PHONOLOGICAL ANALYSIS

An overview of Kabarasi verb tone

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   This article presents the results of a study of verbal tone patterns in Kabarasi [lkb], a Kenyan Bantu language of the Luhya [luy] group. Kabarasi tone has a number of features that are common to Bantu languages (Kisseberth & Odden 2003, Downing 2011, Marlo & Odden 2017), including a lexical contrast between /H/ and /Ø/ verb roots and a rich system of tonal inflection. Long H spans that extend across several words may be created by a pair of iterative, mutually feeding rules. One of these rules only applies across word boundaries and exhibits look-ahead effects; the other motivates a novel morphophonological domain: the LIMITATIVE STEM.*

Keywords: phonological domains, Luhya, limitative stem, macrostem, Bantu, tonology

   1. Introduction. Kabarasi [lkb] is an undocumented variety of the Luhya [luy] macrolanguage, a cluster of about twenty-five languages spoken near Lake Victoria in western Kenya and eastern Uganda. The verbal tone systems of Luhya (a.k.a. Luyia) languages exhibit great diversity (Ebarb et al. 2014); this article adds to the growing body of literature on Luhya verb tone with an overview of tonotactics, inflectional tone, and notable tonal processes in Kabarasi.

   Kabarasi (a.k.a. Kabras/Kabaras/Olukabarasi) is a language spoken by approximately 253,000 people (2009 Kenya census) within Kakamega County in western Kenya. Kanyoro (1983) reports that Kabarasi is most similar to neighboring Tachoni [lts], based on speaker-generated ratings of ease of comprehension. The data presented in this article are consistent with this finding: among the Luhya languages for which there is some documentation of tone, Kabarasi's tonal system is most similar to that of Tachoni (Odden 2009).

   Kabarasi has a tonal system with several properties that are characteristic of Bantu languages (Kisseberth & Odden 2003, Downing 2011, Marlo & Odden 2017), including an underlying contrast between H-toned (/H/) and toneless (/Ø/) verb roots. In §2, I describe the ways in which lexical tones interact with other lexical tones and prosodic properties of verbs. For instance, the second of two adjacent Hs is lost due to Meeussen's rule, a common process across Bantu languages. Contour tones are generally avoided in Kabarasi, but are actively created in the phrasal penult. Kabarasi also has two doubling rules: one spreads Hs from the penultimate mora of the phrase onto the final, and another spreads Hs from the final mora of the phrase onto the penult. A significant finding, discussed at length in §2, is that differences in the way that two sets of inflectional prefixes interact with a spreading process—lexical tone anticipation— motivate a novel morphophonological domain: the LIMITATIVE STEM. The limitative stem is a unit of structure that includes the verb stem, any object prefixes, and a small

number of aspectual prefixes that Meeussen (1967) reconstructs to a 'limitative' position in Proto-Bantu.

As in most Bantu languages (Odden & Bickmore 2014), morphosyntactic context plays an important role in determining the tonal properties of verbs in Kabarasi. Inflectional—or 'melodic'—H tones are assigned to various positions within the verb depending on its tense, aspect, and mood, among other factors. These MELODIC Hs (H_Ms) are assigned to positions within the stem according to often construction-specific rules of H_M assignment. H_Ms are subject to the general tonal processes summarized in the previous paragraph and, in some cases, other construction-specific tonal adjustment rules. A description and analysis of Kabarasi's eight inflectional tonal melodies are offered in §3.

Section 4 describes the phrasal tonology of Kabarasi verbs. Long H spans that extend across several words may be created by a pair of iterative, mutually feeding rules. One of these rules—juncture spread—only applies across word boundaries and exhibits look-ahead effects. It is a rule whereby stem-initial Hs spread onto the stem of a preceding word. The rule can cause Hs to spread across inflectional prefixes, but only if spreading into the preceding word is possible. The verb's position within the phrase does not affect most constructions that are inflected with a tonal melody. However, a few constructions that take a tonal melody phrase-finally do not realize a tonal melody in phrase-medial position. In this case, postverbal Hs spread some distance into the verb stem.

There is evidence for a three-way tonal opposition in Kabarasi: H vs. Ø vs. L. The primary contrast is between H and Ø; virtually all tonal generalizations for Kabarasi can be stated with reference only to the presence vs. absence of Hs. However, as discussed in §2.2 (also more briefly in §3.2 and §3.5), L plays a limited role in blocking a binary process of leftward spreading—throwback—in certain contexts. Whereas L blocks spreading by throwback, tonally unspecified moras do not. This is the only known evidence for phonological L in Kabarasi at this time.

The tone bearing unit (TBU) is the mora in Kabarasi. Standard arguments for establishing the mora as the TBU include evidence from the distribution of contour tones and inflectional tones (Kisseberth & Odden 2003, Marlo & Odden 2017). Heavy syllables can be realized with a level H (HH), a level L (ØØ), a rising tone (ØH), or a falling tone (HØ). In contrast, light syllables can be either level H (H) or level L (Ø) only. The observation that contour tones are restricted to heavy syllables follows naturally if the TBU is the mora and TBUs maximally bear one tone. Under this analysis, contour tones are not phonological primitives, but emerge when only one mora within a heavy syllable bears an H. Additionally, some principles of melodic H assignment target specific moras, rather than specific syllables. For instance, in the hodiernal perfective, an H_M is assigned to the second mora of the stem, whether that mora belongs to the first or second syllable (§3.1). If the syllable were the TBU in Kabarasi, it would not be possible to state the rule of melodic H assignment that applies in the hodiernal perfective.

The data presented in this article are based on original fieldwork carried out by the author in Kaimosi, Kenya, between September 2012 and June 2013 with one female speaker in her mid-forties. At the time of elicitation, the language consultant was pursuing a master's degree in molecular microbiology and biotechnology while teaching at the postsecondary level. The language consultant is multilingual, fluent in Kabarasi, Swahili, and English. The interviews were conducted in English in a quiet room. The transcriptions in this study are based on a review of recordings of the interviews made with a Marantz PMD 660 recorder with Super MOD upgrades by Oade Brothers Audio paired with a Sanken COS-11D omni-directional lavalier microphone using phantom

power. An improvised head mount was used to position the microphone near the consultant's mouth.

The general tonal processes that affect lexical tones in Kabarasi verbal constructions that are not inflected with a tonal melody are illustrated in §2. I next lay out the properties of Kabarasi's eight inflectional tone patterns ('tonal melodies') and their interactions with lexical tones (§3), and then describe phrasal tonology, with a focus on an unbounded process of leftward spreading and the complex set of restrictions that constrain its leftward extent (§4), before concluding (§5).

2. No tonal melody: all L/H on first vowel (V₁). All object prefixes and some verb roots are lexically H in Kabarasi. This section illustrates the ways in which lexical tones interact with phonological and morphological properties of the verb. Data from the near future are presented in §2.1, illustrating the general tonotactics of Kabarasi, and §2.2 discusses other constructions in which tense, aspect, and mood features are not marked with a tonal melody. Lexical Hs spread leftward onto a subset of prefixes that mark these constructions.

2.1. Near future. Verbs belong to one of two tonal classes. As shown in 1, H-toned verbs ('/H/ verbs') generally surface with a level H on the initial syllable of the stem in the near future tense. Toneless verbs ('/∅/ verbs') have an all-L surface pattern. In /H/ verbs with three or more stem syllables, as in 1a, the stem-initial syllable bears a level H, but CVVCV stems have a fall on the initial syllable, shown in 1b. CVCV stems are H on both stem syllables, as in 1c, and CV stems have an H on the initial syllable of the stem as well as on the preceding tense prefix *la-*, as in 1d.

(1) Near future 's/he will … '

/H/ verbs		/∅/ verbs	
a. a-la[xúúmbeela]	'envelop'	a-la[tʃiiŋguula]	'lift'
a-la[sáánditsa]	'thank'	a-la[seeβula]	'say bye'
a-la[sókoɲola]	'squat'	a-la[kaluʃila]	'repeat'
a-la[káraaŋga]	'fry'	a-la[lexuula]	'release'
a-la[βúkula]	'take'	a-la[kulixa]	'name'
b. a-la[réera]	'bring'	a-la[loonda]	'follow'
a-la[xáaβa]	'seek'	a-la[reeβa]	'ask'
c. a-la[βéká]	'shave'	a-la[loβa]	'refuse'
a-la[lúmá]	'bite'	a-la[lexa]	'leave (something)'
d. a-lá[xwá]	'pay dowry'	a-la[kwa]	'fall'
a-lá[rá]	'bury, place'	a-la[sja]	'grind'

Underlining indicates the underlying position of lexical tones, and square brackets denote the edges of the verb stem. Hyphens denote morpheme boundaries among prefixes. Although all verb stems are morphologically complex, including at least the root and an inflectional final suffix, morpheme boundaries within the stem are not indicated. As in several other Bantu languages (Marlo & Odden 2017), the passive *-u* and causative *-i* suffixes influence verb tone in Kabarasi. Data with these two suffixes are not considered in this article, however, and no other suffixes trigger tonal alternations in Kabarasi.

In phrase-medial position, monosyllabic and disyllabic stems pattern with longer stems, realizing just a level H on the stem-initial syllable, as shown in 2.

(2) Near future, /H/ phrase-medial verbs

a-la[rééro] muu[ndu]	's/he will bring someone'
a-la[βéko] muu[ndu]	's/he will shave someone'
a-la[ró] muu[ndu]	's/he will bury someone'

In 2, the final vowel of the verb /-a/ deletes before /o-/, the noun's augment (cf. *o-muu*[*ndu*] 'person'). The augment is the first of two prefixes that appear on nouns as part of a noun class agreement system. In *o-muu*[*ndu*] 'person', the augment is /o-/, the noun class prefix is /mu-/, and the noun root is /ndu/. Though the [o] that surfaces originates morphologically within the noun, I argue in §4 that [o] prosodifies within the verb based on evidence from tonal spreading. The vowel of the noun class prefix lengthens before a nasal-consonant sequence, a context that commonly triggers vowel lengthening in Bantu languages (Hyman 2003, Downing 2005, Odden 2015).

In trisyllabic and longer /H/ verbs with vowel-initial roots, the syllable that contains the left stem boundary surfaces with a level H, as shown in 3a. This syllable has a fall in VCV roots, given in 3b.

(3) Near future, /H/ vowel-initial verbs
    a. a-lá[ákaanila]   's/he will meet (with someone)'
          a-lá[ásamula]   's/he will sneeze'
    b. a-lé[era]   's/he will kill'

In 3b, the /a/ of the tense prefix coalesces with the /i/ of the root (cf. *o-xwi*[*ira*] 'to kill') to [e]. This pattern of coalescence is well attested in Bantu languages (Hyman 2003).

All /Ø/ verbs with vowel-initial roots are L throughout, as shown in 4.

(4) Near future, /Ø/ vowel-initial verbs
    a-la[ambaxana]   's/he will refuse'
    a-le[eluula]   's/he will winnow'
    a-la[akala]   's/he will scratch'
   a-le[enya]   's/he will want'

In near future /H/ verbs, the syllable containing the initial mora of the stem has a level H so long as it is two or more syllables away from the right edge of the phrase. I analyze the root H as underlyingly linked to the stem-initial mora. When the lexical H is linked to the first mora in a long syllable, as in *a-la*[*sáánditsa*] 's/he will thank', it spreads one mora to the right by a rule of FALL DECONTOURING. When it is linked to the second mora in a long syllable, as in *a-lá*[*ásamula*] 's/he will sneeze', the lexical H spreads one mora to the left via RISE DECONTOURING. These contour simplification rules are formalized in 5.

(5) a. FALL DECONTOURING   b. RISE DECONTOURING
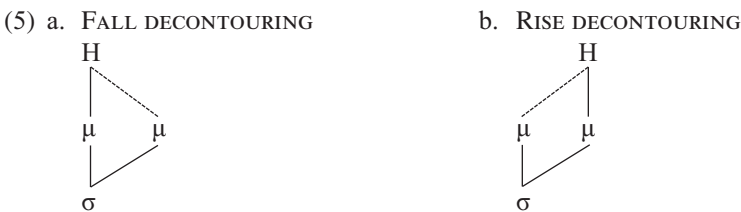
Contour tones are generally avoided in Kabarasi. However, falls are actively created in phrase-penultimate position, overriding the effects of fall decontouring and rise decontouring. PENULT FALL, which renders level Hs within long phrase-penultimate syllables as a fall, is given in 6.
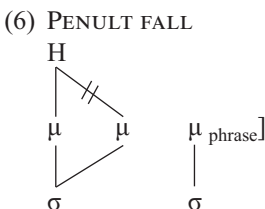
(6) PENULT FALL

Penult fall applies in CVVCV stems, for example, *a-la*[*xáaβa*] 's/he will seek'. The lexical H first spreads onto the second mora of the stem due to fall decontouring. The spreading is later undone by penult fall, as shown in 7. The ordering relationship between these two rules is crucial.

(7) Near future /H/ *a-la*[*xáaβa*] 's/he will seek'

UNDERLYING	FALL DECONTOURING	PENULT FALL
H	H	H
a – la – xaaβa	a – la – xaaβa	a – la – xaaβa
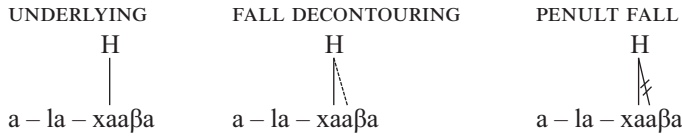
Penult fall also applies after rise decontouring. In verbs with VCV stems, such as *a-lé*[*era*] 's/he will kill', the lexical H spreads left via rise decontouring and later delinks from the stem-initial mora due to penult fall. This crucial ordering relationship is illustrated in 8.

(8) Near future /H/ *a-lé*[*era*] 's/he will kill'

UNDERLYING	RISE DECONTOURING	PENULT FALL
H	H	H
a – le – era	a – le – era	a – le – era
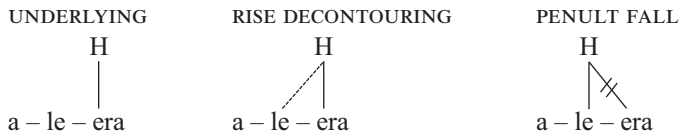
The properties of CVCV and CV stems in phrase-final position motivate two additional tonal rules: PENULT DOUBLING and THROWBACK. Preliminary formalizations are given in 9. Penult doubling spreads a phrase-penultimate H onto the final, as in *a-la*[*βéká*] 's/he will shave' (cf. *a-la*[*βéko*] *muu*[*ndu*] 's/he will shave someone'). Throwback spreads a phrase-final H onto the penult, as in *a-lá*[*rá*] 's/he will bury' (cf. *a-la*[*ró*] *muu*[*ndu*] 's/he will bury someone').

(9) a. PENULT DOUBLING (preliminary)   b. THROWBACK (preliminary)

H		H	
μ	μ $_{phrase}$]	μ	μ $_{phrase}$]

Object prefixes introduce H tones that affect stem tone. In the near future, object prefixes neutralize the lexical contrast between /H/ and /Ø/ verbs. As shown in 10a, the object prefix has an H, and the stem surfaces as all L in most cases, regardless of the verb's tonal class. In verbs with monosyllabic stems, the object prefix and the stem are both H, shown in 10b.

(10) Near future verbs with an object prefix: 's/he will … him/her'

|	/H/ VERBS		/Ø/ VERBS	
a.	a-la-mú[βukula]	'take'	a-la-mú[kulixa]	'name'
	a-la-mú[reera]	'bring'	a-la-mú[reeβa]	'ask'
	a-la-mú[βeka]	'shave'	a-la-mú[loβa]	'refuse'
b.	a-la-mú[rá]	'bury'	a-la-mú[sjá]	'grind'

I analyze the failure of the lexical H to surface in /H/ verbs as the result of MEEUSSEN'S RULE, formalized in 11, which deletes an H after another H. Evidence for Meeussen's rule taking the word as its domain of application is given in §3.1.

(11) MEEUSSEN'S RULE

H   H → Ø   Domain: word

μ   μ

Verbs with monosyllabic stems—those in 10b—surface with an H on the stem-initial syllable, regardless of the verb's tonal class. In these cases, the H of the object prefix spreads onto the stem due to penult doubling, as shown in 12.

(12) Near future /H/ *a-la-mú*[*rá*] 's/he will bury him/her'

UNDERLYING	MEEUSSEN'S RULE	PENULT DOUBLING
H H	H H → Ø	H
| |	| |	/\
a – la – mu – ra	a – la – mu – ra	a – la – mu – ra
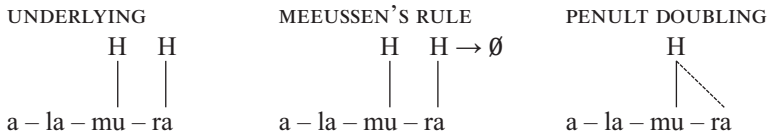
In this section, I have illustrated several tonal processes that affect lexical tones in the near future, a construction that is not marked with an inflectional tonal melody. Rise decontouring and fall decontouring simplify contour tones. The effects of decontouring may be undone by a rule of penult fall, which creates falling tones from level Hs in the penultimate syllable of the phrase. A rule of penult doubling spreads an H from the penultimate mora of the phrase onto the final, and a rule of throwback spreads a phrase-final H onto the penultimate mora. The lexical H is lost when it immediately follows an H-toned object prefix due to Meeussen's rule, which deletes H after H.

2.2. OTHER CONSTRUCTIONS. The near future is just one of several constructions that are not inflected with a tonal melody. Although all such constructions are subject to the same general tonal principles discussed in §2.1, differences emerge among these constructions with respect to the underlying tones of tense prefixes and the way that subject, tense, and aspect prefixes interact with lexical tones. For instance, lexical Hs from the root or an object prefix spread onto aspectual prefixes *axa-* and *ʃi-*, but not subject prefixes, the tense prefix *la-*, or the infinitival marker *o-xu-*. I posit the limitative stem to account for these differences, a novel morphological constituent that serves as the domain within which a rule of unbounded leftward spreading applies.

The infinitive, the present continuous, and the perfect are tonally identical to the near future. /H/ verbs are H on the initial syllable of the stem, while /Ø/ verbs are L throughout. In 13, two /H/ verbs and two /Ø/ verbs are given for each of these constructions.

(13) Other constructions with no tonal melody: /H/ and /Ø/ verbs
    a. INFINITIVES
        o-xu[sókoɲola]   'to squat'
        o-xu[xúúmbeela]   'to envelop'
        o-xu[kaluʃila]   'to repeat'
        o-xu[tʃiiŋguula]   'to lift'
    b. PRESENT CONTINUOUS
        a-la[sókoɲolaaŋga]   's/he is squatting'
        a-la[xúúmbeelaaŋga]   's/he is enveloping'
        a-la[kaluʃilaaŋga]   's/he is repeating'
        a-la[tʃiiŋguulaaŋga]   's/he is lifting'
    c. PERFECT
        u[sókoɲoole]   's/he has squatted'
        u[tsúúnzuunile]   's/he has sucked'
        u[lexuulile]   's/he has released'
        u[tʃiiŋguulile]   's/he has lifted'

In the perfect, the third-person singular subject prefix is *u-*, or *w-* before vowels, rather than the *a-* found in most other contexts. See Schneider-Zioga 2007 and Henderson 2013 on the conditions under which the *u-/w-* variant is used in Bantu verbal constructions.

Short /H/ verbs in the infinitive show adherence to the same patterns of spreading and decontouring observed in the near future. As shown in 14a, CVVCV stems have a fall, rather than a level H. The root H spreads to the final vowel in CVCV stems, shown in 14b, and the root H spreads onto the infinitival marker when the stem is monosyllabic, as in 14c.

(14) Short infinitive /H/ verbs
    a. o-xu[ré̠era]   'to bring'
        o-xu[xá̠aβa]   'to seek'
    b. o-xu[βé̠ká]   'to shave (someone)'
        o-xu[lú̠má]   'to bite'
    c. o-xú[xwá̠]   'to pay dowry'
        o-xú[rá̠]   'to bury, to place'

Perfect /H/ verbs with a CVVCV shape also have a fall on the initial syllable, as in u[xwé̠ere] 's/he has paid dowry'. Shorter stem shapes are not possible in the perfect and the present continuous due to their suffixal morphology. In the present continuous, the imperfective suffix -aŋg is added to all forms, and monosyllabic roots take either -its or -ets: semantically null stem extenders (Marlo 2006). Verbs in the present habitual therefore contain at least three syllables. See §3.1 for more on the perfective suffix and its interactions with stem shape.

The root H shifts onto the tense prefix la- and the infinitival marker o-xu- only in verb forms with monosyllabic stems due to throwback, whereby phrase-final Hs spread to the penult. However, the root H spreads onto the aspectual prefixes that mark the remote future (axa-), the immediate past (axa-), and the persistive (ʃi-), even in verbs with longer stems. As shown in 15, /H/ verbs are realized with an H that extends from the aspectual prefix through the initial syllable of the stem. /Ø/ verbs are L throughout.

(15) Spreading onto aspectual prefixes: /H/ and /Ø/ verbs
    a. REMOTE FUTURE
        j-áxá[só̠koɲole]   's/he will squat'
        j-áxá[xú̠úmbeele]   's/he will envelop'
        j-axa[kaluʃile]   's/he will repeat'
        j-axa[tʃiiŋguule]   's/he will lift'
    b. IMMEDIATE PAST
        w-áxá[só̠koɲola]   's/he just squatted'
        w-áxá[xú̠úmbeela]   's/he just enveloped'
        w-axa[kaluʃila]   's/he just repeated'
        w-axa[tʃiiŋguula]   's/he just lifted'
    c. PERSISTIVE
        a-ʃí[só̠koɲolaaŋga]   's/he is still squatting'
        a-ʃí[sá̠ánditsaaŋga] 's/he is still thanking'
        a-ʃi[kulixaaŋga]   's/he is still naming'
        a-ʃi[tʃiiŋguulaaŋga] 's/he is still lifting'

As in the perfect, the third-person singular subject prefix is u-/w- in the immediate past. The j- in the remote future is the regular prevocalic allomorph of the third-person singular subject prefix. That is, the third-person singular prefix is generally a- before consonants and j- before vowels.

The aspectual prefixes for the remote future, the immediate past, and the persistive are H, regardless of the verb's tonal class, when an object prefix is present. The object prefix itself is also H. As shown in 16, the stem is L in verbs of both tonal classes.

(16) Spreading onto aspectual prefixes: /H/ and /Ø/ verbs with an object prefix

    a. REMOTE FUTURE

        j-áxá-mú[βu̱kule]   's/he will take him/her'

        j-áxá-mú[xu̱umbeele]   's/he will envelop him/her'

        j-áxá-mú[kaluʃile]   's/he will defend him/her'

        j-áxá-mú[tʃiiŋguule]   's/he will lift him/her'

    b. IMMEDIATE PAST

        w-áxá-mú[βu̱kula]   's/he just took him/her'

        w-áxá-mú[xu̱umbeela]   's/he just enveloped him/her'

        w-áxá-mú̱[kaluʃila]   's/he just defended him/her'

        w-áxá-mú̱[tʃiiŋguula]   's/he just lifted him/her'

    c. PERSISTIVE

        a-ʃí-mú[βo̱joŋanaaŋga]   's/he is still going around him/her'

        a-ʃí-mú[saanditsaaŋga]   's/he is still thanking him/her'

        a-ʃí-mú[kulixaaŋga]   's/he is still naming him/her'

        a-ʃí-mú̱[tʃiiŋguulaaŋga] 's/he is still lifting him/her'

The prefixes that mark these three constructions are L when paired with /Ø/ verbs that lack an object prefix. When an object prefix is present, or the verb root is /H/, the prefixes are also H. I analyze the aspectual prefixes as underlyingly toneless. This accounts for the fact that, if no other morpheme introduces an H, the prefixes surface as L. When present, Hs from the verb root or an object prefix spread left onto the prefixes by a process of LEXICAL TONE ANTICIPATION. The root H, as in the near future (§2.1), is deleted by Meeussen's rule following the H of the object prefix.

    The question arises as to why lexical Hs spread through the remote future *axa-*, the immediate past *axa-*, and the persistive *ʃi-*, but not the near future *la-*, present continuous *la-*, the infinitival marker *o-xu-*, or subject prefixes. I attribute the difference to a domain-of-application restriction on lexical tone anticipation. The prefixes that mark the remote future, the immediate past, and the persistive are within the rule's domain of application; all other inflectional prefixes lie outside of this domain.

    The prefixes in this domain all belong to the small set of prefixes that Meeussen (1967) reconstructs to a 'limitative' position in Proto-Bantu—a position between object markers and all other inflectional prefixes. The members of this set and their functions are summarized in 17.

(17) Meeussen's (1967) limitative prefixes

    a. *ka-   motional, 'go to do … '

    b. *ka-   inceptive, 'already; not yet'

   c. *kí-   persistive, 'still; no more'

The immediate past *axa-* and the persistive *ʃi-* are transparently cognate with Meeussen's 'inceptive' and 'persistive' limitative prefixes, respectively. I propose that the remote future *axa-* is cognate with Meeussen's 'motional' prefix. Its form is consistent with the segmental correspondence that holds between the immediate past *axa-* and Meeussen's inceptive *ka-*. The correspondence in meaning between the remote future *axa-* and Meeussen's 'motional' prefix is less transparent, although there is precedent to link the notions of motion and futurity. Verbs of motion commonly grammaticalize into future markers (Heine et al. 1993, Bybee et al. 1994), and this phenomenon is well attested in Bantu (Botne 2006).

    Finally, tracing all verbal prefixes affected by lexical tone anticipation to Meeussen's limitative position lays the foundation for a simple account of the exceptional tonal be-

havior of these prefixes. Namely, lexical tone anticipation takes as its domain of application the limitative stem: a constituent that consists of the inflected stem, any object prefixes, and this small set of aspectual prefixes. Lexical Hs spread into the limitative prefixes because they are within the limitative stem; lexical Hs do not spread into other inflectional prefixes because they are outside of this domain. A preliminary formulation of lexical tone anticipation is given in 18; further restrictions on its application will be introduced in §4.

(18) Lexical tone anticipation (preliminary)

$$
\begin{array}{ll}
H_{lex} & \text{Iterative} \\
& \text{Domain: limitative stem} \\
\mu \quad \mu &
\end{array}
$$
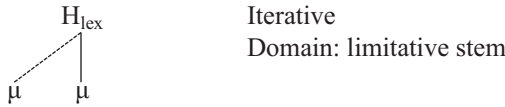
An alternative analysis that does not invoke a novel phonological domain would be to stipulate that subject prefixes, the *la-* tense prefix, and the infinitival marker *o-xu-* are /L/, and so prevent lexical tone anticipation from spreading further than the stem boundary. In contrast, the limitative prefixes are toneless, and so may acquire an H through lexical tone anticipation. I reject this analysis on the basis that, while analyzing subject prefixes as /L/ is consistent with other aspects of the tonology, analyzing *la-* and *o-xu-* as /L/ is not.

I invoke an /L/ vs. /Ø/ contrast among verbal prefixes in order to account for differences in how prefixes interact with throwback. In particular, I propose that throwback can spread a phrase-final H onto /Ø/ prefixes, but cannot spread Hs onto /L/ prefixes. In verb forms with monosyllabic stems, root Hs spread onto *la-* in the near future (*a-lá[xwá̱]* 's/he will pay dowry') and the *xu-* in infinitives (*o-xú[xwá̱]* 'to pay dowry'). A phrase-final H can also spread onto the tense prefix that marks the remote past (§3.3), as in *j-á[sjá]* 's/he ground'. In contrast, phrase-final Hs do not spread onto subject prefixes, as in the subjunctive (§3.2): *a[sjé]* 'let him/her grind'. Spreading onto the tense prefix that marks the distant future (§3.5) is also not observed, as in *a-li[sjá]* 's/he will grind'. Under this approach, near future *la-*, infinitival *o-xu-*, and remote past *a-* are /Ø/, whereas subject prefixes and distant future *li-* are /L/. Constraining the application of lexical tone anticipation through an /L/ vs. /Ø/ contrast among verbal prefixes is at odds with this analysis of throwback, as it would require that *la-* and *o-xu-* be analyzed as /L/ rather than /Ø/.

An H vs. L vs. Ø contrast is not commonly reported in Bantu, though van Otterloo (2011, 2014) and Kaji (1996) posit this three-way contrast for Fuliiru and Tembo, respectively. The failure of throwback to spread phrase-final Hs onto subject prefixes and the tense prefix *li-* is the only known evidence for an /L/ vs. /Ø/ contrast in Kabarasi. However, an /L/ vs. /Ø/ contrast among verbal prefixes is independently motivated in the Idakho variety of Luhya. In Idakho, /H/ verbs (e.g. *xu[lé̱era]* 'to bring') realize an H on the initial mora of the stem in the near future, but only with third-person subjects, as shown in 19a. In 19b, the root H is lost in forms with second- or first-person subjects.

(19) Subject prefixes in Idakho

		SINGULAR		PLURAL	
a.	3rd	a-la[lé̱era]	's/he will bring'	βa-la[lé̱era]	'they will bring'
b.	2nd	u-la[le̱era]	'you will bring'	mu-la[le̱era]	'you (pl) will bring'
	1st	n-a[le̱era]	'I will bring'	xu-la[le̱era]	'we will bring'

Ebarb 2014 analyzes first- and second-person subject prefixes as /L/ and third-person subject prefixes as /Ø/. Subject prefix Ls spread iteratively rightward through the initial mora of the stem, overwriting any intervening tones.

3. TONAL MELODIES. Like other Luhya languages (Ebarb et al. 2014), and indeed most Bantu languages (Kisseberth & Odden 2003, Marlo 2013, Odden & Bickmore 2014, Marlo & Odden 2017), Kabarasi has an inflectional tone system in which morphosyntactic features, such as tense, aspect, and mood, are expressed in part by the choice of regular tonal pattern, or TONAL MELODY. Each tonal melody is characterized by one or two H_Ms, which appear in predictable locations within the verb stem or the MACROSTEM, a unit of structure that includes the verb stem as well as any object prefixes. Tonal adjustment rules, such as rise decontouring, fall decontouring, penult fall, penult doubling, and throwback, can influence the surface position of the H_M. Some tonal adjustment rules are construction-specific, applying only in a small number of morphosyntactic contexts. A verb's lexical tone also interacts with H_Ms.

3.1. MELODY 1: H ON SECOND VOWEL (V_2)/ALL L. A common tonal melody in Kabarasi verbal constructions is characterized by an H_M that targets the second stem mora in /Ø/ verbs and an all-L stem tone pattern in /H/ verbs. In /Ø/ verbs, the H_M also sometimes appears on other moras of the stem in accordance with the general tonotactic principles of the language.

/Ø/ verbs in the imperative$_{sg}$ negative always realize the H_M on at least the second mora of the stem. When the initial syllable of the stem is long, the H_M also surfaces on the initial mora of the stem, as in 20a and 20d; when the initial syllable is short and the second is long, the H_M surfaces on the second and third moras of the stem, as in 20b. In verbs with monosyllabic or disyllabic stems, the H_M is realized on the sole stem mora, shown in 20e.
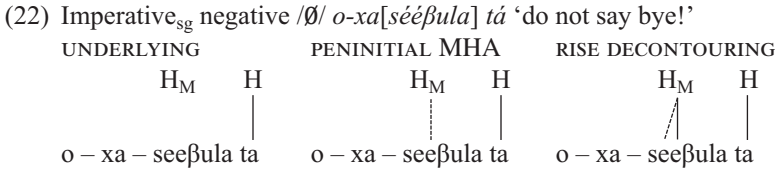
(20) Imperative$_{sg}$ negative, /Ø/ verbs
    a. o-xa[tʃííŋguulila] tá   'do not lift for!'
       o-xa[rééβareeβa] tá   'do not repeatedly ask!'
       o-xa[tʃííŋguula] tá   'do not lift!'
       o-xa[sééβula] tá   'do not say bye!'
    b. o-xa[tsuxúúlula] tá   'do not pour slowly!'
       o-xa[lexúúla] tá   'do not release!'
    c. o-xa[jaβíla] tá   'do not bury!'
       o-xa[kulíxa] tá   'do not name!'
    d. o-xa[lóónda] tá   'do not follow!'
       o-xa[rééβa] tá   'do not ask!'
    e. o-xa[loβá] ꜛtá   'do not refuse!'
       o-xa[lexá] ꜛtá   'do not leave (something)!'
       o-xa[kwá] ꜛtá   'do not fall!'
       o-xa[sjá] ꜛtá   'do not grind!'

The H_M is positioned by PENINITIAL MELODIC H ASSIGNMENT (peninitial MHA) in imperative$_{sg}$ negative /Ø/ verbs. Peninitial MHA—formalized in 21—assigns the H_M to the second mora of the stem. To account for the fact that the H_M is realized on the sole mora of monosyllabic stems, the first mora of the stem is enclosed with parentheses; should the full extension of the rule fail to apply, the H_M is assigned to the initial mora of the stem.
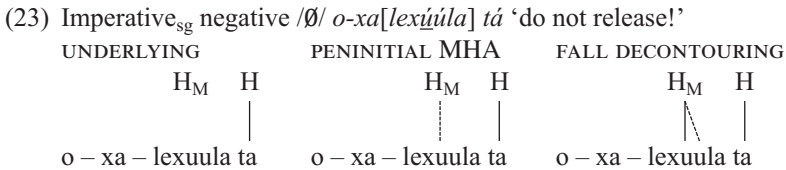
(21) PENINITIAL MELODIC H ASSIGNMENT (preliminary)

$$H_M$$
$$\vdots$$
$$[_{stem} (\mu) \quad \mu$$
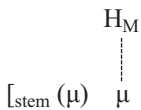
Following peninitial MHA, the H_M is subject to the same general rules that affect lexical tones. For example, when the initial syllable is long, as in *o-xa[sééβula] tá* 'do not say bye!', rise decontouring eliminates the intermediate rise by spreading the H_M onto the stem-initial mora, as shown in 22.

(22) Imperative$_{sg}$ negative /Ø/ *o-xa[sééβula] tá* 'do not say bye!'

```
   UNDERLYING            PENINITIAL MHA         RISE DECONTOURING
   H_M      H            H_M      H             H_M       H
    |                     ┊       |              /|       |
o – xa – seeβula ta   o – xa – seeβula ta   o – xa – seeβula ta
```
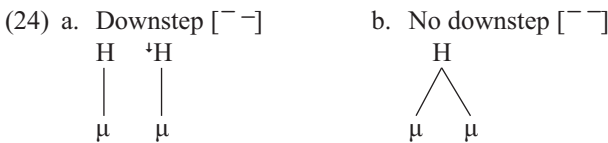
When the first syllable is short and the second is long, fall decontouring eliminates the intermediate fall by spreading the H_M onto the third stem mora, as shown in 23.

(23) Imperative$_{sg}$ negative /Ø/ *o-xa[lexu̯úúla] tá* 'do not release!'

```
   UNDERLYING            PENINITIAL MHA         FALL DECONTOURING
   H_M      H            H_M      H             H_M       H
    |                     ┊       |              |\       |
o – xa – lexuula ta   o – xa – lexuula ta   o – xa – lexuula ta
```

The imperative$_{sg}$ negative has an H-toned, clause-final negative marker *tá*. Aspects of its interaction with stem tone raise several questions. In §2.1, we saw that a rule of throwback spreads phrase-final Hs onto the penult. Given this, why does the H of *tá* not spread onto the verb, even in long stems such as *o-xa[tʃííŋguulila] tá* 'do not lift for!'? We also saw in §2.1 that Meeussen's rule deletes the second of two Hs linked to adjacent moras. Why does the H of *tá* not delete following verb-final H_Ms, as in *o-xa[loβá]* ꜜ*tá* 'do not refuse!'?

That the H of *tá* does not spread onto preceding verbs may be analyzed as a domain restriction on the application of throwback. In particular, throwback does not predict spreading in *o-xa[tʃííŋguulila] tá* 'do not lift for!' if it is restricted to applying only within words or, if *tá* is analyzed as an enclitic, the stem.

The H of *tá* is not deleted following verb-final H_Ms, but is rather downstepped—produced with reduced pitch—relative to the H_M, as in *o-xa[loβá]* ꜜ*tá* 'do not refuse!'. Following Bickmore (2000) and Odden (1982), inter alia, I analyze downstep as the phonetic interpretation of the phonological representation given in 24a, wherein distinct Hs are linked to adjacent moras. No downstep is observed when adjacent moras are linked to the same H, as in 24b.

(24) a. Downstep [¯ ⁻]   b. No downstep [¯ ¯]
```
         H    ꜜH                           H
         |     |                          / \
         μ     μ                         μ   μ
```

Near future /H/ verbs with an object prefix, such as *a-la-mú[βu̯kula]* 's/he will take him/her', showed that the second H in a sequence of two Hs on adjacent moras is lost, via Meeussen's rule. That the H of *tá* is not deleted by Meeussen's rule may also be analyzed as a restriction on the rule's domain of application. Namely, Meeussen's rule applies within words, or, minimally, within the macrostem. An alternative analysis invokes rule ordering: Meeussen's rule precedes peninitial MHA in the derivation. This analysis is rejected on the basis of /H/ verb forms that include an object prefix; as is shown below, such forms require that, in fact, peninitial MHA must precede Meeussen's rule.

The negative marker has a more direct influence on verb tone in that its presence prevents rules that are sensitive to the verb's position within the phrase from applying. The
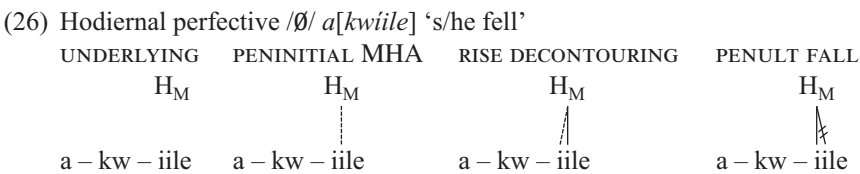
hodiernal perfective takes the same tonal melody as the imperative$_{sg}$ negative, but lacks the negative marker. In long /Ø/ verbs (greater than three stem syllables) with long stem-initial syllables, both the first and second moras of the stem are H, as in 25a. In long verbs with short initial syllables and long second syllables, it is the second and third moras of the stem that are H, as in 25b. In trisyllabic stems beginning with a short initial syllable, long second syllables have a fall, as in 25c. When the second syllable is short (CVCVCV), the second and final vowels are H, as in 25d. Finally, CVVCV stems realize just a fall on the initial syllable, as in 25e.

(25) Hodiernal perfective, /Ø/ verbs
   a. a[tʃííŋguulile]   's/he lifted'
      a[sééβuule]   's/he said bye'
      a[rééβile]   's/he asked'
   b. a[lexúúlile]   's/he released'
   c. a[kalúuʃe]   's/he returned'
   d. a[loβílé]   's/he refused'
   e. a[kwíile]   's/he fell'

Smaller stem shapes are not possible in this context because the hodiernal perfective takes the perfective suffix *-ile*. Thus, verbs with CV roots minimally have CVVCV stems. Compare, for instance, *a[kwíile]* 's/he fell' and *o-xu[kwa]* 'to fall'. Also, the perfective suffix is subject to imbrication: when the suffix attaches to a multisyllabic base that ends in a short vowel, [il] is lost and the base-final syllable lengthens, as in *a[sééβuule]* 's/he said bye' (cf. *o-xu[seeβula]* 'to say bye'). See Bastin 1983 for more on patterns of imbrication in Bantu and Ebarb & Marlo 2015 for more on imbrication in Luhya.

The data in 25 show that all of the same tonal processes observed in near future verb forms (§2.1) interact with H$_M$s in addition to lexical Hs. As in imperative$_{sg}$ negative /Ø/ verbs with long initial syllables, such as *a[rééβile]* 's/he asked', the H$_M$ is assigned to the second mora of the stem and then spreads left onto the initial mora via rise decontouring. When the initial syllable is short and the second is long, as in *a[lexúúlile]* 's/he released', the H$_M$ is assigned to the second mora of the stem, then spreads right onto the third mora by fall decontouring.

In verbs with CVCVCV stems, like *a[loβílé]* 's/he refused', the H$_M$ spreads from the second mora to the final via penult doubling. Verbs with CVVCV stems (e.g. *a[kwíile]* 's/he fell') assign the H$_M$ first to the second mora of the stem. The H$_M$ then spreads to the initial mora via rise decontouring. Finally, it delinks from the second stem mora via penult fall. A derivation is given in 26.

(26) Hodiernal perfective /Ø/ *a[kwíile]* 's/he fell'

UNDERLYING	PENINITIAL MHA	RISE DECONTOURING	PENULT FALL
H$_M$	H$_M$	H$_M$	H$_M$
a – kw – iile	a – kw – iile	a – kw – iile	a – kw – iile

We return now to the imperative$_{sg}$ negative. /Ø/ verbs with an object prefix have the same stem tone pattern as parallel forms without an object prefix: the syllable containing the second stem mora has a level H. The object prefix itself surfaces L, as shown in 27.

(27) Imperative$_{sg}$ negative, /Ø/ verbs with an object prefix
   o-xa-mu̲[tʃííŋguulila] tá   'do not lift for him/her!'
   o-xa-mu̲[tʃííŋguula] tá   'do not lift him/her!'
   o-xa-mu̲[sééβula] tá   'do not say bye to him/her!'

o-xa-k<u>a</u>[tsuxúúlula] tá	'do not pour it₆ slowly!'
o-xa-m<u>u</u>[lexúúla] tá	'do not release him/her!'
o-xa-m<u>u</u>[jaβíla] tá	'do not bury him/her!'
o-xa-m<u>u</u>[kulíxa] tá	'do not name him/her!'
o-xa-m<u>u</u>[lóónda] tá	'do not follow him/her!'
o-xa-m<u>u</u>[rééβa] tá	'do not ask him/her!'
o-xa-m<u>u</u>[loβá] ꜜtá	'do not refuse him/her!'
o-xa-m<u>u</u>[lexá] ꜜtá	'do not leave him/her'
o-xa-m<u>u</u>[sjá] ꜜtá	'do not grind him/her!'

Object prefixes introduce an H in near future /∅/ verbs, for example, *a-la-mú*[*kulixa*] 's/he will name him/her' (cf. *a-la*[*kulixa*] 's/he will name'). This demonstrates that the object prefix is underlyingly H-toned. The failure of the object prefix H to surface in hodiernal perfective /∅/ verbs is analyzed as the result of INITIAL LOWERING, whereby Hs that are initial within the macrostem delete in constructions with an H_M. As shown in 28, the H_M need not be associated to a TBU to satisfy the rule's structural description.

(28) INITIAL LOWERING

$$H \rightarrow \varnothing \quad H_M$$

[with association line from H to μ, bracketed macrostem[μ]
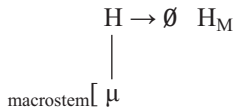
Simple /H/ verbs are realized with an all-L surface pattern in the imperative_sg negative, as shown in 29.

(29) Imperative_sg negative, /H/ verbs

o-xa[s<u>o</u>koɲola] t<u>á</u>	'do not squat!'
o-xa[x<u>u</u>umbeela] t<u>á</u>	'do not envelop!'
o-xa[s<u>a</u>anditsa] t<u>á</u>	'do not thank!'
o-xa[k<u>a</u>raaŋga] t<u>á</u>	'do not fry!'
o-xa[βukula] t<u>á</u>	'do not take!'
o-xa[r<u>e</u>era] t<u>á</u>	'do not bring!'
o-xa[x<u>a</u>aβa] t<u>á</u>	'do not seek!'
o-xa[β<u>e</u>ka] t<u>á</u>	'do not shave (someone)!'
o-xa[l<u>u</u>ma] t<u>á</u>	'do not bite!'
o-xa[xw<u>a</u>] t<u>á</u>	'do not pay dowry!'
o-xa[r<u>a</u>] t<u>á</u>	'do not bury!'

Neither the root H nor the H_M surfaces in the forms above. The failure of the H_M to surface in /H/ verbs is analyzed as resulting from a requirement that the target of peninitial MHA—the second stem mora—be preceded by a toneless mora (μ'). At the relevant point in the derivation, the root H is associated with the initial stem mora, blocking H_M assignment. Peninitial MHA is revised in 30 to reflect this requirement.

(30) PENINITIAL MELODIC H ASSIGNMENT (final)

$$H_M$$

[with dashed association line] [_stem (μ') μ]
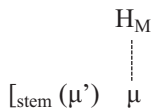
The lexical H fails to surface in hodiernal perfective /H/ verbs because of initial lowering. In forms with no object prefix, the initial mora of the stem is also the initial mora of the macrostem. Though the H_M fails to link to the verb, it triggers initial lowering, deleting the root H. Initial lowering crucially applies after peninitial MHA; if these rules applied in reverse order, the root H would not be present to block assignment of the H_M to the second stem mora. A derivation is given in 31.

(31) Imperative$_{sg}$ negative /H/ *o-xa[sokoɲola] tá* 'do not squat!'

UNDERLYING	PENINITIAL MHA	INITIAL LOWERING
H H$_M$ H		∅ ← H H$_M$ H
| |	*Does not apply*	| |
o – xa – sokoɲola ta		o – xa – sokoɲola ta

/H/ verbs with an object prefix, shown in 32, have a level H on the initial syllable of the stem. The object prefix itself is L.

(32) Imperative$_{sg}$ negative, /H/ verbs with an object prefix

o-xa-m<u>u</u>[xúpaxupa] t<u>á</u>	'do not repeatedly beat him/her!'
o-xa-m<u>u</u>[xúúmbeela] t<u>á</u>	'do not envelop him/her!'
o-xa-m<u>u</u>[βúkula] t<u>á</u>	'do not take him/her!'
o-xa-m<u>u</u>[rééra] t<u>á</u>	'do not bring him/her!'
o-xa-m<u>u</u>[xááβa] t<u>á</u>	'do not seek him/her!'
o-xa-m<u>u</u>[βéka] t<u>á</u>	'do not shave him/her!'
o-xa-m<u>u</u>[lúma] t<u>á</u>	'do not bite him/her!'
o-xa-m<u>u</u>[rá] ꜜt<u>á</u>	'do not bury him/her!'

As in forms without an object prefix, the root H blocks peninitial MHA from applying. The H$_M$ therefore fails to link to the verb. Initial lowering does not affect the root H in this context. When an object prefix is present, the root H is not in macrostem-initial position; instead, initial lowering targets the object prefix H. That the root H surfaces indicates that initial lowering must precede Meeussen's rule. If the rules were reversed, neither the object prefix H nor the root H would surface because Meeussen's rule, not shown in derivation 33, would delete the root H before initial lowering deletes the object prefix H. When the initial syllable of the stem is long, fall decontouring spreads the root H onto the second stem mora. The analysis of /H/ imperative$_{sg}$ negative verbs with an object prefix is illustrated in 33.

(33) Imperative$_{sg}$ negative /H/ *o-xa-mu[xúúmbeela] tá* 'do not envelop him/her!'

UNDERLYING	PENINITIAL MHA
H H H$_M$ H	
| | |	*Does not apply*
o – xa – mu – xuumbeela ta	

INITIAL LOWERING	FALL DECONTOURING
∅ ← H H H$_M$ H	H H$_M$ H
| | |	
o – xa – mu- xuumbeela ta	o – xa – mu – xuumbeela ta

As noted previously, the hodiernal perfective also takes melody 1. That is, /H/ verbs are realized with an all-L surface pattern without any object prefixes. With an object prefix, the initial syllable is H. /∅/ verbs realize an H$_M$ on at least the second stem mora, with and without an object prefix. Representative verb forms are given in 34. The hodiernal perfective is the only affirmative tense that takes this melody in Kabarasi.

(34) Affirmative melody 1 constructions

HODIERNAL PERFECTIVE

a[βojoŋaane]	's/he went around'
a-m<u>u</u>[βójoŋaane]	's/he went around him/her'
a[lexúúlile]	's/he released'
a-m<u>u</u>[lexúúlile]	's/he released him/her'

The negative constructions in 35 also take melody 1.

(35) Negative melody 1 constructions

    a. Present habitual negative

        ʃʲ-aa[β̞o̠jo̠ŋanaaŋga] tá   's/he does not go around'

        ʃʲ-aa-mu̠[β̞ójo̠ŋanaaŋga] tá   's/he does not go around him/her'

        ʃʲ-aa[kalúʃilaaŋga] tá   's/he does not repeat'

        ʃʲ-aa-mu̠[kalúʃilaaŋga] tá   's/he does not defend him/her'

    b. Imperative_PL negative

        mu-xa[β̞o̠jo̠ŋane] tá   'do not go around!'

        mu-xa-mu̠[β̞ójo̠ŋane] tá   'do not go around him/her!'

        mu-xa[kalúʃile] tá   'do not repeat!'

        mu-xa-mu̠[kalúʃile] tá   'do not defend him/her!'

    c. Subjunctive negative

        a-xa[β̞o̠jo̠ŋana] tá   'let him/her not go around'

        a-xa-mu̠[β̞ójo̠ŋana] tá   'let him/her not go around him/her'

        a-xa[kalúʃila] tá   'let him/her not repeat'

        a-xa-mu̠[kalúʃila] tá   'let him/her not defend him/her'

    d. Conditional negative

        ná̠-á-xa[β̞o̠jo̠ŋana] tá   'if s/he does not go around'

        ná̠-á-xa-mu̠[β̞ójo̠ŋana] tá   'if s/he does not go around him'

        ná̠-á-xa[tʃííŋguulila] tá   'if s/he does not lift for'

        ná̠-á-xa-mu̠[tʃííŋguulila] tá 'if s/he does not lift for him/her'

The conditional negative is unique among the constructions that take melody 1 because it includes the H-toned particle *nV́-* before the subject prefix.[1] The particle H spreads onto the subject prefix due to fall decontouring, but does not otherwise influence verb tone.

3.2. Melody 2: H on second syllable (S₂). The subjunctive is marked with an H_M on the second syllable of the stem, irrespective of the verb root's tonal class and the weight of the stem-initial syllable. As shown in 36a, the second stem syllable has a level H in long verbs. Second stem syllables that are long have a fall if they are also penultimate, shown in 36b. The H_M spans two syllables in shorter stems. As shown in 36c, the final vowel of the verb is H if the second stem syllable is both short and penultimate. In disyllabic stems, the final and penultimate moras are H, shown in 36d. Finally, if the stem is monosyllabic, the sole stem mora is H, as seen in 36e.
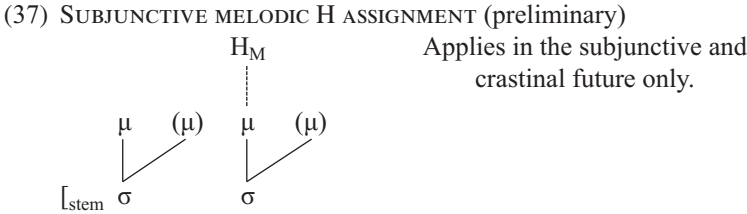
(36) Subjunctive, 'let him/her … '

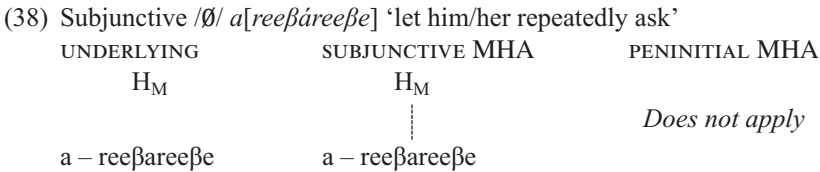|	/H/ verbs		/Ø/ verbs	
a.	a[so̠kóɲole]	'squat'	a[kalúʃile]	'repeat'
	a[xa̠aβ̞áxaaβ̞e]	'repeatedly seek'	a[reeβ̞áreeβ̞e]	'repeatedly ask'
			a[tsuxúúlule]	'pour slowly'
b.	a[xu̠umbéele]	'envelop'	a[tʃiiŋgúule]	'lift'
	a[ka̠ráaɲdʒe]	'fry'	a[lexúule]	'release'
c.	a[sa̠andítsé]	'thank'	a[seeβ̞úlé]	'say bye'
	a[β̞u̠kúlé]	'take'	a[kulíʃé]	'name'
d.	a[re̠éré]	'bring'	a[loóndé]	'follow'
	a[xa̠áβ̞é]	'seek'	a[reéβ̞é]	'ask'
	a[β̞étʃé]	'shave'	a[lóβ̞é]	'refuse'
	a[lúmé]	'bite'	a[léʃé]	'leave (something)'

[1] Before consonant-initial subject prefixes, such as third plural *βa-*, the particle *nV́-* is realized as [ní]: *ní̠-βá*[*ká̠ráaɲdʒe*] 'they will fry'. Before vowel-initial subject prefixes, such as third singular *a-* and second singular *o-*, the quality of the particle's vowel matches that of the subject prefix. That is, /nV́-/ + /a-/ is realized as [ná̠-á], as in *ná̠-á*[*ká̠ráaɲdʒe*] 's/he will fry', and /nV́-/ + /o-/ is realized as [nó̠-ó], as in *nó̠-ó*[*ká̠ráaɲdʒe*] 'you will fry'.

e. a[xwé]   'pay dowry'   a[kwé]   'fall'
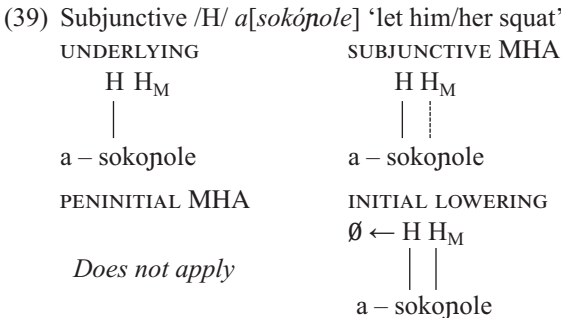   a[ré]   'bury, place'   a[sjé]   'grind'

Because the subjunctive is inflected with a tonal melody, initial lowering applies and the root H is lost in /H/ verbs. The H_M is assigned by a rule, formalized in 37, that targets the initial mora of the second stem syllable.

(37) Subjunctive melodic H assignment (preliminary)

H_M Applies in the subjunctive and
                                 crastinal future only.

μ   (μ)   μ   (μ)

[stem σ   σ

Peninitial MHA is a rule of H_M assignment that targets the second stem mora. Of all the H_M assignment rules, peninitial MHA applies in the most varied contexts, including the imperative_sg negative (melody 1, §3.1), the remote past (melody 3, §3.3), the hodiernal perfective negative (melody 6, §3.6), and even in subjunctive verb forms that include an object prefix. For this reason, peninitial MHA is analyzed as a general rule of the tonology. That is, its application is not constrained to a limited set of morphosyntactic contexts. In contrast, subjunctive MHA applies only in the subjunctive and the subjunctive-based crastinal future. Subjunctive MHA assigns the H_M to the stem in the subjunctive, and not peninitial MHA, because it precedes peninitial MHA in the derivation. This is motivated by forms like a[reeßáreeße] 'let him/her repeatedly ask', derived in 38; if the order of these H_M assignment rules were reversed, the analysis would predict unattested *a[rééßareeße] (after rise decontouring applies).

(38) Subjunctive /Ø/ a[reeßáreeße] 'let him/her repeatedly ask'
     UNDERLYING   SUBJUNCTIVE MHA   PENINITIAL MHA
        H_M H_M

                                                          Does not apply
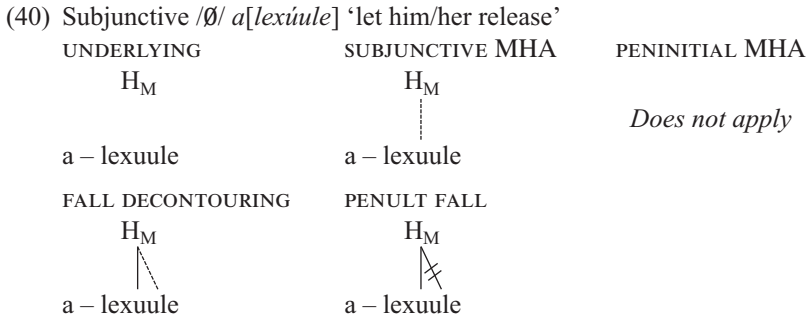
     a – reeßareeße   a – reeßareeße

The H_M is assigned to the second stem mora in /H/ subjunctive verb forms that begin with two short syllables because, unlike peninitial MHA, subjunctive MHA does not require that the mora preceding its target be toneless. A derivation of a[sokóɲole] 'let him/her squat' is given in 39.

(39) Subjunctive /H/ a[sokóɲole] 'let him/her squat'
     UNDERLYING   SUBJUNCTIVE MHA
        H H_M H H_M

     a – sokoɲole   a – sokoɲole

     PENINITIAL MHA   INITIAL LOWERING
                             Ø ← H H_M

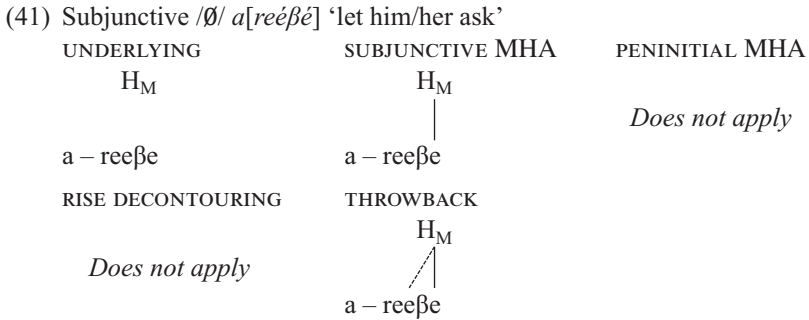   Does not apply

                             a – sokoɲole

After subjunctive MHA assigns the H_M to the stem, the usual suite of tonal rules also apply: fall decontouring, penult fall, rise decontouring, and throwback. When the second syllable is long, the H_M is subject to fall decontouring, as in a[tsuxúúlule] 'let him/ her pour slowly'. When the second syllable is long and penultimate within the phrase, the H_M surfaces as a fall as in a[lexúule] 'let him/her release'; as shown in 40, this is because penult fall follows fall decontouring in the derivation.

(40) Subjunctive /Ø/ *a*[*lexúule*] 'let him/her release'

UNDERLYING	SUBJUNCTIVE MHA	PENINITIAL MHA
H_M	H_M	
	⋮	*Does not apply*
a – lexuule	a – lexuule	

FALL DECONTOURING	PENULT FALL
H_M	H_M
a – lexuule	a – lexuule

When the second syllable is short and penultimate within the phrase, penult doubling spreads the H_M onto the final vowel, as in *a*[*seeβúlé*] 'let him/her say bye'. In CVCV stems, such as *a*[*lóβé*] 'let him/her refuse', throwback spreads the H_M from the final vowel onto the penult.

In CVVCV stems, the H_M also spreads from the final vowel to the penult due to throwback, as in *a*[*reéβé*] 'let him/her ask'. That CVVCV stems begin with a rise indicates that rise decontouring precedes throwback in the derivation, as in 41. If the order were reversed, the analysis would predict CVVCV stems to be H throughout.

(41) Subjunctive /Ø/ *a*[*reéβé*] 'let him/her ask'

UNDERLYING	SUBJUNCTIVE MHA	PENINITIAL MHA
H_M	H_M	
		Does not apply
a – reeβe	a – reeβe	

RISE DECONTOURING	THROWBACK
	H_M
Does not apply	
	a – reeβe

In verbs with monosyllabic stems, such as *a*[*kwé*] 'let him/her fall', the H_M surfaces on the sole stem mora only. This observation is surprising for two reasons: (i) H_M assignment applies, despite there being no second syllable for the rule to target, and (ii) these forms stand as an exception to the generalization that phrase-final Hs are also realized on the penultimate mora due to throwback.

To account for the data involving monosyllabic stems, I revise the original formulation of the subjunctive's H_M assignment rule as in 42 below. This formulation includes parentheses around the initial syllable. The parentheses denote that the initial syllable is an optional extension of the rule. If the stem has two or more syllables, the full form of the rule applies and assigns the H_M to the initial mora of the second syllable. If the stem has only one syllable, the short form applies and assigns the H_M to the initial mora of the only syllable.

(42) SUBJUNCTIVE MELODIC H ASSIGNMENT (final)

$$H_M$$

$$\mu \quad (\mu) \quad \mu \quad (\mu)$$
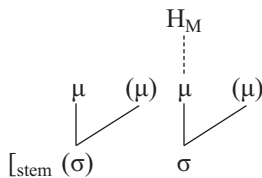
$$[_{\text{stem}} (\sigma) \quad \sigma$$

A question arises as to why the H_M is not subject to throwback. Verbs with CVCV stems like *a*[*lúmé*] 'let him/her bite' show that this rule influences the H_M in some subjunctive verb forms, and monosyllabic stems in the near future, such as *a-lá*[*xwá*] 's/he

will pay dowry', show that throwback can affect the tonal properties of prefixes. I posit that subject prefixes are L-toned morphemes that block throwback from applying. The near future tense prefix *la-* is not L-toned, but rather toneless; throwback is therefore not blocked from spreading onto this prefix. Further evidence for an /L/ vs. /Ø/ contrast among inflectional prefixes is presented in §3.5. Throwback is revised to reflect this restriction in 43.

(43) THROWBACK (final)

H   Domain: word

μ'   μ $_{phrase}$]

An alternative to analyzing subject prefixes as /L/ would be to invoke rule ordering: the H$_M$ is assigned to the stem only after throwback has applied; it does not spread onto the subject prefix because it is not linked to the phrase-final mora before throwback applies. However, this analysis is problematic: verbs with disyllabic stems, such as *a*[*lóβé*] 'let him/her refuse' and *a*[*reéβé*] 'let him/her ask', require the opposite order to hold. That is, the H$_M$ must be assigned to the phrase-final mora in disyllabic stems prior to the application of throwback. If melodic H assignment and throwback were not to proceed in this order, unattested **a*[*loβé*] and **a*[*reeβé*] would be predicted.

Although the lexical contrast between /H/ and /Ø/ verbs is lost in forms lacking an object prefix, the contrast reemerges in subjunctive verb forms that include an object prefix. /Ø/ verbs with an object prefix have an H that generally surfaces on at least the second mora of the stem, whereas /H/ verbs have an H that surfaces on at least the initial mora of the stem. The object prefix itself is L in all verb forms with more than one syllable.

Long initial syllables have a level H in /Ø/ verbs with at least three stem syllables, as in 44a. In long verbs with a short initial syllable, the second syllable has a level H whether it is long, as in 44b, or short, as in 44c. CVCVVCV stems have a fall on the second syllable, as shown in 44d, while CVCVCV stems have an H on the second and final moras, as in 44e. Disyllabic stems with a long initial syllable have a fall on the initial syllable, shown in 44f, and disyllabic stems with a short initial syllable have an H on both moras of the stem, shown in 44g. Monosyllabic stems realize an H on the sole stem mora as well as on the object prefix, shown in 44h.

(44) Subjunctive, /Ø/ verbs with an object prefix
    a. a-mu̱[tʃííŋguulile]   'let him/her lift for him/her'
        a-mu̱[tʃííŋguule]   'let him/her lift him/her'
        a-mu̱[sééβule]   'let him/her say bye to him/her'
    b. a-ka̱[tsuxúúlule]   'let him/her pour it$_6$ slowly'
    c. a-mu̱[kalúʃile]   'let him/her defend him/her'
    d. a-mu̱[lexúule]   'let him/her release him/her'
    e. a-mu̱[jaβílé]   'let him/her bury him/her'
        a-mu̱[kulíʃé]   'let him/her name him/her'
    f. a-mu̱[lóonde]   'let him/her follow him/her'
        a-mu̱[réeβe]   'let him/her ask him/her'
    g. a-mu̱[lóβé]   'let him/her refuse him/her'
        a-mu̱[léʃé]   'let him/her leave him/her'
    h. a-mú[sjé]   'let him/her grind him/her'

The tonal properties of subjunctive verb forms with an object prefix cannot be derived from the same rule of melodic H assignment that applies in subjunctive verbs lacking an object prefix. That is, subjunctive MHA does not apply when an object prefix is present, and its failure to apply cannot be attributed to any phonological features

of the verb form. This state of affairs—in which the subjunctive with and the subjunctive without object prefixes are treated by the tonology as separate constructions that take distinct tonal melodies—is common in Bantu (Odden & Bickmore 2014). Imperatives with and without an object prefix are also treated as separate constructions in many Bantu languages (Odden 1989, Marlo 2013:166–67). In Kabarasi, subjunctive verbs without an object prefix take melody 2 (H on the initial mora of the second stem syllable), while subjunctive verbs with an object prefix take melody 1 (H on the second stem mora; see §3.1).

In subjunctive verbs with an object prefix, the H_M is assigned to the stem by peninitial MHA, which targets the second stem mora. The H_M is then subject to the general tonal principles of Kabarasi, including initial lowering. Initial lowering deletes the object prefix H in all forms. In long /Ø/ verbs with a long initial syllable (e.g. *a-mu*[*tʃíínguule*] 'let him/her lift him/her'), the H_M spreads left onto the initial mora due to rise decontouring. In long verbs with a short initial syllable and a long second syllable (e.g. *a-ka*[*tsuxúúlule*] 'let him/her pour it₆ slowly'), the H_M spreads right onto the third stem mora due to fall decontouring. In CVCVVCV stems (e.g. *a-mu*[*lexúule*] 'let him/her release him/her'), the H_M spreads right onto the third stem mora because of fall decontouring. However, that spreading is later undone due to penult fall. In CVCVCV stems (e.g. *a-mu*[*kulíʃé*] 'let him/her name him/her'), the H_M spreads onto the final due to penult doubling.

Throwback spreads the H_M onto the initial mora of the stem in disyllabic stems with a short stem-initial syllable, as in *a-mu*[*lóβé*] 'let him/her refuse him/her'. In disyllabic stems with a long stem-initial syllable (e.g. *a-mu*[*lóonde*] 'let him/her follow him/her'), the H_M is assigned to the second stem mora (peninitial MHA: *a-mu*[*loónde*]), spreads onto the initial mora (rise decontouring: *a-mu*[*lóónde*]), then delinks from the second stem mora (penult fall: *a-mu*[*lóonde*]). As shown in 45, penult doubling crucially applies after penult fall; were the order reversed, the H_M would spread to the final vowel, bleeding penult fall.

(45) Subjunctive /Ø/ *a-mu*[*lóonde*] 'let him/her follow him/her'

UNDERLYING	PENINITIAL MHA	INITIAL LOWERING
H H_M	H H_M	Ø ← H H_M
a – mu – loonde	a – mu – loonde	a – mu – loonde

RISE DECONTOURING	PENULT FALL	PENULT DOUBLING
H_M	H H_M	*Does not apply*
a – mu – loonde	a – mu – loonde	

In monosyllabic stems (e.g. *a-mú*[*sjé*] 'let him/her grind him/her'), the H_M is assigned to the initial mora of the stem by the shortest extension of peninitial MHA. It then doubles onto the object prefix due to throwback. That doubling onto the object prefix is observed in this context indicates that initial lowering applies before throwback; if the order were reversed, the underlying H of the object prefix would block throwback. A derivation is given in 46.

(46) Subjunctive /H/ *a-mú*[*sjé*] 'let him/her grind him/her'

UNDERLYING	SUBJUNCTIVE MHA	INITIAL LOWERING	THROWBACK
H H_M	H H_M	Ø ← H H_M	H_M
a – mu – sje	a – mu – sje	a – mu – sje	a – mu – sje

Most subjunctive /H/ verbs with an object prefix have a level H on the initial syllable of the stem, as shown in 47a and 47b. Rather than a level H, CVVCV stems have a fall on the initial syllable of the stem, as in 47c. CVCV stems are H on both stem moras, as in 47d, and monosyllabic stems are H on the sole stem mora and the object prefix, as in 47e. The object prefix is L in all other stem shapes.

(47) Subjunctive, /H/ verbs with an object prefix
    a. a-mu̱[xááβaxaaβe]   'let him/her repeatedly seek him/her'
        a-mu̱[xúúmbeele]   'let him/her envelop him/her'
        a-mu̱[sáánditse]   'let him/her thank him/her'
    b. a-mu̱[βó̱joŋane]   'let him/her go around him/her'
        a-mu̱[βúkule]   'let him/her take him/her'
    c. a-mu̱[ré̱ere]   'let him/her bring him/her'
        a-mu̱[xáaβe]   'let him/her seek him/her'
    d. a-mu̱[βétʃé]   'let him/her shave him/her'
        a-mu̱[lúmé]   'let him/her bite him/her'
    e. a-mú[xwé̱]   'let him/her pay her dowry'
        a-mú[ré̱]   'let him/her bury him/her'

As in /Ø/ verbs, the H of the object prefix is deleted by initial lowering, despite the fact that, in the case of /H/ verbs, the H_M does not ultimately surface. Peninitial MHA cannot apply in /H/ verbs due to the requirement that the target of peninitial MHA (the second stem mora) be preceded by a toneless mora; the initial mora is not toneless in /H/ verbs, but rather bears the root H.

The root H is subject to a familiar suite of tonal processes. When the initial syllable is long (e.g. *a-mu̱[sáánditse]* 'let him/her thank him/her'), the root H spreads onto the second stem mora due to fall decontouring. The root H also spreads onto the second stem mora in disyllabic stems with a long initial syllable (e.g. *a-mu̱[ré̱ere]* 'let him/her bring him/her'), but the effect of fall decontouring is undone because the stem-initial syllable—also the penultimate syllable—is subject to penult fall. In CVCV stems (e.g. *a-mu̱[lúmé]* 'let him/her bite him/her'), the root H spreads onto the final vowel due to penult doubling. The root H spreads onto the object prefix in verbs with monosyllabic stems (e.g. *a-mú[ré̱]* 'let him/her bury him/her') due to throwback.

The subjunctive-based crastinal future also takes melody 2, although the tonal properties of the crastinal future differ from the subjunctive due to (i) the presence of an H-toned particle *nV́-* that precedes the subject prefix and (ii) a construction-specific rule of plateau. Verbs with three or more stem syllables realize a level H span that extends from the particle *nV́-* through the second stem syllable, as in 48a. In verbs with trisyllabic stems and a long second syllable, the H span ends in a fall on the penultimate syllable, as in 48b. Trisyllabic stems with a short second syllable are H throughout, as in 48c, as are all smaller stem shapes, shown in 48d.

(48) Crastinal future, 's/he will … '

/H/ VERBS		/Ø/ VERBS	
ná̱-á[só̱kóɲole]	'squat'	ná̱-á[kálúʃile]	'repeat'
ná̱-á[xá̱áβáxaaβe]	'repeatedly seek'	ná̱-á[rééβáreeβe]	'repeatedly ask'
		ná̱-á[tsúxúúlule]	'pour slowly'
ná̱-á[xú̱úmbéele]	'envelop'	ná̱-á[tʃííŋgúule]	'lift'
ná̱-á[ká̱ráaɲdʒe]	'fry'	ná̱-á[léxúule]	'release'
ná̱-á[sá̱ándítsé]	'thank'	ná̱-á[sééβúlé]	'say bye'
ná̱-á[βú̱kúlé]	'take'	ná̱-á[kúlíʃé]	'name'

d. ná-á[ré̠éré]   'bring'   ná-á[lóóndé]   'follow'
   ná-á[xá̠áβé]   'seek'   ná-á[rééβé]   'ask'
   ná-á[βé̠tʃé]   'shave'   ná-á[lóβé]   'refuse'
   ná-á[lú̠mé]   'bite'   ná-á[léʃé]   'leave (s.t.)'
e. ná-á[xwé̠]   'pay dowry'   ná-á[kwé]   'fall'
   ná-á[ré̠]   'bury, place'   ná-á[sjé]   'grind'

The analysis of the crastinal future is the same as that of the subjunctive, except that an additional rule of PLATEAU applies, eliminating the post-underlying tonal trough between the H_M on the second stem syllable and the H of the particle $n\acute{V}$-. There is no downstep in this context; the formulation of plateau given in 49 accounts for this by delinking the underlying H of the particle.

(49) PLATEAU
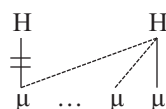
H   H   Applies in the crastinal future only.
                         Domain: word

μ   …   μ   μ

I assume that plateau applies after initial lowering in /H/ verbs. Assuming this order is not critical, but it permits plateau to be stated in a way that does not invoke cyclic application. In verbs of both tonal classes, the usual suite of tonal rules affect the right edge of the H span. For instance, as shown in 50, the H_M is assigned to the penultimate mora, and it spreads onto the final vowel due to penult doubling.

(50) Crastinal future /H/ *ná-á[βúkúlé]* 's/he will take'

UNDERLYING	SUBJUNCTIVE MHA	PENINITIAL MHA
H HH$_M$	H HH$_M$	
		Does not apply
na – a – βukule	na – a – βukule	

INITIAL LOWERING	PENULT DOUBLING	PLATEAU
H Ø ← HH$_M$	H H$_M$	H H$_M$
na – a – βukule	na – a – βukule	na – a – βukule

As in the subjunctive, crastinal future verb forms with an object prefix take melody 1 instead of melody 2. /H/ verbs, shown in 51a, are realized with an H that extends from the particle $n\acute{V}$- through at least the stem-initial mora, and /Ø/ verbs, shown in 51b, have an H that generally extends from the particle through at least the second stem mora.

(51) Crastinal future, 's/he will … him/her {mú-} / it$_6$ {ká-}'
   a. /H/ VERBS
      ná-á-mú[βó̠joŋane]   'go around'
      ná-á-mú[xá̠áβaxaaβe]   'repeatedly seek'
      ná-á-mú[xú̠úmbeele]   'envelop'
      ná-á-mú[sítaatʃe]   'accuse'
      ná-á-mú[sáánditse]   'thank'
      ná-á-mú[βú̠kule]   'take'
      ná-á-mú[ré̠ere]   'bring'
      ná-á-mú[lú̠mé]   'bite'
      ná-á-mú[ré̠]   'bury, place'
   b. /Ø/ VERBS
      ná-á-mú[kálúʃile]   'defend'
      ná-á-mú[rééβareeβe]   'repeatedly ask'

ná̠-á-ká[tsúxúúlule]   'pour slowly'
ná̠-á-mú[tʃííŋguule]   'lift'
ná̠-á-mú̠[léxúule]   'release'
ná̠-á-mú̠[sééβule]   'say bye to'
ná̠-á-mú[kúlíʃé]   'name'
ná̠-á-mú[lóonde]   'follow'
ná̠-á-mú̠[lóβé]   'refuse'
ná̠-á-mú̠[sjé]   'grind'

For an analysis of stem tone properties of crastinal future verbs with an object prefix, refer to the discussion following 44 and 47: the analysis of the crastinal future in this context is the same as for parallel forms in the subjunctive, except that plateau also applies in the crastinal future.

The crastinal future negative also takes melody 2. In my data, however, the crastinal future negative is unlike the crastinal future (affirmative) in that the particle $n\acute{V}$- does not surface as H, and, consequently, plateau is not triggered. /H/ verbs are given in 52a, and /Ø/ verbs are given in 52b.

(52) Crastinal future, 's/he will not … '
    a. /H/ VERBS
        ʃi-na̠-a[sokóɲole] tá   'squat'
        ʃi-na̠-a[xa̠aβáxaaβe] tá̠   'repeatedly seek'
        ʃi-na̠-a[xu̠umbééle] tá̠   'envelop'
        ʃi-na̠-a[ka̠rááɲdʒe] tá̠   'fry'
        ʃi-na̠-a[sa̠andítse] tá̠   'thank'
        ʃi-na̠-a[βu̠kúle] tá̠   'take'
        ʃi-na̠-a[re̠eré] ꜜtá̠   'bring'
        ʃi-na̠-a[xa̠aβé] ꜜtá̠   'seek'
        ʃi-na̠-a[βe̠tʃé] ꜜtá̠   'shave'
        ʃi-na̠-a[lu̠mé] ꜜtá̠   'bite'
        ʃi-na̠-a[xwé̠] ꜜtá̠   'pay dowry'
        ʃi-na̠-a[ré̠] ꜜtá̠   'bury, place'
    b. /Ø/ VERBS
        ʃi-na̠-a[kalúʃile] tá   'repeat'
        ʃi-na̠-a[reeβáreeβe] tá   'repeatedly ask'
        ʃi-na̠-a[tsuxúúlule] tá̠   'pour slowly'
        ʃi-na̠-a[tʃiiŋúúle] tá̠   'lift'
        ʃi-na̠-a[lexúúle] tá̠   'release'
        ʃi-na̠-a[seeβúle] tá̠   'say bye'
        ʃi-na̠-a[kulíʃe] tá̠   'name'
        ʃi-na̠-a[loondé] ꜜtá̠   'follow'
        ʃi-na̠-a[reeβé] ꜜtá̠   'ask'
        ʃi-na̠-a[loβé] ꜜtá̠   'refuse'
        ʃi-na̠-a[leʃé] ꜜtá̠   'leave (something)'
        ʃi-na̠-a[kwé] ꜜtá̠   'fall'
        ʃi-na̠-a[sjé] ꜜtá̠   'grind'

The presence of the negative marker t̠á bleeds many of the general tonal rules that are sensitive to the phrasal boundary. For instance, verbs with a CVCV stem surface with an H just on the final vowel (e.g. ʃi-na-a[loβé] ꜜt̠á 's/he will not refuse'). In the parallel affirmative subjunctive, verb forms are realized with an H on both stem vowels (e.g. a[lóβé] 'let him/her refuse') because throwback spreads the final H onto the penult. Be-

cause the negative marker *tá* follows the verb in the crastinal future negative, the H_M is not final within the phrase, and so throwback does not apply.

The reason that the particle *nV́-* is L in the crastinal future negative data is not known, though I suspect that producing the particle with or without an H is a matter of free variation. My initial transcriptions from early, unrecorded interviews exploring the morphology of Kabarasi verbal constructions suggest that producing the particle *nV́-* as L is also possible in the affirmative crastinal future.

3.3. Melody 3: H on V_1 of macrostem. The remote past exhibits a tonal melody in which verbs of both tonal classes are H on at least the initial mora of the macrostem. Verb forms with an object prefix reveal that the remote past is marked with two H_Ms. The second H_M, when it is realized, targets the second stem mora.

The initial syllable has a level H in verbs belonging to both tonal classes that have three or more stem syllables, as shown in 53a and 53b. The initial syllable has a fall if it is long and penultimate, shown in 53c. Both stem vowels are H in CVCV stems, shown in 53d, and verbs with monosyllabic stems, given in 53e, are H on the stem and the preceding tense prefix *a-*.

(53) Remote past

/H/ verbs		/Ø/ verbs	
a. j-a[xúúmbeela]	's/he enveloped'	j-a[tʃííŋguula]	's/he lifted'
j-a[sá̰ánditsa]	's/he thanked'	j-a[sééβula]	's/he said bye'
b. j-a[sókoɲola]	's/he squatted'	j-a[káluʃila]	's/he repeated'
j-a[ká̰raaŋga]	's/he fried'	j-a[léxuula]	's/he released'
j-a[βúkula]	's/he took'	j-a[kúlixa]	's/he named'
c. j-a[rḛ́era]	's/he brought'	j-a[lóonda]	's/he followed'
j-a[xá̰aβa]	's/he sought'	j-a[réeβa]	's/he asked'
d. j-a[βḛ́ká]	's/he shaved'	j-a[lóβá]	's/he refused'
j-a[lṵ́má]	's/he bit'	j-a[léxá]	's/he left (s.t.)'
e. j-á[xwá̰]	's/he paid dowry'	j-á[kwá]	's/he fell'
j-á[rá̰]	's/he buried'	j-á[sjá]	's/he ground'

The tonal properties of the remote past in both tonal classes of verbs are parallel to those of /H/ verbs in the near future (§2.1). The analysis of these two contexts is identical, except that the H on the initial mora is lexical in /H/ near future verbs, whereas it is inflectional in the remote past. In verbs with trisyllabic and longer stems, a rule, formalized in 54, assigns the H_M to the initial mora of the macrostem. That the rule targets the initial mora of the macrostem, rather than the initial mora of the stem, is motivated by the tonal properties of verb forms that include an object prefix.
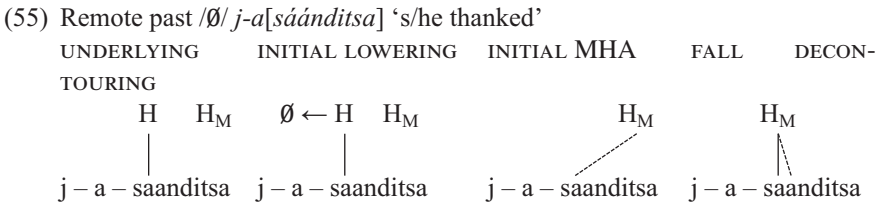
(54) Initial melodic H assignment

H_M Applies only in the remote past

[macrostem μ

In long /H/ verbs with a long initial syllable (e.g. *j-a[sá̰ánditsa]* 's/he thanked'), the root H is deleted by initial lowering.[2] The H_M is then assigned to the stem-initial mora,

---

[2] Idakho—a related Luhya language—realizes a cognate tonal melody in the remote past (cf. /H/ *y-aa[xálaka]* 's/he cut' and /Ø/ *y-aa[láxuula]* 's/he released'). It is clear in Idakho that the stem-initial H is inflectional and not lexical, based on the distribution of passive Hs. Unless a verb form includes the perfective suffix, it will not realize an H on the passive suffix *-u* unless an H_M is also overtly realized. In Idakho, an H on the passive suffix is licensed in remote past /H/ verbs, such as *y-aa[xáˈlák-w-á]* 's/he was cut/judged', indicating that the initial H is inflectional, and not lexical (Ebarb 2014).

by initial MHA, and later spreads onto the second mora via fall decontouring. A derivation is given in 55.

(55) Remote past /Ø/ *j-a*[*sáánditsa*] 's/he thanked'

UNDERLYING	INITIAL LOWERING	INITIAL MHA	FALL DECONTOURING

$$
\begin{array}{llll}
\text{H} \quad \text{H}_M & \text{Ø} \leftarrow \text{H} \quad \text{H}_M & \text{H}_M & \text{H}_M \\
| & | & & \\
\text{j – a – saanditsa} & \text{j – a – saanditsa} & \text{j – a – saanditsa} & \text{j – a – saanditsa}
\end{array}
$$

In CVVCV stems, such as *j-a*[*réeβa*] 's/he asked', the H_M is assigned to the initial mora of the stem. At an intermediate stage, the H_M is simplified as a level H due to fall decontouring. Because it is penultimate within the phrase, the level H generated by fall decontouring is ultimately rendered as a falling tone due to penult fall.

In CVCV stems, such as *j-a*[*lóβá*] 's/he refused', the H_M is first assigned to the initial mora of the stem. It then spreads onto the final vowel due to penult doubling. In monosyllabic stems (e.g. *j-á*[*kwá*] 's/he fell'), the H_M is assigned to the stem-initial mora, then spreads to the prestem syllable due to throwback.

The lexical contrast between /H/ and /Ø/ verbs is preserved in remote past forms that include an object prefix. In /Ø/ verbs, the object prefix is H, and the stem is realized with a second H that generally surfaces on at least the second mora. When the second H is also realized on the initial mora of the stem, it is usually downstepped relative to the H of the object prefix. As shown in 56a, long verbs with long initial syllables are H on the first two moras of the stem. Long verbs with a short initial syllable and a long second syllable are H on the second and third stem moras, as in 56b. CVCVCV stems, as in 56e, are also H on the final two moras of the stem. CVVCV stems are H only on the initial mora, shown in 56f. CVCV stems are H throughout, as in 56g. As shown in 56h, monosyllabic stems are also H throughout (H on the sole stem mora), but no downstep is observed between the object prefix and the stem.

(56) Remote past, /Ø/ verbs with an object prefix

a. j-a-mú[ꜜtʃííŋguulila]   's/he lifted for him/her'
   j-a-mú[ꜜtʃííŋguula]   's/he lifted him/her'
   j-a-mú[ꜜsééβula]   's/he said bye to him/her'
b. j-a-ká[tsuxúúlula]   's/he poured it₆ slowly'
c. j-a-mú[kalúʃila]   's/he defended him/her'
d. j-a-mú[lexúula]   's/he released him/her'
e. j-a-mú[jaβílá]   's/he buried him/her'
   j-a-mú[kulíxá]   's/he named him/her'
f. j-a-mú[ꜜlóonda]   's/he followed him/her'
   j-a-mú[ꜜréeβa]   's/he asked him/her'
g. j-a-mú[ꜜlóβá]   's/he refused him/her'
   j-a-mú[ꜜléxá]   's/he left him/her'
h. j-a-mú[sjá]   's/he ground him/her'

I analyze the remote past as introducing two H_Ms, though the only context in which both are realized is in /Ø/ verbs with an object prefix, as in 56. One H_M is realized on the object prefix, and the other is realized on the stem. The H that surfaces on the object prefix arrives at its position through initial MHA, which targets the initial mora of the macrostem after initial lowering deletes the underlying H of the object prefix. The second is positioned by peninitial MHA, targeting the second stem mora.

In long verbs with a long initial syllable (e.g. *j-a-mú*[ꜜ*sééβula*] 's/he said bye to him/her'), the second H_M spreads onto the initial mora of the stem due to fall decon-

touring. That the stem H_M does not delete, and is instead realized as a downstep H, indicates that rise decontouring applies after Meeussen's rule. A derivation is given in 57.

(57) Remote past /Ø/ *j-a-mú*[ꜝ*sééβula*] 's/he said bye to him/her'

UNDERLYING   PENINITIAL MHA   INITIAL LOWERING

H H_M H_M H H_M H_M Ø ← H H_M H_M

j – a – mu – seeβula   j – a – mu – seeβula   j – a – mu – seeβula

INITIAL MHA   MEEUSSEN'S RULE   RISE DECONTOURING

H_M H_M *Does not apply* H_M H_M

j – a – mu – seeβula   j – a – mu – seeβula

The analysis of verbs with a CVVCV stem (e.g. *j-a-mú*[ꜝ*réeβa*] 's/he asked him/her') is the same as for longer verbs with a long initial syllable, except that penult fall applies after rise decontouring.

A second H_M is not realized in /Ø/ verbs lacking an object prefix (e.g. *j-a*[*káluʃila*] 's/he repeated') because Meeussen's rule is crucially ordered after initial MHA. Both peninitial MHA and initial MHA apply, in that order, but the H_M assigned by peninitial MHA is later deleted due to Meeussen's rule, as shown in 58.

(58) Remote past /Ø/ *j-a*[*káluʃila*] 's/he repeated'

UNDERLYING   PENINITIAL MHA   INITIAL LOWERING

H_M H_M H_M H_M

                                           Does not apply

j – a – kaluʃila   j – a – kaluʃila

INITIAL MHA   MEEUSSEN'S RULE

H_M H_M H_M H_M → Ø

j – a – kaluʃila   j – a – kaluʃila

I do not attribute the failure of the second stem H_M to surface to the requirement that the target of peninitial MHA be preceded by a toneless mora. Such an analysis would require that initial MHA precede peninitial MHA in the derivation and, by extension, initial lowering as well. But this ordering relationship is problematic, as the second H_M would trigger deletion of the first due to initial lowering. The analysis could be made to work if it were stipulated that initial lowering affects only lexical Hs (as lexical tone anticipation does; see §4). Because a simpler ordering solution is available (i.e. initial lowering precedes initial MHA, which in turn precedes Meeussen's rule), however, adding complexity to the statement of initial lowering is unmotivated.

/Ø/ verb forms with an object prefix and a CVCV stem (e.g. *j-a-mú*[ꜝ*lóβá*] 's/he refused him/her') indicate that throwback also applies after Meeussen's rule. If this were not the case, Meeussen's rule would apply, deleting the stem H_M. A derivation is given in 59.
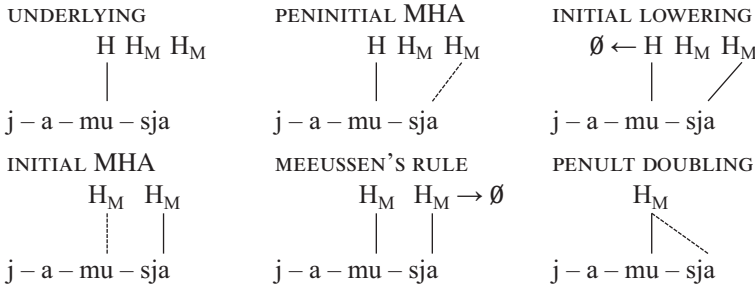
(59) Remote past /Ø/ *j-a-mú*[ꜝ*lóβá*] 's/he refused him/her'

UNDERLYING   PENINITIAL MHA   INITIAL LOWERING

H H_M H_M H H_M H_M Ø ← H H_M H_M

j – a – mu – loβa   j – a – mu – loβa   j – a – mu – loβa

INITIAL MHA   MEEUSSEN'S RULE   THROWBACK

H_M H_M H_M H_M

$\vdots$ $|$ *Does not apply* $|$ $/$

j – a – mu – loβa   j – a – mu – loβa

In verbs with a monosyllabic stem (e.g. *j-a-mú*[*sjá*] 's/he ground him/her'), the stem bears an H, but it is not downstepped relative to the H of the object prefix. This is because the H_M that would otherwise surface on the stem is deleted by Meeussen's rule. Penult doubling then spreads the object prefix H onto the stem. A derivation is given in 60.

(60) Remote past /Ø/ *j-a-mú*[*sjá*] 's/he ground him/her'

UNDERLYING   PENINITIAL MHA   INITIAL LOWERING

H H_M H_M H H_M H_M Ø ← H H_M H_M

$|$ $|$ $/$ $|$ $/$

j – a – mu – sja   j – a – mu – sja   j – a – mu – sja

INITIAL MHA   MEEUSSEN'S RULE   PENULT DOUBLING

H_M H_M H_M H_M → Ø H_M

$\vdots$ $|$ $|$ $|$ $\diagdown$

j – a – mu – sja   j – a – mu – sja   j – a – mu – sja

Most /H/ verbs with an object prefix are H on the object prefix and all L on the stem, as in 61a. When the stem is monosyllabic, both the object prefix *mú-* and the sole stem mora are H, shown in 61b.
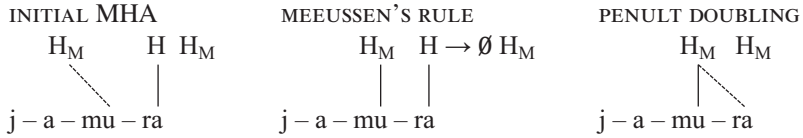
(61) Remote past, /H/ verbs with an object prefix

    a. j-a-mú[xaaβaxaaβa]   's/he repeatedly sought him/her'
        j-a-mú[xuumbeela]   's/he enveloped him/her'
        j-a-mú[saanditsa]   's/he thanked him/her'
        j-a-mú[βojoŋana]   's/he went around him/her'
        j-a-mú[βukula]   's/he took him/her'
        j-a-mú[reera]   's/he brought him/her'
        j-a-mú[xaaβa]   's/he sought him/her'
        j-a-mú[βeka]   's/he shaved him/her'
        j-a-mú[luma]   's/he bit him/her'
    b. j-a-mú[xwá]   's/he paid her dowry'
        j-a-mú[rá]   's/he buried him/her'

In /H/ verbs with an object prefix (e.g. *j-a-mú*[*βukula*] 's/he took him/her'), peninitial MHA does not apply. The rule, which targets the second stem mora, requires that the preceding mora be toneless; at the time it applies, the root H is linked to the stem-initial mora. Initial lowering deletes the underlying H of the object prefix, and initial MHA then links an H_M to the same position. The root H is ultimately deleted by Meeussen's rule. In monosyllabic stems (e.g. *j-a-mú*[*rá*] 's/he buried him/her'), the H_M spreads from the object prefix onto the stem by penult doubling. A derivation is given in 62.

(62) Remote past /Ø/ *j-a-mú*[*rá*] 's/he buried him/her'

UNDERLYING   PENINITIAL MHA   INITIAL LOWERING

H_M H   H H_M H_M Ø ← H   H H_M

$|$ $|$ *Does not apply* $|$ $|$

j – a – mu – ra   j – a – mu – ra

INITIAL MHA   MEEUSSEN'S RULE   PENULT DOUBLING

H_M H H_M H_M H → Ø H_M H_M H_M

j – a – mu – ra   j – a – mu – ra   j – a – mu – ra
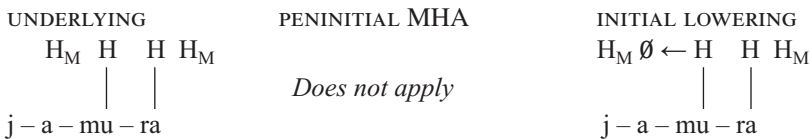
3.4. MELODY 4: H ON SECOND SYLLABLE THROUGH FINAL VOWEL (S₂–FV)/H ON
S_3–FV. The hesternal perfective is marked by an H_M that can extend across multiple
syllables. The leftward extent of the H span differs across tonal classes.

As shown in 63a, /Ø/ verbs have an H that spans from the second stem syllable
through the final. In CVVCV stems—the smallest stem shape in perfective construc-
tions (see §3.1 for more on perfective allomorphy)—the H_M extends into the second
half of the long initial syllable, shown in 63b.

(63) Hesternal perfective, /Ø/ verbs
  a. j-a[reeβárééβílé]   's/he repeatedly asked'
     j-a[kalúʃíílé]   's/he repeated'
     j-a[tʃiiŋgúúlílé]   's/he lifted'
     j-a[seeβúúlé]   's/he said bye'
     j-a[lexúúlílé]   's/he released'
     j-a[kulííʃé]   's/he named'
     j-a[reeβílé]   's/he asked'
     j-a[loβílé]   's/he refused'
  b. j-a[kwiílé]   's/he fell'

As shown in 64a, the H_M extends from the third stem syllable through the final vowel
in /H/ verbs when the verb has four or more syllables. All shorter stem shapes, given in
64b, have an H_M that appears on the final two moras of the stem.

(64) Hesternal perfective, /H/ verbs
  a. j-a[xaaβaxááβílé]   's/he repeatedly sought'
     j-a[sokoɲóólé]   's/he squatted'
     j-a[tsuunzuunílé]   's/he sucked'
     j-a[karaaɲdʒílé]   's/he fried'
  b. j-a[saandiítsé]   's/he thanked'
     j-a[xalaátʃé]   's/he cut'
     j-a[xaaβílé]   's/he sought'
     j-a[lumílé]   's/he bit'
     j-a[xweéré]   's/he paid dowry'

The hesternal perfective data motivate a new rule of H_M assignment that targets the
final mora, which I call FINAL DOCKING (following Odden 2009:311 on closely related
Tachoni). As shown in 65, final docking requires that the penultimate mora be toneless.
Data involving another construction, the distant future, motivate this feature of the rule
(see §3.5).

(65) FINAL DOCKING
  H_M Applies in hesternal perfective, present
   ⋮   habitual, and distant future only.
  μ'   μ]ₛₜₑₘ

Once assigned to the final vowel, the H_M spreads through the leftmost noninitial syl-
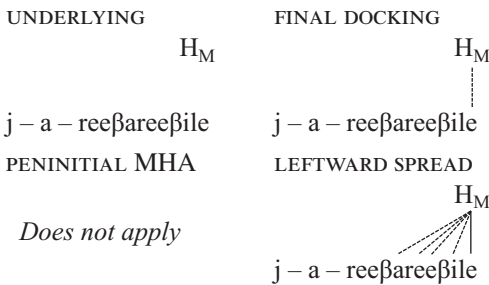lable by a rule of iterative LEFTWARD SPREAD, formalized in 66.

(66) LEFTWARD SPREAD

H_M

(μ)   μ   μ   μ

σ
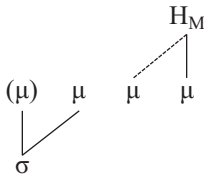
Iterative
Domain: stem
OCP: Does not create sequences of distinct
    Hs on adjacent syllables.
Applies in hesternal perfective, present
    habitual, and distant future only.

The H_M spreads only through the second stem syllable in /Ø/ verbs, as in *j-a*[*reeβá-rééβílé*] 's/he repeatedly asked'. This is because leftward spread requires that the target of spreading be preceded by another syllable within the stem. Leftward spread is similar to another rule of unbounded leftward spreading: lexical tone anticipation. One difference is that leftward spread requires that a syllable within the stem precede the target of spreading, while lexical tone anticipation does not have this requirement. A derivation is given in 67.
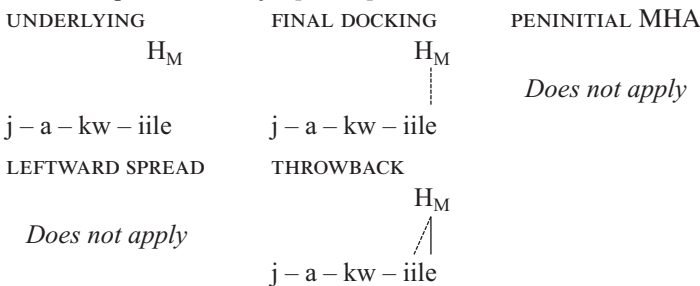
(67) Hesternal perfective /Ø/ *j-a*[*reeβárééβílé*] 's/he repeatedly asked'

UNDERLYING   FINAL DOCKING

H_M H_M

j – a – reeβareeβile   j – a – reeβareeβile

PENINITIAL MHA   LEFTWARD SPREAD

                            H_M

Does not apply

                            j – a – reeβareeβile

As shown in 67, peninitial MHA applies after final docking. This ordering relationship ensures that the H_M is assigned to the stem in the hesternal perfective by the construction-specific rule of final docking rather than the general rule of peninitial MHA. As discussed in §3.6, this order of application is likely part of an ongoing restructuring of the tonal phonology of Kabarasi. The opposite order—that is, peninitial MHA precedes final docking—is required by the hodiernal perfective negative (§3.6) currently, and was formerly required by the distant future (§3.5).

In CVVCV stems (e.g. *j-a*[*kwiílé*] 's/he fell'), the H_M is assigned to the final vowel by final docking. Leftward spread does not apply in this case because it cannot spread Hs onto the stem-initial syllable. Throwback does apply, however, creating a rise on the initial syllable. A derivation of *j-a*[*kwiílé*] 's/he fell' is given in 68.

(68) Hesternal perfective /Ø/ *j-a*[*kwiílé*] 's/he fell'

UNDERLYING   FINAL DOCKING   PENINITIAL MHA

H_M H_M

                                                Does not apply

j – a – kw – iile   j – a – kw – iile

LEFTWARD SPREAD   THROWBACK

                        H_M

Does not apply

                        j – a – kw – iile

In /H/ verbs with more than three stem syllables, the H_M spreads only through the third stem syllable, as in *j-a*[*xạaβaxááβílé*] 's/he repeatedly sought'. Although the root

H is ultimately lost due to the initial lowering, it limits the extent of leftward spreading because leftward spread precedes initial lowering in the derivation. In /H/ verbs, the leftmost mora preceded by a toneless syllable belongs to the third stem syllable. If the order of initial lowering and leftward spread were reversed, /H/ and /Ø/ verbs would be expected to pattern together, with /H/ verbs spreading through the second stem syllable. A derivation is given in 69.

(69) Hesternal perfective /H/ *j-a*[*xaaβaxááβílé*] 's/he repeatedly sought'

UNDERLYING	FINAL DOCKING	PENINITIAL MHA
$\underset{\text{j} - \text{a} - \text{xaaβaxaaβ} - \text{ile}}{\overset{\text{H}\qquad\qquad \text{H}_M}{\mid}}$	$\underset{\text{j} - \text{a} - \text{xaaβaxaaβ} - \text{ile}}{\overset{\text{H}\qquad\qquad \text{H}_M}{\mid \qquad\qquad \vdots}}$	*Does not apply*

LEFTWARD SPREAD	INITIAL LOWERING	THROWBACK
$\underset{\text{j} - \text{a} - \text{xaaβaxaaβ} - \text{ile}}{\overset{\text{H}\qquad\qquad \text{H}_M}{\mid \qquad \nearrow\nearrow}}$	$\underset{\text{j} - \text{a} - \text{xaaβaxaaβ} - \text{ile}}{\overset{\emptyset \leftarrow \text{H}\qquad\qquad \text{H}_M}{\mid \qquad \nearrow}}$	*Does not apply*

In /H/ verbs with three or fewer stem syllables (e.g. *j-a*[*xweéré*] 's/he paid dowry'), leftward spread does not apply; the root H prevents the H_M from spreading into the first or second syllable of the stem. Throwback does apply, spreading the H_M into the penultimate syllable. Unlike leftward spread, throwback requires that the targeted mora be preceded not by a toneless syllable, but rather by a toneless mora. In addition, throwback applies only after initial lowering deletes the root H (see derivation 46 in §3.2). A derivation of *j-a*[*xweéré*] 's/he paid dowry' is given in 70.

(70) Hesternal perfective /H/ *j-a*[*xweéré*] 's/he paid dowry'

UNDERLYING	FINAL DOCKING	PENINITIAL MHA
$\underset{\text{j} - \text{a} - \text{xw} - \text{eere}}{\overset{\text{H}\ \text{H}_M}{\mid}}$	$\underset{\text{j} - \text{a} - \text{xw} - \text{eere}}{\overset{\text{H}\ \text{H}_M}{\mid\ \vdots}}$	*Does not apply*

LEFTWARD SPREAD	INITIAL LOWERING	THROWBACK
Does not apply	$\underset{\text{j} - \text{a} - \text{xw} - \text{eere}}{\overset{\emptyset \leftarrow \text{H}\ \text{H}_M}{\mid\ \mid}}$	$\underset{\text{j} - \text{a} - \text{xw} - \text{eere}}{\overset{\text{H}_M}{\nearrow}}$

Object prefixes do not affect stem tone in /Ø/ hesternal perfective verbs. The object prefix is L, and the stem generally has an H that extends from the second syllable through the final. As shown in 71b, the stem H extends into the initial syllable in disyllabic stems.

(71) Hesternal perfective, /Ø/ verbs with an object prefix

    a. j-a-m<u>u</u>[reeβárééβílé]   's/he repeatedly asked him/her'
       j-a-m<u>u</u>[tʃiiŋgúúlílé]   's/he lifted him/her'
       j-a-m<u>u</u>[kalúʃíílé]   's/he defended him/her'
       j-a-m<u>u</u>[lexúúlílé]   's/he released him/her'
       j-a-m<u>u</u>[seeβúúlé]   's/he said bye to him/her'
       j-a-m<u>u</u>[kulííʃé]   's/he named him/her'
       j-a-m<u>u</u>[reeβílé]   's/he asked him/her'
       j-a-m<u>u</u>[loβílé]   's/he refused him/her'
    b. j-a-m<u>u</u>[sjeélé]   's/he ground him/her'

The analysis of /Ø/ verbs with an object prefix is the same as /Ø/ verbs without an object prefix, except that the H of the object prefix is deleted by initial lowering.

In hesternal perfective /H/ verbs with an object prefix, the root H surfaces. As in forms without an object prefix, the H$_M$ extends from the third syllable through the final in verbs with four or more stem syllables, as in 72a. In verbs with three or fewer stem syllables, the H$_M$ is realized on the final two moras of the stem, as in 72b and 72c.

(72) Hesternal perfective, /H/ verbs with an object prefix

    a. j-a-mu[xááβaxááβílé]   's/he repeatedly sought him/her'
        j-a-mu[xúúmbeelílé]   's/he enveloped him/her'
        j-a-mu[βójoŋááné]   's/he went around him/her'
    b. j-a-mu[sáándiítsé]   's/he thanked him/her'
        j-a-mu[xálaátʃé]   's/he cut him/her'
        j-a-mu[xááˈβílé]   's/he sought him/her'
        j-a-mu[lúˈmílé]   's/he bit him/her'
    c. j-a-mu[xwéˈéré]   's/he paid her dowry'

The root H surfaces in verb forms with an object prefix because the object prefix, and not the root H, is in macrostem-initial position. Initial lowering deletes the H of the object prefix, but the root H is unaffected. In short verbs (e.g. *j-a-mu*[*lúˈmílé*] 's/he bit him/her'), the H$_M$ spreads onto the penultimate mora due to throwback. Fall decontouring spreads the root H onto the second stem mora in long initial syllables except in CVVCV stems (e.g. *j-a-mu*[*xwéˈéré*] 's/he paid her dowry'). This is because throwback precedes fall decontouring in the derivation, illustrated in 73.

(73) Hesternal perfective /H/ *j-a-mu*[*xwéˈéré*] 's/he paid her dowry'
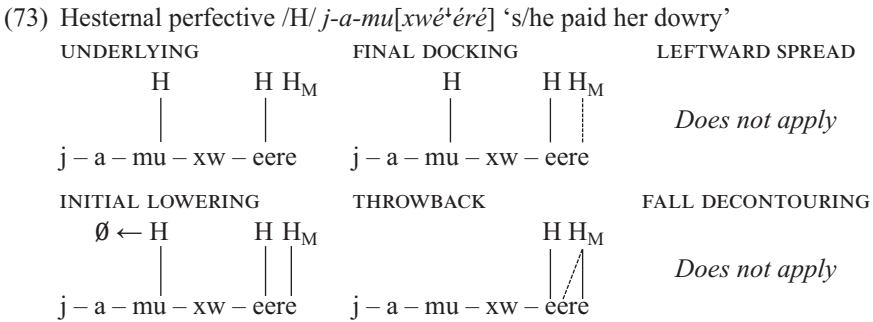
The present habitual also takes melody 4. As shown in 74, /Ø/ verbs have an H$_M$ that extends from the second stem syllable through the final, and /H/ verbs have an H$_M$ that extends from the third stem syllable through the final. In /H/ verbs with an object prefix, the initial syllable is also H.

(74) Present habitual

    a[tsuxúúlúlááŋgá]   's/he pours slowly'
    a-ka[tsuxúúlúlááŋgá]   's/he pours it$_6$ slowly'
    a[βojoŋánááŋgá]   's/he goes around'
    a-mu[βójoŋánááŋgá]   's/he goes around him/her'

The hesternal perfective negative and the distant future negative have the same stem tone pattern. As shown in 75, /Ø/ verbs have an H from the second stem syllable through the final. /H/ verbs have an H from the third stem syllable through the final, and the root H is realized on the initial syllable in forms with an object prefix.

(75) Other melody 4 constructions

    a. HESTERNAL PERFECTIVE NEGATIVE
        ʃi-j-a[tsuxúúlúlá] tá   's/he did not pour slowly'
        ʃi-j-a-ka[tsuxúúlúlá] tá   's/he did not pour it$_6$ slowly'
        ʃi-j-a[βojoŋáná] tá   's/he did not go around'
        ʃi-j-a-mu[βójoŋáná] tá   's/he did not go around him/her'

   b. Dɪsᴛᴀɴᴛ ғᴜᴛᴜʀᴇ ɴᴇɢᴀᴛɪᴠᴇ

ʃʲ-a-li[tsuxúúlúlá] tá	's/he will not pour slowly'
ʃʲ-a-li-ka̠[tsuxúúlúlá] tá	's/he will not pour it₆ slowly'
ʃʲ-a-li[βo̠joŋáná] tá	's/he will not go around'
ʃʲ-a-li-mu̠[βójoŋáná] tá	's/he will not go around him/her'

That the H of the negative marker *tá* is not downstepped is surprising in light of other contexts in which *tá* follows a verb-final H, for example, *o-xa*[*loβá*] ꜛ*tá* 'do not refuse!' (melody 1, §3.1) and *a*[*reeβé*] ꜛ*tá* 'let him/her not ask' (melody 2, §3.2). As is shown in §4, the hesternal perfective and the distant future are constructions in which H$_M$s are deleted phrase-medially. In these constructions, the negative marker *tá* is sufficient to trigger phrase-medial H$_M$ deletion. After deletion of the H$_M$, the H of *tá* spreads onto the final vowel via a rule of juncture spread; from the final vowel it continues spreading leftward through the third stem syllable (in /H/ verbs) or the second stem syllable (in /Ø/ verbs) due to leftward spread. For more on phrasal tone, including a formal statement of juncture spread, see §4.

3.5. Mᴇʟᴏᴅʏ 5: H ᴏɴ S$_2$–FV/H ᴏɴ FV. The distant future exhibits a unique variation on the previous pattern: /Ø/ verbs have the same tonal properties as in the hesternal perfective, but /H/ verbs have a different spreading pattern. As shown in 76a below, /Ø/ verbs have an H$_M$ that extends from the second stem syllable through the final in stems with three or more syllables. The H$_M$ surfaces on the final two moras of disyllabic stems, as in 76b, and on the final mora only in monosyllabic stems, as in 76c.

  (76) Distant future, /Ø/ verbs

     a. a-li[tʃiiŋgúúlílá]   's/he will lift for'

a-li[tsuxúúlúlá]	's/he will pour slowly'
a-li[reeβárééβá]	's/he will repeatedly ask'
a-li[kalúʃílá]	's/he will repeat'
a-li[tʃiiŋgúúlá]	's/he will lift'
a-li[seeβúlá]	's/he will say bye'
a-li[lexúúlá]	's/he will release'
a-li[kulíxá]	's/he will name'

     b.

a-li[loóndá]	's/he will follow'
a-li[reéβá]	's/he will ask'
a-li[lóβá]	's/he will refuse'
a-li[léxá]	's/he will leave (something)'

     c.

a-li[kwá]	's/he will fall'
a-li[sjá]	's/he will grind'

In the distant future, /Ø/ verbs may either be tonally inflected as in 76 above, or with an H$_M$ on the second stem mora (as described for /Ø/ verbs in the imperative$_{sg}$ negative, §3.1). This is a pattern of free variation that does not affect the meaning.

The analysis for long /Ø/ verbs (as transcribed in 76a) is the same for the distant future as in the present habitual: the H$_M$ is first assigned to the final vowel through final docking. Due to leftward spread, it then spreads iteratively leftward through the peninitial syllable. In the disyllabic stems in 76b, the H$_M$ spreads onto the initial syllable through throwback.

Although throwback is operative in the distant future, verbs with monosyllabic stems surface with an H$_M$ only on the stem's sole TBU (e.g. *a-li*[*sjá*] 's/he will grind'). My analysis is that throwback is blocked from applying in this context because the tense prefix *lì-* is underlyingly L-toned. Because the tense prefix is /L/, final docking, which also requires a preceding toneless mora, is blocked in monosyllabic /Ø/ verbs; the H$_M$ is

instead assigned by the short extension of peninitial MHA, which targets the sole stem mora and does not require that the preceding mora be toneless (see 30 in §3.1).

(77) Distant future /Ø/ *a-li*[*sjá*] 's/he will grind'

UNDERLYING	FINAL DOCKING	PENINITIAL MHA
L H_M		L H_M
|	*Does not apply*	|
a – li – sja		a – li – sja

LEFTWARD SPREAD	INITIAL LOWERING	THROWBACK
Does not apply	*Does not apply*	*Does not apply*

When an object prefix is present, the stem tone pattern is largely the same as in forms without an object prefix. That is, long verbs are H from the second stem syllable through the final, as shown in 78a. CVVCV and CVCV stems are H on the final two moras of the stem, as in 78b. The object prefix is also H in verbs with monosyllabic stems, given in 78c.

(78) Distant future, /Ø/ verbs with an object prefix

    a. a-li-m<u>u</u>[tʃiiŋgúúlílá]   's/he will lift for him/her'
        a-li-k<u>a</u>[tsuxúúlúlá]   's/he will pour it$_6$ slowly'
        a-li-m<u>u</u>[reeβárééβá]   's/he will repeatedly ask him/her'
        a-li-m<u>u</u>[kalúʃílá]   's/he will defend him/her'
        a-li-m<u>u</u>[tʃiiŋgúúlá]   's/he will lift him/her'
        a-li-m<u>u</u>[seeβúlá]   's/he will say bye to him/her'
        a-li-m<u>u</u>[lexúúlá]   's/he will release him/her'
        a-li-m<u>u</u>[kulíxá]   's/he will name him/her'
        a-li-m<u>u</u>[jaβílá]   's/he will bury him/her'
    b. a-li-m<u>u</u>[loóndá]³   's/he will follow him/her'
        a-li-m<u>u</u>[lóβá]   's/he will refuse him/her'
        a-li-m<u>u</u>[léxá]   's/he will leave him/her'
    c. a-li-m<u>ú</u>[sjá]   's/he will grind him/her'

In 78c, the H_M spreads onto the object prefix due to throwback. Unlike the tense prefix /lì-/, the object prefix is toneless when throwback applies.

In /Ø/ verbs with trisyllabic and longer stems (e.g. *a-li-k<u>a</u>*[*tsuxúúlúlá*] 's/he will pour it$_6$ slowly'), the H_M links to the final mora via final docking and spreads through the second stem syllable due to leftward spread. In verbs with disyllabic stems (e.g. *a-li-m<u>u</u>*[*lóβá*] 's/he will refuse him/her'), the H_M spreads from the final vowel onto the penult due to throwback.

When the stem is monosyllabic (e.g. *a-li-m<u>ú</u>*[*sjá*] 's/he will grind him/her'), the final (and only) mora of the stem is preceded by the H-toned object prefix *mú-*. Final docking fails to apply because it requires that the mora preceding the target is toneless. The H_M is instead linked to the sole stem mora by the short extension of peninitial MHA. Due to throwback, the H_M spreads onto the object prefix after initial lowering deletes the object prefix H. A derivation is given in 79.

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³ As in forms that do not include an object prefix, /Ø/ verbs may take either the second mora or the S_2–FV pattern in this context. For instance, my database includes both *a-li-m<u>u</u>*[*lexúula*] and *a-li-m<u>u</u>*[*lexúúlá*] for 's/he will release him/her'. All tokens of verbs with a CVVCV shape in my database take the second mora pattern: *a-li-m<u>u</u>*[*lóonda*] 's/he will follow him/her' and *a-li-m<u>u</u>*[*réeβa*] 's/he will ask him/her'. In these forms, the H_M is assigned to the second stem mora by peninitial MHA, spreads onto the initial mora by rise decontouring, and finally delinks from the second stem mora by penult fall. The transcription given in 78, *a-li-m<u>u</u>*[*loóndá*] 's/he will follow him/her', is a hypothesized alternative pronunciation.
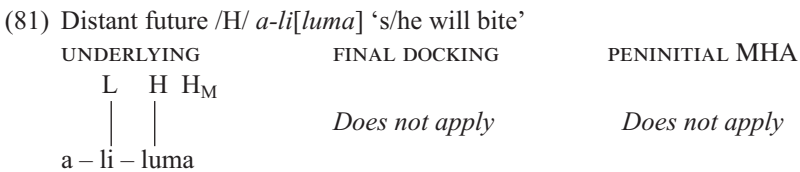
(79) Distant future /∅/ *a-li-mú*[*sjá*] 's/he will grind him/her'

UNDERLYING	FINAL DOCKING	PENINITIAL MHA
L　H　H_M	*Does not apply*	L　H　H_M
a – li – mu – sja		a – li – mu – sja

LEFTWARD SPREAD	INITIAL LOWERING	THROWBACK
Does not apply	L ∅←H　H_M	L　　H_M
	a – li – mu – sja	a – li – mu – sja
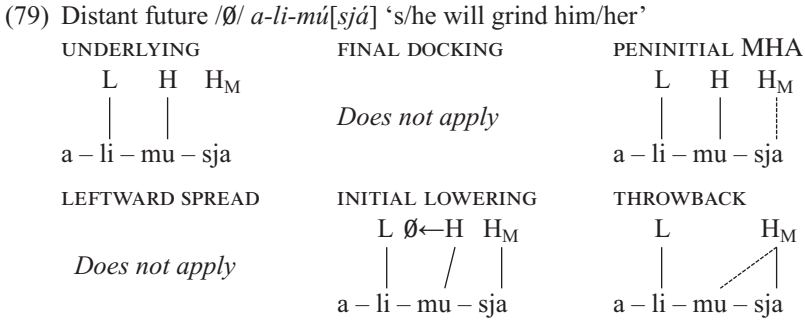
In most /H/ verbs—those in 80a—the H_M surfaces on the final two moras of the stem. In monosyllabic and CVCV stems, given in 80b, the verb surfaces all L.

(80) Distant future, /H/ verbs

　a.　a-li[x̠aaβaxaaβílá]　　's/he will repeatedly seek for'
　　　a-li[β̠ojoŋanílá]　　　's/he will go around for'
　　　a-li[x̠aaβaxaáβá]　　　's/he will repeatedly seek'
　　　a-li[s̠okoɲólá]　　　　's/he will squat'
　　　a-li[x̠uumbeélá]　　　's/he will envelop'
　　　a-li[s̠aandítsá]　　　　's/he will thank'
　　　a-li[k̠araáŋgá]　　　　's/he will fry'
　　　a-li[β̠ukúlá]　　　　　's/he will take'
　　　a-li[r̠eérá]　　　　　　's/he will bring'
　　　a-li[x̠aáβá]　　　　　　's/he will seek'
　b.　a-li[β̠eka]　　　　　　's/he will shave'
　　　a-li[l̠uma]　　　　　　's/he will bite'
　　　a-li[xw̠a]　　　　　　's/he will pay dowry'
　　　a-li[r̠a]　　　　　　　's/he will bury, place'

In long /H/ verbs, the H_M is assigned to the final vowel by final docking. However, it is not affected by leftward spread. Instead, the H_M spreads onto the penultimate mora via throwback.

The observation that the H_M in /H/ verbs is not subject to leftward spread is puzzling. /∅/ verbs like *a-li*[*tsuxúúlúlá*] 's/he will pour slowly' show that leftward spread can apply in the distant future, while verbs in the hesternal perfective like *j-a*[*x̠aaβaxááβílé*] 's/he repeatedly sought' show that leftward spreading can apply in /H/ verbs. It appears to be the specific combination of distant future /H/ verbs in a phrase-final, affirmative context that is excluded from the set of leftward spread's operative contexts. See §3.6 for discussion.

Final docking, which requires that the mora preceding its target be toneless, is blocked by the root H in verbs with monosyllabic and CVCV stems. While the root H ultimately deletes due to initial lowering, it immediately precedes the targeted final vowel during the evaluation of final docking in verbs like *a-li*[*l̠uma*] 's/he will bite'. A derivation is given in 81.

(81) Distant future /H/ *a-li*[*luma*] 's/he will bite'

UNDERLYING	FINAL DOCKING	PENINITIAL MHA
L　H H_M	*Does not apply*	*Does not apply*
a – li – luma		

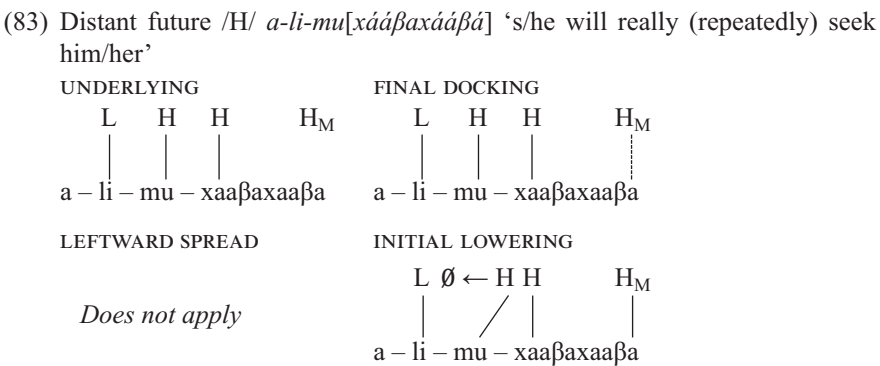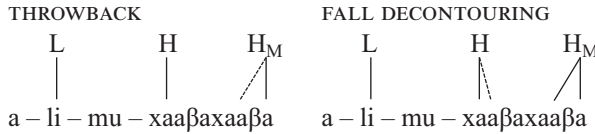| LEFTWARD SPREAD	INITIAL LOWERING	THROWBACK
	L H → Ø H_M	
Does not apply	| |	*Does not apply*
	a – li – luma	
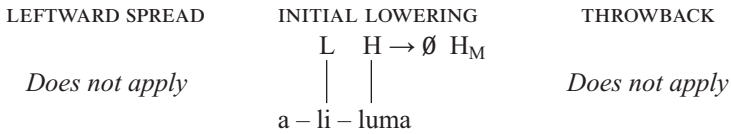
The stem tone pattern is largely the same in /H/ verbs with an object prefix. In particular, the stem is H on the final two moras. In this context, the root H is also realized. As shown in 82b, only one H is realized on the final two moras of the stem in verbs with monosyllabic and CVCV stems.

(82) Distant future, /H/ verbs with an object prefix

a. a-li-m*u*[x*á*áβaxaáβá]   's/he will repeatedly seek him/her'
    a-li-m*u*[βójoŋáná]   's/he will go around him/her'
    a-li-m*u*[x*ú*úmbeélá]   's/he will envelop him/her'
    a-li-mu[s*á*á⁺ndítsá]   's/he will thank him/her'
    a-li-m*u*[sítaáká]   's/he will accuse him/her'
    a-li-m*u*[x*á*⁺láká]   's/he will cut him/her'
    a-li-m*u*[β*ú*⁺kúlá]   's/he will take him/her'
    a-li-m*u*[r*é*⁺érá][4]   's/he will bring him/her'

b. a-li-m*u*[βéká]   's/he will shave him/her'
    a-li-m*u*[lúmá]   's/he will bite him/her'
    a-li-m*ú*[xw*á*]   's/he will pay her dowry'
    a-li-m*ú*[r*á*]   's/he will bury him/her'

In verbs with more than four stem syllables (e.g. *a-li-mu*[x*á*áβaxaáβá] 's/he will really (repeatedly) seek him/her'), the H_M is assigned to the final mora by final docking. The object prefix H is deleted by initial lowering, the H_M spreads left onto the penult via throwback, and the root H spreads onto the second stem mora in long initial syllables due to fall decontouring. A derivation is given in 83.
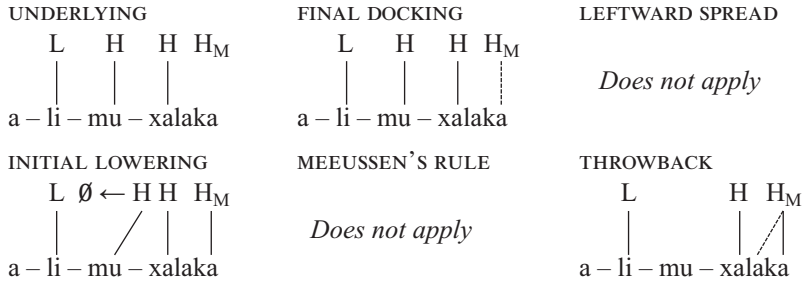
(83) Distant future /H/ *a-li-mu*[x*á*áβax*á*áβá] 's/he will really (repeatedly) seek him/her'

UNDERLYING	FINAL DOCKING
L H H H_M	L H H H_M
| | | |	| | | ⁝
a – li – mu – xaaβaxaaβa	a – li – mu – xaaβaxaaβa

LEFTWARD SPREAD	INITIAL LOWERING
	L Ø ← H H H_M
Does not apply	| / | |
	a – li – mu – xaaβaxaaβa

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[4] The transcription provided in 82 of *a-li-mu*[r*é*⁺érá] 's/he will bring him/her' is a hypothesized, but not a verified, pronunciation. In the current database, this verb and several others were pronounced without an H_M on the final two moras of the stem, for example, *a-li-mu*[r*é*era], *a-li-mu*[x*á*aβa] 's/he will seek him/her', and *a-li-mu*[s*á*ánditsa] 's/he will thank him/her'. My database includes a verb with a CVVCV stem and a reflexive object prefix in the distant future. Reflexive object prefixes largely have the same influence on verb tone as other object prefixes in Kabarasi, and in this context the verb 'bring' is realized as *a-li-i*[r*é*⁺érá] 's/he will bring him/herself'. My database also includes one verb form with a CV- object prefix both with and without an H_M on the final two moras: *a-li-mu*[x*ú*pax*ú*pá] alternates in free variation with *a-li-mu*[x*ú*paxupa] for 's/he will repeatedly beat him/her'.

THROWBACK   FALL DECONTOURING

L   H   H$_M$ L   H   H$_M$

| | / | | \ / |

a – li – mu – xaaβaxaaβa   a – li – mu – xaaβaxaaβa

The analysis for verbs with trisyllabic stems (e.g. *a-li-mu*[*xá⁺láká*] 's/he will cut him/her') is parallel. The H$_M$ is not deleted by Meeussen's rule because throwback follows Meeussen's rule in the derivation. For this reason, the H$_M$ is not adjacent to the root H at the time Meeussen's rule would apply. A derivation is given in 84.

(84) Distant future /H/ *a-li-mu*[*xá⁺láká*] 's/he will cut him/her'

UNDERLYING   FINAL DOCKING   LEFTWARD SPREAD

L   H   H   H$_M$ L   H   H   H$_M$

| | | | | | | ⁝   *Does not apply*

a – li – mu – xalaka   a – li – mu – xalaka

INITIAL LOWERING   MEEUSSEN'S RULE   THROWBACK

L Ø ← H H H$_M$ L   H   H$_M$

| / | | *Does not apply* | | /

a – li – mu – xalaka   a – li – mu – xalaka

The H$_M$ is not deleted by Meeussen's rule in verbs with CVVCVCV stems (e.g. *a-li-mu*[*sáá⁺ndítsá*] 's/he will thank him/her') for the same reason: Meeussen's rule applies before throwback spreads the H$_M$ onto the penult. Indeed, Meeussen's rule applies even before fall decontouring.

In verbs with CVCV stems (e.g. *a-li-mu*[*lúmá*] 's/he will bite him/her'), the root H blocks final docking. The H$_M$ is therefore not linked to the verb stem. The root H ultimately spreads onto the final mora via penult doubling. A derivation is given in 85.

(85) Distant future /H/ *a-li-mu*[*lúmá*] 's/he will bite him/her'

UNDERLYING   FINAL DOCKING   INITIAL LOWERING

L   H   H   H$_M$ L Ø ← H H H$_M$

| | | *Does not apply* | / |

a – li – mu – luma   a – li – mu – luma

MEEUSSEN'S RULE   THROWBACK   PENULT DOUBLING

                                                           L   H   H$_M$

Does not apply   *Does not apply* | | \

                                                           a – li – mu – luma
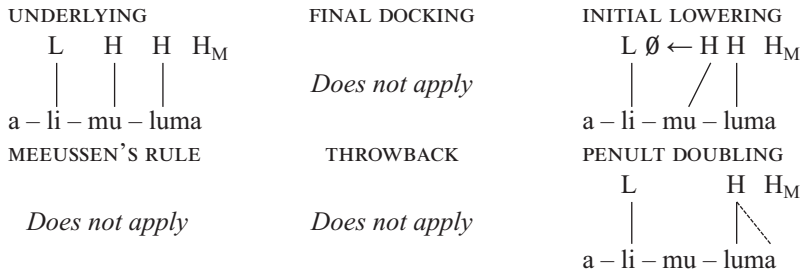
The analysis of verbs with monosyllabic stems (e.g. *a-li-mú*[*xwá*] 's/he will pay her dowry') is the same as for verbs with CVCV stems except that the root H spreads left onto the object prefix via throwback.

3.6. MELODY 6: H ON V$_2$/H ON S$_3$–FV. The hodiernal perfective negative exhibits yet another tonal pattern. /H/ verbs take an H$_M$ that extends from the third stem syllable through the final vowel, and /Ø/ verbs realize an H$_M$ on the second mora of the stem.

/H/ verbs in the hodiernal perfective negative are given below. As shown in 86a, verbs with four or more stem syllables have an H that extends from the third stem syllable through the final. Verbs with three or fewer stem syllables realize an H on the final vowel only, as in 86b. The H of the clause-final negative marker *tá̱* is downstepped relative to the stem H.

(86) Hodiernal perfective negative, /H/ verbs
    a. ʃʲ-aa[x̱aaβaxáá̱βílé] ⁺tá̱   's/he did not repeatedly seek'
       ʃʲ-aa[β̱ojoŋááné] ⁺tá̱   's/he did not go around'
       ʃʲ-aa[tsu̱unzuunílé] ⁺tá̱   's/he did not suck'

ʃʲ-aa[k̲araaɲdʒílé] ꜛt̲á   's/he did not fry'
 b. ʃʲ-aa[s̲aandiitsé] ꜛt̲á 's/he did not thank'
   ʃʲ-aa[x̲alaatʃé] ꜛt̲á   's/he did not cut'
   ʃʲ-aa[x̲aaβilé] ꜛt̲á   's/he did not seek'
   ʃʲ-aa[l̲umilé] ꜛt̲á   's/he did not bite'
   ʃʲ-aa[xweeré] ꜛt̲á   's/he did not pay dowry'

The H_M is assigned to the final vowel via final docking. In verbs with more than three stem syllables (e.g. *ʃʲ-aa[x̲aaβaxáábílé]* ꜛt̲á 's/he did not repeatedly seek'), the H_M subsequently spreads left through the third stem syllable due to leftward spread. The root H is deleted by initial lowering.

In the hesternal perfective (melody 4, §3.4) and the distant future (melody 5, §3.5), the H_M spreads onto the penultimate mora in /H/ verbs with fewer than three stem syllables (e.g. *j-a[x̲alaátʃé]* 's/he cut'). This does not happen in the hodiernal perfective negative because throwback—the rule by which the H_M shifts in the hesternal perfective and the distant future—applies only to phrase-final Hs; the H_M is not final within the phrase in the hodiernal perfective negative due to the presence of the negative marker *t̲á*.

With an object prefix, the first and final syllables of the stem are H, regardless of stem shape. As shown in 87, the object prefix is L.

 (87) Hodiernal perfective negative, /H/ verbs with an object prefix
    ʃʲ-aa-m̲u[x̲áábaxaaβilé] ꜛt̲á   's/he did not repeatedly seek him/her'
    ʃʲ-aa-m̲u[βójoɲaané] ꜛt̲á   's/he did not go around him/her'
    ʃʲ-aa-m̲u[ts̲úúnzuunilé] ꜛt̲á   's/he did not suck him/her'
    ʃʲ-aa-m̲u[s̲áándiitsé] ꜛt̲á   's/he did not thank him/her'
    ʃʲ-aa-m̲u[x̲álaatʃé] ꜛt̲á   's/he did not cut him/her'
    ʃʲ-aa-m̲u[x̲ááβilé] ꜛt̲á   's/he did not seek him/her'
    ʃʲ-aa-m̲u[lúmilé] ꜛt̲á   's/he did not bite him/her'
    ʃʲ-aa-m̲u[xw̲ééꜛré] ꜛt̲á   's/he did not pay her dowry'

In this case, initial lowering targets the H of the object prefix for deletion. The root H surfaces because it is not in macrostem-initial position. It is unknown why leftward spread does not apply even in long verbs like *ʃʲ-aa-m̲u[x̲ááβaxaaβilé]* ꜛt̲á 's/he did not repeatedly seek him/her'. Leftward spread also unexpectedly fails to apply in phrase-final /H/ verbs in the distant future (§3.5), though these two constructions have little else in common.

/Ø/ verbs in the hodiernal perfective negative realize an H on at least the second mora, as shown in 88a. When the second mora of the stem is the second mora of a long initial syllable, the initial mora is also H, as in 88b. When the second mora of the stem is the first mora of a long second syllable, the second and third stem moras are H, as in 88c.

 (88) Hodiernal perfective negative, /Ø/ verbs
   a. ʃʲ-aa[loβíle] t̲á   's/he did not refuse'
   b. ʃʲ-aa[tʃííŋguuliile] t̲á   's/he did not lift for'
    ʃʲ-aa[rééβareeβile] t̲á   's/he did not repeatedly ask'
    ʃʲ-aa[tʃííŋguulile] t̲á   's/he did not lift'
    ʃʲ-aa[sééβuule] t̲á   's/he did not say bye'
    ʃʲ-aa[rééβile] t̲á   's/he did not ask'
    ʃʲ-aa[kwíire] t̲á   's/he did not fall'
   c. ʃʲ-aa[lexúúlile] t̲á   's/he did not release'
    ʃʲ-aa[kulííʃe] t̲á   's/he did not name'

As shown in 89, stem tone is unaffected in /Ø/ verbs with an object prefix. As in forms without an object prefix, the H_M is assigned to the second stem mora, and intermediate contour tones are simplified as level Hs.

(89) Hodiernal perfective negative, /Ø/ verbs

    a. ʃʲ-aa-mu̱[loβíle] tá   's/he did not refuse him/her'

    b. ʃʲ-aa-mu̱[tʃííŋguuliile] tá   's/he did not lift him/her'

        ʃʲ-aa-mu̱[rééβareeβile] tá   's/he did not repeatedly ask him/her'

        ʃʲ-aa-mu̱[tʃííŋguulile] tá   's/he did not lift him/her'

        ʃʲ-aa-mu̱[sééβuule] tá   's/he did not say bye to him/her'

        ʃʲ-aa-mu̱[rééβile] tá   's/he did not ask him/her'

        ʃʲ-aa-mu̱[sjééle] tá   's/he did not grind him/her'

    c. ʃʲ-aa-mu̱[lexúúlile] tá   's/he did not release him/her'

        ʃʲ-aa-mu̱[kulííʃe] tá   's/he did not name him/her'

The tonal pattern observed in /Ø/ verbs is not unfamiliar; the second mora pattern is well attested in Kabarasi tonal melodies. However, accounting for the fact that /Ø/ verbs take this pattern in this particular construction is challenging in view of the larger tonal system.

Recall that the hesternal perfective takes melody 4 (§3.4), which is characterized by an H span that extends from the second stem syllable through the final in /Ø/ verbs and one that extends from the third stem syllable through the final in /H/ verbs. In /H/ verbs (e.g. *j-a*[*x̱a̱aβax̱áábílé*] 's/he repeatedly sought'), the H_M is assigned to the final vowel through final docking and spreads through the third stem syllable through leftward spread. In /Ø/ verbs (e.g. *j-a*[*reeβárééβílé*] 's/he repeatedly asked'), the same two rules apply. Because the root H does not limit the extent of leftward spread, however, the H_M spreads through the second stem syllable. In order to ensure that in /Ø/ hesternal perfective verbs the H_M is assigned to the stem by the construction-specific rule of final docking, rather than by the ubiquitous peninitial MHA, I propose in §3.4 that final docking precedes peninitial MHA in the derivation.

This ordering relationship is at odds with what appears to be required by the tonal properties of the hodiernal perfective negative. /H/ verbs indicate that both final docking and leftward spread apply in the hodiernal perfective negative; given this, it is mysterious that the H_M is not assigned by final docking in /Ø/ verbs, but rather by the apparently later-applying peninitial MHA.

An alternative analysis of the hodiernal perfective negative—one that I endorse—is that peninitial MHA actually precedes final docking in the derivation. This accounts for the fact that /Ø/ verbs in this context have an H on the second stem mora (e.g. *ʃʲ-aa*[*loβíle*] *tá* 's/he did not refuse') and not the final vowel. In /H/ verbs (e.g. *ʃʲ-aa*[*x̱a̱aβax̱áábílé*] *tá* 's/he did not repeatedly seek'), peninitial MHA fails because it requires that the mora preceding the target be toneless. At the time peninitial MHA applies, the root H is linked to the initial mora of the stem and so blocks peninitial MHA. The H_M is instead assigned by the later-applying final docking. From the final vowel, the H_M spreads through the third stem syllable due to leftward spread.

Recall that /H/ verbs in the distant future have an H_M on the final two moras of the stem (e.g. *a-li*[*x̱a̱aβaxaaβílá*] 's/he will repeatedly seek for') and that /Ø/ verbs in the same construction take either of two tonal patterns: (i) an H_M on the second stem mora (e.g. *a-li*[*kalúʃila*] 's/he will repeat') or (ii) an H_M from the second stem syllable through the final (e.g. *a-li*[*kalúʃílá*]). Ordering peninitial MHA before final docking makes available a simple analysis for the first of these patterns. Peninitial MHA applies first and assigns the H_M to the second stem mora in /Ø/ verbs. Peninitial MHA fails in /H/ verbs because of the root H; as a consequence, the H_M is assigned by the later-applying rule of final docking. Throwback spreads the H_M onto the penultimate mora in /H/ verbs, but the construction-specific rule of leftward spread is not indexed to apply in the distant future.

I propose that the other pattern found in distant future /Ø/ verbs—that is, H_M from the second stem syllable through the final vowel (S_2–FV)—is an invasive overextension of a (nonmelodic) tonal pattern that emerged first as a bona fide tonal melody in constructions that lose their tonal melody in phrase-medial position, for example, the hesternal perfective (melody 4, §3.4) and the distant future (melody 5, §3.5). Refer to §4 for more on the phrase-medial loss of H_Ms in Kabarasi and Ebarb 2014:243–65 for more on the emergence of the S_2–FV pattern as a tonal melody within Luhya.

The pattern of variability noted above regarding /Ø/ distant future verbs reflects the tension between the expanding use of the S_2–FV pattern and the analytical contradictions such expansion introduces. In particular, it is mysterious why leftward spread applies in /Ø/ verbs (e.g. *a-li*[*tʃiiŋgúúlílá*] 's/he will lift for'), but only throwback applies in /H/ verbs (e.g. *a-li*[*βoʝoŋanílá*] 's/he will go around for'). Pairing the S_2–FV pattern in /Ø/ verbs with the final vowel pattern in /H/ verbs also suggests that final docking precedes peninitial MHA. However, the opposite ordering relationship is needed in the analysis of hodiernal perfective negative verbs (/H/: *ʃʲ-aa*[*xa̱aβaxáábílé*] *ꜛtá* 's/he did not repeatedly seek'; /Ø/: *ʃʲ-aa*[*tʃííŋguuliile*] *tá* 's/he did not lift for').

My data on the hesternal perfective—another construction that loses its tonal melody phrase-medially (see §4)—give no indication of variability with respect to the tonal pattern realized in /Ø/ verbs. In this context, only the S_2–FV pattern is observed (e.g. *j-a*[*tʃiiŋgúúlíílé*] 's/he lifted for'). I propose that the S_2–FV pattern in /Ø/ hesternal perfective verbs is an innovation, as it is in the distant future, and that, at an earlier stage, the hesternal perfective was inflected with a tonal melody that resembled more the melody that characterizes the hodiernal perfective negative currently. That is, I suggest that hesternal perfective was once characterized by a tonal melody in which the /H/ verbs have an H_M from the third stem syllable through the final and /Ø/ verbs have an H_M on the second stem mora. The S_2–FV pattern has now entirely replaced the earlier second stem mora pattern in hesternal perfective /Ø/ verbs.

The same pattern of variation in /Ø/ verbs observed in the distant past is not also observed in the hesternal perfective because the invasive S_2–FV pattern is less at odds with the tonal properties of /H/ verbs, which realize an H from the third stem syllable through the final (e.g. *j-a*[*xa̱aβaxáábílé*] 's/he repeatedly sought'). In the hesternal perfective, leftward spread does not mysteriously fail to apply in /H/ verbs, as it does in the distant future. Because incorporating the S_2–FV pattern into the hesternal perfective introduces fewer analytical challenges than it does in the distant future, the pattern is better integrated in the hesternal perfective.

3.7. MELODY 7: H ON TENSE PREFIX. The habitual is somewhat unusual in that it takes a tonal melody characterized by an H_M that is assigned to the tense prefix *aa-*. Though the construction appears in some respects not to be inflected with a tonal melody, patterns of tonal deletion indicate that the H on the tense prefix in this construction is in fact melodic, and not lexical.

As shown in 90a, the tense prefix *aa-* is H in the habitual. In forms with no object prefix, bimoraic and longer stems are all L. Monosyllabic stems are H, as in 90b, regardless of tonal class.

(90) Habitual, 's/he is always … '

	/H/ VERBS		/Ø/ VERBS	
a.	j-áá[tsu̱unzuuna]	'sucking'	j-áá[tʃiiŋguulila]	'lifting for'
	j-áá[sa̱anditsa]	'thanking'	j-áá[tʃiiŋguula]	'lifting'
	j-áá[so̱koɲola]	'squatting'	j-áá[seeβula]	'saying bye'

j-áá[k̲araaŋga]	'frying'	j-áá[lexuula]	'releasing'
j-áá[x̲alaka]	'cutting'	j-áá[kulixa]	'naming'
j-áá[x̲aaβa]	'seeking'	j-áá[reeβa]	'asking'
j-áá[l̲uma]	'biting'	j-áá[loβa]	'refusing'
b. j-áá[xw̲á]	'paying dowry'	j-áá[kwá]	'falling'

I analyze the root H as being deleted by initial lowering, rather than Meeussen's rule. Data involving habitual verbs with an object prefix support this analysis.

The presence of an object prefix does not influence verb tone in /Ø/ habitual verbs. The tense prefix *aa-* is H, and the remainder of the verb is L, as shown in 91.

(91) Habitual, /Ø/ verbs with an object prefix 's/he is always … '
   j-áá-m̲u[tʃiiŋguulila]   'lifting for him/her'
   j-áá-m̲u[tʃiiŋguula]   'lifting him/her'
   j-áá-m̲u[seeβula]   'saying bye to him/her'
   j-áá-m̲u[lexuula]   'releasing him/her'
   j-áá-m̲u[kulixa]   'naming him/her'
   j-áá-m̲u[reeβa]   'asking him/her'
   j-áá-m̲u[loβa]   'refusing him/her'
   j-áá-m̲u[sja]   'grinding him/her'

/H/ verbs realize an H on the initial syllable when an object prefix is present. In CVCV stems, the final vowel is also H, as in 92b; in verbs with monosyllabic stems, the object prefix is also H, as in 92c.

(92) Habitual, /H/ verbs with an object prefix 's/he is always … '
   a. j-áá-m̲u[x̲ááβaxaaβa]   'repeatedly seeking him/her'
      j-áá-m̲u[x̲úúmbeela]   'enveloping him/her'
      j-áá-m̲u[s̲áánditsa]   'thanking him/her'
      j-áá-m̲u[β̲ójoŋana]   'going around him/her'
      j-áá-m̲u[x̲álaka]   'cutting him/her'
      j-áá-m̲u[x̲áaβa]   'seeking him/her'
   b. j-áá-m̲u[l̲úmá]   'biting him/her'
   c. j-áá-ꜜmú[xw̲á]   'paying her dowry'

The object prefix H is deleted by initial lowering, triggered by the H_M that surfaces on the tense prefix *aa-*. The root H spreads onto the second stem mora due to fall decontouring when the initial syllable is long (e.g. *j-áá-m̲u[s̲áánditsa]* 's/he is always thanking him/her'), onto the final vowel due to penult doubling when it is penultimate within the phrase (e.g. *j-áá-m̲u[l̲úmá]* 's/he is always biting him/her'), and onto the object prefix due to throwback when it is final within the phrase (e.g. *j-áá-ꜜmú[xw̲á]* 's/he is always paying her dowry').

An alternative analysis treats the habitual as a construction that is not inflected with a tonal melody. Under this approach, the root H is deleted by Meeussen's rule in /H/ verbs with no object prefix. If the tense prefix is analyzed as being underlyingly linked to the rightmost mora of the prefix /aá-/, a sequence of three Hs on adjacent moras (HHH) is reduced to HØH. Stipulating that Meeussen's rule applies from left to right, deleting the leftmost H preceded by another H, accounts for the facts of the habitual. However, this analysis is inconsistent with how HHH sequences are resolved in other constructions that are not inflected with a tonal melody.

Verb forms may include two object prefixes in Kabarasi when one is the first-person singular *Ń̲-*, a homorganic nasal that lengthens the preceding syllable, where the H it introduces is realized (cf. *a-la[kulixa]* 's/he will name' vs. *a-la-áŋ[gulixa]* 's/he will name

(after) me'). When the first-person singular $\underset{\cdot}{N}$- cooccurs with the third-person singular *mú-* and an /H/ root, the resulting tonal pattern indicates that Meeussen's rule applies iteratively from right to left: *a-la-mú-úm*[*betʃela*] 's/he will shave him/her for me'. The third H is deleted by the second, which in turn is deleted by the first. The post-underlying fall in the prestem syllable (*a-la-mú-um*[*betʃela*]) is eliminated by fall decontouring. If Meeussen's rule applied from left to right, the analysis would predict that the root H surfaces, albeit downstepped relative to the object prefix H: *a-la-mú-ꜜúm*[ꜜ*bétʃela*] would become *a-la-mú-um*[*bétʃela*], by Meeussen's rule, then *a-la-mú-úꜜm[*bétʃela*], by fall decontouring. That this pattern is not observed indicates that Meeussen's rule does not apply from left to right.

If one treats the H of the tense prefix as an H_M rather than an underlyingly linked H, explaining the fact that the object prefix H, but not the root H, deletes in forms like *j-áá-mu*[*βójoŋana*] 's/he is always going around him/her' is straightforward: the H_M of the tense prefix triggers initial lowering, which deletes macrostem-initial Hs and precedes Meeussen's rule in the derivation.

3.8. MELODY 8: H ON S_1–PENULT/H ON S_3–FV). The tonal properties of the imperative$_{sg}$ are complex and merit further investigation. I briefly describe what is currently known about this construction and the analytical challenges the available data pose.

As in many Bantu languages (Marlo 2013:166–67), the imperative takes a unique tonal melody in Kabarasi. The basic properties of the melody, as realized in verb forms with long stems, are illustrated in 93. /H/ verbs are H from the third stem syllable through the final, with or without an object prefix, as in 93a. /Ø/ verbs have an H from the initial mora through the penult without an object prefix, as in 93b. As shown in 93c, /Ø/ verbs with an object prefix take two H_Ms: one that targets the second stem mora and another that targets the final vowel.

(93) Imperative$_{sg}$
    a. [xaaβaxááβílá]   'repeatedly seek for!'
       mu[xaaβaxááβé]   'repeatedly seek him/her!'
    b. [rééβárééβa]   'repeatedly ask!'
    c. mu[reeβáreeβilé]   'repeatedly ask for him/her!'

A unified analysis of the four data types represented in 93 is elusive, even if imperatives with and without object prefixes are treated as separate constructions that take distinct tonal melodies (as was done with subjunctives in §3.2). The properties of imperatives with shorter stem-shapes further complicate the analysis.

/H/ verbs without an object prefix realize an H from the third stem syllable through the final in stems with four or more syllables, as in 94a. The final two moras of the stem are H in trisyllabic stems, as in 94b. The initial syllable is L in trisyllabic stems and longer, but is H in monosyllabic and disyllabic stems, shown in 94c–e.

(94) Imperative$_{sg}$, /H/ verbs
    a. [xaaβaxááβílá]   'repeatedly seek for!'
       [βojoŋánílá]   'go around for!'
       [βojoŋáná]   'go around!'
       [sokoŋólá]   'squat!'
    b. [xuumbeélá]   'envelop!'
       [saandítsá]   'thank!'
       [sitaáká]   'accuse!'
       [βukúlá]   'take!'
       [xaláká]   'cut!'

c. [xá⁺áβá]   'seek!'
   [ré⁺érá]   'bring!'
d. [βéka]   'shave (someone)!'
   [lúma]   'bite!'
e. [xwá]   'pay dowry!'
   [rá]   'bury, place!'

Why the initial mora is H in disyllabic stems, but not in trisyllabic stems and longer, is mysterious. That penult doubling fails to apply in verbs with CVCV stems, as in 94d, is also surprising.

The available data indicate several differences between /H/ verbs with and without an object prefix. Stems with four syllables are H across the final two syllables, as in 95a. In all smaller stem shapes, shown in 95b, the final two moras are H.

(95) Imperative$_{sg}$, /H/ verbs with an object prefix
   a. mu[xaaβaxááβé]   'repeatedly seek him/her!'
      mu[βojoŋáné]   'go around him/her!'
   b. mu[xuumbeélé]   'envelop him/her!'
      mu[saandítsé]   'thank him/her!'
      mu[xalátʃé]   'cut him/her!'
      mu[βukúlé]   'take him/her!'
      mu[xaáβé]   'seek him/her!'
      mu[reéré]   'bring him/her!'
      mu[βétʃé]   'shave him/her!'
      mu[lúmé]   'bite him/her!'
      mu[xwé]   'pay her dowry!'
      mu[ré]   'bury him/her!'

What is most surprising about these forms is that the stem H does not spread onto the object prefix in verbs with monosyllabic stems, despite the fact that throwback appears to be operative in this context and throwback spreads onto object prefixes in all other constructions.

As shown in 96, /Ø/ verbs with no object prefix are H from the left edge of the stem through the penult. The sole stem syllable is H in monosyllabic stems.

(96) Imperative$_{sg}$, /Ø/ verbs
   [tʃííŋgúúlíla]   'lift for!'
   [tsúxúúlúla]   'pour slowly!'
   [rééβárééβa]   'repeatedly ask!'
   [kálúʃíla]   'repeat!'
   [tʃííŋgúúla]   'lift!'
   [sééβúla]   'say bye!'
   [léxúúla]   'release!'
   [jáβíla]   'bury!'
   [kúlíxa]   'name!'
   [lóónda]   'follow!'
   [rééβa]   'ask!'
   [lóβa]   'refuse!'
   [léxa]   'leave (something)!'
   [kwá]   'fall!'
   [sjá]   'grind!'

In most long /Ø/ verbs with an object prefix, two H$_M$s surface: one on the second stem syllable and another on the final vowel. This is shown in 97a. In trisyllabic stems with a

short second syllable, the final two vowels are H, as in 97b. CVVCV stems realize a level H on the initial syllable and a downstepped H on the final vowel, as in 97c. Smaller stems are H throughout, as in 97d.

(97) Imperative$_{sg}$, /Ø/ verbs with an object prefix

    a. m<u>u</u>[tʃiiŋúúlilé]   'lift for him/her!'
        k<u>a</u>[tsuxúúlulá]   'pour it$_6$ slowly!'
        m<u>u</u>[reeβáreeβá]   'repeatedly ask him/her!'
        m<u>u</u>[kalúʃilá]   'defend him/her!'
        m<u>u</u>[tʃiiŋúúꜜlé]   'lift him/her!'
        m<u>u</u>[lexúúꜜlé]   'release him/her!'
    b. m<u>u</u>[seeβúlé]   'say bye to him/her!'
        m<u>u</u>[jaβílé]   'bury him/her!'
        m<u>u</u>[kulíʃé]   'name him/her!'
    c. m<u>u</u>[lóóꜜndé]   'follow him/her!'
        m<u>u</u>[rééꜜβé]   'ask him/her!'
    d. m<u>u</u>[lóβé]   'refuse him/her!'
        m<u>u</u>[léʃé]   'leave him/her!'
        m<u>u</u>[sjé]   'grind him/her!'

As in /H/ verbs, the object prefix resists spreading from the phrase-final H in monosyllabic stems (e.g. *m<u>u</u>[sjé]* 'grind him/her!'). Future work will verify and develop an analysis of the imperative$_{sg}$ patterns described in this section.

3.9. Summary of inflectional tone and future directions. In §3, I have described and offered an analysis of eight tonal melodies and their interactions with lexical tone in Kabarasi. The tonal patterns identified above may be derived from a small set of H$_M$ assignment rules that target either the second mora of the stem (peninitial MHA, §§3.1–3.3), the first mora of the second stem syllable (subjunctive MHA, §3.2), the initial mora of the macrostem (initial MHA, §3.3), the final vowel of the stem (final docking, §§3.4–3.6), or the tense prefix (§3.7). Among the H$_M$ assignment rules, only peninitial MHA is not restricted to applying in a limited number of constructions; all others apply in a construction-specific manner.

Once assigned to the stem, H$_M$s are affected by several tonal adjustment rules, including general rules that eliminate contour tones and a later-applying rule that creates a falling contour from level Hs in long, phrase-penultimate syllables. H$_M$s are also affected by two general spreading rules: one that spreads phrase-final Hs onto the penult and another that spreads phrase-penultimate Hs onto the final vowel. In the hesternal perfective (melody 4), the distant future (melody 5), and the hodiernal perfective negative (melody 6), H$_M$s are also subject to a construction-specific rule of unbounded leftward spreading. Finally, lexical Hs that are initial within the macrostem are deleted in all constructions that are inflected with a tonal melody.

The tonal melodies identified in this section are summarized in Table 1. For reference, examples from the near future—a construction that is not inflected with a tonal melody—are also given in the table.

Several of Kabarasi's tonal rules are crucially ordered with respect to one another. In Table 2, I summarize all crucial ordering relationships and cite a verb form for which each ordering relationship is crucial. Cross-references to the relevant derivations are also provided.

The ordering relationship between final docking and peninitial MHA is complicated due to ongoing restructuring of the melodic tone system. I propose that peninitial MHA preceded final docking at one time in the history of Kabarasi—indeed, in the history of Luhya. However, a novel tonal pattern (S$_2$–FV) is emerging in constructions that lose

NEAR FUTURE
/H/: H on σ1   a-la[sókoɲola]   's/he will squat'
/Ø/: all L   a-la[sáánditsa]   's/he will thank'
                      a-la[kaluʃila]   's/he will repeat'
                      a-la[seeβula]   's/he will say bye'

IMPERATIVE_SG NEGATIVE (MELODY 1)
/H/: all L   o-xa[sokoɲola] tá   'do not squat!'
/Ø/: H on μ2   o-xa[xaaβaxaaβa] tá   'do not repeatedly seek!'
                      o-xa[kalúʃila] tá   'do not repeat!'
                      o-xa[tʃííŋguulila] tá   'do not lift for!'

SUBJUNCTIVE (MELODY 2)
/H/: H on σ2   a[sokóɲole]   'let him/her squat'
/Ø/: H on σ2   a[xaaβáxaaβe]   'let him/her really seek'
                      a[kalúʃile]   'let him/her repeat'
                      a[tʃiiŋgúúlile]   'let him/her lift for'

REMOTE PAST (MELODY 3)
/H/: H on μ1   j-a[sókoɲola]   's/he squatted'
/Ø/: H on μ1   j-a[xááβaxaaβa]   's/he repeatedly sought'
                      j-a[káluʃila]   's/he repeated'
                      j-a[tʃííŋguulila]   's/he lifted for'

HESTERNAL PERFECTIVE (MELODY 4)
/H/: H on σ3–F   j-a[sokoɲóólé]   's/he squatted'
/Ø/: H on σ2–F   j-a[xaaβaxááβílé]   's/he repeatedly sought'
                      j-a[kalúʃíílé]   's/he repeated'
                      j-a[tʃiiŋgúúlílé]   's/he lifted'

DISTANT FUTURE (MELODY 5)
/H/: H on final   a-li[sokoɲólá]   's/he will squat'
/Ø/: H on S_2–FV   a-li[xaaβaxaaβílá]   's/he will repeatedly seek for'
                      a-li[kalúʃílá]   's/he will repeat'
                      a-li[tʃiiŋgúúlílá]   's/he will lift for'

HODIERNAL PERFECTIVE NEGATIVE (MELODY 6)
/H/: H on S_3–FV   ʃʲ-aa[sokoɲóólé] ꜛtá   's/he did not squat'
/Ø/: H on μ2   ʃʲ-aa[xaaβaxááβílé] ꜛtá   's/he did not repeatedly seek'
                      ʃʲ-aa[lexúúlile] tá   's/he did not release'
                      ʃʲ-aa[tʃííŋguuliile] tá   's/he did not lift for'

HABITUAL (MELODY 7)
/H/: H on tns prfx   j-áá[sokoɲola]   's/he is always squatting'
/Ø/: H on tns prfx   j-áá[xaaβaxaaβa]   's/he is always repeatedly seeking'
                      j-áá[kaluʃila]   's/he is always repeating'
                      j-áá[tʃiiŋguulila]   's/he is always lifting for'

IMPERATIVE_SG (MELODY 8)
/H/: H on S_3–FV   [sokoɲólá]   'squat!'
/Ø/: H on S_1–penult [xaaβaxááβílá]   'repeatedly seek for!'
                      [kalúʃíla]   'repeat!'
                      [tʃííŋgúúlíla]   'lift for!'

TABLE 1. Summary of tonal melodies in Kabarasi.

their tonal melodies phrase-medially, including the hesternal perfective (§3.4) and the distant future (§3.5). The emerging pattern is at odds with the historical ordering relationship, requiring that final docking precede peninitial MHA in the derivation. These competing analyses have given rise to a pattern of free variation in distant future verbs. See §3.6 for discussion.

4. PHRASAL TONE. A verb's tonal properties are affected by its position within the phrase and tonal properties of the word that follows. Four kinds of interactions are found in Kabarasi. All constructions that are not inflected with a tonal melody have the same properties phrase-medially as they have phrase-finally when the following word is /Ø/,

SUBJUNCTIVE MHA precedes PENINITIAL MHA	Derivation 38 in §3.2
a[reeβáreeβe] 'let him/her repeatedly ask'	
PENINITIAL MHA precedes INITIAL LOWERING	Derivation 31 in §3.1
o-xa[sokoɲola] tá 'do not squat!'	
LEFTWARD SPREAD precedes INITIAL LOWERING	Derivation 69 in §3.4
j-a[xa̱aβaxááβílé] 's/he repeatedly sought'	
INITIAL LOWERING precedes INITIAL MHA	Derivation 58 in §3.3
j-a[káluʃila] 's/he repeated'	
INITIAL MHA precedes MEEUSSEN'S RULE	Derivation 58 in §3.3
j-a[káluʃila] 's/he repeated'	
MEEUSSEN'S RULE precedes RISE DECONTOURING	Derivation 57 in §3.3
j-a-mú[ˈsééβula] 's/he said bye to him/her'	
RISE DECONTOURING precedes THROWBACK	Derivation 41 in §3.2
a[reéβé] 'let him/her ask'	
THROWBACK precedes FALL DECONTOURING	Derivation 73 in §3.4
j-a-mu[xwéˈéré] 's/he paid her dowry'	
FALL DECONTOURING precedes PENULT FALL	Derivation 40 in §3.2
a[lexúule] 'let him/her release'	
PENULT FALL precedes PENULT DOUBLING	Derivation 45 in §3.2
a-mu̱[lóonde] 'let him/her follow him/her'	

TABLE 2. Summary of crucial rule-ordering relationships.

but postverbal Hs spread far left into the verb. Without creating sequences of distinct Hs on adjacent syllables, postverbal Hs spread iteratively leftward through the left edge of the limitative stem in these constructions. Most constructions inflected with a tonal melody are unaffected by the presence of a following word, whether the following word is /H/ or /Ø/. A small number of constructions that express a tonal melody phrase-finally do not realize the H_M phrase-medially; in these cases, postverbal Hs spread through the leftmost syllable that is preceded by a non-H syllable within the verb stem. Finally, one construction inflected with a tonal melody—the habitual (§3.7)—maintains its tonal melody in phrase-medial position, but postverbal Hs may spread into the verb in this context. The goal of this section is to illustrate the properties of these interactions.

Lexical Hs may spread unboundedly leftward, generating long sequences of H-toned syllables (henceforth 'H spans') that may extend across several underlyingly toneless words, including verbs that are not inflected with a tonal melody. Such long-distance leftward spreading, sometimes known as HIGH TONE ANTICIPATION (HTA) is crosslinguistically rare, even within Bantu (Hyman 2007a and references therein), but relatively common within Luhya (Ebarb 2014 on Idakho, Paster & Kim 2011 on Tiriki, Leung 1991 on Logoori, Mutonyi 2000 on Bukusu) and some neighboring languages (Hyman & Katamba 1993 on Luganda). High tone anticipation has several interesting restrictions in Kabarasi. It is constrained by the OBLIGATORY CONTOUR PRINCIPLE (OCP; Goldsmith 1976, Odden 1986) and generally spreads Hs across inflectional prefixes only when spreading occurs across a word boundary. High tone anticipation is also blocked from spreading into verbs that are inflected with a tonal melody.

In the near future—a construction that is not inflected with a tonal melody—/Ø/ verbs are all L when they precede an underlyingly toneless object (e.g. *o-muu*[*ndu*] 'person'), as in 98a. When an H-toned object follows (e.g. *o-mu*[*sa̱átsa*] 'man'), a level H span extends across the full length of the stem, as in 98b.

(98) Near future, /Ø/ phrase-medial verbs
  a. a-la[sjo] muu[ndu]   's/he will grind someone'
      a-la[lexo] muu[ndu]   's/he will leave someone'
      a-la[reeβo] muu[ndu]   's/he will ask someone'

            a-la[seeβulo] muu[ndu]   's/he will say bye to someone'
            a-la[tʃiiŋguulo] muu[ndu]   's/he will lift someone'
            a-la[kaluʃilo] muu[ndu]   's/he will defend someone'
        b. a-la[sjó] mú[sa̤atsa]   's/he will grind the man'
            a-la[léxó] mú[sa̤atsa]   's/he will leave the man'
            a-la[rééβó] mú[sa̤atsa]   's/he will ask the man'
            a-la[sééβúló] mú[sa̤atsa]   's/he will say bye to the man'
            a-la[tʃííŋgúúló] mú[sa̤atsa]   's/he will lift the man'
            a-la[kálúʃíló] mú[sa̤atsa]   's/he will defend the man'

Recall that the final vowel of the verb /-a/ deletes before the noun's augment /o-/. I represent the remaining [o] within the verb stem for reasons that will be articulated shortly.

The H span introduced by an H-toned object does not extend onto the tense prefix *la-*. As shown in 99, the H span extends only through the left edge of the stem in the perfect and the present continuous as well.

    (99) No HTA onto inflectional prefixes, /Ø/ verbs
        a. PERFECT
            uu[reeβareeβilo] muu[ndu]   's/he has repeatedly asked someone'
            uu[tʃiiŋguuliilo] muu[ndu]   's/he has lifted for someone'
            uu[rééβárééβíló] mú[sa̤atsa]   's/he has repeatedly asked the man'
            uu[tʃííŋgúúlííló] mú[sa̤atsa]   's/he has lifted for the man'
        b. PRESENT CONTINUOUS
            a-la[kulixaaŋgo] muu[ndu]   's/he is naming someone'
            a-la[kaluʃilaaŋgo] muu[ndu]   's/he is defending someone'
            a-la[kúlíxááŋgó] mú[sa̤atsa]   's/he is naming the man'
            a-la[kálúʃílááŋgó] mú[sa̤atsa]   's/he is defending the man'

In contrast, the H span does extend onto the remote future *axa-*, immediate past *axa-*, and persistive *ʃi-* limitative prefixes, as shown in 100.

    (100) HTA onto the limitative prefixes, /Ø/ verbs
        a. REMOTE FUTURE
            j-axa[kaluʃilo] muu[ndu]   's/he will defend someone'
            j-axa[tʃiiŋguulilo] muu[ndu]   's/he will lift for someone'
            j-áxá[kálúʃíló] músa̤atsa   's/he will defend the man'
            j-áxá[tʃííŋgúúlíló] músa̤atsa   's/he will lift for the man'
        b. IMMEDIATE PAST
            w-axa[kaluʃilo] muu[ndu]   's/he just defended someone'
            w-axa[tʃiiŋguulilo] muu[ndu]   's/he just lifted for someone'
            w-áxá[kálúʃíló] mú[sa̤atsa]   's/he just defended the man'
            w-áxá[tʃííŋgúúlíló] mú[sa̤atsa]   's/he just lifted for the man'
        c. PERSISTIVE
            a-ʃi[reeβareeβaaŋgo] muu[ndu]   's/he is still repeatedly asking s.o.'
            a-ʃi[tʃiiŋguulilaaŋgo] muu[ndu]   's/he is still lifting for someone'
            a-ʃí[rééβárééβááŋgó] mú[sa̤atsa]   's/he is still repeatedly asking the
                                                    man'
            a-ʃí[tʃííŋgúúlílááŋgó] mú[sa̤atsa]   's/he is still lifting for the man'

Just as the final vowel *-a* is lost in the immediate past and persistive before the noun's augment *o-*, the final vowel *-e* is lost in the remote future (cf. *j-axa*[*tʃiiŋguulile*] 's/he will lift for').

An H-toned object also introduces an H span in /H/ verbs. In this case, the H span extends only through the third stem syllable. When an /H/ verb is followed by a toneless

object, only the initial syllable of the stem is H, as in 101a. When followed by an H-toned object, a tonal trough on the second stem syllable separates the root H on the initial syllable from the H span introduced by the object, as in 101c. When the verb has less than three stem syllables, as in 101b, H-toned objects do not introduce an H span onto the verb. Furthermore, the noun class prefix is not H, though it is when the verb has three or more syllables.

(101) Near future, /H/ phrase-medial verbs
    a. a-la[ró] muu[ndu]   's/he will bury someone'
         a-la[βéko] muu[ndu]   's/he will shave someone'
         a-la[rééro] muu[ndu]   's/he will bring someone'
         a-la[sáánditso] muu[ndu]   's/he will thank someone'
         a-la[tsúúnzuuno] muu[ndu]   's/he will suck someone'
         a-la[βójoŋano] muu[ndu]   's/he will go around someone'
    b. a-la[ró] mu[sáatsa]   's/he will bury the man'
         a-la[βéko] mu[sáatsa]   's/he will shave the man'
         a-la[rééro] mu[sáatsa]   's/he will bring the man'
    c. a-la[sáánditsó] mú[sáatsa]   's/he will thank the man'
         a-la[tsúúnzuunó] mú[sáatsa]   's/he will suck the man'
         a-la[βójoŋánó] mú[sáatsa]   's/he will go around the man'

An H span that extends through the third stem syllable is also introduced in constructions that are marked with a limitative prefix. As shown in 102, the limitative prefixes are H in this context, whether the following word is /H/ or /Ø/.

(102) HTA onto the limitative prefixes, /H/ verbs
    a. REMOTE FUTURE
         j-áxá[βójoŋano] muu[ndu]   's/he will go around someone'
         j-áxá[xááβaxaaβo] muu[ndu]   's/he will repeatedly seek someone'
         j-áxá[βójoŋánó] músáatsa   's/he will go around the man'
         j-áxá[xááβaxááβó] músáatsa   's/he will repeatedly seek the man'
    b. IMMEDIATE PAST
         w-áxá[βójoŋano] muu[ndu]   's/he just went around someone'
         w-áxá[xááβaxaaβo] muu[ndu]   's/he just repeatedly sought s.o.'
         w-áxá[βójoŋánó] mú[sáatsa]   's/he just went around the man'
         w-áxá[xááβaxááβó] mú[sáatsa]   's/he just repeatedly sought the man'
    c. PERSISTIVE
         a-ʃí[βójoŋanaaŋgo] muu[ndu]   's/he is still going around someone'
         a-ʃí[xááβaxaaβaaŋgo] muu[ndu]   's/he is still repeatedly seeking s.o.'
         a-ʃí[βójoŋánááŋgó] mú[sáatsa]   's/he is still going around the man'
         a-ʃí[xááβaxááβááŋgó] mú[sáatsa]   's/he is still repeatedly seeking the man'

I analyze high tone anticipation as resulting from two separate rules: LEXICAL TONE ANTICIPATION and JUNCTURE SPREAD. Lexical tone anticipation spreads lexical, but not inflectional, Hs iteratively leftward through the maximal number of toneless moras within the stem (see Bickmore 1997, Poletto 1998, and Ebarb & Marlo 2009 for additional examples of proposed phonological rules that distinguish between lexical and inflectional tones). Lexical tone anticipation—revised in 103—is similar to leftward spread—a rule that affects H_Ms in the hesternal perfective (§3.4), distant future (§3.5), and hodiernal perfective negative (§3.6)—in that it respects the OCP: the rule stops short of creating sequences of phonologically distinct Hs on adjacent syllables. How-

ever, it is dissimilar to leftward spreading in that lexical tone anticipation can spread onto the stem-initial syllable, whereas leftward spread cannot.

(103) LEXICAL TONE ANTICIPATION (final)
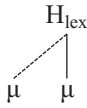
H_{lex} Iterative
             Domain: limitative stem
μ   μ   OCP: Does not create sequences of distinct Hs on
                   adjacent syllables.

JUNCTURE SPREAD derives its name from its status as a 'domain juncture rule, [that is, a rule that applies] between phonological words' (Hyman & Katamba 1993:45). The rule spreads a stem-initial H onto the final vowel of a preceding word. The targeted vowel must be toneless, and the rule is sensitive to the same OCP restriction as lexical tone anticipation. That is, it does not create sequences of distinct Hs on adjacent syllables. Juncture spread is formalized as in 104.

(104) JUNCTURE SPREAD
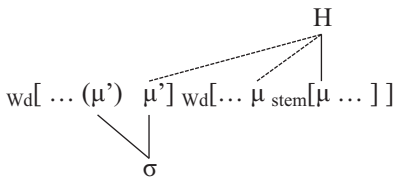
                                        H   OCP: Does not create sequences of
                                                    distinct Hs on adjacent syllables.

Wd[… (μ')   μ'] Wd[… μ stem[μ …]]

                         σ

Spreading onto the final vowel of the verb is not possible in /H/ verbs with CVCV stems (e.g. *a-la*[*βéko*] *mu*[*sáatsa*] 's/he will shave the man') because spreading onto the final vowel would create a sequence of distinct Hs on adjacent syllables. The noun H does not spread onto the noun class prefix either, despite the fact that doing so would not violate the OCP condition on juncture spread. Juncture spread applies in an all-or-nothing fashion, spreading an H from the initial mora of a noun stem across the object's noun class prefix onto the final vowel of the verb simultaneously.

It is because a postverbal H spreads across the noun class prefix and onto the final vowel of verbs with trisyllabic stems (e.g. *a-la*[*sáánditsó*] *mú*[*sáatsa*] 's/he will thank the man') that I propose that the noun's augment *o-* is treated by the tonology as belonging to the verb stem. As stated in 104, juncture spread would not be expected to apply in this context if the [o] did not prosodify with the verb. An alternative approach would be to posit a rule that spreads a stem-initial H onto the augment and the intervening prefix. That is, the target of this rule would be the augment, rather than the final vowel of the verb.

One reason to reject an analysis that treats the augment as the target of spreading, rather than the final vowel, is that spreading from the stem-initial mora onto the augment is not observed in nouns in isolation (e.g. *o-mu*[*sáatsa*] 'man'). Juncture spread, as formalized in 104, accounts for this without elaboration: the stem-initial H does not spread because there is no preceding word to which it can spread. A rule that treats the augment as the target of spreading incorrectly predicts spreading in this case (*ó-mú[*sáatsa*]).

The root H limits the leftward extent of lexical tone anticipation even if it fails to be realized in the surface form. Recall that the root H is deleted by Meeussen's rule in near future verb forms that include an object prefix, as in *a-la-mú*[*reera*] 's/he will bring him/her' (cf. *a-la*[*réera*] 's/he will bring'). /Ø/ verbs with an object prefix have the same surface tonal properties as /H/ verbs phrase-finally: /Ø/ verbs also realize an H only on the object prefix, as in *a-la-mú*[*reeβa*] 's/he will ask him/her' (cf. *a-la*[*reeβa*] 's/he will ask').

The contrast between /H/ and /Ø/ verbs is also lost in near future verb forms that include an object prefix and precede an underlyingly toneless noun. In both /Ø/ and /H/ verbs—shown in 105a and 105b, respectively—the object prefix is H and the stem is all L.

(105) Near future, /Ø/ and /H/ phrase-medial verbs 's/he will … someone for him/her'

    a. a-la-mú[sjeelo] muu[ndu]   'grind'
        a-la-mú[leʃelo] muu[ndu]   'leave'
        a-la-mú[reeβelo] muu[ndu]   'ask'
        a-la-mú[seeβulilo] muu[ndu]   'say bye to'
        a-la-mú[tʃiiŋguulilo] muu[ndu]   'lift'
        a-la-mú[kaluʃililo] muu[ndu]   'defend'
    b. a-la-mú[reero] muu[ndu]   'bury'
        a-la-mú[βetʃelo] muu[ndu]   'shave'
        a-la-mú[reerero] muu[ndu]   'bring'
        a-la-mú[saanditsilo] muu[ndu]   'thank'
        a-la-mú[tsuunzuunilo] muu[ndu] 'suck'
        a-la-mú[βojoŋanilo] muu[ndu]   'go around'

The lexical contrast reemerges when the verb precedes an H-toned object: the object introduces an H span that extends through the second stem syllable in /Ø/ verbs and through the third stem syllable in /H/ verbs, shown in 106a and 106b, respectively.

(106) Near future, /Ø/ and/H/ phrase-medial verbs 's/he will … the man for him/her'

    a. a-la-mú[sjeeló] mú[sáatsa]   'grind'
        a-la-mú[leʃéló] mú[sáatsa]   'leave'
        a-la-mú[reeβéló] mú[sáatsa]   'ask'
        a-la-mú[seeβúlíló] mú[sáatsa]   'say bye to'
        a-la-mú[tʃiiŋgúúlíló] mú[sáatsa] 'lift'
        a-la-mú[kalúʃílíló] mú[sáatsa]   'defend'
    b. a-la-mú[reero] mu[sáatsa]   'bury'
        a-la-mú[βetʃeló] mú[sáatsa]   'shave'
        a-la-mú[reereró] mú[sáatsa]   'bring'
        a-la-mú[saanditsíló] mú[sáatsa] 'thank'
        a-la-mú[tsuunzuuníló] mú[sáatsa] 'suck'
        a-la-mú[βojoŋáníló] mú[sáatsa] 'go around'

The H of the object prefix limits leftward spreading in /Ø/ verbs: the object H spreads only through the second stem syllable, rather than the first, so as not to create a sequence of distinct Hs on adjacent syllables.

Despite not being realized on the surface, the root H influences the leftward extent of high tone anticipation in /H/ verbs: spreading extends only through the third stem syllable in long verbs (e.g. *a-la-mú*[*βojoŋáníló*] *mú*[*sáatsa*] 's/he will go around the man for him/her'. This indicates that lexical tone anticipation precedes Meeussen's rule in the derivation. Additionally, the object H spreads onto neither the verb nor the noun class prefix of the object in /H/ verbs with just two syllables (e.g. *a-la-mú*[*reero*] *mu*[*sáatsa*] 's/he will bury the man for him/her'). This is the predicted outcome when juncture spread also precedes Meeussen's rule in the derivation.

Juncture spread and lexical tone anticipation affect not only object Hs, but also the H of the clause-final negative marker *tá*. Just like an H-toned object, *tá* introduces long H

spans that extend through the stem-initial syllable in /Ø/ verbs, as shown in 107a, and through the third stem syllable in /H/ verbs, as shown in 107b.

    (107) Near future negative, /Ø/ and /H/ verbs

        a. ʃʲ-a-la[kwá] tá   's/he will not fall'

           ʃʲ-a-la[léxá] tá   's/he will not leave (something)'

           ʃʲ-a-la[rééβá] tá   's/he will not ask'

           ʃʲ-a-la[sééβúlá] tá   's/he will not say bye'

           ʃʲ-a-la[tʃííŋgúúlá] tá   's/he will not lift'

           ʃʲ-a-la[kálúʃílá] tá   's/he will not repeat'

        b. ʃʲ-a-la[rá] ꜜtá   's/he will not bury'

           ʃʲ-a-la[βéka] tá   's/he will not shave'

           ʃʲ-a-la[rééra] tá   's/he will not bring'

           ʃʲ-a-la[sáánditsá] tá   's/he will not thank'

           ʃʲ-a-la[tsúúnzuuná] tá   's/he will not suck'

           ʃʲ-a-la[βójoŋáná] tá   's/he will not go around'

In /H/ verbs with monosyllabic stems, the root H and negative H are realized on adjacent syllables with the negative H downstepped relative to the root H. As noted in §3.1, Meeussen's rule does not apply in this case as a matter of domain of application: Meeussen's rule only deletes H after H within a constituent of the verb unit—one at least as large as the macrostem—exclusive of negative marker *tá*.

When a toneless object follows the verb, the negative marker *tá* follows the object and its H spreads through the object onto the verb stem if possible. That is, it will spread if the verb is /Ø/, as shown in 108a, or if the verb is /H/ and has a stem with three or more syllables, as shown in 108c. If spreading onto the verb stem is not possible, as in the /H/ verbs with less than three syllables in 108b, spreading stops at the left edge of the noun stem.

   (108) Near future negative, /Ø/ and /H/ verbs

        a. ʃʲ-aa-la[sjó] múú[ndú] tá   's/he will not fall someone'

           ʃʲ-aa-la[léxó] múú[ndú] tá   's/he will not leave someone'

           ʃʲ-aa-la[rééβó] múú[ndú] tá   's/he will not ask someone'

           ʃʲ-aa-la[sééβúló] múú[ndú] tá   's/he will not say bye to someone'

           ʃʲ-aa-la[tʃííŋgúúló] múú[ndú] tá 's/he will not lift someone'

           ʃʲ-aa-la[kálúʃíló] múú[ndú] tá   's/he will not defend someone'

        b. ʃʲ-aa-la[ró] muu[ndú] tá   's/he will not bury someone'

           ʃʲ-aa-la[βéko] muu[ndú] tá   's/he will not shave someone'

           ʃʲ-aa-la[rééro] muu[ndú] tá   's/he will not bring someone'

        c. ʃʲ-aa-la[sáánditsó] múú[ndú] tá   's/he will not thank someone'

           ʃʲ-aa-la[tsúúnzuunó] múú[ndú] tá 's/he will not suck someone'

           ʃʲ-aa-la[βójoŋánó] múú[ndú] tá   's/he will not go around someone'

In the distant future negative, /H/ verbs with monosyllabic stems are L on the sole stem syllable (e.g. *ʃʲ-aa-li*[*ra*] *tá* 's/he will not bury'. Spreading onto the verb stem is not possible in this case (more on the properties of the distant future negative below). When the object /o-mu[sáatsa] o-mu[lala]/ 'one man' is present, the full numeral root /-lala/ surfaces as H, but the numeral's noun class agreement marker *mu-* is L: *ʃʲ-aa-li-*[*ro*] *mu*[*sáátso*] *mu*[*lálá*] *tá* 's/he will not bury one man'. When both the modifier and the noun are toneless, as in /o-muu[ndu] o-mu[lala]/, the H extends through the initial syllable of the noun stem: *ʃʲ-aa-li-*[*ro*] *muu*[*ndú*] *mú*[*lálá*] *tá* 's/he will not bury one person'.

The data above, in which the H of *tá* spreads across multiple words, motivate the claim that juncture spread and lexical tone anticipation are iterative and mutually feeding rules. This has also been claimed for two rules of rightward spreading—one of which notably applies across words—in Copperbelt Bemba (Kula & Bickmore 2015).

The form *ʃʲ-aa-la*[*léxǫ́*] *múú*[*ndú*] *tá̱* 's/he will not leave someone' is analyzed as in 109. The H of negative marker *tá̱* spreads onto the only vowel of the noun via juncture spread, onto the final mora of the verb stem via a second application of juncture spread, and finally onto the initial mora of the verb stem through lexical tone anticipation.

(109) Near future negative /Ø/ *ʃʲ-aa-la*[*léxó*] *múú*[*ndú*] *tá* 's/he will not leave someone'

UNDERLYING

H
|
ʃʲ-aa-la[lexo] muu[ndu] ta

JUNCTURE SPREAD

H
ʃʲ-aa-la[lexo] muu[ndu] ta

JUNCTURE SPREAD

H
ʃʲ-aa-la[lexo] muu[ndu] ta

LEXICAL TONE ANTICIPATION

H
ʃʲ-aa-la[léxó] muu[ndu] ta
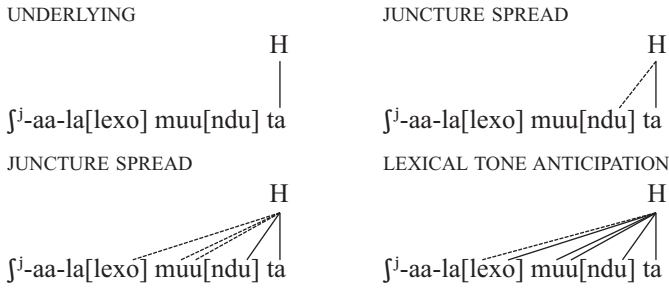
The above derivation shows that juncture spread feeds lexical tone anticipation. Lexical tone anticipation must also feed juncture spread, as shown by the distant future negative form *ʃʲ-aa-li-*[*rǫ*] *muu*[*ndú*] *mú*[*lálá*] *tá̱* 's/he will not bury one person'. The verb, into which the postverbal H cannot spread, is omitted from the derivation in 110.

(110) Distant future negative /H/
ʃʲ-aa-li[*ro*] *muu*[*ndú*] *mú*[*lálá*] *tá̱* 's/he will not bury one person'

UNDERLYING

H
|
muu[ndu] mu[lala] ta

JUNCTURE SPREAD

H
muu[ndu] mu[lala] ta

LEXICAL TONE ANTICIPATION

H
muu[ndu] mu[lala] ta

JUNCTURE SPREAD

H
muu[ndu] mu[lala] ta
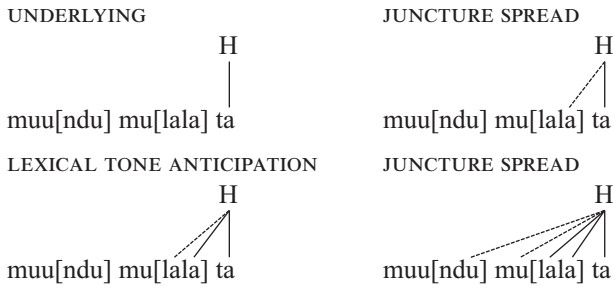
The scope of the current database precludes a demonstration of both rules applying iteratively and mutually feeding one another within the same form, as in presumed *ʃʲ-a-la*[*léxó*] *mú*[*lósí*] *tá̱* 's/he will not leave the witch'.

If Meeussen's rule is in fact a rule of deletion, rather than lowering, as it has been characterized in this article, then it crucially applies after juncture spread. This ordering relationship is necessary to account for the fact that juncture spread spreads an H onto disyllabic near future verb forms that include an object prefix if the root is /Ø/, as in *a-la-mú*[*sjeeló*] *mú*[*sá̱atsa*] 's/he will grind the man for him/her', but not if the root is /H/, as in *a-la-mú̱*[*reero*] *mu*[*sá̱atsa*] 's/he will bury the man for him/her'. If Meeussen's rule applies before juncture spread, one would expect both tonal classes to pattern like /Ø/ verbs.

Postverbal Hs are blocked from spreading into the verb stem in most contexts where the verb is inflected with a tonal melody. For example, in the hodiernal perfective—which takes melody 1—/Ø/ verbs have an H_M on the second mora of the stem and adhere to rise decontouring, as in *a*[*tʃííŋguulile*] 's/he lifted'. This generalization holds whether the verb precedes a toneless or H-toned object, as shown in 111a and 111b, respectively.

(111) Hodiernal perfective, /Ø/ phrase-medial verbs
   a. a[rééβareeβilo] muu[ndu]   's/he repeatedly asked someone'
       a[tʃííŋguuliilo] muu[ndu]   's/he lifted for someone'
   b. a[rééβareeβilo] mu[sá̱atsa]   's/he repeatedly asked the man'
       a[tʃííŋguuliilo] mu[sá̱atsa]   's/he lifted for the man'

The last vowel of the perfective suffix *-ile* deletes before the noun's augment *o-*. As noted in §3.1, the *-ile* perfective suffix is subject to imbrication, whereby [il] is lost and the base-final syllable is lengthened if it attaches to a base that ends in a short final syllable. No spreading from the object H is observed in 111b, even though the verb stems are long enough to accommodate spreading without violating the OCP.

Postverbal Hs fail to spread onto the verb stem even in /H/ verbs that realize an all-L surface pattern in phrase-final position (e.g. *a[βojoŋaane]* 's/he went around'). Such verbs are also all L when followed by both toneless and H-toned objects, as shown in 112a and 112b respectively.

(112) Hodiernal perfective, /H/ phrase-medial verbs
  a. a[βo̲joŋaano] muu[ndu]   's/he went around someone'
     a[xa̲aβaxaaβilo] muu[ndu]   's/he repeatedly sought someone'
  b. a[βo̲joŋaano] mu[sa̲atsa]   's/he went around the man'
     a[xa̲aβaxaaβilo] mu[sa̲atsa]   's/he repeatedly sought the man'

Other constructions that take melody 1—all of which are negative constructions marked with *ta̲*—also exhibit no spreading into the verb. See §3.1, especially derivation 35, for examples. Constructions that take melody 2 (§3.2: subjunctive, crastinal future) and melody 3 (§3.3) are also unaffected by the presence of a following word, shown in 113a and 113b, respectively.

(113) No spreading in constructions inflected with a tonal melody
  a. SUBJUNCTIVE
     a[βo̲jóŋano] muu[ndu]   'let him/her go around someone'
     a[kalúʃilo] muu[ndu]   'let him/her defend someone'
     a[βo̲jóŋano] mu[sa̲atsa]   'let him/her go around the man'
     a[kalúʃilo] mu[sa̲atsa]   'let him/her defend the man'
  b. CRASTINAL FUTURE
     na̲-á[βó̲jóŋano] muu[ndu]   's/he will go around someone'
     na̲-á[kálúʃilo] muu[ndu]   's/he will defend someone'
     na̲-á[βó̲jóŋano] mu[sa̲atsa]   's/he will go around the man'
     na̲-á[kálúʃilo] mu[sa̲atsa]   's/he will defend the man'
  c. REMOTE PAST
     j-a[βó̲joŋano] muu[ndu]   's/he went around someone'
     j-a[káluʃilo] muu[ndu]   's/he defended someone'
     j-a[βó̲joŋano] mu[sa̲atsa]   's/he went around the man'
     j-a[káluʃilo] mu[sa̲atsa]   's/he defended the man'

In constructions that take melody 4 (§3.4: hesternal perfective, present habitual) and melody 5 (§3.5: distant future), the presence of an object conditions the loss of the H_M. Phrase-finally, /H/ verbs in the hesternal perfective realize an H from the third stem syllable through the final, and /∅/ verbs are H from the second syllable through the final, as shown in 114a and 114b, respectively. Verbs of both tonal classes are all L when followed by a toneless object, as in 114c. The present habitual—shown in 114d—patterns with the hesternal perfective.

(114) Phrase-medial loss of H_M
     HESTERNAL PERFECTIVE
  a. j-a[xa̲aβaxááβílé]   's/he repeatedly sought'
  b. j-a[tʃiiŋgúúlíílé]   's/he lifted for'
  c. j-a[xa̲aβaxaaβilo] muu[ndu]   's/he repeatedly sought someone'
     j-a[tʃiiŋguuliilo] muu[ndu]   's/he lifted for someone'

PRESENT HABITUAL

d. a[xa̠aβaxááβááŋgá]   ‘s/he repeatedly seeks’
   a[tʃiiŋgúúlílááŋgá]   ‘s/he lifts for’
   a[xa̠aβaxaaβaaŋgo] muu[ndu]   ‘s/he repeatedly seeks someone’
   a[tʃiiŋguulilaaŋga] muu[ndu]   ‘s/he lifts for someone’

The distant future differs only slightly. As in the hesternal perfective, /Ø/ verbs realize an H from the second stem syllable through the final phrase-finally, as in 115b, and verbs of both tonal classes are all L when followed by a toneless object, as in 115c. However, in the distant future, phrase-final /H/ verbs are H only on the final two moras of the stem, as in 115a.

(115) Phrase-medial loss of H$_M$
       DISTANT FUTURE
       a. a-li[xa̠aβaxaaβílá]   ‘s/he will repeatedly seek for’
       b. a-li[tʃiiŋgúúlílá]   ‘s/he will lift for’
       c. a-li[xa̠aβaxaaβo] muu[ndu]   ‘s/he will repeatedly seek someone’
          a-li[tʃiiŋguulilo] muu[ndu]   ‘s/he will lift for someone’

When an H-toned object follows in these constructions, /H/ verbs have an H from the third stem syllable through the final, and /Ø/ verbs have an H from the second stem syllable through the final.

(116) Phrase-medial loss of H$_M$
       a. HESTERNAL PERFECTIVE
          j-a[xa̠aβaxááβíló] mú[sa̠atsa]   ‘s/he repeatedly sought the man’
          j-a[βo̠joŋáánó] mú[sa̠atsa]   ‘s/he went around the man’
          j-a[tʃiiŋgúúlííló] mú[sa̠atsa]   ‘s/he lifted for the man’
          j-a[reeβárééβílé] mú[sa̠atsa]   ‘s/he repeatedly asked the man’
       b. PRESENT HABITUAL
          a[xa̠aβaxááβááŋgá] mú[sa̠atsa]   ‘s/he repeatedly seeks the man’
          a[βo̠joŋánááŋgá] mú[sa̠atsa]   ‘s/he goes around the man’
          a[tʃiiŋgúúlílááŋgá] mú[sa̠atsa] ‘s/he lifts for the man’
          a[kalúʃílááŋgá] mú[sa̠atsa]   ‘s/he defends the man’
       c. DISTANT FUTURE
          a-li[xa̠aβaxááβó] mú[sa̠atsa]   ‘s/he will repeatedly seek the man’
          a-li[βo̠joŋánó] mú[sa̠atsa]   ‘s/he will go around the man’
          a-li[tʃiiŋgúúlíló] mú[sa̠atsa]   ‘s/he will lift for the man’
          a-li[kalúʃíló] mú[sa̠atsa]   ‘s/he will defend the man’

The postverbal H spreads onto the final vowel of the verb through juncture spread, then continues spreading as appropriate through leftward spread—a rule that uniquely affects constructions inflected with melody 4, melody 5, or melody 6. In the case of /Ø/ verbs, the noun H spreads through the second stem syllable. If lexical tone anticipation were to apply, rather than leftward spread, the noun H would be predicted to extend through the initial syllable in /Ø/ verbs, though it does not. It is unknown why leftward spread applies in distant future /H/ verbs phrase-medially, as in 116c, but not phrase-finally (cf. *a-li*[*xa̠aβaxaaβílá*] ‘s/he will repeatedly seek for’).

Finally, in a unique case, the habitual realizes its tonal melody phrase-medially, but postverbal Hs may spread into the verb in this context. As shown in 117a, the H$_M$ is realized on the tense prefix *aa-*, regardless of tonal class. The presence of a toneless object has no effect on verb tone, as shown in 117b. See §3.7 for the argument in favor of analyzing the H on the tense prefix as melodic, rather than lexical.

(117) H$_M$ maintained phrase-medially 's/he is always … '
       Habitual
   a. j-áá[x<u>a</u>aβaxaaβa]   'repeatedly seeking'
       j-áá[tʃiiŋguulila]   'lifting for'
   b. j-áá[x<u>a</u>aβaxaaβo] muu[ndu]   'repeatedly seeking someone'
       j-áá[tʃiiŋguulilo] muu[ndu]   'lifting for someone'

When an H-toned object follows, /H/ verbs, given in 118a, are H from the third stem syllable through the final, and /Ø/ verbs, given in 118b, are H from the second stem syllable through the final. The noun class prefix is also H, and no downstep is observed between words.

(118) H$_M$ maintained phrase-medially with HTA 's/he is always … '
       Habitual
   a. j-áá[x<u>a</u>aβaxááβó] mú[s<u>á</u>atsa]   'repeatedly seeking the man'
       j-áá[β<u>o</u>joŋánó] mú[s<u>á</u>atsa]   'going around the man'
   b. j-áá[tʃiiŋgúúlíló] mú[s<u>á</u>atsa]   'lifting for the man'
       j-áá[reeβárééβó] mú[s<u>á</u>atsa]   'repeatedly asking the man'

That high tone anticipation is observed in this construction is somewhat surprising given that (i) it is inflected with a tonal melody and (ii) it maintains its H$_M$ phrase-medially. As shown above, high tone anticipation is generally blocked in constructions that are inflected with a tonal melody, unless the H$_M$ is lost phrase-medially. This unexpected behavior might be understood in terms of domains. Though tonal melodies generally block high tone anticipation, tonal melodies are generally also expressed wholly within the limitative stem—the domain within which lexical tone anticipation applies. Although H$_M$s generally block high tone anticipation, the H$_M$ is realized outside of this domain in the case of the habitual.

In sum, postverbal Hs spread leftward unboundedly, with the potential of creating H spans that extend across multiple words. This spreading is the result of two iterative and mutually feeding rules, juncture spread and lexical tone anticipation. Both rules avoid creating sequences of phonologically distinct Hs on adjacent syllables, and the leftward extent of spreading is constrained by root Hs, even if the root H ultimately fails to surface due to Meeussen's rule. Finally, juncture spread does not spread across prefixes unless such spreading results in an H span that extends onto the stem of the preceding word. That is, the rule appears to 'look ahead' and applies in an all-or-nothing fashion rather than iteratively to gradient effect. Spreading into the preceding word is not possible if either the penultimate syllable has an H or the verb is inflected with a tonal melody.

Some constructions lose their tonal melody in phrase-medial position. If an H-toned word follows, juncture spread applies, spreading the postverbal H onto the final vowel of the verb. In these constructions, leftward spread continues spreading the postverbal H through the leftmost syllable preceded by a non-H syllable within the stem.

5. Conclusions. This article presents an overview of Kabarasi verbal tonology. I illustrated several tonotactic rules of spreading (throwback, penult doubling), deletion (Meeussen's rule, initial lowering), contour simplification (rise decontouring, fall decontouring), and contour creation (penult fall). I also provided a description and analysis of eight inflectional tonal melodies, in which H$_M$s are assigned to several positions within the stem. Depending on the morphosyntactic context of the verb, H$_M$s target the initial mora of the macrostem, the second mora of the stem, the initial mora of the second stem syllable, and the final vowel. In one construction—the habitual—an H$_M$ is linked to the tense prefix. H$_M$s assigned to the final vowel are also sometimes affected by a construction-specific rule of leftward spreading. See §3.9 for a more complete review of the inflectional tone system.

Other features of Kabarasi tonology of broad theoretical interest include the look-ahead nature of juncture spread. The rule spreads Hs onto nominal and agreement prefixes, but only if such spreading results in an H span that extends into the preceding word. The ordering relationship between juncture spread and Meeussen's rule is also noteworthy. Regarding this ordering relationship, it is problematic for some theories of grammar interaction such as LEXICAL PHONOLOGY (Kiparsky 1982) that Meeussen's rule, a rule that applies within, but not across, words (cf. ʃʲ-a-la[rá] ꜜtá 's/he will not bury') applies later in the derivation than juncture spread, a rule that applies within the phrasal domain. In such theories, the word-level phonology (which in this case includes Meeussen's rule) is strictly resolved prior to the application of phrase-level phonological rules (e.g. juncture spread), though the facts of Kabarasi preclude ordering Meeussen's rule before juncture spread. See also Marlo et al. 2015 on tonal aspects of another Bantu language—Kuria—that pose problems for the classical assumptions of lexical phonology.

Verbs in Bantu languages are morphologically complex, and it is well established that the hierarchy of morphological constituents within the verb defines a rich set of phonological domains (e.g. Downing 1999b, 2003, Hyman 1999, 2003, 2008, Hyman et al. 2008). Verbal tone patterns provide considerable support for two domains in particular: the INFLECTED STEM and the macrostem. These constituents are commonly invoked in accounting for aspects of Bantu verbal tonology, including the assignment of inflectional tones and constraining the application of tonal processes, such as shifting, spreading, and deletion (Kisseberth & Odden 2003, Marlo 2013, Odden & Bickmore 2014, Marlo & Odden 2017). Kabarasi shows evidence that a constituent larger than the macrostem—namely the limitative stem—defines a phonological domain.

The structure in 119 reflects a composite of the general consensus in most recent work concerning the internal structure of Bantu verbs (e.g. Myers 1987, Downing 1999a,b, 2003, Hyman & Mtenje 1999, Hyman 2007b, Marlo 2014).

(119) Structure of Bantu verbs
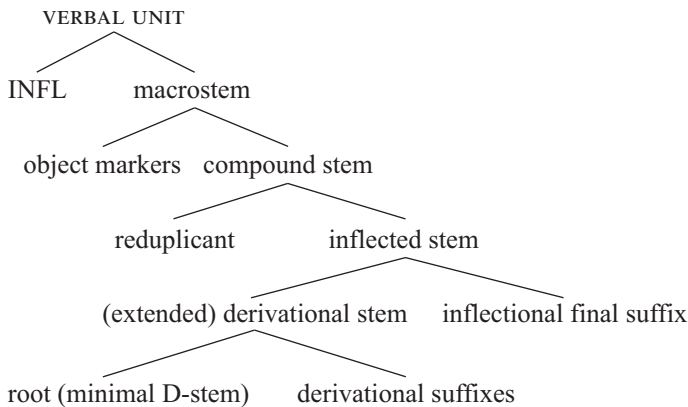
The derivational stem is composed of the verb root and any of a set of derivational suffixes. An 'inflectional final suffix' combines with the derivational stem to form the inflected stem. A reduplicant, if present, combines with the inflected stem to form the compound stem,[5] which in turn combines with object markers to form the macrostem. 'Stem' as it has been used throughout this article refers to the inflected stem by default.

Although the stem and the macrostem are well-established phonological domains in Bantu, I am aware of no proposals that argue for a domain smaller than the verbal unit,

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[5] Hyman and colleagues (2008) analyze reduplicants as sisters to the DERIVATIONAL STEM rather than the INFLECTED STEM.

but larger than the macrostem. That is, no one has yet argued for a constituent that includes the macrostem plus (some set of) inflectional prefixes. Indeed, Myers (1998) argues that inflectional prefixes appearing to the left of the macrostem constitute their own phonological domain to the exclusion of the rest of the verbal complex. He calls this domain the INFLECTIONAL STEM.
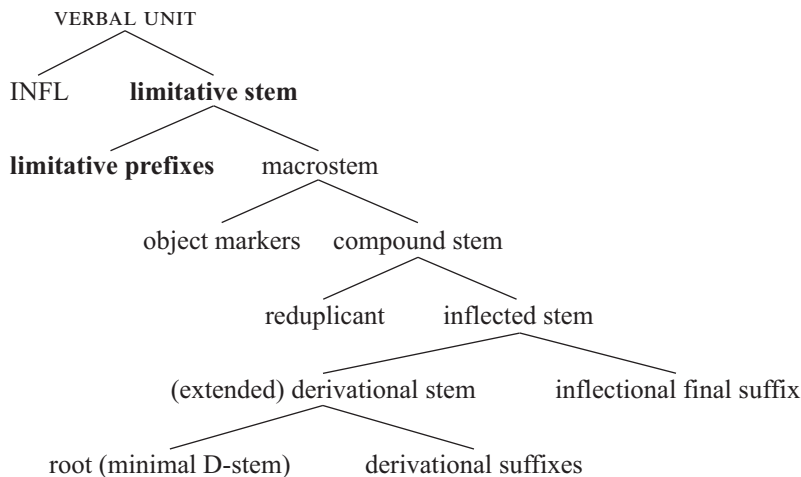
The limitative stem subsumes all content within the macrostem plus Meeussen's (1967) small set of 'limitative' aspectual prefixes. The limitative prefixes occupy a position between object markers (the 'infix' position, in Meeussen's parlance) and all other inflectional prefixes. Though contemporary Bantu languages might have fewer, more, or different prefixes in the limitative position, Meeussen reconstructs those repeated in 120 for Proto-Bantu.

(120) Meeussen's (1967) limitative prefixes
        *ka-   motional, 'go to do … '
        *ka-   inceptive, 'already; not yet'
        *kí-   persistive, 'still; no more'

Evidence for the limitative stem comes from patterns of tonal spreading in Kabarasi. In brief, I show that the notion of the limitative stem allows for a simple account of the observation that, in Kabarasi, the remote future (*motional) *axa-*, the immediate past (*inceptive) *axa-*, and persistive *ʃi-* prefixes may acquire an H through a leftward-spreading process of lexical tone anticipation, though other pre-macrostem prefixes—including other tense/aspect prefixes—cannot. Adopting the revised model of Bantu verbal structure proposed in 121 helps make sense of the fact that these prefixes behave phonologically as a unit with the macrostem in Kabarasi with respect to lexical tone anticipation.

(121) Revised structure of Bantu verbs

VERBAL UNIT

INFL   **limitative stem**

limitative prefixes   macrostem

object markers   compound stem

reduplicant   inflected stem

(extended) derivational stem   inflectional final suffix

root (minimal D-stem)   derivational suffixes

The proposal advocated above naturally gives rise to questions about the number of possible phonological domains within Bantu verbs and what those domains might be. Marlo (2014) also calls for finer hierarchical distinctions among Bantu verbal prefixes in order to account for the exceptional properties of first-person singular and reflexive object prefixes. In particular, Marlo argues that these prefixes occupy a lower structural position than other object prefixes. This division among the object prefixes, if interpreted as corresponding to nesting phonological domains above the level of the inflected stem, may explain the fact that these two object prefixes often have exceptional tonal behaviors compared to other object prefixes (Marlo 2013, 2015).

In his analysis of neighboring Tachoni, Odden (2009) observes that the remote future has exceptional tonal properties, but does not report on the properties of the persistive or the immediate past. The proposal I advocate above regarding the limitative stem may shed light on the exceptional properties of the remote future in Tachoni.

Botne (1999) explores the historical origins of the form *-ka-* as it is used in Bantu as (i) a distal marker and (ii) a future 'formative' (i.e. future tense marker). He concludes that 'future -ᴋᴀ-'—realized as *ka-*, *aka-*, *axa-*, and *raka-* in various Bantu languages— is likely reconstructable to Proto-Bantu as a 'formative' based on its widespread geographical distribution within Bantu and, indeed, its presence in some Southern Bantoid languages. Botne concludes that 'distal -ᴋᴀ-' cannot be reconstructed to Proto-Bantu and suggests that 'further insight into the origins of distal -ᴋᴀ- may come from a consideration and comparison of the range of distribution of languages having a set of aspectual-like markers in a distinctive "limitative" category and those having distal -ᴋᴀ-' (Botne 1999:504).

In Kabarasi, Botne's 'future -ᴋᴀ-' corresponds with the remote future *axa-*. Given that the reflex of 'future -ᴋᴀ-' in Kabarasi patterns tonally with the immediate past *axa-* and persistive *ʃi-* limitative prefixes, I submit that it is 'future -ᴋᴀ-', not 'distal -ᴋᴀ-', that reconstructs as a limitative prefix.

Future work will focus on the effect of other linguistic factors on Kabarasi tonal patterns, including the effects of relativization, enclitics, question formation, and H-toned affixes such as the causative and passive suffixes.

REFERENCES

Bastin, Yvonne. 1983. *La finale verbale -IDE et l'imbrication en bantou*. Tervuren: Royal Museum for Central Africa.

Bickmore, Lee. 1997. Problems in constraining high tone spread in Ekegusii. *Lingua* 17.297–333. DOI: 10.1016/S0024-3841(97)00009-0.

Bickmore, Lee. 2000. Downstep and fusion in Namwanga. *Phonology* 102.265–90. Online: http://www.jstor.org/stable/4420177.

Botne, Robert. 1999. Future and distal -ka-'s: Proto-Bantu or nascent form(s)? In Hombert & Hyman, 473–515.

Botne, Robert. 2006. Motion, time, and tense: On the grammaticalization of *come* and *go* to future markers in Bantu. *Studies in African Linguistics* 35.2.127–88. Online: http://journals.linguisticsociety.org/elanguage/sal/article/view/1403.html.

Bybee, Joan; Revere Perkins; and William Pagliuca. 1994. *The evolution of grammar: Tense, aspect, and modality in the languages of the world*. Chicago: University of Chicago Press.

Downing, Laura J. 1999a. Prosodic stem ≠ prosodic word in Bantu. *Studies on the phonological word*, ed. by T. Alan Hall and Ursula Kleinhenz, 73–98. Amsterdam: John Benjamins.

Downing, Laura J. 1999b. Morphological constraints on Bantu reduplication. *Linguistic Analysis* 29.6–46.

Downing, Laura J. 2003. Compounding and tonal non-transfer in Bantu languages. *Phonology* 20.1–42. DOI: 10.1017/S0952675703004457.

Downing, Laura J. 2005. On the ambiguous segmental status of nasals in homorganic NC sequences. *The internal organization of phonological segments*, ed. by Marc van Oostendorp and Jeroen van de Weijer, 183–216. Berlin: Mouton de Gruyter.

Downing, Laura J. 2011. Bantu tone. *The Blackwell companion to phonology*, ed. by Marc van Oostendorp, Colin J. Ewen, Elizabeth Hume, and Keren Rice, chapter 14. Oxford: Blackwell.

Ebarb, Kristopher J. 2014. *Tone and variation in Idakho and other Luhya varieties*. Bloomington: Indiana University dissertation. Online: http://pqdtopen.proquest.com/doc/1625743679.html?FMT=ABS&pubnum=3640905.

Ebarb, Kristopher J.; Christopher R. Green; and Michael R. Marlo. 2014. Luyia tone melodies. *Africana Linguistica* 20.121–43. DOI: 10.2143/AL.20.0.3062065.

Ebarb, Kristopher J., and Michael R. Marlo. 2009. Conditioning factors in the realization of tone: Nyala-West verbs. *Indiana University Working Papers in Linguistics* 8.85–107.

Ebarb, Kristopher J., and Michael R. Marlo. 2015. Vowel length (in)sensitivity in Luyia morphophonology. *Southern African Linguistics and Applied Language Studies* 33.3.373–90. DOI: 10.2989/16073614.2015.1108772.

Goldsmith, John A. 1976. *Autosegmental phonology*. Cambridge, MA: MIT dissertation. Online: http://www.ai.mit.edu/projects/dm/theses/goldsmith76.pdf.

Heine, Bernd; Tom Güldemann; Christa Killian-Hatz; Donald A. Lessau; Heinz Roberg; Mathias Schladt; and Thomas Stolz. 1993. *Conceptual shift: A lexicon of grammaticalization processes in African languages*. (Afrikanistische Arbeitspapiere 34/35.) Köln: Institut für Afrikanistik.

Henderson, Brent. 2013. Agreement and person in anti-agreement. *Natural Language and Linguistic Theory* 31.453–81. DOI: 10.1007/s11049-013-9186-8.

Hombert, Jean Marie, and Larry M. Hyman (eds.) 1999. *Bantu historical linguistics: Theoretical and empirical perspectives*. Stanford, CA: CSLI Publications.

Hyman, Larry M. 1999. The historical interpretation of vowel harmony in Bantu. In Hombert & Hyman, 235–95.

Hyman, Larry M. 2003. Segmental phonology. In Nurse & Philippson, 42–58.

Hyman, Larry M. 2007a. Universals of tone rules: 30 years later. *Tones and Tunes* 1.1–34.

Hyman, Larry M. 2007b. Reconstructing the Proto-Bantu verbal unit. *SOAS Working Papers in Linguistics* 15.201–11. Online: https://www.soas.ac.uk/linguistics/research/workingpapers/volume-15/file37809.pdf.

Hyman, Larry M. 2008. Directional asymmetries in the morphology and phonology of words, with special reference to Bantu. *Linguistics* 46.309–50. DOI: 10.1515/LING.2008.012.

Hyman, Larry M.; Sharon Inkelas; and Galen Sibanda. 2008. Morpho-syntactic correspondence in Bantu reduplication. *The nature of the word: Essays in honor of Paul Kiparsky*, ed. by Kristin Hanson and Sharon Inkelas, 273–310. Cambridge, MA: MIT Press.

Hyman, Larry M., and Francis X. Katamba. 1993. A new approach to tone in Luganda. *Language* 69.1.34–67. DOI: 10.2307/416415.

Hyman, Larry M., and Charles W. Kisseberth (eds.) 1998. *Theoretical aspects of Bantu tone*. Stanford, CA: CSLI Publications.

Hyman, Larry M., and Al Mtenje. 1999. Prosodic morphology and tone: The case of Chichewa. *The prosody-morphology interface*, ed. by Rene Kager, Harry van der Hulst, and Wim Zonneveld, 90–133. Cambridge: Cambridge University Press.

Kaji, Shigeki. 1996. Tone reversal in Tembo (Bantu J.57). *Journal of African Languages and Linguistics* 17.1–26. DOI: 10.1515/jall.1996.17.1.1.

Kanyoro, Rachel A. 1983. *Unity in diversity: A linguistic survey of the Abaluyia in Western Kenya*. Vienna: Afro-Publications.

Kiparsky, Paul. 1982. Lexical morphology and phonology. *Linguistics in the morning calm*, ed. by In-Seok Yang, 3–91. Seoul: Hanshin.

Kisseberth, Charles W., and David Odden. 2003. Tone. In Nurse & Philippson, 59–70.

Kula, Nancy, and Lee Bickmore. 2015. Phrasal phonology in Copperbelt Bemba. *Phonology* 32.1.147–76. DOI: 10.1017/S095267571500007X.

Leung, Elizabeth W.-Y. 1991. The tonal phonology of Llogoori: A study of Llogoori verbs. *Working Papers of the Cornell Phonetics Laboratory* 6.

Marlo, Michael R. 2006. CV-root expansion in three Luyia languages. *Linguistic Analysis* 32.293–326.

Marlo, Michael R. 2013. Verb tone in Bantu languages: Micro-typological patterns and research methods. *Africana Linguistica* 19.137–234. DOI: 10.2143/AL.19.0.3009263.

Marlo, Michael R. 2014. Exceptional patterns of object marking in Bantu. *Studies in African Linguistics* 43.2.85–123. Online: http://sal.research.pdx.edu/PDF/432Marlo_.pdf.

Marlo, Michael R. 2015. Exceptional properties of the reflexive in Bantu languages. *Nordic Journal of African Studies* 24.1–22. Online: http://www.njas.helsinki.fi/.

Marlo, Michael R.; Leonard Chacha Mwita; and Mary Paster. 2015. Problems in Kuria H tone assignment. *Natural Language and Linguistic Theory* 33.251–65. DOI: 10.1007/s11049-014-9251-y.

Marlo, Michael R., and David Odden. 2017. Tone. *The Bantu languages*, 2nd edn., ed. by Mark Van de Velde and Koen Bostoen. London: Routledge, to appear.

Meeussen, Achille E. 1967. Bantu grammatical reconstructions. *Africana Linguistica* 3. 79–121.

Mutonyi, Nasiombe X. 2000. *Aspects of Bukusu morphology and phonology*. Columbus: The Ohio State University dissertation.

Myers, Scott. 1987. *Tone and the structure of words in Shona*. Amherst: University of Massachusetts dissertation.

Myers, Scott. 1998. AUX in Bantu morphology and phonology. In Hyman & Kisseberth, 231–64.

Nurse, Derek, and Gérard Philippson (eds.) 2003. *The Bantu languages*. London: Routledge.

Odden, David. 1982. Tonal phenomena in Kishambaa. *Studies in African Linguistics* 13.177–208. Online: http://sal.research.pdx.edu/PDF/132Odden.pdf.

Odden, David. 1986. On the role of the obligatory contour principle in phonological theory. *Language* 62.353–83. DOI: 10.2307/414677.

Odden, David. 1989. Predictable tone systems in Bantu. *Autosegmental studies on pitch accent systems*, ed. by Harry van der Hulst and Norval Smith, 225–51. Dordrecht: Foris.

Odden, David. 2009. Tachoni verbal tonology. *Language Sciences* 31.305–24. DOI: 10.1016/j.langsci.2008.12.009.

Odden, David. 2015. Bantu phonology. *Oxford handbooks online*. Oxford: Oxford University Press. DOI: 10.1093/oxfordhb/9780199935345.013.59.

Odden, David, and Lee Bickmore. 2014. Melodic tones in Bantu: Overview. *Africana Linguistica* 20.3–13. DOI: 10.2143/AL.20.0.3062059.

Paster, Mary, and Yuni Kim. 2011. Downstep in Tiriki. *Linguistic Discovery* 9.71–104. DOI: 10.1349/PS1.1537-0852.A.390.

Poletto, Robert. 1998. Constraints on tonal associations in Olusamia: An optimality theoretic account. In Hyman & Kisseberth, 331–64.

Schneider-Zioga, Patricia. 2007. Anti-agreement, anti-locality and minimality: The syntax of dislocated subjects. *Natural Language and Linguistic Theory* 25.403–46. DOI: 10.1007/s11049-006-9014-5.

van Otterloo, Karen. 2011. *The Fuliiru language, vol. 1: Phonology, tone, and morphological derivation*. Dallas, TX: SIL International.

van Otterloo, Karen. 2014. Tonal melodies in the Kifuliiru verbal system. *Africana Linguistica* 20.385–403. DOI: 10.2143/AL.20.0.3062079.