A sketch of Lower Nyole tone

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Abstract

This paper presents an overview of the tone system of Lower Nyole (LN), a moribund and previously unrecognized variety of Nyole (JE35) spoken in southern Busoga. After providing a preliminary study of tonal patterns in nouns, we show that LN has a 'reversive' tone system with two tonal classes of verbs – (i) verbs which are underlyingly toneless and (ii) historically *H-toned verbs which synchronically have an initial /L/ tone. All known verbal contexts of LN are inflected with a melodic tone pattern, i.e. there are no tonally uninflected constructions. Like other Luyia languages, LN has a large number of tonal inflections, which are characterized by the assignment of Hs to positions at the edges of the verb stem. An additional noteworthy property of LN verb tone is that long vowels that precede NC clusters are treated like short vowels by tone assignment principles.

Keywords: Bantu, Luyia, Lower Nyole, tense-aspect-mood, verb tone, noun tone

Introduction

In the Bantu linguistics literature, Nyole is known primarily as a language spoken near Lake Kyoga, to the south and west of the town of Mbale, in eastern Uganda. Nyole is classified as JE35 by Maho (2009), is given the ISO code [nuj] in Lewis *et al.* (2016), and is considered to be part of the Luyia macrolanguage.[1]

This paper reports results from two days of field research by the four authors on a second group of geographically distant Lower Nyole (LN) speakers in south Busoga on 16-17 January, 2016. Our speakers are from Lubali village in Busoga, Bunya (Bunha) County, Mayuge District, near the intersection of two unnamed roads at the coordinates 0°23'42.2"N, 33°31'17.8"E. At the time of our research, very little was known about this southern group of Nyole speakers, which are not recognized in most sources, including the *Ethnologue* (Lewis *et al.* 2016). It was not known, for instance, whether there is any linguistic or historical relation to the Upper Nyole (UN) community to the north and east.

Namulemu (2004) and Wicks (2006) identify four distinct dialects of UN. (i) Lumenya, the subject of most prior research, is said to be the prestige dialect and is spoken by the largest number of speakers, in the central region including the commercial and governmental centers of Busolwe and Butaleja. The other dialects are (ii) Luhadyo, spoken to the north and northwest in Butaleja and Nawanjofu subcounties, (iii) Lusabi / Luwesa, spoken in southern Bunyole in the Budumba subcounty, and (iv) an unnamed dialect spoken in the east in the Kachonga and Mazimasa subcounties, where the dialect is in contact with other languages, including Gisu and Gwere.

Ladefoged *et al.* (1972: 71) report the highest lexical similarity between UN and the Gwe dialect of Saamia (82%) and with Kenyan Nyore (61%) – figures repeated in Lewis *et al.* (2016) without attribution. Namulemu (2004: 3) suggests that this percentage of lexical similarity with Kenyan Nyore may be overstated.

A population of Nyole speakers in Busoga is not mentioned in Wicks (2006), or other prior references. Namulemu (2004: 1, 2006: 8) makes an oblique reference to LN when briefly describing an origin story of the Banyole which says that Munyole, his wife Nanyole, and brother Nanyumba migrated to Uganda from Bunyifa in Kenya. According to this story, Munyole settled in the northern region (Bunyole), while Nanyumba continued the migration south and settled in Busoga. Namulemu's (2004, 2006) descriptions of Nyole do not discuss LN further.

Our LN speakers narrate a somewhat different story which accords more with oral narratives recorded in Cohen (1972: 108-9) involving the migration routes of the Lungfish peoples. In tracing their ancestor's origin from Kenya, our speakers describe a journey via Lake Victoria followed by settlement in southern Busoga.

While there are thus a variety of origin stories that place Banyole in southern Busoga before the 20th century via different routes, southern Busoga was decimated by sleeping sickness during the first half of the 20th century, and all inhabitants either

1. There is sometimes confusion in the literature between Ugandan Nyole (JE35) and Kenyan Nyore (JE33). For instance, Wicks (2006) cites Mould (1981) and Angogo Kanyoro (1983) in support of placing Nyole within Greater Luyia, but both of those references discuss Kenyan Nyore. Conversely, Marlo (2015b) incorrectly refers to Kenyan Nyore in citing data from Namulemu (2006), when in fact the reference is about Ugandan Nyole.

died or left the area (see Nabirye 2016). The present Banyole who live in southern Busoga arrived there more recently, as a government resettlement effort during the 1950s brought some Banyole from (Upper) Bunyole into southern Busoga.

Our speakers, two brothers, were part of this resettlement. The elder of the two, Hamba Baziriyo, born in 1954, was very young when he moved with his parents to their current location. The younger speaker, Wangira Noah, was born in south Busoga in 1965 and has lived there his entire life. The two stay near their mother, who is in her 80s – one of three old Banyole women from the resettlement era said to still be alive in this town. The three women only occasionally converse in Nyole, and while they successfully passed on Nyole to their children, Nyole ceased to be passed on in south Busoga after one more generation. All but one of the 23 children of Baziriyo and Noah are first language speakers of Tenga, i.e. the main Soga variety, with only the eldest child of the elder brother having some proficiency in Nyole. They no longer have contact with the Banyole of Upper Bunyole.

While Nyole has moribund status around Lubali village, it has already gone extinct in the family of the Nanhumba in Kityerera village, a few kilometers southeast of Lubali. The Nanhumba is the head of the Baisewumbwe clan and one of the 11 clan heads that constitute the ruling council of the Busoga kingdom. The members of this clan consider themselves Banyole (not Basoga). However, none of the members of the chief's family speak Nyole; all are Tenga speakers. We spoke with a large group of people at the home of an elder in the Nanhumba's family and found only one 65-year old woman who remembered speaking Nyole with her mother. The family members reported that they did not know anyone in their village who spoke Nyole.

The visit to the family of the Nanhumba in Bunhole County had been the first stop in our search for LN speakers, so when the Nyole-remembering woman recalled vocabulary only with considerable difficulty, we decided to continue looking elsewhere. After retracing our steps back to the northwest, we found the two Nyole-speaking brothers in Lubali, outside of Bunhole county. We worked with the brothers over two days, collecting a Swadesh list and some additional verb vocabulary on the first day, and eliciting data from the elder brother focusing on the verbal tone system on the second day.[2]

This paper reports the results of our study of LN, focusing on verb tone. The study is necessarily preliminary and not as comprehensive in scope as would be ideal. Our data on nouns was collected on a single pass through a Swadesh list. Similarly, we were only able to gather verbal tone data from one speaker on one day, and as a result we have been unable to re-elicit all of the data, and a few questions remain about transcriptions and glossing. (Unknown glosses are given below as '?'.) Moreover, we were unable to explore certain topics that could potentially be revealing about the language's tone system. We mention these topics below in the discussion and conclusions section.

2. The Swadesh list data and the verb vocabulary were collected from both brothers, but as the younger brother had some other responsibilities on the second day, we obtained the verb tone data from only the elder brother. From time to time, the younger brother joined us, and when he also pronounced the words, we found them to be identical in the relevant respects to his brother's.

Recognizing these limitations, we nevertheless feel that it is important to make our results available since, apart from Nabirye (2016), there is no prior research on LN, and virtually no prior work on tone in either UN or LN. Moreover, we are unaware of any published study of tone in any variety of Ugandan Luyia, which in addition to Nyole includes varieties of Masaaba and Saamia/Gwe. Brown's (1972) study of phonological variation within Masaaba dialects does not mark tone, and the studies of Saamia tone in Chagas (1976) and Poletto (1998) are based on Kenyan Saamia. It is unknown if Kenyan Saamia and Ugandan Saamia/Gwe have the same tone system.

In the following section, previous research on UN is described. We then provide a sketch of LN noun tone based on our Swadesh list, and in subsequent sections, detail what we have learned about the LN verb tone system, describing the many melodic tone patterns we have uncovered in the language. Data are presented for each melody with the two tonal classes of verbs, in basic phrase-final forms lacking an object prefix (OP), and in forms inflected with an OP, which sometimes triggers or undergoes tonal alternations.

1. Previous research on Nyole

UN is the subject of a handful of works, beginning with Morris (1963) – a brief sketch of the Nyole sound system based on data from speakers from the northern part of the UN-speaking region. Eastman (1972) updates the record with additional data collected by Michael and Susan Whyte in 1969-1971 among the Bamenya group of UN speakers in Mulagi and Lwamboga, near Busolwe. This work is again brief, focusing on the sound system, but also includes some notes on the tense-aspect system and on noun class agreement, and provides some sentences and a small lexicon. Schadeberg (1989) is a highly focused piece discussing the velar nasal **ŋ** in UN, a sound which descends historically from ***p**, corresponds to **h**, **w**, and **Ø** in related languages, and undergoes a "crazy rule" (Schadeberg 1989: 173), becoming **[p]** in a post-nasal context.

Over the last decade, more in-depth research into the lexicon, phonology, and morphosyntax of UN has become available through Namulemu's (2004) M.A. dissertation on tense-aspect-mood and (2006) statement on phonology, the grammar sketch in Wicks's (2006) M.A. dissertation, and Musimami & Diprose's (2012) dictionary, which is an updated version of Whyte (1994).

Despite these advances in the linguistic description of Nyole, there is almost no prior research on tone in the language. Tone is marked irregularly and not a focus of Morris (1963). Eastman (1972) explicitly avoids tone and vowel length. Schadeberg (1989) includes only schematic data with no tone marking. Namulemu (2004) provides potentially useful information in identifying distinct tense-aspect-mood constructions, but tones are mostly not transcribed, and the tonal patterns associated with different tense-aspect-mood constructions are not discussed. Wicks (2006) marks tone only in the case of known tonal minimal pairs. Musimami & Diprose's (2012) dictionary does not mark tone.

A small amount of information on tone in UN is found in Namulemu (2006). Namulemu (2006: 34) provides several examples of verbs in their infinitival form,

organized by the number of syllables in the verbs. The reorganized display in (1) reveals that the forms fall into two tonal classes: historically toneless (*Ø) verbs in (1a), and historically *H-toned verbs in (1b).

(1) Two tonal classes of verbs in UN (Namulemu 2006: 34)

a.	**ohú [nyá]**	‘to defecate’	**ohú [mírá]**	‘to swallow’
	ohú [sómésá]	‘to teach’	**ohú [púlúlúhá]**	‘to fly’
	ohú [ŋúmáŋúmána]	‘to smear all over with’		
b.	**óhu [ŋá]**	‘to give’	**óhu [βoná]**	‘to see’
	óhu [byáátúlá]	‘to give birth to twins’	**óhu [pyáátulá]**	‘to crash’
	óhu [taŋgálálá]	‘to be speechless’	**óhu [fulúháná]**	‘to work hard’

The forms in (1a), have a H that stretches from the infinitival (cl. 15) prefix **hú-** through the stem and to the final vowel of the verb. (We demarcate the stem boundaries – beginning with the root and ending on the final vowel – with square brackets.) The forms in (1b) surface with a H on the augment **ó-**, and the infinitival prefix **hu-** surfaces L. With the exception of the anomalous trisyllabic forms **óhu [byáátúlá]** ‘to give birth to twins’ and **óhu [pyáátulá]** ‘to crash’, which are not discussed by Namulemu (2006), verbs with two or more stem syllables begin with L on the first syllable, and subsequent syllables are H. As we show in (6) below, these are the same general tone patterns we find in our data on LN.[3]

Namulemu (2006) does not attempt to derive the tonal patterns – indeed, all of the examples are given inside slashes (/ /), suggesting that the author thinks of them as underlying forms. As we discuss below, we treat the *Ø verbs as synchronically /Ø/ and the *H verbs as synchronically /L/, i.e. with a specified L tone on the stem-initial mora. We treat the H on the verb stem as a ‘melodic’ H tone, a piece of verb inflection that is assigned to the verb by rule (see Odden & Bickmore 2014 and the case studies in the associated volume).

Namulemu (2006) provides some other data in which tone is transcribed, identifying a handful of tonal minimal pairs in lexical items, e.g. **ohú [βálá]** ‘to count’ vs. **óhu [βalá]** ‘to become warm’, and in grammatical distinctions, e.g. **βa [sómá]** ‘They are reading.’ vs. **βá [somá]** ‘They read (long ago).’[4] Only isolated,

3. These examples are anomalous for two reasons. First, the verb ‘to give birth to twins’ is transcribed inconsistently: **óhu [byáátula]** (Namulemu 2006: 14, 24) vs. **óhu [byáátúlá]** (Namulemu 2006: 34). (There is also variation in the symbol used to represent the low vowel, which is sometimes given as <**a**> and sometimes as <**ɑ**>.) Second, the surface tone patterns of **óhu [byáátula]** ‘to give birth to twins’, with no H after the stem-initial syllable, **óhu [byáátúlá]** ‘to give birth to twins’, with a level H on the stem-initial syllable, and **óhu [pyáátulá]** ‘to crash’ (Namulemu 2006: 14, 34), with a L penult, are inconsistent with the other data in Namulemu (2006), in which disyllabic and longer /L/ verbs have an initial L that is followed by H-toned vowels.

4. We attempted to collect Remote Past forms of this type from our speakers through elicitation, but were unsuccessful in identifying a construction with a tense prefix **á-** and the final vowel **-a**. On reviewing our recordings, we discovered that we elicited two examples of what is probably a Remote Perfective construction, with the tense prefix **á-** and the perfective final vowel ***-ire:*** **βá [seeyé]** ‘they ground’, **βá [somiré]** ‘they read’. Unfortunately, we did not distinguish this construction from the Hodiernal Perfective and the Hesternal Perfective

minimally differing examples are provided, and no attempt is made to understand why, for example, the different tense forms have the different tonal patterns that they do. Namulemu (2006: 32) states that tone in Nyole has "a very light functional load with rare tonal lexical pairs and grammatical tone". However, as we show below, LN in fact has a highly complex tonal system in which the realization of tone on the verb marks tense-aspect-mood-polarity differences and is influenced by the underlying tone of verb roots; prosodic features of the verb stem, including the number and length of stem syllables; and the presence of OPs, which contribute H tones to the verb.

2. Lower Nyole noun tone

Before turning to the LN verb tone system, we first describe the tonal patterns of nouns in our small corpus of noun data. Our notes include 84 noun forms, which take one of three main tone patterns.

One common tone pattern, shown in (2), begins with a L on the augment, and has H on all subsequent vowels. 23 (27%) of the nouns in our corpus have this pattern. In the cases of **omuú-tú** 'person' and **om(w)-oóyó** 'heart', there is a rising tone on the second syllable of the noun, which is long. This is the predictable consequence of a general tonological rule in LN called Rise Formation, which creates a rising tone from what would have been a level H tone on a long vowel, i.e. V́V́ → VV́, provided that the preceding vowel is not H.

(2) LH…H nouns

			BLR 3	
CV	**eeʃí-dá ~ eehí-dá**	'belly'		
	oomú-nwá	'mouth'	***nùà**	'mouth'
	eehí-ní	'liver'		
	aamá-ní	'livers'		
	oomú-sí	'root'	***dì**	'root'
	ooβú-mó	'seed'		
NCV	**omuú-tú**	'person'	***ntù**	person
	aβaá-tú	'people'		
CVCV	**e-góhé**	'ashes'		
	e-ɲúní	'bird'	***jùnì**	'bird'
	omú-líró	'fire'	***dìdò**	'fire'
	e-ɲámá	'meat'	***nàmà**	'meat'
	eŋ-gírá	'path'	***jìdà**	'path'
	ahá-gírá	'path (dim.)'		
	e-gósí	'neck'	***kòtì**	'neck'
VCV	**om(w)-oóyó**	'heart'	***jòjò**	'heart'

while surveying TAMP constructions, and thus did not collect further data on the Remote Perfective, which, given these two examples, may be tonally identical to the Hodiernal Perfective (see §3.3.1), except that it has a /H/ tense prefix, and thus is in fact tonally identical to the Near Future (see §3.3.2).

CVVCV	**omú-sááyí**	‘blood’
	e-ɲééní	‘fish’
	eʃí-hóólá ~ ehí-hóólá	‘leaf’
	olú-gúúdó	‘?’
CVVNCV	**e-ɲááŋgá**	‘day’
CVCVVCV	**eŋ-géréésí**	‘?’
CVVNCVCV	**omú-láándírá**	‘root’

Where possible, we include reconstructed forms from Bastin *et al.* (2002) in the final two columns of the table. We see that the nouns in this class are historically toneless or all L-toned on the stem. Below, we treat verbs with this surface tone pattern in the Infinitive as underlyingly toneless; the surface all-H pattern is the result of an inflectional H tone. Due to the nature of our data set involving nouns, it is not possible at present to know if there is evidence for treating the H as part of the lexical representation or as something else, e.g. a ‘default’ H.

A second robust nominal tone pattern, illustrated by the forms in (3), has a H on the augment, and subsequent vowels are L. 17 (21%) of the nouns in our corpus have this pattern. Corresponding reconstructions with a tonal indication[5] all end in H; some have a LH stem tone pattern; one has a HH pattern.

(3) HL…L nouns

			BLR 3	
CV	**ée-gi**	‘egg’	***gí**	‘egg’
	áama-gi	‘eggs’		
	óoβu-le	‘millet’		
CVCV	**ómu-goβa**	‘area between the eyes’		
	ómu-hasi	‘woman’	***kádí**	‘woman’
VCV	**éʃy-ooβu**	‘skin’		
	ŋ-áasi	‘ground’		
	éry-ooya	‘feather’	***jòjá**	‘feather’
	ám-ooya	‘feathers’		
	óm(w)-oodo	‘tail’		
	ól-uuya	‘warmth’		
CVVCV	**é-βaale**	‘stone’	***bààdé**	‘stone’
	áma-βaale	‘stones’		
	ómu-saala	‘tree’	***caada**	‘tree’
	émi-saala	‘trees’		
	éhi-syaaga	‘sugarcane’		
CVVNCV	**é-guumba**	‘bone’	***kʊmba**	‘bone’

The most common tone pattern – found in 39 (45%) nouns in our corpus – has an initial H on the augment and a final H. Examples of this type are given in (4). Virtually all reconstructed forms in this category have a HL stem tone pattern.

5. Reconstructions with no tone marks do not have a tonal reconstruction.

(4) HL…LH nouns

			BLR 3	
CV	**ée-mbwá**	‘dog’	***búà**	‘dog’
	óomu-twé	‘head’	***túè**	‘head’
	óohu-twí	‘ear’	***túì**	‘ear’
	áama-twí	‘ears’		
	óomu-mwí	‘sunshine’		
CVCV	**ómu-honó**	‘arm’	***kónò**	‘arm’
	óβu-malí	‘blackness’		
	éhi-rerí	‘cloud’		
	ée-moní	‘eye’	***mónì**	‘pupil’
	ólu-deté	‘fingernail’	***cété**	‘nail’
	ólu-sozí	‘mountain’		
	ée-fulá	‘rain’		
	ómu-jehé	‘sand’		
	ée-sigó	‘seed (sg.)’		
	ólu-godé	‘skin (human)’		
	ómu-hirá	‘tail’		
	ólu-limí	‘tongue’	***dímì**	‘tongue’
VCV	**ólw-aalá**	‘finger’	***jádà**	‘finger nail’
	éenj-alá	‘fingers’		
	ér-iigá	‘horn’		
	ám-eegá	‘horns’		
	ómw-eesí	‘moon, month’	***jédì**	‘moon, month’
	ér-iisí	‘smoke’	***jíkì**	‘smoke’
	éeŋj-uβá	‘sun’		
	ám-aají	‘water’	***jíjì**	‘water’
	él-iinó	‘tooth’	***jínò**	‘tooth’
	ám-eenó	‘teeth’		
CVVCV	**é-βeeré**	‘breast’	***béèdè**	‘breast’
	áma-βeeré	‘milk’		
	é-fwiirí	‘hair (of head)’		
	óβu-leeŋí	‘length’		
	ómu-saajá	‘man’		
	é-siiná	‘name’	***jínà (?)**	‘name’
	ó-(β)wiiré	‘night’	***bʊɪ (?)**	‘darkness’
	é-suulú	‘nose’	***jódù (?)**	‘nose’
	ému-ŋeeŋé	‘star’	***ŋéŋè**	‘star’
	é-saawá	‘sunshine’		
CVVNCV	**é-kuumbó**	‘knee’		
CVCVCVCV	**óβu-ŋololohí**	‘?’		

The three main tonal patterns of nouns show a diachronic reversal of tones, as *LL became HH on the surface, *LH became H…L, and *HL became LH. Below we find evidence of reversal in the verb tone system as well.

In addition to the three main patterns, a handful of additional nouns were identified with different stem tone patterns. The nouns **áma-sáβu** 'fat' and **éeŋ-gége** 'tilapia' – the latter of which appears to derive from the LH form ***kèké** 'Luciolates stappersi' – have a H on the augment and a stem-initial H. The longer noun **é-sekére** 'louse' has a H on the augment and a H on the second stem vowel. This example could be grouped with the first two if the relevant generalization for the position of the stem tone is "H on the penult". The singular-plural pair **ómu-sumáalí – émi-sumáalí** 'nail(s)' has a H on the augment and two stem Hs: one on the second stem mora and one on the final stem mora. This latter pair of examples is borrowed from Arabic, possibly via Swahili and/or Ganda.

3. Lower Nyole tone melodies

LN possesses a large number of distinct tonal melodies, which are summarized in (47) in the Discussion and conclusions section. These include two distinct melodies (Pattern 1 and Pattern 6) that have a melodic H that spans the verb stem. Several melodies have a melodic H that targets the stem-initial mora in /Ø/ verbs. These melodies differ from each other in whether the melodic H is realized on the second mora of the stem in /L/ verbs (yes: Pattern 2, no: Pattern 3, Pattern 4, Pattern 6), and Pattern 6 differs from the rest in that the stem-initial melodic H overwrites a root L and also surfaces on monosyllabic stems. In Pattern 3, there is also a melodic H that targets the final vowel in both /Ø/ and /L/ verbs, and in Pattern 5, there is a single melodic H that surfaces on the final vowel in /Ø/ verbs but on the second mora of the stem in /L/ verbs. Pattern 7 is generally characterized by an all L-toned stem, but a melodic H targeting the left edge of the verb stem reveals itself in forms with an OP. In the following sections, we detail each of these melodies, one-by-one. We begin with Infinitive forms and other constructions we have classified as 'Pattern 1'.

3.1. Pattern 1 (/Ø/: μ_1-FV, /L/: σ_2/μ_2-FV)

The general tonal feature of Pattern 1 is a melodic H that spans the entire verb stem in /Ø/ verbs and from the second stem mora through the final vowel in /L/ verbs. Pattern 1a and Pattern 1b both have /H/ prefixes, while Pattern 1c does not. Pattern 1a and Pattern 1b also differ from Pattern 1c in that they are subject to a rule that eliminates rising tones in certain verb forms which does not apply in Pattern 1c, while they fail to undergo a process of Plateau that does occur in Pattern 1b. Pattern 1a and Pattern 1b differ from each other in how the /H/ prefixes are realized.

Although not entirely identical to each other, the three sub-patterns of Pattern 1 are more closely related to each other than to the other melodic tone patterns of LN, and for this reason we classify them together as one Pattern. We present the Pattern 1a Infinitives in §3.1.1, the Pattern 1b Immediate Past in §3.1.2, and the Pattern 1c Present/Habitual in §3.1.3.

3.1.1. Pattern 1a: Infinitive

Infinitives in LN appear to have the same tonal pattern as what Namulemu (2006) reports for UN.[6] As shown in (5), in historically *Ø verbs, the augment **o-** lacks a H, there is a H on the infinitival prefix **hú-**, and the entire verb stem is H. We analyze these verb stems as synchronically underlyingly toneless, and we treat the H that appears on the verb as a melodic H. We discuss the tone of **ohú-** in further depth in §3.1.2.

(5) /Ø/ verbs in the Infinitive ('to V')

oohú [gwá]	'fall'	**oohú [sá]**	'grind'
ohú [gúlá]	'buy'	**ohú [mąná]**	'know'
ohú [gééndá]	'walk'	**ohú [hwéésá]**	'pull'
ohú [lááŋgá]	'call'	**ohú [sííhá]**	'bury'
ohú [góβólá]	'come back'	**ohú [léhúlá]**	'release'
ohú [súúβísá]	'promise'	**ohú [lówóósá]**	'think'
ohú [háyáánáˊ]	'shout'	**ohú [hóóndyóólá]**	'undermine with the eyes'
ohú [líímbíílílá]	'close the eyes'	**ohú [lóóndérésá]**	'follow'

Verbs of the historically *H-toned class have a somewhat complicated realization. As shown in (6), the augment surfaces **ó-**, and the infinitive prefix **hu-** is L, and in all verbs, there is a H on the stem, which is realized on the final vowel. There are differences among the examples in how far to the left within the verb the H extends. In monosyllabic stems, as in (6a), the lone stem syllable surfaces H.[7] In

6. This section includes representative examples of the Infinitive. A full list of the 109 infinitival verbs we collected is provided in the Addendum, (48) - (52).

7. A recurrent transcription challenge concerns H tones on the final vowel, when the tone of the preceding syllable is not a H at the same pitch register. In such cases, we have vascillated between transcriptions of level H vs. rise. When the tone of the preceding syllable is H at the same pitch level as the final H, our transcriptions always indicate level H. One context where we commonly encounter the final H vs. rise question is with monosyllabic stems; another is with disyllabic stems that end LH over the final two syllables. Our general conclusion is that there is no contrast between final H and final rise, and the transcriptions in this paper consistently use final (level) H. Relatedly, while vowel length contrasts are possible before the final vowel, there does not appear to be a vowel length contrast in final position, though the final vowel generally seems to be longer in duration than word-internal short vowels. As noted above, there is a predictable process that creates rising tones from level H on long vowels – the rule of Rise Formation. If we conceive of this rule as a phonetic process, or if final vowels are phonologically long, then we have a natural explanation for why final Hs tend to be realized with a phonetic rise.

A complication is that there seem to be phonetically distinct, but freely varying, realizations when there is a H of a higher register immediately before the final H/rise. In such cases, the variation is between rise and downstepped H, which we mark here uniformly as downstepped H. Both realizations are present in our corpus, including in different tokens of the same example. In some examples of this type, the downstepped H might be the result of simplifying a LH rise, with L acting as a downstep operator. However, there are also cases involving monosyllabic stems where the variation between final rise / downstepped H cannot be the result of a dislodged lexical L that triggers downstep since the final H-rise

the disyllabic stems of (6b-d), the stem-initial syllable is consistently L, followed by the melodic H on the final vowel. In trisyllabic and longer stems, differences emerge depending on the length of the stem-initial vowel. When the stem-initial vowel is short, as in (6e), the stem-initial vowel is L, and subsequent vowels of the stem are H. When the stem-initial vowel is a pre-NC long vowel, as in (6f), the entire stem-initial syllable surfaces L, followed by H. As we see throughout the rest of the paper, pre-NC long vowels consistently pattern with short vowels in LN tone. See Hyman (1992), Hubbard (1995a, 1995b, 1995c), and Downing (2005) for proposals on formally analyzing comparable facts in other Bantu languages. When the stem-initial vowel is long, and the long vowel does not precede an NC sequence, as in (6g), the stem-initial syllable begins with a rise, and subsequent syllables of the stem are H. When the first stem syllable is short or begins with a pre-NC long vowel and the second syllable of the stem has a long vowel, as in (6h), there is a rise on the second stem syllable, followed by Hs.

(6) /L/ verbs in the Infinitive (‘to V’)

a.	**óohu [hwá]**	‘pay the brideprice’	**óohu [lyá]**	‘eat’
b.	**óhu [βegá]**	‘shave’	**óhu [lumá]**	‘bite’
c.	**óhu [huumbá]**	‘walk proudly’	**óhu [ŋaambá]**	‘grab’
d.	**óhu [βuusá]**	‘ask’	**óhu [leetá]**	‘bring’
e.	**óhu [ŋulírá]**	‘hear’	**óhu [hozésá]**	‘use’
	óhu [βoŋólólá]	‘untie’	**óhu [heβúlírá]**	‘remember’
f.	**óhu [fuundíhá]**	‘tie a knot’	**óhu [siindíhá]**	‘push’
	óhu [taaŋgírírá]	‘lead’	**óhu [siiŋgírísyá]**	‘roll (e.g. tire)’
g.	**óhu [ŋeérésá]**	‘send’		
h.	**óhu [halaáŋgá]**	‘fry’		
	óhu [seeŋgeéjá]	‘sieve’	**óhu [suundaálá]**	‘squat’

Because the stem-initial mora is nearly always L-toned in the historically *H class of verbs throughout the LN verb tone system, we assume that these verbs have an underlying /L/ on the stem-initial mora. In our analysis, the melodic H is assigned to the final vowel, spreads left, and is blocked from spreading onto the stem-initial mora by the root L.

There are several further issues to sort out in the analysis.[8] A first issue concerns monosyllabic verb stems. Monosyllabic stems in both /Ø/ and /L/ verbs surface

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or H-ꜜH sequence derives from two Hs with no intervening L. One possible account is that the final vowel is phonologically long, and an intermediate final ØH sequence is created, followed by default L insertion; the inserted L can subsequently act as a downstep operator (see Paster & Kim 2011). Another possible account is that cases where there is no downstep between adjacent Hs are the result of a rule of Fusion, and cases with downstep are those where Fusion is unable to apply, e.g. because the two Hs are not on adjacent moras.

A further complication is that we identified a final fall in one context (monosyllabic verbs in the Subjunctive), which clearly contrasts with final H/rise. Those forms are discussed in §3.6.

8. Our description and analysis of the Infinitive would be more complete if we had data with an OP. We see below that OPs are /H/ and sometimes trigger or undergo tonal alternations. We would especially like to compare Infinitival forms with an OP with parallel forms in the Immediate Past.

with a H on the lone stem syllable. Although the stem tone patterns are the same in the two lexical tone classes of verbs, the overall tonal patterns of /Ø/ and /L/ verbs remain distinct because of tonal differences in the realization of the infinitive prefix (**ohú-** with /Ø/ verbs vs. **óhu-** with /L/ verbs). We see below that the underlying tonal contrast between /Ø/ and /L/ verbs is commonly obscured in monosyllabic stems in the melodic patterns of LN.

Monosyllabic /L/ stems are the one context where the stem-initial mora is H in /L/ verbs in the infinitive, as in (6a). In such forms, the stem-initial vowel is also the final syllable, the position to which the melodic H is assigned. The root L functions to block the leftward spread of the melodic H after it has been assigned, but the L is overwritten by the assignment of the melodic H. It is difficult to ascertain whether overwriting of the root L takes place directly as part of the rule of Melodic H Assignment or via a secondary process that levels out an intermediate LH rise. As we see below, there are cases where a word-final H variably retains its rising character, particularly when there is no preceding H. Because we find rise with both /L/ and /Ø/ verbs, we assume that rise is produced in both contexts by the late application of Rise Formation.

A second issue is the difference in the extent of spreading between disyllabic and longer stems when the stem-initial syllable begins with a long vowel. Note that there is no issue when the stem begins with a pre-NC long vowel because such forms typically behave as though they begin with a short vowel, and /L/ stems that begin with a short vowel never have a H in the stem-initial syllable. The relevant contrast is between CVVCV stems, as in (6d), where the melodic H does not surface on the second mora of the stem, and trisyllabic and longer contexts like (6g), where the melodic H does surface on the second mora of the stem.

This asymmetry between short and long stems is almost the inverse of one in closely related Khayo (see Marlo 2009, 2013a for the presentation of similar facts and a similar analysis in Khayo) and Tura (Marlo 2008). In those languages, long verb stems have a tone pattern where the melodic H surfaces from the second syllable to the final vowel; thus the melodic H does not enter the stem-initial syllable. However, in disyllabic stems, the melodic H does spread into the stem-initial syllable. Our analysis also parallels the analysis of Khayo in that we posit an extra rule for the short verb forms. In the case of Khayo, the extra rule spreads H into the stem-initial syllable. In LN, the extra rule, which we call Stem-Initial Rise Delinking, delinks H from that position. One unanswered question is exactly what the environment is for the delinking – a rise which is both stem-initial and in penultimate position? Currently unavailable phrasal data would assist in pinning down exactly what the environment for the rule is. We see below that the same restriction is found in the Pattern 1b Immediate Past, but not in the Pattern 1c Present/Habitual.

A third issue is the rise on the second syllable of the stem in (6h). Here, Rise Formation is also responsible, e.g. generating surface **óhu [halaáŋgá]** 'to fry' from intermediate **óhu [halááŋgá]** .

A fourth issue, which is a peculiar property of Infinitives, is the alternation between /Ø/ and /L/ verbs in the tone of the prefix complex: **ohú-** in /Ø/ verbs vs. **óhu-** in /L/ verbs. Since other prefix tones in LN verbs are otherwise not known to shift position, it is difficult to know whether the infinitival complex has the

underlying representation (UR) **/ohú-/**, **/óhu-/**, or something else. If the UR is **/ohú-/**, then we would need to explain why the H of the infinitival prefix shifts left in /L/ verbs; leftward shifting of H is not attested elsewhere in our data. If the UR is **/óhu-/**, then why does the H of the augment appear to shift to the right in /Ø/ verbs, and why is the melodic H on monosyllabic stems like **ohú [sá]** 'to grind' not realized as a rise or downstepped H, as it is in parallel forms in the Immediate Past, discussed below?

One possible solution is that the UR is indeed **/óhu-/**, but there is no shifting in /Ø/ verbs. Rather, in /Ø/ verbs, the melodic H spreads unboundedly leftward, crosses the stem boundary, and stops on the infinitival prefix. The augment H is deleted/lowered by the process responsible for deleting the H of the augment in historically toneless / all-L nouns, as in (2) above. Such a deletion process might be blocked in /L/ verbs by the root tone, so the H of the augment is preserved.

We have not identified any other tenses or verbal constructions that have the same alternation in the tone of prefixes (**ohú-** vs. **óhu-**), but the stem tonal patterns of the Immediate Past are otherwise identical to the Infinitive, and those of the Present/Habitual, discussed in §3.1.3, are very similar to those of the Infinitive and Immediate Past.

3.1.2. Pattern 1b: Immediate Past

The Immediate Past and the Immediate Past Negative have the same tone patterns. Affirmative forms are discussed here; examples from the Immediate Past Negative are in (53) – (56) in the Addendum. The Immediate Past has a H-toned tense prefix **há-** and the final vowel **-a**. As shown in (7), /Ø/ verbs surface all H after **há-**, including monosyllabic verbs in (7a). These tone patterns are identical to the Infinitive.

(7) /Ø/ verbs in the Immediate Past ('They just Ved.')

a.	**βaa-há [sá]**	'grind'		
b.	**βa-há [sómá]**	'read'	**βa-há [hwéésá]**	'pull'
	βa-há [góβólá]	'come back'	**βa-há [háyááná]**	'shout'
	βa-há [súúβísá]	'promise'	**βa-há [lóóndérésá]**	'follow'
	βa-há [táβúlánírá]	'stir for e.o.'		

In /L/ verbs, **há-** is H, and there is a complex realization of stem tone, which is essentially identical to the patterns of /L/ verbs in the Infinitive. The core generalization is that there is a melodic H from the second mora of the stem through the final vowel. This generalization is transparently true of disyllabic and longer stems with an initial short vowel as in (8b) as well as trisyllabic and longer stems with an initial long vowel, as in (8f). The generalization is also true of stems whose first syllable has a pre-NC long vowel, as in (8d); recall that such vowels function as short vowels. In (8e), the first stem syllable is short and the second stem syllable is long; a rise surfaces on the second syllable due to Rise Formation.

(8) /L/ verbs in the Immediate Past (‘They just Ved.’)

a.	**βaa-há⁺ [lyá]**	‘eat’	**βaa-há⁺ [hwá]**	‘pay the brideprice’
b.	**βa-há [βoná]**	‘see’	**βa-há [ŋirá]**	‘take’
	βa-há [hozésá]	‘use’		
	βa-há [ŋulírá]	‘hear’	**βa-há [heβúlírá]**	‘remember’
c.	**βa-há [bwaagá]**	‘break’	**βa-há [leetá]**	‘bring’
d.	**βa-há [ŋaambá]**	‘grab’	**βa-há [siindíhá]**	‘push’
e.	**βa-há [halaáŋgá]**	‘fry’		
f.	**βa-há [βuúsányá]**	‘ask e.o.’	**βa-há [ŋeérésá]**	‘send’

In the monosyllabic stems of (8a), the melodic H is realized on the lone stem syllable after the H of **há-**. There are two variant pronunciations of this H: as a downstepped H or as a rise. As discussed in footnote 7, it could be that the root L is optionally dislodged by a process of Rise Elimination, subsequently acting as a downstep operator. However, because we find other cases in LN of rise ~ ˥H variation where a root L is not present (as in Pattern 1c Present/Habitual forms with an OP in (13) below), this is not a general solution. Two possible solutions – one involving an inserted default L acting as a downstep operator, and another involving a rule of Fusion – are mentioned in footnote 7 above.

As in CVVCV stems in the Infinitive, CVVCV stems the Immediate Past in (8c) do not have a rise on the stem-initial syllable. As in the analogous Infinitive forms, the lack of rise here is treated as the result of Stem-Initial Rise Delinking, which applies to rise in CVVCV stems but not in longer stems with an initial long vowel.

One surprise of /L/ verbs in Pattern 1b is that Plateau effects are not observed in trisyllabic and longer verb stems with an initial long vowel – see (8f), where a surface H.LH sequence is tolerated. This is unexpected in light of analogous Pattern 1c forms described in §3.1.3 below such as **βa-mú [ŋéérésá]** ‘They send him.’, which is derived from intermediate **βa-mú [ŋeérésá]** .

Next we consider Pattern 1b forms with an OP. With few exceptions, OPs in LN surface H after L and L elsewhere, and melodic Hs assigned to the left edge of the stem are not realized after the H of an OP.[9] For these reasons, we assume that OPs are /H/ and both undergo and trigger Meeussen’s Rule (Goldsmith 1984a, 1984b), which lowers/deletes H after H.

When an OP is present following H-toned **há-**, the underlying H of the OP is lowered (or deleted) by Meeussen’s Rule. As shown in (9a), /Ø/ stems that begin with a short vowel are realized all H. In verbs that begin with a long vowel, as in (9b), an initial rise is predictably produced by Rise Formation.

9. The exceptions are: (i) Imperative + OP forms in (37) – (38), where the Imperative + OP combination may function as a distinct construction (see §3.5), (ii) Subjunctive + OP forms in (41) – (42), where the melodic tones overwrite the lexical tones within the macrostem (see §3.6), with ‘macrostem’ the constituent that includes the verb stem and the OP (see Marlo 2013b and references therein), and (iii) Near Past Negative + OP forms in (45) – (46) where the H of the OP seems to be lowered by a long-distance version of Meeussen’s Rule (see §3.7).

(9) /Ø/ verbs with an OP in the Immediate Past ('They just Ved it$_7$ (**ʃi-**) / it$_{14}$ (**βu-**) / him (**mu-**).')

a.	**βa-há-βu [sá]**	'grind'	**βa-há-ʃi [sómá]**	'read'
	βa-há-mu [léhúlá]	'release'	**βa-há-mu [táβúlírá]**	'stir for'
b.	**βa-há-mu [hweésá]**	'pull'	**βa-há-mu [siíhá]**	'bury'
	βa-há-mu [suúβísá]	'promise'	**βa-há-mu [loóndérésá]**	'follow'

The /H/ of the OP is also lowered following **há-** in /L/ verbs. Even though the pre-stem H is removed in these forms, the melodic H is found on the same position of the stem as in examples lacking an OP. Monosyllabic stems in (10a) have a single H. Verb stems that begin with a short vowel as in (10b) or a pre-NC long vowel as in (10d) begin with a stem-initial L and then are followed by H on subsequent stem syllables. As in forms without an OP, there is a difference between disyllabic stems that begin with a long vowel, and longer stems that begin with a long vowel: in disyllabic stems, as in (10c), the stem-initial syllable is all L, while in longer stems, as in (10f), the stem-initial syllable is realized with a rise. Rise is also found predictably on the long vowel at the beginning of the H tone span in (10e), as the result of Rise Formation.

(10) /L/ verbs with an OP in the Immediate Past ('They just Ved it$_7$ (**ʃi-**) / him (**mu-**).')

a.	**βa-há-ʃi [lyá]**	'eat'	**βa-há-mu [hwá]**	'pay for'
	βa-há-mu [ŋá]	'give'		
b.	**βa-há-mu [βegá]**	'shave'	**βa-há-mu [ŋirá]**	'take'
	βa-há-mu [hozésá]	'use'	**βa-há-mu [ŋulírá]**	'hear'
	βa-há-mu [heβúlírá]	'remember'		
c.	**βa-há-mu [leetá]**	'bring'		
d.	**βa-há-mu [ŋaambá]**	'grab'	**βa-há-mu [siindíhá]**	'push'
e.	**βa-há-mu [halaáŋgírá]**	'fry for'		
f.	**βa-há-mu [leétérá]**	'bring for'	**βa-há-mu [ŋeérésá]**	'send'

3.1.3. Pattern 1c: Present/Habitual

The Present/Habitual represents the third sub-pattern of Pattern 1. This construction is formed with a null tense marker and the final vowel **-a**. In the data in (11a) with /Ø/ verbs that begin with a short vowel, there is a melodic H that spans the entire verb stem. In the forms in (11b), which have a stem-initial long vowel, the H tone span on the stem begins with a rise, due to Rise Formation.

(11) /Ø/ verbs in the Present/Habitual ('They V.')

a.	**βa [sá]**	'grind'	**βa [sómá]**	'read'
	βa [góβólá]	'come back'	**βa [léhúlá]**	'release'
	βa [lówóósá]	'think'		
b.	**βa [hweésá]**	'pull'	**βa [suúβísá]**	'promise'
	βa [loóndérésá]	'follow'		

/L/ verbs, shown in (12), have a more complicated realization that is similar to, but not identical to, /L/ verbs in other Pattern 1 constructions. The basic generalization is that there is a melodic H from the second mora of the verb stem to the final vowel. As in other Pattern 1 constructions, for monosyllabic verbs in (12a), there is a H on the final vowel; this is the same surface pattern as monosyllabic /Ø/ verbs. As with monosyllabic /L/ verbs in the Infinitive, we assume that root L is overwritten by the melodic H. In longer verbs that begin with a short vowel (12b, e) or a pre-NC long vowel (12c, f), the first stem vowel is L, and subsequent vowels are H – again just like in Pattern 1a and Pattern 1b. When the first vowel of the stem has a short or pre-NC long vowel and the second syllable of the stem is long, as in (12h), a rise is predictably created at the beginning of the H tone span on the second stem syllable by Rise Formation.

(12) /L/ verbs in the Present/Habitual ('They V.')

a.	**βa [lyá]**	'eat'	**βa [ŋwá]**	'drink'
b.	**βa [βoná]**	'see'		
c.	**βa [ŋaambá]**	'grab'	**βa [huumbá]**	'walk proudly'
d.	**βa [siíxá]**	'break'	**βa [leétá]**	'bring'
e.	**βa [ŋulírá]**	'hear'	**βa [heβúlírá]**	'remember'
f.	**βa [siindíhá]**	'push'		
g.	**βa [ŋeérésá]**	'send'		
h.	**βa [suundaálá]**	'squat'		

In disyllabic (12d) and longer (12g) verb stems that begin with a long vowel, the stem-initial syllable has a rise and subsequent syllables are H. Here is the first area where Pattern 1c differs from Pattern 1a and Pattern 1b: CVVCV stems have a LH.H surface pattern in Pattern 1c, whereas they have LL.H in Pattern 1a and Pattern 1b. Our analysis is that the special delinking rule that applies in CVVCV stems in Pattern 1a and Pattern 1b is morphosyntactically restricted, and does not apply in Pattern 1c tenses.

In Present/Habitual forms with an OP, the OP surfaces H, and the stem tone patterns are mostly the same as forms without an OP. In /Ø/ verbs, the disyllabic and longer stems in (13b) have a level H realized at the same pitch level as the H of the OP. However, in monosyllabic stems, as in (13a), the stem H is realized as a rise/downstepped H following the H of the OP. The rise/downstepped H realization is somewhat surprising in this context because unlike with /L/ verbs, there is no underlying L that could potentially act as a downstep operator. Two possible solutions are described in footnote 7.

(13) /Ø/ verbs with an OP in the Present/Habitual ('They V it$_{14}$ (**βú-**) / them$_{8}$ (**βí-**) / him (**mú-**).')

a.	**βa-βú^{1} [sá]**	'grind'		
b.	**βa-βí [sómá]**	'read'	**βa-mú [léhúlá]**	'release'
	βa-mú [hwéésá]	'pull'	**βa-mú [lóóndérésá]**	'follow'

/L/ verbs with an OP also generally have the same stem tone patterns as forms without an OP, with a melodic H from the second stem mora through the final vowel. This is clearest in examples with two or more syllables in the stem and a stem-initial short vowel, as in (14b). The forms with a stem-initial pre-NC long vowel in (14c) are also just like their OPless counterparts, preceded by a H OP. In monosyllabic stems, as in (14a), the melodic H on the lone stem vowel is realized as a rise/downstepped H following the H of the OP. The forms in (14d), with an initial long vowel, undergo a process of Plateau, by which intermediate H.LH becomes H.HH. Plateau produces a level H tone span from the H of the OP through the final vowel of the verb; notably the output of Plateau lacks downstep. Interestingly, this cross-linguistically common and phonetically motivated process is morphologically restricted in LN: it applies in Pattern 1c (and in some other melodies, e.g. Pattern 2), but not in Pattern 1a or Pattern 1b. Plateau also applies in a somewhat specific context, as it does not occur in monosyllabic stems transcribed with a downstep H, which have intermediate H.LH or H.ØH representations.

(14) /L/ verbs with an OP in the Present/Habitual ('They V it$_7$ (**hí-**) / him (**mú-**).')

a.	**βa-hí$^{\downarrow}$ [lyá]**	'eat'		
b.	**βa-mú [βoná]**	'see'	**βa-mú [ŋulírá]**	'hear'
	βa-mú [heβúlírá]	'remember'		
c.	**βa-mú [ŋaambá]**	'grab'	**βa-mú [siindíhá]**	'push'
d.	**βa-mú [léétá]**	'bring'	**βa-mú [ŋéérésá]**	'send'

Stem tone patterns in the Hesternal Perfective and Indefinite Future are identical to those of the Present/Habitual. Data from these tenses is provided in (57) – (60) and (61) – (64) in the Addendum.

3.2. Pattern 2 (/Ø/: μ_1, /L/: μ_2)

The Pattern 2 tone melody is found in two negative verb forms whose affirmative forms are in Pattern 1: the Hesternal Perfective Negative and the Indefinite Future Negative. These forms are characterized by a melodic H on the stem-initial mora in toneless verbs and by a H on the second mora of the stem in /L/ verbs. The following subsection presents data from the Indefinite Future Negative; data from the Hesternal Perfective Negative are in (65) – (68) in the Addendum.

The Indefinite Future Negative is formed with the negative marker **sí-**, which precedes the subject prefix, the tense prefix **li-**, and the final vowel **-a**. As shown by the forms in (15b), which have disyllabic and longer stems, Indefinite Future Negative forms have a melodic H on the stem-initial mora in /Ø/ verbs. When the stem is monosyllabic, as in (15a), the melodic H is not realized.

(15) /Ø/ verbs in the Indefinite Future Negative ('They won't V.')

a.	**sí-βa-li [sa]**	'grind'	**sí-βa-li [gwa]**	'fall'
b.	**sí-βa-li [líla]**	'cry'	**sí-βa-li [hwéesa]**	'pull'
	sí-βa-li [góβola]	'come back'	**sí-βa-li [súuβisa]**	'promise'
	sí-βa-li [lóonderesa]	'follow'		

/L/ verbs have a parallel surface pattern, but the melodic H is one mora to the right of its position in analogous /Ø/ verbs. As shown by the trimoraic and longer stems of (16d-e), the melodic H is found on the second mora of the verb stem. In the shorter monosyllabic and CVCV stems of (16a-b), the melodic H is not realized. The melodic H systematically avoids surfacing on the final vowel in Pattern 2. Note that the CVVNCV stems of (16c) again pattern with the CVCV stems in (16b), and not with the CVVCV stems in (16d). The trisyllabic stem of (16f), whose first syllable has a pre-NC long vowel, also behaves as though it begins with a short vowel.

(16) /L/ verbs in the Indefinite Future Negative ('They won't V.')

a.	**sí-βa-li [lya]**	'eat'		
b.	**sí-βa-li [βega]**	'shave'	**sí-βa-li [βona]**	'see'
c.	**sí-βa-li [ŋaamba]**	'grab'	**sí-βa-li [huumba]**	'walk proudly'
d.	**sí-βa-li [leéta]**	'bring'	**sí-βa-li [tiína]**	'go'
e.	**sí-βa-li [hozésa]**	'use'	**sí-βa-li [ŋulíra]**	'hear'
	sí-βa-li [haláaŋga]	'fry'	**sí-βa-li [ŋeéresa]**	'send'
f.	**sí-βa-li [siindíha]**	'push'		

As shown in (17), when an OP is added in Pattern 2, the OP surfaces with its underlying H, and the melodic H does not surface when combined with /Ø/ verbs. This could be either because the rule of Melodic H Assignment requires the mora before the target to be toneless or because the melodic H is assigned to the stem-initial position and then subsequently deleted by Meeussen's Rule, following the H of the OP.

(17) /Ø/ verbs with an OP in the Indefinite Future Negative ('They won't V it$_{14}$ (**βú-**) / him (**mú-**).')

sí-βa-li-βú [sa]	'grind'	**sí-βa-li-mú [maɲa]**	'know'
sí-βa-li-mú [sika]	'?'	**sí-βa-li-mú [hweesa]**	'pull'
sí-βa-li-mú [lehula]	'release'	**sí-βa-li-mú [loonderesa]**	'follow'

In /L/ verbs with an OP, the OP is H, and the melodic H surfaces in trimoraic and longer stems, on the second stem mora. This is seen most clearly when the stem-initial vowel is short, as in (18c). When the stem-initial vowel is long, as in (18b), Plateau turns the intermediate H.LH sequence into H.HH. In the short verbs of (18a), the melodic H is not realized, just as in forms lacking an OP.

(18) /L/ verbs with an OP in the Indefinite Future Negative ('They won't V it$_{7}$ (**ʃí- ~ hí-**) / him **(mú-)** / me (V-lengthening, **h → k**).')

a.	**sí-βa-li-ʃí [lya] ~**			
	sí-βa-li-hí [lya]	'eat'	**sí-βa-li-mú [βona]**	'see'
	sí-βa-li-mú [ŋaamba]	'grab'		
b.	**sí-βa-li-mú [lééta]**	'bring'	**sí-βa-li-mú [ŋééresa]**	'send'

c.	**sí-βa-li-mú [siindíha]**	‘push’	**sí-βa-li-mú [heβúlira]**	‘remember’
	sí-βa-lií [keβúlira]	‘remember’	**sí-βa-li-mú [haláaŋgira]**	‘fry for’

The μ_1/μ_2 pattern can be accounted for by two different approaches. One approach, involving more complex derivations, is to apply the tone assignment principles of the affirmative Pattern 1c forms in the Present/Habitual, Hesternal Perfective, and Indefinite Future, which produce a H tone span from the second stem mora through the final vowel (in all stem shapes, including disyllabic stems). In the negative Pattern 2 forms, additional delinking rules would then apply, iteratively removing the rightmost association line in multiply linked structures, so that only the leftmost linkage remains on μ_1/μ_2, and then finally removing any remaining linkages from the final vowel.

The second approach involves more straightforward derivations, assigning the melodic H directly to the leftmost free mora in the verb stem, provided that it is not final. In /Ø/ verbs, the leftmost free mora is the stem-initial mora. In /L/ verbs, the root L occupies the stem-initial mora, so the leftmost free mora is the second stem mora. Under such an approach, there is no formal connection in the analysis between the analysis of Pattern 1b and Pattern 2. One could possibly maintain both analyses by proposing that the second approach reflects the synchronic system today, while the first approach reflects the diachronic change that is responsible for the modern day distinctness of the affirmative and negative Hesternal Perfective and Indefinite Future forms.

3.3. Pattern 3 (/Ø/: μ_1, FV, /L/: FV)

Pattern 3 is found in the Hodiernal Perfective and Near Future tenses, and is characterized by two melodic Hs: one at each edge of the stem. The Hodiernal Perfective and Near Future differ tonally in the tone of pre-stem prefixes. The Hodiernal Perfective, which we subclassify as Pattern 3a, lacks a tense prefix, and subject prefixes surface L; thus the vowel immediately before the macrostem is L. The Near Future, which we subclassify as Pattern 3b, has a H-toned tense prefix **n(a)á-** which immediately precedes the macrostem and interacts with the stem-initial melodic H and the H of OPs. We discuss the Hodiernal Perfective first in §3.3.1 and then turn to the Near Future in §3.3.2.

3.3.1. Pattern 3a: Hodiernal Perfective

The Hodiernal Perfective is characterized by a lack of tense prefix, plus perfective morphology on the stem: the final vowel sometimes surfaces as **-ire** and sometimes surfaces as **-e** plus various modifications[10] of the base, e.g. lengthening the base-final

10. These modifications are commonly known as ‘imbrication’, see e.g. Bastin (1983) and Hyman (1995) for more information in the Bantuist and generalist literature, Ebarb & Marlo (2015) for more on imbrication in some other Luyia languages, and Namulemu (2006: 43-4) and Wicks (2006: 24) for unanalyzed data showing allomorphy involving the perfective in UN.

vowel and mutating the final consonant. /Ø/ verbs are inflected with two melodic Hs. As shown in (19), one is assigned to the stem-initial mora, and one is assigned to the stem-final mora.

(19) /Ø/ verbs in the Hodiernal Perfective ('They Ved.')

βa [gúuyé]	'fall'	**βa [séeyé]**	'grind'
βa [gúliré]	'buy'	**βa [góβooyé]**	'come back'
βa [láaŋgiré]	'call'	**βa [hwéehiisé]**	'pull'
βa [táβulaniiyé]	'stir for e.o.'	**βa [lóonderehiisé]**	'follow'

The smallest possible verb stem in perfective tenses is trimoraic. Thus, the stem-initial mora and the stem-final mora are always separated by at least one intervening mora, and it is not possible to see how the first-and-final pattern would be realized in monomoraic or bimoraic contexts. These realizations are discussed in §3.3.2 below, as monomoraic and bimoraic stems are possible in the Near Future, which also has the Pattern 3 melodic tonal pattern.

As shown in (20), only a single H surfaces in /L/-toned verbs, on the final vowel.

(20) /L/ verbs in the Hodiernal Perfective ('They Ved.')

βa [liiyé]	'drink'	**βa [saliré]**	'cut'
βa [tiiniré]	'go'	**βa [fuundihiré]**	'tie a knot'
βa [hozehiisé]	'use'		

The lack of a H on the second mora of the stem in /L/ verbs is evidence that different principles of tone assignment operate in Pattern 3 compared to Pattern 2, even though in /Ø/ verbs, the surface tone patterns are identical (plus an additional final H in Pattern 3). Pattern 2 can be characterized as assigning H to the leftmost free mora of the stem, while Pattern 3 can be characterized as assigning H to the leftmost mora of the stem, provided that it is free. In /L/ verbs, the stem-initial mora is occupied by the root tone, so Melodic H Assignment fails to apply.

When an OP is present, the contrast between /Ø/ and /L/ verbs is neutralized. As shown by the examples in (21) and (22), both underlying classes of verbs surface with a H on the OP and a H on the final vowel.

(21) /Ø/ verbs with an OP in the Hodiernal Perfective ('They Ved it$_{14}$ (**βú-**) / him (**mú-**).')

βa-βú [seeyé]	'grind'	**βa-mú [siihiré]**	'bury'
βa-mú [laaŋgiré]	'call'	**βa-mú [guliiyé]**	'buy for'
βa-mú [hweehiisé]	'pull'		

(22) /L/ verbs with an OP in the Hodiernal Perfective ('They Ved him (**mú-**).')

βa-mú [βweené]	'see'	**βa-mú [ŋiriré]**	'take'
βa-mú [leetiré]	'bring'	**βa-mú [ŋaambiré]**	'grab'
βa-mú [heβuliiyé]	'remember'		

As in /Ø/ verbs with an OP in Pattern 2 (see (17)), the lack of stem-initial H in /Ø/ verbs with an OP in Pattern 3 could be the result of a requirement on the rule of Melodic H Assignment that the preceding mora must be toneless, or assignment could apply first, followed by application of Meeussen's Rule.

3.3.2. Pattern 3b: Near Future

The Near Future is characterized by a tense prefix **n(a)á-** and the final vowel **-e**. The allomorphy between the two forms of the tense prefix **ná-** vs. **naá-** depends on the number of following moras within the verb. As shown by the examples in (23a-b), the prefix takes the long form **naá-** when one or two moras follow, but the prefix takes the short form **ná-** when three or more moras follow, as in (23c).[11] As in Hodiernal Perfective forms with an OP in (21) – (22), the presence of the H of the tense prefix in the Near Future neutralizes the underlying tonal difference between /Ø/ and /L/ verbs. The examples in (23) and (24) show that both classes of verbs are realized with the same stem-tone pattern: with a H only on the final vowel. In (23a) and (24a), we see that the word-final H is realized as a rise / downstepped H when it immediately follows the H-toned tense prefix in monosyllabic stems.

(23) /Ø/ verbs in the Near Future ('They will V.')

a.	**βa-naáˈ [sé]**	'grind'	**βa-naáˈ [gwé]**	'fall'
b.	**βa-naá [somé]**	'read'	**βa-naá [liré]**	'cry'
c.	**βa-ná [bwaagé]**	'break'	**βa-ná [hweesé]**	'pull'
	βa-ná [laaŋgé]	'call'	**βa-ná [lehulé]**	'release'
	βa-ná [lowoosé]	'think'	**βa-ná [loonderesé]**	'follow'

(24) /L/ verbs in the Near Future ('They will V.')

a.	**βa-naáˈ [lyé]**	'eat'		
b.	**βa-naá [ŋiré]**	'take'	**βa-ná [huumbé]**	'walk proudly'
	βa-ná [leeté]	'bring'	**βa-ná [siindihé]**	'push'
	βa-ná [suundaalé]	'squat'	**βa-ná [halaaŋgé]**	'fry'
	βa-ná [heβuliré]	'remember'		

11. There appears to be a difference in Future tense morphology/semantics between UN and LN. Namulemu (2004: 16-7, 23-5) distinguishes an Immediate Future construction, which has the prefix **na-** and the final vowel **-e**, and refers to events that will occur "from now to sunset of today", from a Near Future construction, which has the prefix **naha-** and the final vowel **-e**, and refers to events that will occur "any time between tomorrow at sunrise and the end of the day after tomorrow." While we did not specifically inquire about a semantic difference along these lines, our speakers did not give us the sense that there are two different tenses. The difference between the **ná-** and **naá-** allomorphs in our speakers appears to be phonologically governed.

A melodic H on the final vowel in a monosyllabic stem – whether /Ø/ or /L/ – is not deleted after H by Meeussen's Rule. This is presumably because the final vowel is long, and the melodic H is not adjacent to the prefix H at the time Meeussen's Rule applies.

When an OP is present, the vowel of the OP counts in the calculation of the allomorph of the Near Future tense prefix. As shown in (25a) and (26a) below, the long allomorph of the Near Future prefix **naá-** is found when an OP co-occurs with a monosyllabic stem, but the short allomorph **ná-** is found with bimoraic stems as in (25b) and (26b), and with longer stems as in (25c) and (26c).

The H of the OP is lowered after the H of the tense prefix by Meeussen's Rule, and the two tonal classes of verbs are deneutralized, revealing the presence of a second melodic H that justifies the classification of the Near Future as Pattern 3. As shown in (25b-c), /Ø/ verbs with at least two moras surface with two melodic Hs, one at each edge of the stem. In the bimoraic stems in (25b), the second H is downstepped after the first; as above, the word-final melodic H is not deleted after the preceding H.[12] In the monomoraic stems in (25a), the lone stem mora surfaces H.

(25) /Ø/ verbs with an OP in the Near Future ('They will V it$_{14}$ (**βu-**) / it$_{7}$ (**ʃi- ~ hi-**) / him (**mu-**) / me (V-lengthening).')

a.	**βa-naá-βu [sé]**	'grind'		
b.	**βa-ná-ʃi [gúˈlé]**	'buy'	**βa-ná-mu [máˈɲé]**	'know'
	~ βa-ná-hi [gúˈlé]			
	βa-náa [máˈɲé]	'know'		
c.	**βa-ná-mu [hwéesé]**	'pull'	**βa-ná-mu [léhulé]**	'release'
	βa-ná-mu [súuβisé]	'promise'	**βa-ná-mu [lóonderesé]**	'follow'

One question about the CVCV stems in (25b) is why the stem-final melodic H surfaces after the stem-initial melodic H, and is not deleted by Meeussen's Rule. In general, melodic Hs that target the stem-final position in LN seem not to undergo Meeussen's Rule (or be subject to a condition that requires the preceding mora to be toneless). One possible explanation for this is that word-final Melodic H Assignment is ordered late, after Meeussen's Rule has applied, and Hs that remain in adjacent positions are phonetically downstepped (see Odden 1982, Schuh 1998, Bickmore 2000, but see Paster & Kim 2011).

As shown in (26), the OP surfaces L in /L/ verbs, and only a single H surfaces on the verb stem – on the final vowel. This fact leads us to conclude that the Near Future is a Pattern 3 tense, like the Hodiernal Perfective, where /L/ verbs lack a second H oriented toward the left edge of the stem. Monosyllabic /L/ verbs in (26a) have a H on the lone stem syllable, presumably the result of Melodic H Assignment overwriting the root L, as in Pattern 1 and Pattern 2.

12. As in other examples transcribed with downstepped H on the final vowel, the realization of the final H may have a rise-like quality.

(26) /L/ verbs with an OP in the Near Future ('They will V it$_9$ (**yi-**) / him (**mu-**).')

a.	**βa-naá-yi [lyé]**	'eat'		
b.	**βa-ná-mu [βoné]**	'see'		
c.	**βa-ná-mu [leeté]**	'bring'	**βa-ná-mu [ŋuliré]**	'hear'
	βa-ná-mu [siindihé]	'push'	**βa-ná-mu [heβuliré]**	'remember'
	βa-ná-mu [halaaŋgiré]	'fry for'		

3.4. Pattern 4 (/Ø/: μ_1, /L/: L)

Pattern 4 is found in two negative constructions – the Imperative Negative and the Near Future Negative – and is tonally identical to Pattern 3 without the melodic H that targets the final vowel. The two constructions differ from each other in that the negative prefix **ta-** is Ø/L-toned in the Imperative Negative, while the Near Future Negative has the H-toned prefix **n(a)á-**.

3.4.1. Imperative Negative

The Imperative Negative is formed with the 2sg subject prefix **o-**, the negative prefix **ta-**, and the final vowel **-a**. /Ø/ verbs have a stem-initial H, provided there are at least two moras in the stem, as in (27b). The monomoraic stems in (27a) surface without a melodic H.

(27) /Ø/ verbs in the Imperative Negative ('Don't V!')

a.	**o-ta [sa]**	'grind'	**o-ta [gwa]**	'fall'
b.	**o-ta [sóma]**	'read'	**o-ta [hwéesa]**	'pull'
	o-ta [léhula]	'release'	**o-ta [lówoosa]**	'think'
	o-ta [lóonderesa]	'follow'		

As shown in (28), /L/ verbs in the Imperative Negative surface all L.

(28) /L/ verbs in the Imperative Negative ('Don't V!')

o-ta [lya]	'eat'	**o-ta [hwa]**	'pay the brideprice'
o-ta [βona]	'see'	**o-ta [leeta]**	'bring'
o-ta [suundaala]	'squat'	**o-ta [halaaŋga]**	'fry'
o-ta [heβulira]	'remember'		

As shown in (29) and (30), when an OP precedes the stem in the Imperative Negative, /Ø/ verbs and /L/ verbs have the same surface pattern: the OP is H, and the entire verb stem is L. The melodic H normally found in /Ø/ verbs is suppressed after the H of the OP, due to Meeussen's Rule (or a condition on the rule of Melodic H Assignment).

(29) /Ø/ verbs with an OP in the Imperative Negative ('Don't V it$_{14}$ (**βú-**) / it$_{7}$ (**ʃí-**) / him (**mú-**)!')

o-ta-βú [sa]	'grind'	**o-ta-ʃí [soma]**	'read'
o-ta-mú [lehula]	'release'	**o-ta-mú [loonderesa]**	'follow'

(30) /L/ verbs with an OP in the Imperative Negative ('Don't V it$_{7}$ (**ʃí-**) / him (**mú-**)!')

o-ta-ʃí [lya]	'eat'	**o-ta-mú [βona]**	'see'
o-ta-mú [leeta]	'bring'	**o-ta-mú [heβulisa]**	'remind'
o-ta-mú [halaaŋgira]	'fry for'		

3.4.2. Near Future Negative

Near Future Negative forms, which have the H tense prefix **n(a)á-**, are tonally identical to Imperative Negative forms with an OP, as in (29) and (30) above. The examples in (31) and (32) show that the pre-stem mora is H, and the entire verb stem is L. The tense prefix has the same length alternations as in the affirmative Near Future: the long form **naá-** is found when one or two moras follow, and the short form **ná-** surfaces when three or more moras follow.

(31) /Ø/ verbs in the Near Future Negative ('They will not V.')

sí-βa-naá [se]	'grind'	**sí-βa-naá [gule]**	'buy'
sí-βa-naá [some]	'read'	**sí-βa-ná [hweese]**	'pull'
sí-βa-ná [lehule]	'release'	**sí-βa-ná [loonderese]**	'follow'

(32) /L/ verbs in the Near Future Negative ('They will not V.')

sí-βa-naá [lye]	'eat'	**sí-βa-naá [βone]**	'see'
sí-βa-ná [leete]	'bring'	**sí-βa-ná [ŋulire]**	'hear'
sí-βa-ná [siindihe]	'push'	**sí-βa-ná [heβulire]**	'remember'

When an OP is added to the verb in the Near Future Negative, the H of the OP is lowered after the H of the tense prefix by Meeussen's Rule, and /Ø/ and /L/ verbs have distinct tonal patterns. As shown in (33), /Ø/ verbs with an OP have a H on the stem-initial mora, as in (33b), provided that stem-initial mora is not in the final syllable, as in monosyllabic stems in (33a).

(33) /Ø/ verbs with an OP in the Near Future Negative ('They will not V it$_{14}$ (**βu-**) / him (**mu-**).')

a.	**sí-βa-naá-βu [se]**	'grind'		
b.	**sí-βa-ná-mu [máŋe]**	'know'	**sí-βa-ná-mu [hwéese]**	'pull'
	sí-βa-ná-mu [léhule]	'release'	**sí-βa-ná-mu [súuβise]**	'promise'
	sí-βa-ná-mu [lóonderese]	'follow'		

The forms in (33b) potentially have three Hs in a row – on the tense prefix **ná-**, on the OP, and on the stem-initial mora. If Meeussen's Rule is responsible for the deletion of the stem-initial H in forms lacking an OP, then the rule needs to be specified to apply from left to right, so that it is only the middle H that is deleted. Had the ruled applied iteratively from right to left, then only one H would surface – on the tense prefix **ná-**.

As shown in (34), /L/ verb stems are all L after **n(a)á-** and the lowered OP.

(34) /L/ verbs with an OP in the Near Future Negative ('They will not V it$_7$ (**ʃi-**) / him (**mu-**).')

a.	**sí-βa-naá-ʃi [lye]**	'eat'		
b.	**sí-βa-ná-mu [βone]**	'see'	**sí-βa-ná-mu [leete]**	'bring'
	sí-βa-ná-mu [ŋulire]	'hear'	**sí-βa-ná-mu [siindihe]**	'push'
	sí-βa-ná-mu [halaaŋgire]	'fry for'		

3.5. Pattern 5 (/Ø/: FV, /L/: μ_2, FV)

As in many other Bantu languages (Marlo 2013b), the Imperative has a distinct tonal melody in LN. The Imperative melody is characterized by a melodic H that links to opposite edges of the verb in /Ø/ and /L/ verbs in a reversal of Goldsmith's (1987: 170-1) 'Complex Stem Tone Pattern' in which there is a melodic H on the second mora of /Ø/ verbs and on the final vowel of /H/ verbs.

As shown in (35), /Ø/ verbs surface with a H on the final vowel. The final H is realized in all stem shapes, including monosyllabic stems, as in (35a).

(35) /Ø/ verbs in the Imperative ('V!')

a.	**[sá]**	'grind'		
b.	**[somá]**	'read'	**[hweesá]**	'pull'
	[lehulá]	'release'	**[loonderesá]**	'follow'

In /L/ verbs, the melodic H targets the left edge of the stem, but unlike the melodic H of Pattern 2 (see §3.2), the melodic H is not prohibited from surfacing on the final vowel. As shown in (36a), the melodic H surfaces on the final vowel in monosyllabic stems and CVCV stems. In verb stems with three or more moras, as in (36b-e), the melodic H surfaces on the second mora of the stem.[13]

(36) /L/ verbs in the Imperative ('V!')

a.	**[lyá]**	'eat'	**[hwá]**	'pay the brideprice'
	[βoná]	'see'	**[ŋaambá]**	'grab'
b.	**[leéta]**	'bring'	**[hozésa]**	'use'
	[ŋulíra]	'hear'	**[siindíha]**	'push'
c.	**[haláaŋga]**	'fry'	**[suundáala]**	'squat'
d.	**[ŋeéresa]**	'send'	**[heβúlira]**	'remember'

13. There are a few tokens in our corpus which suggest that there might be a second H in some long /L/ verbs on the final vowel. This construction should certainly be studied further.

One way to account for the asymmetry between /Ø/ and /L/ verbs in the surface position of the melodic H is to propose that the melodic H of /Ø/ verbs and the melodic H of /L/ verbs reach their surface position by different rules of Melodic H Assignment. In the case of /Ø/ verbs, the melodic H is assigned to the final vowel; in the case of /L/ verbs, the melodic H is assigned to the second mora of the stem. The question then is why each underlying tonal class of verbs does not surface with the melodic H of the other tone pattern. If there is only a single underlying melodic H, then we can restrict the rule of Melodic H Assignment that targets the second mora of the stem so that it requires that a tone be present on the mora before the target.[14] In /Ø/ verbs, there are no underlying tones, so a rule of Melodic H Assignment that requires the mora before the target to be H would not apply. The melodic H would then be free to link to the final vowel via the rule of Melodic H Assignment that targets the final vowel. In /L/ verbs, once the melodic H is assigned to the second mora of the stem, the later rule of Melodic H Assignment linking H to the final vowel would not apply because there are no floating Hs to link to that position.[15]

When an OP is present, there is a morphological change in the verb stem compared to bare Imperatives: the final vowel is realized as **-e**.[16] The tonal patterns of Imperatives with an OP are also complex. One surprising property is that the OP itself is not H, which is unusual since OPs normally surface H, unless the pre-OP mora is H, in which case Meeussen's Rule causes the OP H to be lowered/deleted. As shown in (37), the OP surfaces L, and /Ø/ stems of two or more moras realize two Hs on the stem: one on the stem-initial mora, and one on the stem-final mora. When there are only two moras in the stem, as in (37b), both melodic Hs surface, and the second H is downstepped after the first (with a variant rise-like realization). When there is only a single mora in the stem, as in (37a), the lone stem vowel surfaces H.

(37) /Ø/ verbs with an OP in the Imperative ('V it$_{14}$ (**βu-**) / it$_{7}$ (**ʃi- ~ hi-**) / him (**mu-**)!')

a.	**βu [sé]**	'grind'		
b.	**ʃi [sóˈmé] ~ hi [sóˈmé]**	'read'		
c.	**ʃi [hwéesé]**	'pull'	**mu [láaŋgé]**	'call'
	mu [léhulé]	'release'	**mu [táβuliré]**	'stir for'
	mu [lóonderesé]	'follow'		

14. Marlo (2008: 212) proposes a rule like this for Tura.

15. If it turns out that /L/ verbs (optionally) have a H on the final vowel (see footnote 13), then we would need to posit two melodic Hs. The second of these Hs would link to the final vowel by the second rule of Melodic H assignment. The existing analysis would account for the single H in /Ø/ verbs since the rule targeting the second stem mora would still fail to apply.

16. The final vowel is also **-e** in the Subjunctive and in the Near Future, but these constructions have different tonal patterns. See §3.6 on the Pattern 6 Subjunctive and §3.3.2 on the Pattern 3 Near Future.

As shown in (38), only a single H is realized in /L/ verbs: on the final vowel.[17]

(38) /L/ verbs with an OP in the Imperative ('V it$_9$ (**i-**) / us (**tu-**) / him (**mu-**) / them (**βa-**) / me (**ŋ → p**; **m-**, **β → b**; **h → k**) / yourself (**e-**)!')

i [lyé]	'eat'	**[pé]**	'give'
m [bé^{L}gé]	'shave'	**tu [βegé]**	'shave'
w-e [βegé]	'shave'		
mu [βegé]	'shave'	**βa [βegé]**	'shave'
mu [ŋaambé]	'grab'	**mu [leeté]**	'bring'
mu [heβuliré]	'remember'	**[kéβulí^{L}lé]**	'remember'

How would the analysis proposed for bare imperatives apply to forms with an OP? To make such an analysis work, we need to assume that the melodic H targets the second mora of the verb macrostem, and the mora before the target, i.e. the first mora of the macrostem, must have a tone. Since OPs contribute a H, the melodic H is able to be assigned to the initial mora of /Ø/ verbs. In /L/ verbs, the melodic H is not able to be assigned since the second mora of the macrostem is the initial mora of the stem, which is already occupied by the root L tone, so the melodic H is not assigned. In this approach, an additional rule such as Initial Lowering, which lowers a macrostem-initial H (see Ebarb 2014 on Idakho, and Ebarb 2016 on Kabarasi), would be required to account for the fact that the OP surfaces L.

Another possible analysis of Imperative forms with an OP is to treat them as a distinct construction from bare Imperatives. If we treat Imperatives with an OP as a distinct construction, the Imperative + OP construction can be classified as Pattern 3 forms in which toneless verbs have two Hs – one at each edge of the stem – and /L/ verbs have only one H – on the final vowel. Under this approach the Imperative + OP complex triggers the insertion of the Pattern 3 melody and the OP itself does not contribute its usual underlying H, which explains why OPs surface L in this construction.

3.6. Pattern 6 (/Ø/: μ_1, /L/: μ_1)

Pattern 6 is found in the Subjunctive and is the one tonal melody of LN where the underlying tonal contrast between /Ø/ and /L/ verbs is fully neutralized – both in forms without an OP and in forms with an OP. Subjunctives are formed with a subject prefix and the final vowel **-e**. As shown in (39) and (40), /Ø/ and /L/ verbs have the same tone patterns, characterized by a single H on the stem-initial mora. Unlike other melodies where there is a melodic H targeting the stem-initial mora, the Pattern 6 melodic H does surface in monosyllabic stems in (39a) and (40a); somewhat surprisingly, this H has a different pitch profile from other final Hs, as it

17. A few examples are given here with the 1sg OP, which sometimes surfaces as a nasal and which triggers mutations of the stem-initial consonant: **m**[**bé^{L}gé**] 'Shave me!' and **[kéβulí^{L}lé**] 'Remember me!' Both of these forms have an unexpected stem-initial H in addition to the stem-final H, and the longer verb also has a H on the penult. At present, we have no account for these forms.

is realized with a falling contour. For this reason, it may be best to treat this tense as having a melodic HL sequence, rather than a simple H.

(39) /Ø/ verbs in the Subjunctive (‘Let’s V!’)

a.	**hu [sê]**	‘grind’		
b.	**hu [sóme]**	‘read’		
c.	**hu [hwéese]**	‘pull’	**hu [láaŋge]**	‘call’
	hu [góβole]	‘come back’	**hu [léhule]**	‘release’
	hu [lóonderese]	‘follow’	**hu [táβulanire]**	‘stir for e.o.’

(40) /L/ verbs in the Subjunctive (‘Let’s V!’)

a.	**hu [lyê]**	‘eat’		
b.	**hu [βóne]**	‘see’		
c.	**hu [léete]**	‘bring’	**hu [ŋúlire]**	‘hear’
	hu [hálaaŋge]	‘fry’	**hu [ŋéerese]**	‘send’
	hu [síindihe]	‘push’	**hu [súundaale]**	‘squat’
	hu [héβulire]	‘remember’		

When an OP is present, /Ø/ and /L/ verbs also have the same surface tone patterns: there is a H on the OP, the verb stem is all L. See (41) and (42).

(41) /Ø/ verbs with an OP in the Subjunctive (‘Let’s V it$_{14}$ (**βú-**) / it$_{7}$ (**hí- ~ ʃí-**) / him (**mú-**)!’)

a.	**hu-βú [se]**	‘grind’		
b.	**hu-hí [some]**	‘read’	**hu-mú [lehule]**	‘release’
	hu-mú [taβulire]	‘stir for’		
c.	**hu-ʃí [hweese]**	‘pull’	**hu-mú [loonderese]**	‘follow’

(42) /L/ verbs with an OP in the Subjunctive (‘Let’s V it$_{7}$ (**ʃí-**) / him (**mú-**)!’)

a.	**hu-ʃí [lye]**	‘eat’		
b.	**hu-mú [βone]**	‘see’	**hu-mú [heβulire]**	‘remember’
c.	**hu-mú [leete]**	‘bring’	**hu-mú [siindihe]**	‘push’

It is unknown if the best account of this pattern is to assume that the HL melody links to the left edge of the verb macrostem. Another possibility is to assign it consistently to the stem, but the melodic H is lost by Meeussen’s Rule after the H of the OP, or never assigned at all due to a restriction that the target of Melodic H Assignment be preceded by a toneless mora.

3.7. Pattern 7 (/Ø/: L, /L/: L)

The final tonal melody we have identified in LN is found in the Near Past Negative. This is the construction we elicited while attempting to elicit negative forms of

the Hodiernal Perfective, though it is clearly not related morphologically to the Hodiernal Perfective, i.e. it does not have perfective morphology, but rather takes the final vowel **-a**. Another feature of the Near Past Negative is that it takes the negative marker, **naandí-** ~ **ndí-**, which precedes the subject prefix, unlike most other constructions apart from the Imperative Negative (see §3.4.1) which take negative **sí-** (see §3.2, §3.4.2, and the Addendum).

In Near Past Negative forms lacking an OP, /Ø/ and /L/ have the same surface tone pattern. As shown in (43) and (44), all verbs surface all L after the H-toned negative marker.

(43) /Ø/ verbs in the Near Past Negative ('They didn't V.')

a.	**ndií-βa [sa]**	'grind'		
b.	**ndí-βa [gula]**	'buy'	**ndí-βa [hweesa]**	'pull'
	ndí-βa [goβola]	'come back'	**ndí-βa [hayaana]**	'shout'
	ndí-βa [suuβisa]	'promise'	**ndí-βa [loonderesa]**	'follow'
	ndí-βa [taβulanira]	'stir for e.o.'		

(44) /L/ verbs in the Near Past Negative ('They didn't V.')

a.	**ndií-βa [lya]**	'eat'		
b.	**ndí-βa [sala]**	'cut'	**ndí-βa [tiina]**	'go'
	ndí-βa [ŋulira]	'hear'	**ndí-βa [halaaŋga]**	'fry'
	ndí-βa [fuundiha]	'tie a knot'	**ndí-βa [siindiha]**	'push'
	ndí-βa [heβulira]	'remember'		

A surprising twist is found in forms with an OP. Despite the fact that no H immediately precedes the OP, OPs surface L. As shown in (45), in /Ø/ verbs, a H also surfaces on the stem-initial mora, provided that it is not in final position, as in (45a). As shown in (45b), a monosyllabic stem followed by an enclitic – one of very few examples we have with enclitics in our notes – does appear to be able to host the H, and longer verb stems in (45c) also have H on the stem-initial position.

(45) /Ø/ verbs with an OP in the Near Past Negative ('They didn't V it$_{14}$ (**βu-**) / it$_{7}$ (**ʃi-**) / him (**mu-**).')

a.	**ndí-βa-βu [sa]**	'grind'		
b.	**ndí-βa-mu [gwá^{L}] hó**	'fall on'		
c.	**ndí-βa-ʃi [gúla]**	'buy'	**ndí-βa-mu [ŋéma]**	'chase away'
	ndí-βa-mu [hwéesa]	'pull'	**ndí-βa-mu [sómera]**	'read to'
	ndí-βa-mu [súuβisa]	'promise'	**ndí-βa-mu [lóonderesa]**	'follow'

As shown in (46), in /L/ verbs, the OP surfaces L, and the verb is all L, too.

(46) /L/ verbs with an OP in the Near Past Negative ('They didn't V it$_{7}$ (**ʃi-**) / him (**mu-**).')

ndí-βa-ʃi [lya]	'eat'	**ndí-βa-mu [βona]**	'see'
ndí-βa-mu [leeta]	'bring'	**ndí-βa-mu [siindiha]**	'push'
ndí-βa-mu [heβulira]	'remember'	**ndí-βa-mu [halaaŋgira]**	'fry for'

It is difficult to know exactly what to make of this melody. The fact that there is a H on /Ø/ verbs with an OP suggests that there is a melodic H. Let us assume this melodic H targets the stem-initial mora. One question is why this melodic H fails to surface in OPless forms. In the case of /Ø/ verbs, the most plausible solution appears to be that a long-distance version of Meeussen's Rule operates in this context, lowering the stem-initial H after the H of **ndí-**. In the case of /L/ verbs, assignment of the melodic H is blocked by the presence of the root L, which occupies the stem-initial position. In forms with an OP, where the OP surfaces L, Long-Distance Meeussen's Rule lowers the Hs of the OPs, allowing the melodic H to be assigned to the stem-initial mora of /Ø/ verbs. Because the stem-initial mora is always occupied by the root L in /L/ verbs, the melodic H does not surface.

Discussion and conclusions

There is still much to discover about LN tone. We know of a number of additional linguistic contexts that we would still like to explore. Two contexts were accidental omissions: Infinitive forms with an OP, and the negative counterpart to the Present/Habitual tense. Other contexts were skipped over due to a lack of time, though in light of the fact that these contexts are known to be important in other Bantu languages (see Kisseberth & Odden 2003, Marlo 2013b, Marlo & Odden forthcoming), we would like to explore these topics in future research on LN.

Outside of basic Infinitive forms, we did not collect data involving V-initial verb stems. We did not test to see if the choice of subject prefix has any tonal consequences. We did not survey OPs systematically, including 1sg and reflexive forms (see Marlo 2014, 2015a, forthcoming). A few forms we did collect with the 1sg OP suggest that forms of that type need to be studied carefully in all tone melodies. We did not test for the possibility of multiple OPs (see Marlo 2015b), and we have only a few forms with enclitics. We did not test to see if the plural Imperative has a distinct form or tonal pattern, as it does in some other Luyia varieties such as Wanga (Green & Marlo 2015, 2016). We also did not explore tone in phrasal structures, relative clauses, or yes/no questions. These are all fertile areas for additional research on LN.

While much remains to be explored in the language, we have nevertheless learned quite a bit about the LN tone system. For instance, we have identified seven distinct major melodies. The surface tonal patterns of these melodies are summarized in (47) for one representative construction per melody.

(47) Summary of LN tone melodies

PATTERN 1a
Infinitive

–OP	/Ø/	The augment **o-** is L; and the melodic H extends from the infinitive prefix **hú-** through the FV.
	/L/	The augment **ó-** is H; the infinitive prefix **hu-** is L; and the melodic H extends from μ_2 through the FV in trisyllabic and longer stems.
+OP	/Ø/	no data
	/L/	no data

PATTERN 1b
Imm. **Past**

–OP	/Ø/	The tense prefix **há-** is H; and the melodic H extends from μ_1 through the FV.
	/L/	The tense prefix **há-** is H; and the melodic H extends from μ_2 through the FV in trisyllabic and longer stems. Plateau does not apply.
+OP	/Ø/	The tense prefix **há-** is H; the OP is L; and the melodic H extends from μ_1 through the FV.
	/L/	The tense prefix **há-** is H; the OP is L; and the melodic H extends from μ_2 through the FV in trisyllabic and longer stems.

PATTERN 1c
Pres./**Hab**.

–OP	/Ø/	The melodic H extends from μ_1 through the FV.
	/L/	The melodic H extends from μ_2 through the FV.
+OP	/Ø/	The OP is H; and the melodic H extends from μ_1 through the FV.
	/L/	The OP is H; and the melodic H extends from μ_2 through the FV. Plateau applies.

PATTERN 2
Indef. **Fut**. **Neg**.

–OP	/Ø/	The melodic H is on μ_1 in disyllabic and longer stems
	/L/	The melodic H is on μ_2 in trimoraic and longer stems
+OP	/Ø/	The OP is H; and the stem is L.
	/L/	The OP is H; and the melodic H is on μ_2 in trimoraic and longer stems. Plateau applies.

PATTERN 3a
Hodiernal Perf.

–OP	/Ø/	There are two melodic Hs: one on μ_1, and one on the FV.
	/L/	There is one melodic H, on the FV.
+OP	/Ø/	The OP is H; and there is one melodic H, on the FV.
	/L/	The OP is H; and there is one melodic H, on the FV.

PATTERN 3b
Near Fut.

–OP	/Ø/	The tense prefix **n(a)á-** is H; and there is one melodic H, on the FV.
	/L/	The tense prefix **n(a)á-** is H; and there is one melodic H, on the FV.
+OP	/Ø/	The tense prefix **n(a)á-** is H; the OP is L; and there are two melodic Hs: one on μ_1, and one on the FV.
	/L/	The tense prefix **n(a)á-** is H; the OP is L; and there is one melodic H, on the FV.

PATTERN 4
Imperative Neg.

–OP	/Ø/	The melodic H is on μ_1.
	/L/	The stem is L.
+OP	/Ø/	The OP is H; and the stem is L.
	/L/	The OP is H; and the stem is L.

PATTERN 5
Imperative

–OP	/Ø/	There is one melodic H, on the FV.
	/L/	There is one melodic H, on μ_2.
+OP	/Ø/	The OP is L; and there are two melodic Hs: one on μ_1, and one on the FV.
	/L/	The OP is L; and there is one melodic H, on the FV.

PATTERN 6
Subjunctive

–OP	/Ø/	There is one melodic H: on μ_1.
	/L/	There is one melodic H: on μ_1.
+OP	/Ø/	The OP is H; and the stem is L.
	/L/	The OP is H; and the stem is L.

PATTERN 7
Near Past Neg.

–OP	/Ø/	The negative prefix **ndí-** is H; and the following syllables of the verb are L.
	/L/	The negative prefix **ndí-** is H; and the following syllables of the verb are L.
+OP	/Ø/	The negative prefix **ndí-** is H; the OP is L; and the melodic H is on μ_1 in dimoraic and longer stems.
	/L/	The negative prefix **ndí-** is H; the OP is L; and the stem is L.

Depending on how one counts, the final tally of melodies may be different. For instance, it may be possible to derive Pattern 2 from Pattern 1b, which might lead to a reduction in the overall number of melodies. One could also distinguish Pattern 1a, Pattern 1b, and Pattern 1c as distinct numbered melodies. While one might quibble about the exact number of melodies, there is no question that LN possesses an unusually large number of melodies, as in other Luyia varieties (Marlo 2013b: 178, Ebarb *et al.* 2014: 123).

Another striking feature of LN tone is that it presents some of the clearest evidence for positing underlying L as the synchronic stem-initial tone in the historically *H class of verbs. Evidence for this representation is that the stem-initial mora virtually always surfaces L. Moreover, the stem-initial position generally exhibits blocking effects, limiting the leftward extent of the melodic H.[18] By contrast, underlyingly toneless moras regularly become H through direct assignment of the melodic H or through spreading of the melodic H.

Within Luyia tone, the classification of LN as having a reversive system (with synchronic /L/ verbs and with tonal melodies in all verb forms) is noteworthy because the other Luyia systems that appear to fall into this category, e.g. Wanga (Green & Marlo 2016) and Nyala East (Ebarb *et al.* 2014: 123), are located in the central Luyia region. Southwestern Luyia languages of Busia County in Kenya have predictable systems that have lost the contrast between two tonal types of roots. These predictable systems include Saamia, which as noted above is said to have the highest lexical similarity with UN. It is not yet clear what implications the identification of LN as a reversive language has for Luyia tone history, but the finding certainly encourages comparative work on tone in UN, and the nearest neighbors of LN and UN, including Masaaba, varieties of Soga, Gwere, and Kenyi.

A third notable feature of LN tone is that pre-NC long vowels count as short for the purposes of stem tone placement. In cases where the melodic H is normally located on the second mora of the stem, stems that begin with a pre-NC long vowel pattern with stems that begin with a short vowel, and not with other stems that begin with a long vowel, as H is located on the second, rather than first, stem syllable. While Luyia languages have been noted to have both mora-counting and syllable-counting in their tone systems (see Ebarb & Marlo 2015), the differential treatment of pre-NC long vowels and other long vowels is not known elsewhere in Luyia, but is reported in some other Great Lakes Bantu languages like Haya and Nyambo (see Hyman 1992).

18. The surface exceptions to these generalizations are (i) Pattern 6 Subjunctive forms shown in (40) where the melodic H overwrites lexical L, (ii) monosyllabic /L/ verbs assigned a melodic H that overwrites the lexical L, and (iii) verb forms that undergo Plateau effects, where H.LH become H.HH. It is surpring that Plateau does not preserve the L as a downstep operator (Bird 1966: 135, Clements & Ford 1979: 206, Paster & Kim 2011), instead deleting all traces of it.

Abbreviations

ꜜ	downstep	Ø	toneless
BLR3	Bastin *et al.* 2002	OP	object prefix
C	consonant	sg., sg	singular
dim.	diminutive	TAM(P)	tense-aspect-mood (-polarity)
e.o.	each other	UN	Upper Nyole
FV	final vowel	UR	underlying representation
H	high tone	V	(the meaning of the) verb ; vowel
L	low tone	μ_1	first mora of the verb stem
LN	Lower Nyole	μ_2	second mora of the verb stem
N	nasal	σ_2	second syllable of the verb stem

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Addendum

Pattern 1a

Infinitive

(48) /Ø/ verbs in the Infinitive ('to V')

oohú [gwá]	'fall'	**oohú [sá]**	'grind'
ohú [gúlá]	'buy'	**ohú [júhá]**	'pour'
ohú [límá]	'dig'	**ohú [lírá]**	'cry'
ohú [lómá]	'say'	**ohú [máɲá]**	'know'
ohú [ŋémá]	'chase away'	**ohú [sómá]**	'read'
ohú [gééndá]	'walk'	**ohú [láángá]**	'call'
ohú [βííngá]	'run after'	**ohú [hwéésá]**	'pull'
ohú [méélá]	'bleat'	**ohú [móólá]**	'moo'
ohú [sááβá]	'bathe'	**ohú [sííhá]**	'bury'
ohú [sííβá]	'fast'	**ohú [gáβáná]**	'share'
ohú [góβólá]	'come back'	**ohú [gúlúhá]**	'fly'
ohú [hólóŋá]	'throw'	**ohú [léhúlá]**	'release'
ohú [náβúlá]	'tear'	**ohú [sítúlá]**	'untie'
ohú [táβúlá]	'stir'	**ohú [yíhúlá]**	'uncover'
ohú [fúlúútá]	'?'	**ohú [háyáánáá]**	'shout'
ohú [lówóósá]	'think'	**ohú [hóóndyóólá]**	'undermine with the eyes'

ohú [súúβísá]	‘promise’	**ohw [áámbálá]**	‘?’
ohw [ááníhá]	‘spread to dry’	**ohw [ééfúnʸá]**	‘bow (in respect)’
ohw [íígúlá]	‘open’	**ohw [ííhálá]**	‘sit’
ohú [húŋémá]	‘?’	**ohú [lóóndérésá]**	‘follow’
ohú [líímbíílílá]	‘close the eyes’	**ohw [ííhírísá]**	‘accept, allow’

(49) /L/ verbs in the Infinitive (‘to V’)

óohu [fwá]	‘die’	**óohu [hwá]**	‘pay brideprice’
óohu [lyá]	‘eat’	**óohu [ɲwá]**	‘drink’
óohu [ŋá]	‘give’	**óohu [tá]**	‘put’
óhu [bahá]	‘catch’	**óhu [hoká]**	‘suck’
óhu [laβá]	‘ripen’	**óhu [lumá]**	‘bite’
óhu [lumá]	‘bite’	**óhu [ŋirá]**	‘take’
óhu [salá]	‘cut (with knife)’	**óhu [yiβá]**	‘?’
óhu [βegá]	‘shave’	**óhu [βoná]**	‘see’
óhu [βoŋá]	‘tie a knot’	**óhw [eeŋahá]**	‘rub’
óhu [huumbá]	‘walk proudly’	**óhu [ŋaambá]**	‘grab’
óhu [bwaagá]	‘break’	**óhu [fuujá]**	‘spit’
óhu [fwaanʸá]	‘see’	**óhu [huulá]**	‘pull out’
óhu [leetá]	‘bring’	**ohu [ʃyaalá]**	‘visit’
óhu [tiiná]	‘go’	**óhu [wuusá]**	‘ask’
óhu [oogá]	‘wash’	**óh(w) [oomá]**	‘dry (intr.)’
~ óhu [ooká]			
óh(w) [oomyá]	‘dry (tr.)’	**óhw [iitá]**	‘kill’
óhu [fumítá]	‘spear, stab’	**óhu [hozésá]**	‘use’
óhu [ŋalúsá]	‘pull, drag’	**óhu [ŋeɲúhá]**	‘lie (down)’
óhu [ŋulírá]	‘hear’	**óhu [halaángá]**	‘fry’
óhu [fuundíhá]	‘tie a knot’	**óhu [seeŋgúhá]**	‘migrate’
óhu [siindíhá]	‘push’	**óhu [seengeéjá]**	‘sieve’
óhu [suundaálá]	‘squat’	**óhu [ŋeérésá]**	‘send’
óhw [aadúhá]	‘shine, burn (intr.)’	**óhw [aagámá]**	‘come to an end’
óhw [aaníhá]	‘dry in the sun’	**óhw [aasíhá]**	‘lend’
óhw [iijúsá]	‘fill’	**óhw [oonoóná]**	‘destroy, spoil’
óhu [heβúlírá]	‘remember’	**óhu [ŋalágátá]**	‘scrape’
óhu [ŋulírísá]	‘listen’	**óhu [βoŋólólá]**	‘untie’
óhu [siriíngísyá]	‘roll (e.g. tire)’	**óhu [taangírírá]**	‘lead’
óhu [tiíhírísá]	‘threaten’	**óhw [aaɲjúlúsá]**	‘unfold’
óhw [eemérérá]	‘stand’	**óhw [aagaágáná]**	‘be the same size’
óhw [eemeérérá]	‘stand’		

(50) Forms with an enclitic in the Infinitive (‘to V’)

óhu [oongesa] yó ‘?’

(51) Forms with the reflexive in the Infinitive (‘to V’)

óhw-ee [boombá]	‘swim’	**óhw-ee [tooloólá]**	‘go around’

(52) Forms with the reflexive and an enclitic in the Infinitive (‘to V’)

óhw-ee [geresa] yó	‘extend’	**óhw-ee [yóogera] yó**	‘continue’

Pattern 1b

Immediate Past Negative

(53) /Ø/ verbs in the Immediate Past Negative (‘They didn’t just V.’)

sí-βa-há [sómá]	‘read’	**sí-βa-há [sááβá]**	‘bathe’
sí-βa-há [súúβísá]	‘promise’	**sí-βa-há [lóóndérésá]**	‘follow’

(54) /L/ verbs in the Immediate Past Negative (‘They didn’t just V.’)

sí-βa-há [βoná]	‘see’	**sí-βa-há [leetá]**	‘bring’
sí-βa-há [heβúlírá]	‘remember’		

(55) /Ø/ verbs with an OP in the Immediate Past Negative (‘They didn’t just V it$_7$ (**ʃi-**) / him (**mu-**).’)

sí-βa-há-ʃi [sómá]	‘read’	**sí-βa-há-mu [suúβísá]**	‘promise’
sí-βa-há-mu [loóndérésá]	‘follow’		

(56) /L/ verbs with an OP in the Immediate Past Negative (‘They didn’t just V him (**mu-**).’)

sí-βa-há-mu [βoná]	‘see’	**sí-βa-há-mu [leetá]**	‘bring’
sí-βa-há-mu [heβúlírá]	‘remember’		

Pattern 1c

Hesternal Perfective

(57) /Ø/ verbs in the Hesternal Perfective (‘They Ved.’)

a.	**βa [gúlíré]**	‘buy’	**βa [lílíré]**	‘cry’
	βa [máŋíré]	‘know’	**βa [góβóóyé]**	‘come back’
	βa [háyéénéé]	‘shout’	**βa [léhúúyé]**	‘release’
	βa [sítúúyé]	‘untie’	**βa [táβúúyé]**	‘stir’
	βa [hólóŋíré]	‘throw’	**βa [lówóóhíísé]**	‘think’
b.	**βa [guúyé]**	‘fall’	**βa [seéyé]**	‘grind’
	βa [hweéhíísé]	‘pull’	**βa [saáβíré]**	‘bathe’
	βa [suúβíhíísé]	‘promise’		
c.	**βa [laáŋgíré]**	‘call’	**βa [liímbílííyé]**	‘close eyes’
	βa [loóndéréhíísé]	‘follow’		

(58) /L/ verbs in the Hesternal Perfective ('They Ved.')

a.	**βa [ŋiríré]**	'take'	**βa [salíré]**	'cut'
	βa [ŋalúhíísé]	'pull'	**βa [βoŋólóóyé]**	'untie'
	βa [heβúlííyé]	'remember'	**βa [hozéhíísé]**	'use'
b.	**βa [ŋuliíyé]**	'hear'	**βa [halaáŋgíré]**	'fry'
	βo [onoóníré]	'destroy'		
c.	**βa [βweéné]**	'see'	**βa [liíyé]**	'eat'
	βa [ɲoóyé]	'drink'	**βa [ŋaáyé]**	'give'
	βa [taáyé]	'put'	**βa [taáye] ŋó**	'put there'
	βa [bwaágíré]	'break'	**βa [fuújíré]**	'spit'
	βa [tiíníré]	'go'	**βa [βuúhíísé]**	'ask'
	βa [ŋeéréhíísé]	'send'		
d.	**βa [huumbíré]**	'walk proudly'	**βa [ŋaambíré]**	'grab'
	βa [fuundíhíré]	'tie a knot'	**βa [siindíhíré]**	'push'
	βa [taaŋgírííyé]	'lead'		

(59) /Ø/ verbs with an OP in the Hesternal Perfective ('They Ved him (**mú-**)/ it_{14} (**βú-**).')

a.	**βa-mú [máɲíré]**	'know'	**βa-mú [ŋémíré]**	'chase away'
b.	**βa-βú [sééyé]**	'grind'	**βa-mú [bííŋgíré]**	'run after'
	βa-mú [sííhíré]	'bury'	**βa-mú [sááβíísyé]**	'bathe'
	βa-mú [hwééhíísé]	'pull'		
c.	**βa-mú [lááŋgíré]**	'call'	**βa-mú [lóóndéréhíísé]**	'follow'

(60) /L/ verbs with an OP in the Hesternal Perfective ('They Ved him (**mú-**).')

a.	**βa-mú [ŋahíré]**	'smear'	**βa-mú [ŋiríré]**	'take'
	βa-mú [hozéhíísé]	'use'		
b.	**βa-mú [βwééné]**	'see'	**βa-mú [léétíré]**	'bring'
	βa-mú [βúúhíísé]	'ask'		
c.	**βa-mú [ŋaambíré]**	'grab'	**βa-mú [siindíhíré]**	'push'
	βa-mú [fuundíhííyé]	'knot for'		

Indefinite Future

(61) /Ø/ verbs in the Indefinite Future ('S/he will V.')

a.	**a-li [sá]**	'grind'		
b.	**a-li [gúlá]**	'buy'	**a-li [lírá]**	'cry'
	a-li [góβólá]	'come back'	**a-li [lówóósá]**	'think'
c.	**a-li [hweésá]**	'pull'	**a-li [suúβísá]**	'promise'
	a-li [loóndérésá]	'follow'		

(62) /L/ verbs in the Indefinite Future ('S/he will V.')

a.	**a-li [lyá]**	'eat'		
b.	**a-li [βoná]**	'see'		
c.	**a-li [ŋaambá]**	'grab'		
d.	**a-li [leétá]**	'bring'	**a-li [ŋeérésá]**	'send'
e.	**a-li [ŋulírá]**	'hear'	**a-li [heβúlírá]**	'remember'
f.	**a-li [siindíhá]**	'push'		
g.	**a-li [halaáŋgá]**	'fry'		

(63) /Ø/ verbs with an OP in the Indefinite Future ('S/he will V it$_{14}$ (**βú-**) / him (**mú-**).')

a.	**a-li-βú^{L} [sá]**	'grind'		
b.	**a-li-βú [gúlá]**	'buy'	**a-li-mú [síká]**	'?'
	a-li-mú [léhúlá]	'release'		
c.	**a-li-mú [hwéésá]**	'pull'	**a-li-mú [súúβísá]**	'promise'
	a-li-mú [lóóndérésá]	'follow'		

(64) /L/ verbs with an OP in the Indefinite Future ('S/he will V it$_{7}$ (**hí- ~ ʃí-**) / him (**mú-**).')

a.	**a-li-hí^{L} [lyá] ~**			
	a-li-ʃí^{L} [lyá]	'eat'		
b.	**a-li-mú [βoná]**	'see'	**a-li-mú [tumá]**	'send'
c.	**a-li-mú [ŋulírá]**	'hear'		
d.	**a-li-mú [léétá]**	'bring'	**a-li-mú [ŋéérésá]**	'send'
e.	**a-li-mú [siindíhá]**	'push'		
f.	**a-li-mú [halaáŋgírá]**	'fry for'		

Pattern 2

Hesternal Perfective Negative

(65) /Ø/ verbs in the Hesternal Perfective Negative ('They didn't V.')

a.	**sí-βa [gúlire]**	'buy'	**sí-βa [lílire]**	'cry'
	sí-βa [háyeene]	'shout'	**sí-βa [góβooye]**	'come back'
	sí-βa [lówoohiise]	'think'		
b.	**sí-βa [séeye]**	'grind'	**sí-βa [sáaβire]**	'bathe'
	sí-βa [hwéehiise]	'pull'		
c.	**sí-βa [láaŋgire]**	'call'		

(66) /L/ verbs in the Hesternal Perfective Negative (‘They didn’t V.’)

a.	**sí-βa [ŋiríre]**	‘take’	**sí-βa [salíre]**	‘cut’
	sí-βa [ŋulíiye]	‘hear’	**sí-βa [heβúliiye]**	‘remember’
	sí-βa [ŋalágatire]	‘scrape’		
b.	**sí-βa [βweéne]**	‘see’	**sí-βa [liíye]**	‘eat’
	sí-βa [βuúhiise]	‘ask’		
c.	**sí-βa [suundáaye]**	‘squat’	**sí-βa [fuundíhire]**	‘tie a knot’

(67) /Ø/ verbs with an OP in the Hesternal Perfective Negative (‘They didn’t V him (**mú-**) / it$_{14}$ (**βú-**).’)

a.	**sí-βa-mú [maɲire]**	‘know’	**sí-βa-mú [taβuliiye]**	‘stir for’
b.	**sí-βa-βú [seeye]**	‘grind’	**sí-βa-mú [guuyé^{L}] hó**	‘fall on’
c.	**sí-βa-mú [laaŋgire]**	‘call’	**sí-βa-mú [loonderehiise]**	‘follow’

(68) /L/ verbs with an OP in the Hesternal Perfective Negative (‘They didn’t V him (**mú-**).’)

a.	**sí-βa-mú [ŋiríre]**	‘take’	**sí-βa-mú [heβúliiye]**	‘remember’
b.	**sí-βa-mú [βwéene]**	‘see’	**sí-βa-mú [léétire]**	‘bring’
	sí-βa-mú [βúúhiise]	‘ask’		
c.	**sí-βa-mú [ŋaambíre]**	‘grab’	**sí-βa-mú [siindíhire]**	‘push’
d.	**sí-βa-mú [haláaŋgiiye]**	‘fry for’		

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Résumé

Cet article présente une vue d'ensemble du système tonal du nyole inférieur (Lower Nyole, LN), variété moribonde et autrefois non reconnue du nyole (JE35) parlée dans le sud du Busoga. Après une étude préliminaire des schèmes tonals nominaux, on démontre que le LN possède un système tonal 'réversif' présentant deux classes tonales de verbes : (i) les verbes dépourvus de tons sous-jacents et (ii) les verbes possédant historiquement une tonalité *H et, synchroniquement, un ton /B/ initial. Tous les contextes verbaux connus de LN sont marqués selon un schème tonal mélodique (il n'existe pas de construction non marquée tonalement) et, tout comme d'autres langues luyia, LN possède un grand nombre de marques tonales caractérisées par l'attribution de H aux positions extrêmes de la racine verbale. Une seconde propriété remarquable du ton verbal LN est que les principes d'attribution tonale traitent les voyelles longues qui précèdent les groupes NC comme des voyelles brèves.