'
- (16) sim\~khə/ siʔ\~i/~bɿy\~ya/
knife-also go-APPL-EXH-EMPH
'Take the knife [with you] too.'
- (17) ʔɿyʔ/~khə\ k\~ʔɿyʔ/~laʔ\
lullaby-also 1-sing-must
'I will have to sing [the child] to sleep with a lullaby.'
- (18) ləm/~khə\ ʔ\~biŋ/~tɿʔ\
road-also 3-block-too
'The road is blocked as well.'
- (19) k\~tu/~lɿʔ/~khə\ ʔ~m\~tɿm/~i\~ba/~beʔ/~hyɿ/
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/~mɿʔ/
2-house-LOC 2-go-PRF-Q
'Did you go to your home?'
- (21) ləm/~a\ n\~sə/ pɿm/~i\~bɿy/
road-LOC 2-child carry-APPL-EXH
'Carry your child along the road.'
- (22) kei/~seŋ/~a\ naŋ/ n\~mɿyʔ\
1-nearby-LOC 2 2-exist
'You are near me.'
- (23) kaw\~a/ ŋə/~sa\ təŋ\~pəʔ/~hme\
hearth_frame-LOC fish-dry put-RES-IMP

‘Put the dried fish up on the hearth-frame.’

- (24) pɔŋ\ -a/ aŋ\ki/ tɔŋ\ -pɔʔ/ -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 -lɔʔ/ 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\ -myeŋ/ -i\ -mɔʔ/
 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 -mɔʔ/ and negative particle -aʔ. 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\ ʔ/ -pa\ -mɔʔ/
 plum 3-blossom-Q
 ‘Is the plum [tree] in blossom?’

- (28) muʔ/ ʔ/ -pɔyʔ\ -hni\ -mɔʔ/
 snack 3-finish-PRF-Q
 ‘Is the snack all finished?’

- (29) lay/ -a\ sɔŋ\ -khɔ/ ʃom/ -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\ mɔy\ -aʔ\ -mɔʔ/
 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) pɔn\ɔm/ k/.-hleiʔ\~hni/
 cardamom 1-buy-PRF
 'I have bought the cardamom.'
- (32) ʔayʔ/~teʔ/ k/.-laʔ\~hni/
 plough-but 1-get-PRF
 'I have got the plough, however'.
- (33) yaʔ/ ʔ\.-htɔy/~hni\~ay/
 3 3-fall_over-PRF-IRR
 'He is [now] about to fall over.'
- (34) naŋ/~im/ ʔ\.-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 to repair it again.'
- (36) kei/~fɔ\ m-kheŋ\~ba/~hme\
 1-cow TR-catch-again-IMP
 'Catch my cow again.'
- (37) ʔa\~sɔ/ msip/~ba\~tei/~aʔ/
 chicken-DIM cheep-again-still-NEG
 'The chicks are not cheeping any more.'
- (38) kei/~lɔʔ yu/~tay/ k\.-myɔn/~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).

- (39) n/.kə\ ʔ/-dəm\-ba/-hni\-mɿ/?
 2-illness 3-recover-again-PRF-Q
 'Has your illness got better again?'
- (40) k/.-hma\ ʔ/.-yem\-ba/-hni\
 1-wound 3-heal-again-PRF
 'My wound has healed again.'
- (41) tu\ə/ ʔ/.tən\ ʔ/.-tək\-ba/-hni\
 now somewhat 3-fat-again-PRF
 'Now he has grown rather fat again.'
- (42) yɔʔ\ ʔ\.-hɿn/-ba\-hni/
 rain 3-lessen-again-PRF
 'The rain has let up again.'
- (43) yaʔ/-a\ lei/ n\.-pek/-ba\-hni/-mɿ/?
 3-OBJ debt 2-give-again-PRF-Q
 'Have you paid him back the debt?'

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 |
| | | | | | |
| b. | [T] | -T | T | -T | T |
| | | | | | |
| | σ | σ | σ | σ | σ |
| | | | | | |
| c. | H | L | 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 T₁ and T₂ are HIGH or LOW. However, since we find no functional morphemes with lexically determined LOW tone, the patterns where T₂ is low are not attested.

(45) a.	[T ₁]	?	?	[T ₂]	?
	σ	σ	σ	σ	σ
b.	[T ₁]	-T ₁	T ₁	[T ₂]	-T ₂
	σ	σ	σ	σ	σ
c.	[H]	L	H	[H]	L
	[L]	H	L	[H]	L
	[H]	L	H	[L]	H
	[L]	H	L	[L]	H

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.thewʔ/*, 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 *-thewʔ* 'fruit' in second position, shown in (46).

(46) Words for fruit in Sumtu

<i>ʔ.thewʔ/</i>	fruit	'fruit'
<i>hoj\~thewʔ/</i>	mango-fruit	'mango'
<i>kom\~thewʔ/</i>	betel-fruit	'betel nut'
<i>pan/siʔ\~thewʔ/</i>	cucumber-fruit	'cucumber'
<i>pay/lom\~thewʔ/</i>	long bean-fruit	'long bean'
<i>tat\~thewʔ\</i>	<i>tat</i> -fruit	'monkey-head fruit'
<i>thei\~thewʔ\</i>	fig-fruit	'fig'

In these compounds *-thewʔ* 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

ʔ.thəwʔ/ '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 *được*, 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-lɿʔ khu/ ʔ-laʔ\-i/
 3-SBJ inheritance 3 -receive-APPL
 'He received an inheritance from his parents.'

(49) yaʔ/-lɿʔ/ ʃɿ\ ʔ-laʔ\-ba/-hni\
 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/-hni\ -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/-lɿʔ/ nɔʔ/ hɿa*] ‘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 *hɿa* ‘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/-lɿʔ/ nɔʔ/ hɿa*] *laʔ-aʔ/*
 [3-SBJ buffalo borrow] can-NEG
 ‘He cannot borrow the buffalo.’ [e.g. because someone else is using it]

(55) *yaʔ/-lɿʔ/ nɔʔ/ hɿa\-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\-bɿy/-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/-fɿ\ lam\-pɔʔ/-hme*
 DIST-cow follow-RES-IMP
 ‘Follow that cow!’

(59) *yaʔ/-a\ k/-pan\-pɔʔ/*
 3-OBJ 1-call-RES
 ‘I called over to him.’

- (60) ʃɿ\ -haʔ/ k-m/.-phlan\ -pɔʔ/
 cow-PL 1-TR-return-RES
 ‘I returned the cows [to their home].’
- (61) su/-hyɿʔ\ lim\ -pɔʔ/-hme\
 DIST-blanket fold-RES-IMP
 ‘Fold that blanket away.’
- (62) nei\ -haʔ/-khɔ\ ʃim\ -pɔʔ/-e/
 PROX-PL-also put_away-RES-EMPH
 ‘Put those ones away too.’
- (63) pi\ n-m/.-ʃɿm\ -pɔʔ/-ay/-ɿ/?
 what 2-TR-offer-RES-IRR-Q
 ‘What will you give [as a present] then?’
- (64) yaʔ/-khɔ\ hɔyʔ\ -i/-pɔʔ\ -e/
 3-also beckon-APPL-RES-EXH
 ‘Beckon him over too.’
- (65) pɔŋ\ -a/ aŋ\ ki/ tɔŋ\ -pɔʔ/-hme\
 wall-LOC shirt hang-RES-IMP
 ‘Hang the shirt up on the wall.’
- (66) nei\ -p\ .tɿŋ/ hmlɿŋ\ -pɔʔ/-bɿy/
 PROX-way drive-RES-EXH
 ‘Drive [the buffalo] this way.’
- (67) kei/-ʔɔŋ\ shen/-khɔ/ hmluyʔ\ -pɔʔ/-e/
 1-water_pot-also fill-RES-IMP
 ‘Fill up my water pot too.’
- (68) kaw\ -a/ ŋɔ/-sa\ tɔŋ\ -pɔʔ/-hme\
 hearth_frame-LOC fish-dry put-RES-IMP
 ‘Put the dried fish up on the hearth-frame.’
- (69) sɔk\ -you/-khɔ/ k/.-lou\ -pɔʔ/
 tube-bamboo-also 1-bring-RES
 ‘I brought the bamboo tube also.’
- (70) nei\ -hew/-tum\ kɿt\ -pɔʔ/-bɿy\
 PROX-wood-log carry-res-EXH
 ‘Carry [on your shoulder] this wooden log.’
- (71) ʔa\ -khɔ/ thɿk\ -pɔʔ/-bɿy\
 chicken-also shoo-RES-EXH
 ‘Shoo the chicken away also.’

- (72) ʔən/-ʔam/ kup\-pɔʔ/-e/
 curry-pot cover-res-IMP
 ‘Cover the cooking pot.’
- (73) tak\ lou\-pɔʔ/-ba\-la/-tei\
 oar bring-RES-again-NEG-IMP
 ‘Don’t bring the oar back again.’
- (74) tap\-a/-khɔ\ mi/ hmyap\-pɔʔ/-bɣy\
 hearth-LOC-also fire extinguish-RES-EXH
 ‘Put out the fire in the hearth also.’

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

- (75) khoy\ ʃim/-a\ n\.-lou/-pɔʔ\-ay/-mɣ/?
 bee gather-PURP 2-come-RES-IRR-Q
 ‘Will you come along to gather honey from the beehive?’
- (76) hyɣʔ\ k-m\.-hton\-pɔh\
 blanket 1-TR-place-RES
 ‘I put on another layer of blanket for you.’
- (77) ʔim/-khɔ\ phək/-pɔʔ\-bɣy/
 house-also sweep-RES-EXH
 ‘Sweep the house also.’
- (78) su/-ʔaŋ\ki/ wawt/-pɔʔ\-hme/
 DIST-shirt fetch-RES-IMP
 ‘Fetch down that shirt.’
- (79) pat\-khɔ/ m\.-hla/-pɔʔ\-ay/
 jute-also 1.DU.INCL-split-RES-IRR
 ‘We will splice the jute also.’
- (80) buʔ\ hmap/-pɔʔ\-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 a lexical tone. Three of the adverbs which appear in the *Sumtu Reader* data set are listed in (81).

- (81) na\.na/ 'somewhat'
 dɛ\.dɛ/ '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 ʔ) 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 shown in (82).

- (82) Sesquisyllabic lexemes
- | | |
|--|-----------------|
| $\text{ʔ}/.b\epsilon\eta\backslash$ | ‘cheek’ |
| $\text{ʔ}/.m\text{ik}\backslash$ | ‘eye’ |
| $\eta/.hm\epsilon t\backslash$ | ‘chilli pepper’ |
| $\text{ʔ}m/.ʃ\epsilon\eta\backslash$ | ‘tapeworm’ |
| $\text{ʔ}\backslash.th\epsilon w\text{ʔ}/$ | ‘fruit’ |
| $\text{ʔ}\backslash.th\text{i}/$ | ‘blood’ |
| $p\backslash.kh\epsilon w/$ | ‘wildcat’ |
| $t\backslash.hlay/$ | ‘yeast’ |
| $\text{ʃ}\backslash.mi/$ | ‘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 shown 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

SINGULAR	
1	kei/
2	naŋ/
3	jaʔ/

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 jaʔ/ to ʔ-.

(85) Pronoun prefixes

SINGULAR	
1	k-.V
2	n-.V
3	ʔ-.V

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\.-myɾn/-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\.-myɛŋ/-i\-mɣ/?
2-fear-APPL-Q
'Are you afraid?'

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

(88) a. ʔ\.-ya/-laʔ\
3-stand-must
'He has to stand.'

- b. ʔ/.-pɣyʔ\–hni/–mɣ/
 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/.-hɣn\ |
| | 1-grandchild | 1-head | 1-belly |
| | 'my grandchild' | 'my head' | 'my belly' |
| | | | |
| (90) | n\-.ɟɔm/ | n/-.si\ | n/-.hno\ |
| | 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 |
| | | | | | |
| b. | -T | [T] | -T | T | -T |
| | | | | | |
| | . | 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-m\.-pek/–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\

3-receive-again-PRF
'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

		DUAL	PLURAL
1	INCL	<i>m/.hniʔ\</i>	<i>m\hniʔ/(-haʔ/)</i>
	EXCL	<i>n/.hniʔ\</i>	<i>n\hniʔ/(-haʔ/)</i>
2		<i>naŋ\hniʔ/</i>	<i>naŋ-hniʔ/(-haʔ/)</i>
3		<i>yaʔ\hniʔ/</i>	<i>yaʔ-hniʔ/(-haʔ/)</i>

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

		DUAL	PLURAL
1	INCL.	<i>m.-V</i>	<i>m.-V</i>
	EXCL.	<i>k.n.-V</i>	<i>k.n.-V</i>
2		<i>n-n.-V</i>	<i>n-n.-V</i>
3		<i>ʔ-n.-V</i>	<i>ʔ-n.-V</i>

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'

	SINGULAR		DUAL	PLURAL
1	k/.-siʔ\	INCL	m\.-siʔ/	m/.-siʔ\
		EXCL	k-n\.-siʔ/	k-n/.-siʔ\
2	n/.-siʔ\		n-n\.-siʔ/	n-n/.-siʔ\
3	ʔ/.-siʔ\		ʔ-n\.-siʔ/	ʔ-n/.-siʔ\

Further examples in context of dual flip-flop changing the tone of lexically low-tone verbs from 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) pɔwʔ/ʔu/-lɣʔ/ nuʔʔu/ sɔ/-kon\ hɔw/-a/ ʔ-n\.-siʔ/-laʔ/
 father-SBJ mother child-spouse propose-PURP 3-DU-go-must
 'Father and mother had to go to propose [marriage] to [their prospective] daughter-in-law.'

(100) ʔa\-khon/-khiŋ/ t\kɣyʔ/ʔ-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/-pɔʔ\-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 *ʃik* 'argue', with a dual subject in (105).

(103) yaʔ/–hniʔ/–teʔ/ ʔ-n/.-kay/–i\–mɤ/?
 3-PL-but 3-PL-well-APPL-Q
 'And are they [your family] well?'

(104) bɛk\ɓ/lɛw/-sɔ/–haʔ/ʔ-n/.-khew/–hni\
 [k.o.bird]-child-PL 3-PL-hatch-PRF
 'The *bekbalew* chicks have hatched.'

(105) naŋ\–hniʔ/ n-n.\–fɪk/–mɤ/ ?
 2-PL 2-DU-argue-Q
 'Are you two arguing?'

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:

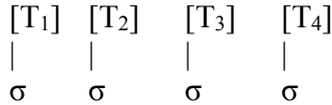
- (1) OCP operates
- (2) Lexical tone is not deleted
- (3) DUAL must be distinct from PLURAL - this can override (1) or (2)

8.1 Lexical tone

Monosyllabic lexemes in Sumtu may have lexically specified tone [T], either HIGH or LOW.



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



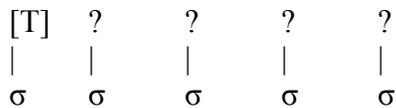
8.2 Toneless morphemes

Syllables may be lexically toneless ? – typically functional morphemes.



8.3 Right-spreading polarity

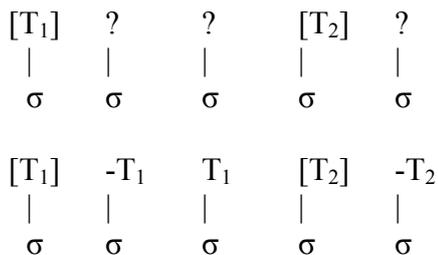
Within an agglutinative syntactic phrase, toneless syllables acquire their tone from the nearest [T] to the left, which assigns tones rightwards with alternating polarity to itself.



becomes



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.



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.

$$\begin{array}{cc} ? & [T] \\ | & | \\ (. & \sigma) \end{array}$$

becomes

$$\begin{array}{cc} -T & [T] \\ | & | \\ (. & \sigma) \end{array}$$

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

$$\begin{array}{cccccc} ? & [T_1] & ? & ? & [T_2] & ? \\ | & | & | & | & | & | \\ (. & \sigma) & \sigma & \sigma & \sigma & \sigma \\ \\ -T_1 & [T_1] & -T_1 & T_1 & [T_2] & -T_2 \\ | & | & | & | & | & | \\ (. & \sigma) & \sigma & \sigma & \sigma & \sigma \end{array}$$

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

$$\begin{array}{cc} \text{PLURAL} & -T \quad [T] \\ | & | \\ . & \sigma \end{array}$$

becomes

$$\begin{array}{cc} \text{DUAL} & -\{-T \quad [T]\} \\ | & | \\ . & \sigma \end{array}$$

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

As [T] is usually low tone,

$$\begin{array}{cc} \text{PLURAL H} & [L] \\ | & | \\ . & \sigma \end{array}$$

(output is HL)

becomes

DUAL -{H [L]}

| |

(. σ)

(output is LH)

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

NEG	negative
OBJ	object
PL	plural
PRF	perfect
PROX	proximal
PURP	purposive
Q	question
QUOT	quotative
RES	resultative
SBJ	subject
SG	singular
TR	transitive

10 References

- Bradley, David (2002), "The Subgrouping of Tibeto-Burman", in Beckwith, Chris; Blezer, Henk, *Medieval Tibeto-Burman languages*, BRILL, pp. 73–112, ISBN 978-90-04-12424-0.
- Button, Christopher. (2011). *Proto Northern Chin*. STEDT Monograph 10. University of California, Berkeley: STEDT [SOAS PhD dissertation 2009].
- Dong Ling (2008) *Sum:tu Hmyow Saw Uk*. [Sumtu Reader] Yangon.
- Hartmann, Helga (2002) Verb stem alternation in Daai Chin. *LTBA* 25.2:81-97
- Henderson, Eugénie J. A. (1965). *Tiddim Chin: A Descriptive Analysis of Two Texts*. School of Oriental and African Studies, University of London. London: Oxford University Press.
- Herr, Kerstin (2012). *Notes on Sumtu Phonology - Revision*. Unpublished ms.
- Hyman, Larry M. & Kenneth VanBik (2002). 'Tone and stem2-formation in Hakha-Lai'. *Linguistics of the Tibeto-Burman Area* 25.1:113-121.
- Hyman, Larry M. and Kenneth VanBik. 2004. 'Output problems in Hakha Lai – or: What's (not) Chinese about directional tone sandhi?' *Language and Linguistics* 5.4: 821-861. Taipei: Institute of Linguistics, Academia Sinica.
- Hyman, Larry M.(2007). *Kuki-Thaadow: An African Tone System in Southeast Asia*. UC Berkeley Phonology Lab Annual Report (2007)
- Kee Shein Mang (2012). *Sumtu Chin Orthography Report*. Unpublished ms.
- King, Deborah. (2009). Structural And Pragmatic Functions Of Kuki-Chin Verbal Stem Alternations. *Journal of the Southeast Asian Linguistics Society* 1:141-157.
- Lewis, M. Paul (ed.), 2009. *Ethnologue: Languages of the World*, Sixteenth edition. Dallas, Tex.: SIL International. Online version: <http://www.ethnologue.com/>.
- Peterson, David (to appear). 'Bangladesh Khumi', in A. Vittrant and J. Watkins (eds) *The Mainland Southeast Asian Linguistic Area*. Berlin: Mouton de Gruyter.
- Peterson, David (2010). Khumi elaborate expressions. *Himalayan Linguistics*, 9(1), 81-100.
- Simpson, A. (2001). Focus, presupposition and light predicate raising in East and Southeast Asia. *Journal of East Asian Linguistics*, 10(2), 89-128.
- VanBik, Kenneth (2009). *Proto-Kuki-Chin: A Reconstructed Ancestor of the Kuki-Chin Languages*. STEDT Monograph 8. University of California, Berkeley: STEDT
- Yip, Moira (2002). *Tone*. Cambridge: Cambridge University Press.
- Yip, Moira (2004). Phonological markedness and allomorph selection in Zahao. *Language and Linguistics*, 5(4), 969-1001.