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Tonal melodies in the Lulamogi verb

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Abstract

In this paper I describe the tonal melodies of Lulamogi, a small understudied language of the Luganda-Lusoga cluster. Although Lulamogi has lost lexical contrast on verbs, as in most Bantu languages, it has a rich set of verbal melodies that are assigned on the basis of tense, aspect, mood, polarity and clause type (e.g. main vs. relative). Although focus is on the stem tone melodies, other complications arise from preceding prefixes which may shift their H tone onto the stem initial syllable. Since the system is quite different from that found in well-known Luganda, it is of particular interest for our understanding of the evolution of the tone systems of this subregion.

Keywords: Tonal melodies, tense aspect, negation, relative clauses

1. Introduction

In this paper I discuss some of the salient properties of verb tones in Lulamogi [ó-lu-lamooǰí], a small, underdocumented language of Uganda, which was the subject of study in an undergraduate field methods course in Berkeley in the Fall 2013 semester.¹ Although not appearing in Maho’s (2009) revised Guthrie referential classification of the Bantu languages, it is usually classified as part of the Lusoga [JE16] dialect cluster. Our evidence, however, points instead to a dialectal relationship with Lugwere [JE17]. There has been a striking increase of work on these languages/dialects in recent years, especially the publication of dictionaries and lexicons (Kagaya 2006, Gulere 2009, Nabirye 2009, Nzogi & Diprose 2012). The information on the tone systems which has been slowly becoming available (Yukawa 2000, van der Wal 2004, Kagaya 2005, Nzogi 2009) indicates considerable variation and quite different properties from the better-known, closely related Luganda language (see Hyman & Katamba 2010 and references cited therein). In this paper I will first present the infinitive tones and then turn to the tonal melodies which occur in conjugated affirmative and negative verb forms. I will conclude by considering the significance of these findings for the study of tonal melodies in Bantu in general.

2. Infinitive tones

As in many Bantu languages, infinitives in the affirmative are marked by the class 15 augment + prefix sequence **ó-ku-** and end with the final vowel **-a**. Unlike Luganda and Lusoga, verb roots do not contrast in tone in Lulamogi (or in Lugwere). Thus, Luganda /-bál-/ ‘bear fruit’ vs. /-bal-/ ‘count’ both correspond to the homophonous infinitive **ó-ku-bal-á** in Lulamogi, where the morphology determines all verb tones.² The following table illustrates the infinitive tone patterns with consonant-initial stems of different numbers of syllables:

Table 1. Infinitive tones with C-initial stems

HLH	ó-ku-ly-á	‘to eat’	ó-ku-h-á	‘to give’
	ó-ku-nyw-á	‘to drink’	ó-ku-t-á	‘to put in’
HLLH	ó-ku-siβ-á	‘to tie’	ó-ku-many-á	‘to know’
	ó-ku-siiβ-á	‘to fast’	ó-ku-maany-á	‘to pluck’
HLLHH	ó-ku-sumít-á	‘to stab’	ó-ku-holóót-á	‘to snore’
	ó-ku-βiikúl-á	‘to uncover’	ó-ku-leekáán-á	‘to shout’
HLLHHH	ó-ku-fukámíl-á	‘to kneel’	ó-ku-seehúlíká	‘to migrate’
	ó-ku-halákát-á	‘to scrape’	ó-ku-kuléembélá	‘to lead’

1. All of the Lulamogi forms cited in this study are based on the speech of Mr. Andrew Mukacha from Busulumba village in Kaliro district, Uganda.
2. In transcribing tone, I shall follow the normal practice of marking H(igh) tone with an acute (´) accent. L(ow) tone is mostly unmarked, but occasionally indicated by a grave (`) accent for clarity. While there is downdrift, there is no phonemic downstep in Lulamogi.

On the basis of the above forms, whose stems consist either of a single morpheme root or a formal -CV(V)C- radical followed by an unproductive suffix or unanalyzeable further material, the following observations can be made:

(i) An unmistakable pattern emerges which consists of H on the augment **ó**-, L on both the **-ku-** prefix and the first syllable of the stem, and H on all remaining syllables.

(ii) The one exception to the schema HLLH* (where H* means any number of Hs) concerns monosyllabic verb stems, as in **ó-ku-ly-á** ‘to eat’ (verb stem: /li-a/). In this case there is only a single L on **-ku-**.

(iii) Finally, vowel length distinctions (written with a double vowel) do not affect the tone patterns, which suggests that the syllable (and not the mora) is the tone-bearing unit in Lulamogi (see however below for further discussion).

While not shown in the table, the same tonal patterns occur on longer verb forms which may be derived by adding one or more verb extensions, e.g. **-il-** ‘applicative’, **-agan-** ‘reciprocal’, and/or by full stem reduplication, e.g. **ó-ku-siḡ-íl-ágán-á** ‘to tie for each other’, **ó-ku-halákát-á-hálákát-á** ‘to scrape a bit here and there’.

With the above established, we can now turn to questions of tonal representation and tonal mapping. One possibility, which we shall reject, is that HLLH* is a word-tone melody which maps left-to-right onto the full infinitive. Not only does the LL sequence violate the Obligatory Contour Principle, but it runs into difficulty with vowel-initial stems, illustrated in Table 2.

Table 2. Infinitive tones with V-initial stems

HLH	ó-kw-iib-á	‘to steal’	ó-kw-ooh-á	‘to pour’
	ó-kw-eet-á	‘to call’	ó-kw-aak-á	‘to shine’
HLHH	ó-kw-iigúl-á	‘to close’	ó-kw-oonóón-á	‘to spoil’
	ó-kw-eengél-á	‘to ripen’	ó-kw-aazík-á	‘to lend’
HLHHH	ó-kw-iizúkílá	‘to remember’	ó-kw-iikílíly-á	‘to allow’
	ó-kw-eemélél-á	‘to stand’	ó-kw-aanzúlúl-á	‘to extend’

As seen in the above examples, the infinitive prefix /-ku-/ glides to **kw-** with compensatory lengthening of the following stem-initial vowel. More significantly, there is only one L tone syllable on such forms. The same pattern can be observed on longer verbs, e.g. **ó-kw-aazík-íl-ágán-á** ‘to lend to each other’, **ó-kw-oonóón-á-yónóón-á** ‘to spoil a bit here and there’. Unless /-ku-/ and the initial stem vowel are counted as separate syllables (vs. the single syllable which occurs in the output), it is clear that a HLLH* melody cannot be successfully mapped onto the forms in Table 2.

A more promising approach, which is supported by other verb forms, is to recognize that the different components of the melody come in at different strata. The initial H clearly belongs to the augment morpheme, as also found on nouns of different tone patterns, e.g. **ó-mu-kalí** ‘woman’, **ó-mú-géni** ‘guest’. This leaves the LH as a melody. The proposal is that the L links to the leftmost mora of the verb stem. The H is then a suffixal tone which is mapped onto all successive moras—with

the caveat that Lulamogi does not permit LH rising tones. Stem-level derivations are given in (1):³

- (1) a. /li-a/ +LH → li-á → lí-á
 b. /siβ-a/ +LH → siβ-á
 c. /siiβ-a/ +LH → siíβ-á → siìB-á
 d. /sasul-a/ +LH → sàsúl-á
 e. /βiikul-a/ +LH → βiíkúl-á → βiìkúl-á

At this point, the prefixes /ó-ku-/ are added. While the augment has a H tone, /-ku-/ is either /L/, or more likely is toneless, receiving L tone by default. While the bitonal LH appears to be a bonafide stem-level melody (vs. exponents of two separate morphemes), the word level HLLH* schema is epiphenomenal.

There is one last detail that needs to be added to the above analysis. This concerns the reflexive prefix /-e-/ which directly precedes the verb stem. As seen in the forms in Table 3, there again is only one output L tone:⁴

Table 3. Infinitive tones with reflexive /-e-/

HLH	ó-ku-h-á	→	ó-kw-ee-h-á	‘to give self’
HLHH	ó-ku-siβ-á	→	ó-kw-e-siβ-á	‘to tie self’
	ó-ku-maany-á	→	ó-kw-e-máány-á	‘to pluck self’
HLHHH	ó-ku-sumít-á	→	ó-kw-e-súmít-á	‘to stab self’
	ó-ku-βiíkúl-á	→	ó-kw-e-βiíkúl-á	‘to uncover self’
HLHHHH	ó-ku-halákát-á	→	ó-kw-e-hálákát-á	‘to scrape self’
	ó-ku-kuléémbélá	→	ó-kw-e-kuléémbélá	‘to lead self’

Since we do not derive forms with two L tones (*ó-kw-e-siβ-á, *ó-kw-e-sasúl-á etc.), the reflexive prefix must either be considered to be in the domain to which the LH melody is assigned or (our preferred interpretation) it can assign a H to the first syllable of the stem converting it from LH* to all H. This differs from non-reflexive object prefixes. As seen in Table 4, where -mu- and -ki- mark classes 1 and 7, respectively, these do not affect the LH melody, but rather assign a H tone to a preceding CV- prefix. In this case, /-ku-/ → -kú-:

3. A constraint-based analysis would, of course, not need to go through a LH rising tone stage. At various points of the investigation we considered privative analyses with either /H/ vs. Ø or /L/ vs. Ø, but it turned out that both H and L features were needed. This is seen particularly clearly on forms such as aa-ly-á ‘s/he eats’ in Table 8, where there is a HL contour on a single mora.

4. As with vowel-initial stems, /-ku-/ glides to -kw-. However, the reflexive prefix exhibits compensatory lengthening only if the stem is monosyllabic. A separate paper is being prepared on vowel length alternations in Lulamogi.

Table 4. Infinitive tones with an object prefix

HLH	ó-ku-h-á	→	ó-kú-mu-h-á	‘to give him/her’
HLLH	ó-ku-siβ-á	→	ó-kú-ki-siβ-á	‘to tie it’
	ó-ku-maany-á	→	ó-kú-ki-maany-á	‘to pluck it’
HLLHH	ó-ku-sumít-á	→	ó-kú-mu-sumít-á	‘to stab him/her’
	ó-ku-βiikúl-á	→	ó-kú-ki-βiikúl-á	‘to uncover it’
HLLHHH	ó-ku-halákát-á	→	ó-kú-ki-halákát-á	‘to scrape it’
	ó-ku-kuléémbélá	→	ó-kú-mu-kuléémbélá	‘to lead him/her’

The examples in (2) show that up to three object prefixes can occur, which are all realized L with a single H assigned to the preceding prefix **-ku-**:⁵

- (2) a. **ó-ku-lag-á** ‘to show, to point’
 b. **ó-kú-ki-lag-á** ‘to show it’
 c. **ó-kú-ki-mu-lag-á** ‘to show it to him/her’
 d. **ó-kú-ki-mu-tu-lag-íl-á** ‘to show it to him/her for us’

All non-reflexive object prefixes have same above properties, as illustrated by the human forms and the verb **ó-ku-sumít-á** ‘to stab’ in Table 5.⁶

Table 5. Infinitive tones with non-reflexive human object prefixes

ó-kúú-n-sumít-á	‘to stab me’	ó-kú-tu-sumít-á	‘to stab us’
ó-kú-ku-sumít-á	‘to stab you’	ó-kú-βa-sumít-á	‘to stab you pl.’
ó-kú-mu-sumít-á	‘to stab him/her’	ó-kú-βa-sumít-á	‘to stab them’

Thus, these object prefixes do not affect the infinitive stem tone vs. the reflexive prefix **-e-** in Table 3, which causes the stem to begin H.

Before moving on to conjugated verb forms, let us note in Table 6 that the tones are slightly different in the corresponding negative infinitive forms:

Table 6. Infinitive tones with human object prefixes

ó-βu-tá-ly-á	‘to not eat’	ó-βu-tá-ki-ly-á	‘to not eat it’
ó-βu-ta-siβ-á	‘to not tie’	ó-βu-tá-ki-siβ-á	‘to not tie it’
ó-βu-ta-súmít-á	‘to not stab’	ó-βu-tá-ki-sumít-á	‘to not stab it’

5. That object prefixes consist of a L sequence with a single preceding H raises the question of whether they counterexemplify Marlo’s (2013: 45) view that “... the set of OPs is not a morphological or syntactic constituent and is not known to form its own prosodic domain.”

6. As seen, there is only one L in ‘to stab me’. The intermediate representation is **ó-kú-ñ-sasúlá**, where both **-n-** ‘me’ and the first syllable of the verb are L. To obtain the observed output, the **-kú-** usurps the mora and tone from **-ñ-** to produce **-kúú-**, whose HL tone is simplified to H. Note that **-βa-** marks both second and third person plural class 2 objects.

As seen, the negative infinitive is marked by class 14 /**ó-bu-**/. While the forms on the right with an object prefix show the same LH stem melody as in the affirmative, those on the left appear have an all H pattern. Our analysis is that the stem melody is still LH, but the negative prefix /-**tá-**/ shifts its H to the first syllable of the stem. If not available in the case of a monosyllabic stem, or if /-**tá-**/ is followed by an object prefix, the H remains on **-tá-** (cf. **ó-bu-tá-ki-mu-tu-lag-il-á** ‘to not show it to him for us’).⁷

3. Conjugated verb tones I: Main clause affirmative (MCA)

In this section we consider the tonal melodies assigned by the major verb TAMs in the main clause affirmative shown with the verb **-tolok-** ‘escape’ in Table 7.⁸

Table 7. Major TAMs in the MCA

	prefix	suffix	tone		
Present	Ø	-a	LH*L	:	a-tolók-a ‘he escapes’
Perfect	Ø	-ile	LH*L	:	a-tolók-éle ‘he has escaped’
Progressive	-li-ku-	-a	LH*	:	a-li-ku-tolók-á ‘he is escaping’
Past ₁	-aaká-	-a	(L)H*	:	y-aaká-tólók-á ‘he has just escaped’
Past ₂	-á-	-ile	LH*L	:	y-á-tolók-éle ‘he escaped’
Past ₃	-a-	-ile	L*H	:	y-a-tolok-elé ‘he escaped’
Future	-á-	-a	L*H	:	y-á-tolok-á ‘he will escape’
Subjunctive	Ø	-e	L*H	:	á-tolok-é ‘may he escape!’

As in other Bantu languages, TAM marking combines prefixal, suffixal and tonal exponents in Lulamogi. The above TAMs introduce at least two new tone melodies: LH*L and L*H. The annotation (L)H* in the Past₁ (L)H* indicates a LH* melody whose L is overridden by a H assigned by the **-aaká-** tense prefix.

I begin by illustrating the LH*L stem melody in the present (habitual) tense in Table 8, with and without object prefixes, with two different subject prefixes.⁹

7. We will see in the next section that other prefixes also sometimes shift their H onto the stem in conjugated forms. That the object prefixes resist the H may have to do with their own property of assigning a H to the preceding prefix. Another alternative is that they are /L/ and that the first tone of the LH stem melody is Ø rather than L.

8. Past₁ expresses past time today or yesterday, while Past₂ expresses past actions before yesterday. As seen in the examples, the inflectional ending **-ile** harmonizes to **-ele** after a mid vowel. Additional future tenses consist of **-(y)añ-** ‘go’ and **-iz-** ‘come’ + the infinitive: **a-yañ-a-ku-tolók-á** ‘he is about to escape’, **a-iz-a-ku-tolók-á** ‘he will escape’. Imperatives are expressed by a second person subjunctive: **ó-tolok-é** ‘escape!’, pl. **mú-tolok-é**.

9. In some TAMs all subject prefixes have the same tones. In others, **n-** ‘I’, **o-** ‘you sg.’, **a-** ‘s/he’ (class 1) and **e-** (class 9) are L, while **tú-** ‘we’, **mú-** ‘you pl.’, **βá-** ‘they’ (class 2) and other noun class subject prefixes are H (which may shift onto the stem). This derives from Proto-Bantu, where *CV- prefixes reconstruct as *H and *N- and *V- prefixes as *L. Note that all V- prefixes lengthen if followed by a monosyllabic stem, e.g. **aa-ly-á** ‘s/he eats’.

Table 8. LH*L melody in the MCA present/habitual

aa-ly-â	‘s/he eats’	a-ki-ly-â	‘s/he eats it’
a-síß-a	‘s/he ties’	a-ki-síß-a	‘s/he ties it’
a-sumít-a	‘s/he stabs’	a-ki-sumít-a	‘s/he stabs it’
a-halákát-a	‘s/he scrapes’	a-ki-halákát-a	‘s/he scrapes it’
tu-ly-â	‘we eat’	tú-ki-ly-â	‘we eat it’
tu-síß-a	‘we tie’	tú-ki-síß-a	‘we tie it’
tu-súmít-a	‘we stab’	tú-ki-sumít-a	‘we stab it’
tu-hálákát-a	‘we scrape’	tú-ki-halákát-a	‘we scrape it’

As seen, the initial L of the melody is not realized: (i) on mono- and bisyllabic stems; (ii) in ‘we stab’ and ‘we scrape’, where the H of /tú-/ has shifted onto the first syllable of the stem. The H remains on **tú-** when followed by an object prefix. The same patterns occur in the perfect, which differs only in taking the inflectional ending **-ile** rather than **-a**:

Table 9. LH*L melody in the MCA perfect

a-lí-íle	‘s/he has eaten’	a-ki-lí-íle	‘s/he has eaten it’
a-síß-íle	‘s/he has tied’	a-ki-síß-íle	‘s/he has tied it’
a-sumít-íle	‘s/he has stabbed’	a-ki-sumít-íle	‘s/he has stabbed it’
a-halákát-íle	‘s/he has scraped’	a-ki-halákát-íle	‘s/he has scraped it’
tu-lí-íle	‘we have eaten’	tú-ki-lí-í-le	‘we have eaten it’
tu-síß-íle	‘we have tied’	tú-ki-síß-íle	‘we have tied it’
tu-súmít-íle	‘we have stabbed’	tú-ki-sumít-íle	‘we have stabbed it’
tu-hálákát-íle	‘we have scraped’	tú-ki-halákát-íle	‘we have scraped it’

As seen in Table 10, neither the different subject prefixes, nor the **-á-** prefix affect the LH*L melody in Past₂ forms:

Table 10. LH*L melody in the MCA Past₂

y-á-lí-íle	‘s/he ate’	y-á-ki-lí-íle	‘s/he ate it’
y-á-síß-íle	‘s/he tied’	y-á-ki-síß-íle	‘s/he tied it’
y-á-sumít-íle	‘s/he stabbed’	y-á-ki-sumít-íle	‘s/he stabbed it’
y-á-halákát-íle	‘s/he scraped’	y-á-ki-halákát-íle	‘s/he scraped it’
tw-á-lí-íle	‘we ate’	tw-á-ki-lí-í-le	‘we ate it’
tw-á-síß-íle	‘we tied’	tw-á-ki-síß-íle	‘we tied it’
tw-á-sumít-íle	‘we stabbed’	tw-á-ki-sumít-íle	‘we stabbed it’
tw-á-halákát-íle	‘we scraped’	tw-á-ki-halákát-íle	‘we scraped it’

The L*H tone pattern is illustrated in the Past₃ in Table 11:

Table 11. L*H melody in the MCA Past₃

y-a-li-ilé	‘s/he ate’	y-a-ki-li-ilé	‘s/he ate it’
y-a-siβ-ilé	‘s/he tied’	y-a-ki-siβ-ilé	‘s/he tied it’
y-a-sumit-ilé	‘s/he stabbed’	y-a-ki-sumit-ilé	‘s/he stabbed it’
y-a-halakāt-ilé	‘s/he scraped’	y-a-ki-halakāt-ilé	‘s/he scraped it’
tw-a-li-ilé	‘we ate’	tw-a-ki-li-i-lé	‘we ate it’
tw-a-siβ-ilé	‘we tied’	tw-a-ki-siβ-ilé	‘we tied it’
tw-a-sumit-ilé	‘we stabbed’	tw-a-ki-sumit-ilé	‘we stabbed it’
tw-a-halakāt-ilé	‘we scraped’	tw-a-ki-halakāt-ilé	‘we scraped it’

The same L*H melody can also be observed on the future and subjunctive forms in Table 7. This leaves the (L)H* pattern of the Past₁. However, as seen in the following forms, this is just the LH melody, with **-aaká-** assigning a H to the initial syllable of the stem—unless there is an intervening object prefix:

Table 12. (L)H* melody in the MCA Past₁

y-aaká-ly-á	‘s/he ate’	y-aaká-ki-ly-á	‘s/he ate it’
y-aaká-siβ-á	‘s/he tied’	y-aaká-ki-siβ-á	‘s/he tied it’
y-aaká-súmít-á	‘s/he stabbed’	y-aaká-ki-sumít-á	‘s/he stabbed it’
y-aaká-hálákát-á	‘s/he scraped’	y-aaká-ki-hálákát-á	‘s/he scraped it’
tw-aaká-ly-á	‘we ate’	tw-aaká-ki-ly-á	‘we ate it’
tw-aaká-siβ-á	‘we tied’	tw-aaká-ki-siβ-á	‘we tied it’
tw-akáá-súmít-á	‘we stabbed’	tw-aaká-ki-sumít-á	‘we stabbed it’
tw-aaká-hálákát-á	‘we scraped’	tw-aaká-ki-hálákát-á	‘we scraped it’

4. Conjugated verb tones II: Main clause negative (MCN)

The main clause negative forms of the major TAMs are exemplified in Table 13.

Table 13. Major TAMs in the negative

	prefix	sfx	tone		
Pres	ti-	-a	(L)H*	ti-tu-tólók-á	‘we don’t escape’
Perf	ndí-	-a	LH*	ndí-tu-tolók-á	‘we haven’t escaped’
Prog	tí-...-lí-ku-	-a	LH*	tí-tú-lí-ku-tolók-á	‘we are not escaping’
Past ₁	tí-...-aaká-	-a	(L)H*	tí-tw-aaká-tólók-á	‘we haven’t just escaped’
Past ₂	ti-...-á-	-ile	H*	ti-tw-á-tólók-élé	‘we didn’t escape’
Past ₃	tí-...-a-	-ile	L*H	tí-tw-a-tolok-élé	‘we didn’t escape’
Fut	tí-...-a-	-e	L*H	tí-tw-a-tolok-é	‘we will not escape’
Sbjv	ti-...-á-	-a	H*	ti-tw-á-tólók-á	‘let’s not escape!’

An immediate observation to make is the MCN forms all take H-final melodies: LH*, L*H or H*. Again, what is indicated as (L)H* is identical to the LH* melody except that a specific prefix assigns a H to the first syllable of the stem. Since subject

prefixes do not contrast in tone in negatives, these melodies will be exemplified only with **tú-** ‘we’, starting with the MCN present/habitual in Table 14.

Table 14. (L)H* melody in the MCN present/habitual

ti-tu-ly-á	‘we don’t eat’	ti-tú-ki-ly-á	‘we don’t eat it’
ti-tu-siβ-á	‘we don’t tie’	ti-tú-ki-siβ-á	‘... tie it’
ti-tu-súmít-á	‘we don’t stab’	ti-tú-ki-sumít-á	‘... stab it’
ti-tu-hálákát-á	‘we don’t scrape’	ti-tú-ki-hálákát-á	‘... scrape it’

The all H pattern is seen in the left column, where it cannot be determined if the stem-initial H is assigned by the subject prefix or the tense. The forms on the right show the LH* stem melody after an object prefix. The H tone on **-tú-** could be assigned by the object prefix, as we saw in earlier examples, or it could be underlying (as subject prefixes are generally H in the negative).

The L*H and *H tonal melodies are illustrated in the MCN future and Past₂ in Tables 15 and 16, respectively:

Table 15. L*H melody in the MCN future

tí-tw-aa-ly-é	‘we won’t eat’	tí-tw-a-ki-ly-é	‘... eat it’
tí-tw-a-siβ-é	‘we won’t tie’	tí-tw-a-ki-siβ-é	‘... tie it’
tí-tw-a-sumít-é	‘we won’t stab’	tí-tw-a-ki-sumít-é	‘... stab it’
tí-tw-a-halakát-é	‘we won’t scrape’	tí-tw-a-ki-halakát-é	‘... scrape it’

Table 16. H* melody in the MCN Past₂

ti-tw-á-lí-ílé	‘we didn’t’	ti-tw-á-kí-lí-ílé	‘... eat it’
ti-tw-á-síβ-ílé	‘we didn’t tie’	ti-tw-á-kí-síβ-ílé	‘... tie it’
ti-tw-á-súmít-ílé	‘we didn’t stab’	ti-tw-á-kí-súmít-ílé	‘... stab it’
ti-tw-á-hálákát-ílé	‘we didn’t scrape’	ti-tw-á-kí-hálákát-é	‘... scrape it’

As seen, an object prefix doesn’t affect the above tonal melodies.

5. Conjugated verb tones III: Relative clauses

In this section I briefly consider the corresponding tones of the major TAMs in relative clauses. We begin with the subject relative affirmative (SRA). Since the subject prefix **tú-** cannot occur in this position, and since **βá-** ‘they’ (class 2) fuses with an **-a-** tense marker, these will be illustrated with the class 10 **gí-** subject prefix. A summary and examples are provided in Table 17.

Table 17. Major TAMs in the SRA

	prefix	sfx	tone	émbulí ...	‘the goats ...’
Pres	Ø	-a	HL*H	é-gi-tólok-á	‘that escape’
Perf	Ø	-ile	(L)H*L	é-gi-tólók-éle	‘that have escaped’
Prog	-li-ku-	-a	LH*	é-gi-lí-ku-tólók-á	‘that are escaping’
Past ₁	-aaka-	-a	(L)H*	é-gy-aaká-tólók-á	‘that have just escaped’
Past ₂	-á-	-ile	LH*L	é-gy-á-tólók-éle	‘that escaped’
Past ₃	-a-	-ile	L*H	é-gy-a-tolok-elé	‘that escaped’
Future	-á-	-a	L*H	é-gy-á-tolok-á	‘that will escape’

The tonal melodies are exactly the same as in the MCA except for the present which has an unprecedented HL*H melody. In the first three TAMs the H of a CV- subject prefix shifts onto the following stem or -li- syllable. A V- subject prefix fuses with its augment and does not shift its H, e.g. class 1: **ómbulí á-tólóka** ‘the goat that escapes’ (from /á-á-tólók-a/).

The corresponding object (non-subject) relative clause affirmative TAMs are shown in Table 18.

Table 18. Major TAMs in the ORA

	prefix	sfx	tone	ékíintu ékye ...	‘the thing that ...’
Pres	Ø	-a	(H)L*H	tu-hálakat-á	‘we scrape’
Perf	Ø	-ile	(L)H*L	tu-hálákát-íle	‘we have scraped’
Prog	-lí-ku-	-a	LH*	tu-lí-ku-halákát-á	‘we are scraping’
Past ₁	-aaká-	-a	(L)H*	tw-aaká-hálákát-á	‘we have just scraped’
Past ₂	-á-	-ile	LH*L	tw-á-halákát-íle	‘we scraped’
Past ₃	-a-	-ile	L*H	tw-a-halakat-ilé	‘we scraped’
Future	-á-	-a	L*H	tw-á-halakat-á	‘we will scrape’

Most of the important observations from Tables 17 and 18 concern the present TAMs: (i) the present unexpectedly has a different tonal melody from the perfect; (ii) only they (and the progressive) show /tú-/ shifting its H onto the following syllable; (iii) as a result, as in the SRA, the present tense form has a (H)L*H tonal configuration. Table 19 gives the present ORA forms for verb stems of different lengths, with and without an object prefix (which does not assign a H to **tu-**):

Table 19. (H)L*H melody in the ORA present

ékíintu ékye ...	‘the thing that ...’		
tu-lyá	‘we eat’	tu-mú-li-il-á	‘we eat for him’
tu-síß-a	‘we tie’	tu-mu-síß-il-á	‘we tie for him’
tu-súmit-á	‘we stab’	tu-mu-súmit-il-á	‘we stab for him’
tu-hálakat-á	‘we scrape’	tu-mu-hálakat-il-á	‘we scrape for him’

As seen, when an object prefix is present, the H of /tú-/ does not shift.

Subject relative negative (SRN) forms are seen in Table 20.¹⁰

Table 20. Major TAMs in the SRN

	prefix	sfx	tone	émbulí ...	‘the goats...’
Pres	-ta-	-a	(L)H*	é-gi-ta-tólók-á	‘that don’t escape’
Perf	-ta-	-ile	(L)H*	é-gi-ta-tólók-élé	‘that haven’t escaped’
Prog	-ta-lí-ku-	-a	LH*	é-gi-ta-lí-ku-tolók-á	‘that aren’t escaping’
Past ₁	-káa-lí-ku-	-a	LH*	é-gi-káa-lí-ku-tolók-á	‘that haven’t just escaped’
Past ₂	-ta-	-ile	(L)H*L	é-gi-tá-tólók-élé	‘that didn’t escape’
Past ₃	-ta-	-ile	L*H	é-gi-ta-tolok-elé	‘that didn’t escape’
Future	-ta-	-e	L*H	é-gi-ta-tolok-é	‘that will escape’

As seen, except for Past₂, the tonal melodies are the same as in the corresponding MCN TAMs even though the negative marker occurs in a different position and is **-ta-** rather than **ti-**.

Table 21 presents the corresponding TAMs in the object relative negative:

Table 21. Major TAMs in the ORN

	prefix	sfx	tone	ékíintu ékye ...	‘the thing that ...’
Pres	-ta-	-a	(L)H*	tu-ta-hálákát-á	‘we don’t scrape’
Perf	-káa-lí-ku-	-ile	LH*	tu-káa-lí-ku-halákát-á	‘we haven’t scraped’
Prog	-ta--lí-ku-	-a	LH*	tu-ta-lí-ku-halákát-á	‘we aren’t scraping’
Past ₁	ndí-	-a	LH*	ndí-tu-halákát-á	‘we haven’t just scraped’
Past ₂	-tá-	-ile	LH*L	tu-tá-halákát-ile	‘we didn’t scrape’
Past ₃	-ta-	-ile	L*H	tu-ta-halakat-ilé	‘we didn’t scrape’
Future	-ta-	-é	L*H	tu-ta-halakat-é	‘we will not scrape’

This concludes the survey of the major TAM + clause type combinations. We now turn to a discussion of the major points.

6. Summary and discussion

In the preceding sections we have seen that although verbs do not have contrastive lexical tone, they exhibit a number of different tonal melodies, summarized in Table 22.

10. It is likely that the Past₂, Past₃ and Future all have a **-ta-a-** sequence, but since these fuse as **-ta-** it is difficult to know.

Table 22. Summary of tonal melodies

	MCA	SRA	ORA	MCN	SRN	ORN
Present	(L)H*L	HL*H	HL*H	(L)H*	(L)H*	(L)H*
Perfect	(L)H*L	(L)H*L	(L)H*L	LH*	(L)H*	LH*
Progressive	LH*	LH*	LH*	LH*	LH*	LH*
Past ₁	(L)H*	(L)H*	(L)H*	(L)H*	(L)H*	LH*
Past ₂	LH*L	LH*L	LH*L	H*	(L)H*L	LH*L
Past ₃	L*H	L*H	L*H	L*H	L*H	L*H
Future	L*H	L*H	L*H	L*H	L*H	L*H
Subjunctive	L*H			H*		
Infinitive	LH*			(L)H*		

A striking generalization which emerges from the above table is that an individual TAM can require the same tonal melody throughout the six combinations of clause type and polarity. Thus, the progressive has the same LH* stem tones in all six columns. This is because it is built on the infinitive with the same **ku-** prefix throughout (cf. note 8 concerning two additional future tenses built on the infinitive with these same tones). In addition, the Past₃ and Future have L*H in all six contexts. (Past₁ has (L)H* in all but the ORN, where LH* is essentially equivalent.) Finally, both the Perfect and the Past₂ have (L)H*L tone in all affirmative columns. While the Present and Perfect are the same in the MCA and nearly the same in the negative columns, they differ substantially in affirmative relative clauses, as pointed out above. Although there are rows in Table 22 with the same tonal melody, the above six columns show that there is no comparable generalization of a tonal melody being consistently spelled out on the basis of a clause type + polarity configuration. This absence is quite robust in Bantu, Niger-Congo, and probably tone systems in general (Hyman 2013).

Recall that the parenthetical L of (L)H*L and (L)H* melodies is actually part of the melody which can be overridden by a H shifting from the preceding prefix. Thus, (L)H*L and LH*L are the same melody, as are (L)H* and LH*. It is striking that there is no H*L (or HL*) melody that exists without the potential of a preceding L. There is a H* melody, which logically could be the result of a LH* melody that is always preceded by a shifting H prefix. It is thus tempting to reduce the above table to essentially three stem tone melodies, as in (3).

- (3)
- melody

with shifting prefixal H
- :

:
- LH*L

H*L
- LH*

H*
- L*H

HL*H

There are, however, two problems. The first is that there are only two related cells in Table 22 that have HL*H tone (SRA and ORA present tense). The second is that H* appears in at least some cases to be related to L*H, not LH*. In Table 23, the second person subjunctive (= imperative) takes a L*H melody in the affirmative whether an object prefix is present or not:

Table 23. L*H melody in the affirmative subjunctive

óó-ly-e ¹¹	‘eat!’ (sg.)	ó-ki-ly-é	‘eat it’ (pl.)
ó-siβ-é	‘tie!’	ó-ki-siβ-é	‘tie it!’
ó-sumit-é	‘stab!’	ó-ki-sumit-é	‘stab it!’
ó-halakaté	‘scrape!’	ó-ki-halakaté	‘scrape it!’
mú-ly-e	‘eat!’ (pl.)	mú-ki-ly-e	‘eat it!’ (pl.)
mú-siβ-é	‘tie!’	mú-ki-siβ-é	‘tie it!’
mú-sumit-é	‘stab!’	mú-ki-sumit-é	‘stab it!’
mú-halakaté	‘scrape!’	mú-ki-halakaté	‘scrape it!’

However, when the reflexive object prefix /-e-/ is present, the tonal melody becomes H*:

Table 24. H* melody in the affirmative subjunctive with reflexive prefix

w-éé-ly-é	‘eat yourself!’	mw-éé-ly-é	‘eat yourselves!’
w-é-siβ-é	‘tie yourself!’	mw-é-siβ-é	‘tie yourselves!’
w-é-súmít-é	‘stab yourself!’	mw-é-súmít-é	‘stab yourselves!’
w-é-hálákáté	‘scrape yourself!’	mw-é-hálákáté	‘scrape yourselves!’

The subjunctive is the only TAM where this happens. The same H* melody is observed in the negative subjunctive:

Table 25. H* melody in the negative subjunctive

t-óó-ly-á	‘don’t eat!’ (sg.)	t-ó-kí-ly-á	‘don’t eat it’
t-ó-siβ-á	‘don’t tie!’	t-ó-kí-siβ-á	‘don’t tie it!’
t-ó-súmít-á	‘don’t stab!’	t-ó-kí-súmít-á	‘don’t stab it!’
t-ó-hálákát-á	‘don’t scrape!’	t-ó-kí-hálákát-á	‘don’t scrape it!’
ti-mw-áá-ly-á	‘don’t eat!’ (pl.)	ti-mw-á-kí-ly-á	‘don’t eat it’
ti-mw-á-siβ-á	‘don’t tie!’	ti-mw-á-kí-siβ-á	‘don’t tie it!’
ti-mw-á-súmít-á	‘don’t stab!’	ti-mw-á-kí-súmít-á	‘don’t stab it!’
ti-mw-á-hálákát-á	‘don’t scrape!’	ti-mw-á-kí-hálákát-á	‘don’t scrape it!’

It is important to note that the H* melody is rare, so it is hard to be certain about drawing conclusions from it.

7. Further issues and outstanding questions

The above summarizes our current understanding of the tonal melodies in the Lulamogi verb. While I have tried to be as exhaustive as possible in covering the major TAMs of the language, there are other forms (e.g. compound tenses) and other contexts. One of these concerns what happens to the tonal melodies when

11. Recall from note 9 that V- prefixes are pronounced long if followed by a monosyllabic stem. A paper on this topic is currently being prepared.

something follows the verb. As in Luganda, when a verb is followed by an object which begins with an augment, the tonal melody remains stable. However, certain TAMs in the affirmative simplify their LH*L melody to all L when followed by a non-augmented noun or certain other elements.¹² This is illustrated in Table 26 with the attenuative class 17 locative enclitic =**kú** ‘a little, a bit’:

Table 26. MCA present/habitual + enclitic

aa-ly-â	→	a-ly-aa =kú	‘s/he eats a bit’
a-síß-a	→	a-síß-a =kú	‘s/he ties a bit’
a-sumít-a	→	a-sumít-a =kú	‘s/he stabs a bit’
a-halákát-a	→	a-halakát-a =kú	‘s/he scrapes a bit’
tu-ly-â	→	tu-ly-ââ =kú	‘we eat a bit’
tu-síß-a	→	tu-síß-a =kú	‘we tie a bit’
tu-súmit-a	→	tu-súmit-a =kú	‘we stab a bit’
tu-halákát-a	→	tu-halákát-a =kú	‘we scrape a bit’

The forms on the left recapitulate the (L)H*L melody seen in Table 8. Recall that although the full LH*L melody is realized after the subject prefix **a-** (e.g. **a-halákát-â** ‘s/he scrapes’), CV- subject prefixes such as /**tú-**/ shift their H tone onto the initial syllable of the verb (e.g. **tu-halákát-â** ‘we scrape’). Considering the forms with =**kú**, we see that the tones of the verb stem become all L when the subject prefix is **a-**, but are unaffected when the subject prefix is **tu-**. Table 27 shows that when an object prefix is present, the the verb stem becomes all L with both subject prefixes, the H remaining on /**tú-**/:

Table 27. MCA present/habitual with object prefix + enclitic

a-ki-ly-â	→	a-ki-ly-aa =kú	‘s/he eats it’
a-ki-síß-a	→	a-ki-síß-a =kú	‘s/he ties it’
a-ki-sumít-a	→	a-ki-sumít-a =kú	‘s/he stabs it’
a-ki-halákát-a	→	a-ki-halakát-a =kú	‘s/he scrapes it’
tú-ki-ly-â	→	tú-ki-ly-aa =kú	‘we eat it’
tú-ki-síß-a	→	tú-ki-síß-a =kú	‘we tie it’
tú-ki-sumít-a	→	tú-ki-sumít-a =kú	‘we stab it’
tú-ki-halákát-a	→	tú-ki-halakát-a =kú	‘we scrape it’

One interpretation of the above is that it is only LH*L stems which reduce to all L. Another, which I favor, is that the H* of (L)H*L is reduced in all cases, but the H of an immediately preceding CV- subject prefix shifts and replaces it, thereby reproducing the same H*L on the surface. If correct, this would confirm our view that the tonal melodies come in at the stem level and are only later modified by the effects of an adjacent prefix. In other words, Bantu verbal tonology is stratal, as we have known for some time. The fact that the H* melody affects the subject, TAM,

12. Thus, from **aa-síß-a** ‘s/he ties’ there is a contrast between **aa-síß** ‘**émbulí**’ ‘s/he ties goats’ (with wide focus) vs. **aa-síß-a mbulí** ‘she ties GOATS’ (not something else).

and reflexive prefixes as well as the stem in Tables 24 and 25 suggests that H* is actually imposed at the word rather than stem level.¹³ Thus, not all melodies are equal with respect to their domain.

What we would like to know about these melodies is how they came into being, particularly since the lexical tonal contrast has been lost on Lulamogi verbs. If one were to take the LH* infinitive tones as a starting point, it would likely not be correct to assume that Proto-Bantu *H and *L merged as L followed by a H suffixal tone. Table 28 compares the one tone pattern of Lulamogi with the lexical contrasts of Proto-Bantu as realized in Lusoga and Luganda.¹⁴

Table 28. Tonal Reflexes of Proto-Bantu Verbs

Proto-Bantu	Luganda	Lusoga	Lulamogi	
*H *-búmb-	o-ku-búmb-a	o-kú-buumb-á	ó-ku-buumbá	‘to mould’
*-kám-	o-ku-kám-a	o-kú-kam-á	ó-ku-kam-á	‘to milk’
*-léet-	o-ku-léet-a	o-kú-leet-á	ó-ku-leet-á	‘to bring’
*L *-bàl-	o-ku-bal-a	o-kú-bál-á	ó-ku-bal-á	‘to count’
*-càb-	o-ku-sab-a	o-kú-sáb-á	ó-ku-sal-á	‘to ask, beg’
*-mìd-	o-ku-mir-a	o-kú-mír-á	ó-ku-mil-á	‘to swallow’

As seen, Luganda realizes the Proto-Bantu root tones directly, whereas Lusoga has modified them considerably, still keeping the contrast. Interestingly, it is the *H pattern in Lusoga that most resembles Lulamogi HLLH* infinitive tones. This is borne out in the two-way tonal contrast found on nouns with bisyllabic stems:

Table 29. Tonal Reflexes of Proto-Bantu Nouns

Proto-Bantu	Luganda	Lulamogi	
*H-H *kálí	o-mu-kázi	ó-mu-kalí	‘woman’
*H-L *kóno	o-mu-kóno	ó-mu-konó	‘arm’
*L-H *-tikí	e-ki-síki ~ ki-sikí	é-kí-síki	‘stump, log’
*L-L *-geni	o-mu-genyi	ó-mú-géni	‘guest’

As seen, the four-way contrast in Proto-Bantu has merged into a three-way contrast in Luganda (*H-H and *H-L merge). In Lulamogi, both *H-H and *H-L merge with the infinitive tone pattern H-L-L-H, while both *L-H and *L-L merge as H-H-H-L.¹⁵ What this suggests is that pre-Lulamogi first merged the verb root tones as H, which then underwent a shift to the right to produce what looks today like a H suffixal tone.

13. The augment and negative marker **ti-** may be a proclitic rather than a prefix.

14. The Lusoga forms were extracted from van der Wal (2004) except for ‘to bring’, which was taken from a word list provided by Michael Marlo. I didn’t have access to enough tonally marked Lusoga nouns to incorporate them into Table 29.

15. Of the four reconstructions, all but *L-H are consistent, while this latter sometimes corresponds to the other tone pattern in Lulamogi.

In fact, there are additional reasons to think of present-day final Hs as suffixal, or even boundary tones. Throughout the study of Lulamogi I have struggled with the interpretation of word-final H tone(s). One reason is that they fail to appear in certain contexts. One is as subject of a main clause verb:

Table 30. The infinitive as subject of a main clause verb

ó-ku-ly-á	→	ó-ku-ly-a kú-sa	‘to eat is good’
ó-ku-siβ-á	→	ó-ku-siβ-a kú-sa	‘to tie is good’
ó-ku-sumít-á	→	ó-ku-sumít-a kú-sa	‘to stab is good’
ó-ku-halákát-á	→	ó-ku-halakata-a kú-sa	‘to scrape is good’

Final Hs also do not occur at the end of a yes-no question. Thus compare the following:

Table 31. Final L in yes-no questions

ó-ku-ly-á	→	a-ták-a ó-ku-ly-a	‘does s/he want to eat?’
ó-ku-siβ-á	→	a-ták-a ó-ku-siβ-a	‘does s/he want to tie?’
ó-ku-sumít-á	→	a-ták-a ó-ku-sumít-a	‘does s/he want to stab?’
ó-ku-halákát-á	→	a-ták-a ó-ku-halakata-a	‘does s/he want to scrape?’

It has thus been tempting to treat such final Hs not as part of a stem- (or word-) tone melody, but rather as a phrasal boundary tone (H%), as in Luganda. However, there is evidence from nominal reduplication that at least some final H tones are not phrasal: **ó-mu-kalí** ‘woman’ reduplicates as **ó-mu-kalí-kalí** ‘a bad example of a woman’, not ***ó-mu-kalí-kálí** (which is the way verb infinitives reduplicate). It seems therefore just as likely that the final H is lexical, but that it becomes L at the end both of an utterance-internal phrase and a yes-no question. In future work we hope to resolve this and other remaining open questions.¹⁶

Abbreviations

Fut = future, MCA = main clause affirmative, MCN = main clause negative, ORA = object relative clause affirmative, ORN = object relative clause negative, Perf = perfect, Prog = progressive, Pres = present, Sbjv = subjunctive, SRA = subject relative clause affirmative, SRN = subject relative clause negative, TAM = tense-aspect-mood.

16. Since Luganda has tonal anticipation rather than rightward shift of Hs, this is another interesting divergence. How much, if any, of the history may have to do with Meeussen’s Rule is also unclear. Perhaps the all-L sequence of object prefixes preceded by one H is one reflex.

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Résumé

Dans cet article, je décris les mélodies tonales du lulamogi, langue peu répandue et peu étudiée du groupe luganda-lusoga. Bien que le lulamogi ait perdu tout contraste lexical dans les verbes, comme la plupart des langues bantu, il possède un riche ensemble de mélodies verbales assignées sur base du temps, de l'aspect, du mode, de la polarité et du type de proposition (p. ex. principale/relative). Si l'intérêt se porte essentiellement sur les mélodies tonales du thème, des complications proviennent des préfixes qui précèdent et qui peuvent déplacer leur ton H vers la syllabe initiale du thème. Le système étant totalement différent de celui que l'on trouve dans le luganda, mieux connu, il est particulièrement intéressant pour notre compréhension de l'évolution des systèmes tonals de cette sous-région.