Melodic H tones in Emakhuwa and Ecuwabo verbs

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Abstract

This paper describes in some detail the Melodic H tone patterns found in various Emakhuwa (P30) speech varieties, all of which share the property that there is no lexical tone in the verb system. While Emakhuwa dialects share the same Melodic H tone patterns, they do differ to a considerable extent in their general tonology. These differences at times obscure the extent to which different dialects exhibit the same pattern.

Language contact in northern Mozambique between Emakhuwa and languages outside Zone P has led to the development of three “mixed” languages. We examine Melodic Tone in one of these mixed languages, Ecuwabo, since it provides the only case in Zone P where there is both lexical tone in the verb and also Melodic H Tones.

Keywords: Bantu, tone, Melodic H, Emakhuwa, Ecuwabo
1. Introduction

This chapter describes the Melodic H (MH) tone patterns of the Emakhuwa language cluster, composed of Emakhuwa (including varieties identified as “Elomwe”) and “mixed-Emakhuwa” (Ekoti, Esangaji, and Ecuwabo). Mixed-Emakhuwa refers to varieties which largely retain Emakhuwa morphology, but which have a substantial non-Emakhuwa component (possibly a Zone N source for Ecuwabo). We confine our discussion to Emakhuwa and Ecuwabo. All of the data cited in this paper derive from the field work of the authors.

2. Emakhuwa

In all of Emakhuwa, verb stems have no lexical tone contrast. While a stem may lack any High, as in the negative infinitive, in most tenses an H is assigned to one or two moras in the stem. These stem H tones are what this volume refers to as “melodic” H tones. The number of distinct verb tenses in Emakhuwa is extremely large, and we restrict ourselves to tenses that we have examined in a great variety of dialects. We have not discussed relative tenses both because we lack extensive comparative data and because they do not seem to differ tonally from the corresponding non-relative verb tenses.

In all dialects the tonal contrast is presence of H on a mora versus its absence. Throughout this paper, surface H is marked by an acute accent. Toneless moras are unmarked. The most important tonal contrast is between dialects that do not double a H tone (i.e. raise the pitch of the next mora) and those that do. We shall use the term “primary” H tone to refer to a H tone that is lexically assigned (e.g. to a prefix mora) or is a MH on the stem. The mora bearing a primary H is underlined, and a mora bearing a doubled H is not, for example, Ikorovere: \[\underline{\text{u-líméla}}\] ‘to cultivate for’. For an overview of Emakhuwa dialect variation, see Cassimjee and Kisseberth (1999).

Doubling dialects are differentiated in various ways. One way has to do with whether doubling is restricted. Doubling may be blocked from targeting (a) the phrase-final mora (cf. \[\text{u-líma}\] in Ikorovere); (b) the second mora of a phrase-penult bimoraic syllable (cf. \[\text{u-hóola}\] ‘to precede’ in Ikorovere); (c) a monomoraic phrase-penult syllable (cf. \[\text{u-límela}\] ‘to cultivate for’ in Imeetto). We refer to dialects that bar doubling in all three contexts as “maximally restricted”; those dialects that bar doubling in contexts (a) and (b) are “restricted”; and those where no restrictions hold are “unrestricted”.

Doubling dialects can be categorized on a second dimension: do they attenuate the mora bearing a primary H tone? By “attenuate” we refer to a lowering of the pitch of the primary H. Attenuation may be partial and yield a mid-pitched mora (symbolized with the diaeresis symbol over the mora) or complete (the mora is indistinguishable from a low-toned mora). In Imithupi attenuation is partial:

1. There is one very significant mistake in the account of Esaaka in this 1999 paper; specifically, the paper failed to recognize that Esaaka in fact doubles a primary H tone onto the next mora whenever that mora is antepenult or further forward in the phrase. The present paper provides corrected data for Esaaka.
[u-límëla...], while in Eeratti it is complete: [u-límëla...]. We have cited phrase-medial pronunciations in order to postpone discussion of another aspect of tone realization. Regardless of whether attenuation is partial or complete, the mora remains underlined. Attenuation may be blocked in certain environments: e.g. attenuation does not affect the primary H tone if it does not have a double (e.g. in Imiththupi, [u-líma], with no attenuation, but [u-límá...]); it does not affect a primary H on the first mora of a bimoraic syllable (cf. Imiththupi [u-hóóla...]); and in some dialects it does not affect a primary H tone that is immediately preceded by a H-toned mora (cf. Imiththupi, [ki-nóó-límëla...] ‘I am cultivating...’, where the primary H on the first stem mora is not attenuated).

Finally, a doubled H (but not a primary H) has, in some dialects, a falling pitch when on a phrase-penult mora (cf. Imiththupi [u-líma]), indicated with a circumflex symbol. Phrase-final H, both primary and doubled, in some dialects may have falling pitch. We ignore this detail as it does not appear to represent a phonemic contrast.

The discussion below briefly characterizes the tone pattern of each dialect exemplified, but omits specifics of tone realization. The reader should be able to utilize the above guide to make sense out of the surface tone shapes. There are many dialects of Emakhuwa, but we have limited ourselves to the following: the “Rovuma” dialects Ikorovere, Imiththupi, and Imeetto; the coastal Nampula dialects Esaaka, Eeratti, and Enlai; the Zambezian dialects of Ilê and Mugeba.

We now turn to the MH tone patterns. MH tone patterns fall into three basic types in Emakhuwa: (1) no stem H tone; (2) one stem H; (3) two stem H.

We clarify the notion “stem” before proceeding. Every verb in Emakhuwa ends in a vowel, the choice of which is determined by the verb tense. This “final vowel” (FV) is part of the stem. Certain verbal extensions may precede the FV, e.g. the perfect extension and the ak/ek extension that occurs either obligatorily or optionally in several tenses, and are also part of the stem. It is sometimes necessary to recognize that when an object marker (OM) is present, it functions as part of the verb stem. In the literature, the term “macrostem” is used to refer to the structure (OM)-stem. When referring to a MH that is assigned to a mora in the macrostem domain, we refer to a MS1 or a MS2 H tone, meaning the first or the second mora of the macrostem. When talking about a MH tone assigned to a particular vowel of the verb stem narrowly viewed, we prefix the symbol “S” (e.g. S3 is the third mora of the verb stem proper). In the morphological formulas provided below for each tense, we will use the term “verbal base” (VB) to refer to the root plus derivational extensions that form the base to which inflectional extensions and the FV are added.

2.1. No stem H tone

In several tenses there are no (visible) MH tones at all in the macrostem. The negative infinitive (o-hí-(OM)-VB-a ‘not to do’) is one tense that lacks a melodic H on the stem. The negative prefix -hí- bears a primary H tone. Note that in this chapter we repeatedly use the same verb stems, so we will gloss a stem only on its first use.
a. **ILÊ** (a non-doubling dialect, Zambezia)

- **o-hí-ca** (eat)
- **o-hí-lovola** (carry)
- **o-hí-rukunusa** (turn it over)

- **‣ + OM:** **o-hí-mu-lima** (cultivate [cl.1])
- **o-hí-mu-lovola** (carry [cl.1])

**b. ENLAÏ** (a completely attenuating unrestricted doubling dialect, Nampula)

- **o-hí-cá** (buy)
- **o-hí-rúkula** (pick off)

- **‣ + OM:** **o-hí-kí-mana** (beat me)

Examination of these data shows that there is a primary H tone on the negative prefix -**hi**-, but no other primary H tone. We should note that since Enlai has an unrestricted doubling system, and is completely attenuating, and has only one environment where attenuation is blocked (namely, when the primary H is on the first mora of a bimoraic vowel: **o-héétta** ‘to not walk’, from underlying /o-hi-etta/) the mora bearing a primary H tone almost never actually bears a surface H tone. One might propose that in Enlai all primary H tones are located one mora to the right of where they are in the other Emakhuwa dialects (and that the only doubling rule is one that doubles a primary H from the second mora of a long vowel to the first mora). We believe that such an analysis would complicate the assignment of primary H tones in Enlai, with no strong offsetting advantages, but this is not the place to pursue this issue.

The negative situative (**SM-a-hí-(OM-)VB-a** ‘if I do not’) is another tense which lacks a stem MH tone. The subject marker is toneless, while the negative morpheme -**hi**- bears a primary H tone. Note that throughout this paper we cite finite verb forms with the first person singular SM **k(i)-**.

2) **ILÊ**

- **k-a-hí-(mu-)ca**
- **k-a-hí-(mu-)lima**
- **k-a-hí-(mu-)lovola**
- **k-a-hí-(mu-)thukumeliha**

The subsecutive subjunctive (**SM-a-(OM-)VB-(ek-)e** (‘I should go and do’) lacks a stem MH tone as well.

3) **IMEETTO** (a maximally restricted non-attenuating doubling dialect, southern Tanzania and northern Mozambique)

- **w-á-lye** (eat)
- **w-á-weye** (look)
- **w-á-thikile** (cut)

- **w-á-lóvole**
- **w-á-khúure** (chew)
- **w-á-khávihere** (help)

- **‣ + OM:** **w-á-n-thikile** (cut [cl.1])
- **w-á-kí-thumeleke** (buy for me)

The primary H tone on the prefix **g-** (and its double, if there is one) are the only H tones in the word. There is no Melodic H on the stem.

It should be pointed out that in most cases where a stem lacks a MH, the stem is immediately preceded by a H-toned prefix. One could propose that in these tenses, the stem is in fact assigned a MH on the first mora of the macrostem, but this H tone is deleted because of the preceding H tone (an Obligatory Contour Principle effect).
We are unaware of any data that would compel such an analysis, but it is a possible account. See section 3 for a brief discussion of the negative subjunctive verb, which in some dialects lacks both a prefix H and a stem MH.

2.2. A single H tone

There are various tenses where a single MH tone appears, but they differ with respect to which mora in the stem they target: the first, the second, the third, or the final mora. We discuss each location in turn.

2.2.1. A MH tone on the first mora of the macrostem

One of the most important MH patterns is where the first mora of the macrostem is assigned a (primary) H tone. Although there are instances where another MH may be used along with the MS1 H, in this section we restrict ourselves to cases where MS1 is the only MH in the stem.

The conjoint past imperfective tense (\(SM-a(a)-(OM-)VB-a\) ‘I was doing’) has this pattern. A conjoint verb form is one whose primary use requires a complement (in contrast to disjoint tenses, where the verb may be clause-final). In illustrating conjoint verb forms, we place the symbol ‘…’ after the verb.

\[
\begin{align*}
\text{(4)} & \quad \text{MUGEBA (an unrestricted non-attenuating doubling dialect, Zambezia)} \\
& \quad \text{k-a-cá… k-a-límá… k-a-rúkúla… k-a-rúúla… (take out of water)} \\
& \quad \text{k-a-rúkúnusa… k-a-véléela… (see off, send)} \\
& \quad \text{\hspace{1cm} + OM: k-a-m-cá… k-a-m-límá… k-a-m-thúkumeliha…}
\end{align*}
\]

Notice that one might initially think that the primary H tone on the OM is an inherent feature of the OM, and that the MH is located on the first mora of the verb stem proper, but is deleted after the H-toned OM due to the Obligatory Contour Principle. This analysis cannot be maintained, however, since the OM is not in fact regularly H-toned. There are numerous tenses where the OM does not bear a H tone. See below for cases involving MS2 and S3 H tones. In our understanding of Emakhuwa tonology, an OM possesses a primary H tone just in case there is a MS1 H tone involved.

Another tense that exhibits a MH tone on the first mora of the macrostem is the conjoint present tense, with the formula \(SM-n(V)-(OM-)VB-a\) (‘I am doing’).

\[
\begin{align*}
\text{(5)} & \quad \text{ILÈ} \\
& \quad \text{ki-n-cá… ki-n-líma… ki-n-rúkula… ki-n-rúula…} \\
& \quad \text{ki-n-rúkunusa… ki-m-máaliha… ki-n-thúkumeliha…} \\
& \quad \text{\hspace{1cm} + OM: ki-m-mú-ca… ki-m-mú-rukunusa…}
\end{align*}
\]

2.2.2. A MH tone on the second mora of the macrostem

The MS2 position is also robustly attested (appearing principally in forms using the perfective stem). The negative past perfective tense, which has the formula
Neg-SM-aa-(OM-)VB-pfv-e (‘I did not do’), is a tense where MS2 is targeted. The perfective stem in Emakhuwa involves the suffixation of either -il- or -al- after the lexical stem and before the final vowel -e or alternatively the infixation of a moraic nasal in front of the last consonant of the stem. The distribution of the suffixed and the infixed forms is highly variable across the various dialects and cannot be discussed here.

When there is no OM, the second mora of the verb stem proper bears a primary H tone. Notice that the verb stem in this example necessarily has at least two moras due to the presence of a moraic element used to form the perfective stem. Ilê is a dialect that allows word-final H tones, so the MH appears on the second mora of the stem even when it is word-final: n-k-aa-cilé. Dialects that do not allow word-final primary H tone may resort to various devices to avoid a word-final MH in such cases. When an OM is present, the MH appears on the first mora of the verb stem proper – in other words, the second mora of the macrostem. All the data can be accounted for in a straightforward manner if the MH tone is considered to be a MS2 H tone.

A MS2 H tone is used in the conjoint past perfective tense, which has the morphological structure SM-aa-(OM-)VB-pfv-e (‘I did’).

When there is no OM, the second mora of the verb stem proper bears a primary H tone. Notice that the verb stem in this example necessarily has at least two moras due to the presence of a moraic element used to form the perfective stem. Ilê is a dialect that allows word-final H tones, so the MH appears on the second mora of the stem even when it is word-final: n-k-aa-cilé. Dialects that do not allow word-final primary H tone may resort to various devices to avoid a word-final MH in such cases. When an OM is present, the MH appears on the first mora of the verb stem proper – in other words, the second mora of the macrostem. All the data can be accounted for in a straightforward manner if the MH tone is considered to be a MS2 H tone.

A MS2 H tone is used in the subjunctive as well. The morphological formula for this tense is SM-(OM-)VB-e (‘I should do’).

Observe that in Ilê, the MH is located on the second mora of the stem proper when no OM is present, and on the first mora of the stem proper when an OM is present. In other words it has a MS2 H tone. Section 2.4 shows that in the Rovuma dialects Ikorovere and Imithupi, forms with an OM do not follow the MS2 pattern.

A MS2 H tone appears on the second mora of the stem in the negative present perfective, whose formula is Neg-SM-(OM-)VB-pfv-e (‘I have not done’).
Note that if the MS2 vowel would be word-final in Enlai, as in the case of a stem such as /ciye/, it retracts to the preceding mora and then doubles onto the final vowel. It is our contention that all word-final H-tones in Enlai are in fact doubles from a preceding H toned mora. Primary H tones are banned from word-final vowels. This restriction occurs in several other Emakhuwa speech varieties.

Another tense with a Melodic H on the second mora of the macrostem is the past counterfactual, which has the formula $SM-g(a)-(OM-\text{VB})-pfv-e$ (‘if I had done’). In Ilê, illustrated below, a short form of the $g(a)$ is used.

(10) **Ilê**

\[ \text{k-á-cíle k-á-thuúmme k-á-lovoǹle k-á-rukúnunse} \]
\[ \text{+ OM: k-á-mu-cíle k-á-mu-thúúmme k-á-mu-thúkumelinhe} \]

The negative past counterfactual is another tense with a melodic H on the second mora of the macrostem; the morphological formula for this tense is $SM-a-hí-(OM-)VB-pfv-e$ (‘if I had not done’) in Ilê, the source of our data below.

(11) **Ilê**

\[ \text{k-a-hí-cíle k-a-hí-thuúmme k-a-hí-thukúmelinhe} \]
\[ \text{+ OM: k-a-hí-mu-thúúmme k-a-hí-mu-thúkumelinhe} \]

2.2.3. A MH tone on the third mora of the stem (variant: penult mora)

A number of verb tenses in Emakhuwa exhibit a H tone on the third mora of the verb stem proper. We call this Melodic H tone a S3 H tone. The S3 H tone corresponds to a Penult H tone in a few dialects (Imitthupi in Tanzania, Enahara in Nampula, and “Zanzibari”, the language of the descendants of freed slaves who were brought to Durban in the nineteenth century). We discuss later cases where the S3/Penult H tone co-occurs with a MS1 H tone. In this section, we restrict ourselves to a case where an S3/Penult H tone is the only MH.

The situative tense has the formula $SM-a-(OM-)VB-a$ (‘if I do’). In (12), we illustrate the S3 pattern displayed in Esaaka.

(12) **Esaaka** (non-attenuating, maximally restricted doubling dialect)

\[ \text{k-a-ca k-a-líma k-a-rukula} \]
\[ \text{k-a-rukunüsa k-a-veleḡla k-a-khomaáliga k-a-thukumélíhaca} \]
\[ \text{+ OM: k-a-n-lya (eat) k-a-n-líma k-a-n-lovolá} \]
\[ \text{k-a-n-ruúla k-a-n-rukunüsa k-a-m-maalíha k-a-n-thukumélíhaca} \]

There is only one primary H tone in the stem and it is always on the third mora of the verb stem proper. If the stem has only one or two moras, this S3 H tone fails to appear. If the stem has three moras, the S3 H tone still fails to appear. Esaaka does not allow the S3 H tone to dock to a word-final vowel. This is not surprising since word-final H tones do not occur in this dialect. It should be noted, however, that in Esaaka, while a MS1 H cannot dock onto a monomoraic stem due to the ban on word-final primary H tones, the MS1 H tone retracts back to the preceding prefix. This sort of retraction does not occur in the case of the S3 H tone. We should note that the behavior of the S3 H tone may be more complex in dialects that allow word-final primary H tones.
Now let us look at a dialect where the MH pattern is Penult rather than S3. In Imithupi the situative tense has the formula $SM-a-(OM-)VB-ak-a$ (‘if I do’).

(13) **IMITHUPI**

<table>
<thead>
<tr>
<th>Verb Stem</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>k-a-lyáka</td>
<td>k-a-limáka</td>
</tr>
<tr>
<td>k-a-hukuláka (sieve)</td>
<td>k-a-khuuráka (chew)</td>
</tr>
<tr>
<td>k-a-kotopholáka (dig out)</td>
<td>k-a-tittitimiráka (sink)</td>
</tr>
</tbody>
</table>

▶ + OM: (k)a-ki-kaviháka (help me) a-k-peekettheláka (beat for me)

Since every verb stem in this tense has at least two moras (due to the presence of the *ak* verbal extension), every form has a penult mora and this mora always bears a H tone. Furthermore, the presence of an OM does not alter this situation in any way. It is still the penult mora in the word that is H-toned.

2.2.4. A MH tone on the final mora of the stem

The principal tense having a final MH is the conjoint present perfective verb: $SM-(OM-)VB-pfv-e$ (‘I have done’).

(14) a. Ilê  ki-cilé... ki-limmé... ki-lovonlé... ki-kookinhé...
    ▶ + OM: ki-mu-cilé... ki-mu-limmé...

b. IMETTO  ki-lilyé... ki-thumilé... ki-thumihilé...
    ▶ + OM: ki-n-thumilé... ki-n-thumihilé...

It is of some significance to point out that while Ilê does allow word-final primary H tones, Rovuma dialects such as Imetto do not; nevertheless, in the conjoint present perfective in Imetto, we do find a word-final H tone. In other words, it is as though the final vowel is not really word-final! It is likely that a word-final primary H tone is permitted here due to the fact that this is a conjoint tense.

2.3. Tenses that involve multiple H tone assignment in the stem

All dialects that we have studied contain cases where two MH tones appear: one of these H tones is an MS1 H tone and the other is an S3/Penult H tone. Other cases where more than one MH appears on the stem are sporadically attested and seem to primarily involve negative tenses, though the matter requires more detailed study and is not discussed here due to lack of well-developed data.

2.3.1. MS1+S3/penult pattern

The infinitive verb $(o/u-(OM-)VB-a$ (‘to do’)) displays the MS1+S3/Penult melodic H tone pattern. The infinitive prefix is toneless. There are some differences in behavior between dialects which do not allow word-final primary H tones and those that do. We will begin with Esaaka, a dialect that does not allow word-final primary H tones.

(15) **ESAAKA**  ó-lya o-líma o-lóvola o-rúula o-rúkúnúsa o-vélééla o-khómááliha o-thúkúmélíhaca
In Esaaka, when there is no OM, there is always a primary H tone on the first mora of the stem except when the stem is monomoraic and thus its first vowel is word-final. In that circumstance, the MS1 H tone is retracted to the prefix. A S3 H tone appears whenever the stem is four moras or longer. When the stem has one, two, or three moras, then there is no S3 H tone. These data parallel precisely the data cited above in (12).

The infinitive with an OM always displays a MS1 H tone but does not have a S3 H tone when the stem is monomoraic or bimoraic. If the stem has four or more moras, then it is the S3 mora that bears the MH. The OM plays no role in the assignment of the second MH. It is the trimoraic stems that are a bit complex. There appear to be two variants. In one variant, we find facts like those cited above for the first person singular OM: the S3 H tone simply fails to appear. This parallels what we observed in (12). However, a second variant was recorded (shown above in the forms with a [cl.1] OM): a second MH tone appears, though it is not located on the S3 vowel. Rather it is located on the preceding vowel. This preceding vowel is in fact a third mora, since it is the third mora of the macrostem. It is as though the MS3 mora is targeted when the S3 mora is not available due to the ban on word-final primary H tones. It turns out that this second variant is observed in several dialects (e.g. Ilê, Ikorovere). (16) illustrates the infinitive in Ilê:

(16) Ilê  
\[\text{o-cá o-líma o-lóvola o-rúula} \]
\[\text{o-rúkunúsa o-kóokíha o-kóokíherya o-thúkuméliha} \]
\[\text{+ OM: o-mú-ca o-mú-límá/o-mú-líma... o-mú-lovóla} \]
\[\text{o-mú-ruúla o-mú-rúkunúsa o-mú-thukuméliha} \]

Ilê is a dialect that does permit the MS1 H tone to dock to a word-final vowel: cf. o-cá. As a result, the MS1 H tone appears on the first mora of the macrostem in every example. In the case of stems that do not contain an OM, the S3 MH tone in Ilê cannot appear unless there are at least four moras in the verb stem. When there is an OM, the facts are a bit more complex. The longer verb stems show clearly that the second MH in the stem is S3. When the verb stem proper is trimoraic, we find the MH being assigned to the third mora of the macrostem (apparently as a way avoiding assigning the MH to the word-final vowel). The case of a bimoraic stem is interesting in that it shows a difference between phrase-final and phrase-medial position. The S3 H tone is able to dock to the word-final vowel when the verb is phrase-final, but not when phrase-medial. Ilê exhibits differences between phrase-final and phrase-medial position in other cases of the S3 H tone (e.g. the situative), but further discussion is beyond the scope of this study.

The conjoint present tense \((SM-n(o)-(OM-)VB-a \ ‘I am doing’)\) displays the MS1+S3/Penult tone pattern. Recall that conjoint tenses must not be clause-final.
Imetto is a dialect that avoids word-final primary H tones and MS1 H tones normally retract from a monomoraic stem (cf. the infinitive ŋ-lya), but in the conjoint present tense this retraction does not take place. Notice also that the S3 H tone surfaces on the final mora of a trimoraic stem when there is an OM. As we saw earlier with the infinitive, it seems that when an OM is present, a S3 H tone wants to anchor to the stem rather than simply not appear. In this conjoint tense, the S3 mora is targeted, apparently because it is not considered to be “really” word-final; i.e., a conjoint verb behaves like it does not constitute a separate word. We should also observe that the word-final primary H tones shown in (17) do double onto the next word.

Another tense exhibiting the MS1+S3/Penult pattern is the disjoint present perfective tense, which in the Rovuma dialects is SM-(OM-)VB-a (‘I have done’). However, the h optionally elides when the stem is consonant-initial (as long as there is an overt subject prefix and a consonant cluster does not follow). No elision is possible when the verb stem is vowel-initial. Elsewhere in Emakhuwa, the elision of the h is obligatory rather than optional in the relevant environments.

In all the above data, a MH tone appears on the first mora of the macrostem, with the single caveat that if the macrostem consists of a single mora, the MS1 H tone retracts to the preceding prefix. If there is no OM, the S3 H tone does not dock on stems with three or fewer moras. If the stem is longer, an S3 H tone is present. The presence of an OM yields a single departure from the above facts about the S3 tone. As noted earlier, the second MH in this tense docks to the MS3 mora and not the S3 mora when the verb stem proper is trimoraic. This appears to be a strategy that permits the MH to be pronounced on a vowel that is not word-final.

2.3.2. MS1 H tone fails to be assigned due to OCP effect of a prefix H tone

There are tenses that might be considered to be instances of the MS1+S3/Penult pattern where the MS1 melodic H is missing, but its absence could be claimed to be the response to a tone deletion rule triggered by the Obligatory Contour Principle, a constraint that bars successive primary H tones in Emakhuwa.

One such case is the disjoint past perfective tense verb summarized by the formula SM-aa-h’u-(OM-)VB-a (‘I had done’).
The prefix *ha*-) bears a primary H tone in each example. Since Mugeba has unrestricted doubling, the next mora (the first mora of the macrostem) always bears a doubled H, but never bears a primary H tone. In other words, the MS1 H tone is absent. When there is no OM, the S3 H tone only appears when there are more than three moras in the stem. When there is an OM present, once again the facts about the S3 H tone are the same as observed above in Esaaka: if the stem proper has one or two moras, no S3 H tone appears. If the stem proper has four or more moras, there is a MH on the third mora of the stem proper. When the stem proper has three moras, then a MS3 H tone is assigned rather than a S3 H tone.

The disjoint past perfective tense form in Esaaka has the shape $SM\text{-}aa\text{-}hg\text{-}(OM\text{-})\text{VB}-a$ where the presence of a primary H tone on $ho$-) (possibly) prevents the appearance of the MS1 H tone.

Examination of these data shows that in Esaaka the prefix *ho*) always bears a primary H tone; since Esaaka is a maximally restricted doubling dialect, the first mora of the macrostem may bear a doubled H, but never a MS1 H. The facts concerning the S3 H tone are much as in Mugeba, the major difference being that in Esaaka the presence of an OM does not lead to the assignment of a MS3 H tone when the verb stem proper is trimoraic. Esaaka shows some variation on this point across different tenses.

Another tense where the MS1 H tone fails to appear is the sequential tense, which has the structure $ku-(OM\text{-})\text{VB}-a$ (‘and I did’).

In these data, the sequential prefix *ku-* bears a H tone in all forms. The MS1 mora never bears a primary H tone, though it does exhibit a doubled H in most cases (Esaaka is a maximally restricted doubling dialect, so the double cannot appear on the final vowel in *ku-lya*, nor on the penult mora in *ku-lima*). When there is no OM, the S3 H tone cannot appear when the stem has three or fewer moras. This can be attributed to the ban on word-final H tones in Esaaka. In forms with an OM, the S3 appears just in case the verb stem has four or more moras. These data parallel the Esaaka forms in (20).
2.4. The distribution of Melodic H Tone patterns

In the preceding sections, we have provided illustrations of the Melodic H Tone patterns found in the various Emakhuwa dialects that we have investigated. For the most part, a given tense will have the same Melodic H Tone pattern in all the dialects that use the tense in question. We have shown that the major MH patterns are: no stem MH (though these tenses could be analyzed as cases where there is a MS1 H tone that has been deleted due to a preceding prefix H); a MS1 H tone; a MS2 H tone; a S3 (or Penult H in a few tenses); a final H; and a multi-tone pattern where the MH tones are MS1 plus S3 (or Penult). A number of tenses where superficially there is only a S3 (Penult) pattern could be analyzed as having the MS1+S3 (Penult), with the MS1 being deleted due to a preceding prefixal H tone.

Below we provide a list of the major tenses in the Rovuma dialects (Ikorovere [K] and Imithupi [Mi]). In a few cases where we lack data from [K] or [Mi], we cite data from a third Rovuma dialect, Imetto [Me]. The examples cited sometimes show phonological interactions between successive vowels across morpheme boundaries. Space precludes discussion of these interactions. When a vowel in one morpheme assimilates to a vowel in the next morpheme, we show the resulting vowel as belonging to the same morpheme. We have not provided extensive exemplification of the patterns due to space limitations.

Table 1: Melodic H patterns of major tenses in Rovuma Emakh

<table>
<thead>
<tr>
<th>Tense</th>
<th>Pattern</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>neg.inf</td>
<td>no stem MH (perhaps due to OCP deleting MS1 H tone)</td>
<td>- u-hí-(OM-)VB-a [K] ‘not cause to stay awake’;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>u-hí-rámuse [Mi] ‘not greet’</td>
</tr>
<tr>
<td>cj.pst.ipfv</td>
<td></td>
<td>k-aa-rükúreriha n-khoyi ‘I was tying a rope around’</td>
</tr>
<tr>
<td>neg.hAb</td>
<td></td>
<td>ki-nóó-h-ééttakaca ‘I never visit’</td>
</tr>
<tr>
<td>neg.pst.ipfv</td>
<td></td>
<td>kh-a-ná-thátaaniha ‘[cl.2] has not yet put on top of one another’</td>
</tr>
<tr>
<td>neg.sit</td>
<td></td>
<td>ki-(h)í-pángaka ‘me not doing’</td>
</tr>
<tr>
<td>neg.sbjv</td>
<td></td>
<td>ki-(h)i-lokottanihe [K] ‘that I not pick up’;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>a-hí-(ki-)ramuse [Mi] ‘let [cl.2] not greet (me)’</td>
</tr>
<tr>
<td>subs.sbjv</td>
<td></td>
<td>k-á-rápeke [K] ‘let me go and bathe’;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>w-á-lókothaniheke [Me] ‘you should go and pick up’</td>
</tr>
</tbody>
</table>

2. It should be noted that other dialects that do not allow a word-final primary H tone – e.g. Esaaka – exhibit toneless stems in the subjunctive negative. However, in dialects where a final primary H tone is allowed, the subjunctive negative has a final H tone. It thus appears that the toneless stems in the subjunctive negative are the result of the ban on word-final primary H tones in these dialects. Since this tense is the only tense where apparently toneless verb stems are not preceded immediately by a prefixal H tone, there seems little doubt that in Emakhuwa toneless verb stems are the result of either (a) the deletion of a MS1 H tone due to the OCP effect from a prefixal H or (b) the failure of a final MH tone to surface due to the ban on word-final primary H tones.
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‣ neg.subs.sbjv [Me] {SM-a-hi-(OM-)VB-ek-e} Ex: w-a-hí-thúmeke ‘you shouldn’t go and buy; w-a-hí-ń-thumeke ‘you shouldn’t go and buy [cl.1]’

‣ neg.sit [K,Mi] {SM-(aa)-hi-na-(OM-)VB-e} Ex: k-aa-hí-lùpattheke [K] ‘if I don’t hunt’; ni-hí-káviheke [Mi] ‘if we do not help’

‣ neg.ce.sit [K,Mi] {SM-(aa)-hi-na-(OM-)VB-e} Ex: k-aa-hí-ná-pángace [K] ‘I might as well not make it’; k-a-hí-ná-thúkule [Mi] ‘even if I don’t untie it’

‣ ce.pfv.sit [K,Mi] {SM-na-(OM-)VB-pfv-e} Ex: ki-ná-thérekenle [K] ‘(when) I have already chopped it up’; a-ná-hókolele [Mi] ‘after [cl.1/2] had returned’

MH on MS1

‣ narr.pst [Mi] {nka-SM-aa-(OM-)VB-a} Ex.: ŋká-k-aa-tụpúlaníha ‘and then I cut into pieces’; ŋká-k-aa-hímyacera ‘and then I talked about it to [cl.2]’

‣ neg.pst.pfv [Mi] {Neg-SM-aa-(OM-)VB-a} Ex: kha-aa-tụpúlaníha ‘I wasn’t cutting to pieces’; kh-aa-kí-rúwana ‘[cl.1] wasn’t insulting me’

‣ sbjv [K,Mi] {SM-OM-VB-(ek)-e} Ex: n-kí-ttóttele [K] ‘you (resp.) should pick up for me’; n-kí-rúkulele [Mi] ‘you (resp.) should pick up for me!’

MH on MS2


‣ sit [K,Me] {SM-(OM-)VB-ak-a} Ex: ki-lúpattháka ‘me hunting’; ki-khomáálihaka [Me] ‘me strengthening’ (cf MS2+S3 when OM in [K])


‣ pst.cf [Mi] {SM-kaa-(OM-)VB-pfv-e} Ex: ã-káa-váhíre ‘if [cl.1] had given’; ã-káa-rámúšile ‘if [cl.1] had greeted’; ã-káa-ki-rámúšile ‘if [cl.1] had greeted me’

‣ neg.pst.cf [Mi] {SM-hí-kaa-(OM-)VB-pfv-e} Ex: a-hí-káa-rámúšile ‘if [cl.2] had not greeted’; a-hí-káa-ki-rámúšile ‘if [cl.2] had not greeted me’

MH on S2

‣ sbjv [K,Mi] {SM-VB-(ek)-e} Ex: n-lokóttánihe [K] ‘you (resp.) should pick up!’; n-rikàníhace [Mi] ‘you (resp.) should mix’
3. Observe that in this tense, a MS3 H tone is present when the verb stem proper is trimoraic and an OM is present.
The preceding compendium of verb tenses from the Rovuma dialects is not by any means exhaustive, but it does provide an accurate reflection of the typical Melodic H patterns as they appear across a wide swath of the Emakhuwa verbal system.

3. Ecuwabo

This section provides a description of Melodic H tone in Ecuwabo, classified as P34 by Guthrie, and spoken in the South of Zambezia province.

Whereas Emakhuwa lacks any lexical tone contrast in the verb stem, a number of Ecuwabo tenses have retained a lexical tone contrast on verb stems. This tone contrast must be taken into account when studying MH tone in Ecuwabo. But before entering into a description of the lexical and melodic tones in Ecuwabo, a few words on its basic tonology are needed. Ecuwabo closely parallels Emakhuwa in its tonology. There are two basic tones, High and Low. H tones (whatever their source) double onto the following mora, but like many Emakhuwa dialects, this doubling cannot affect a phrase-final vowel. Furthermore tone spreading is found in Ecuwabo, unlike Emakhuwa where it is unusual.

Lexical, prefixal, and MH tones are all referred to as primary H tones; the following H tone is referred to as a “doubled” or “spread” H (depending on the situation). As in some Emakhuwa varieties, a doubled H on a phrase-penult mora is realized with a falling character: w-aábâla ‘to wear clothes’ versus w-aábálela ‘to dress well’. The transcription of tone in this section is as in Emakhuwa.

Two distinct sets of tenses need to be considered. In one set, there is a lexical tone contrast between toneless and High stems, but no MH tone (section 3.1). In the second set, a MH tone appears, with -in most cases- the effect of cancelling the lexical H contrast. In other words, lexical H tone and MH tone do not occur in the same tense in Ecuwabo (except for one pattern, in 3.2.1). This is, of course, in contrast to many Bantu languages where the two types of H tone may co-occur. For each tone pattern discussed, only a few tenses are exemplified. A more exhaustive tense list for each pattern is proposed in table 2, section 3.3.
3.1. Non-melodic stem tone

3.1.1. Lexical H contrast

Ecuwabo is a “mixed” language which has a strong Emakhuwa (Zone P30) component that has been interwoven with another source from Zone N. It is interesting to note that Ecuwabo is the only language in Zone P and Zone N that has retained the contrast between toneless and H verb roots. The contrast can be seen in the infinitive o-lïma ‘to cultivate’ (cf. Common Bantu *-dïm-) versus ó-rumá ‘to send’ (from Common Bantu *-dúm-).

In the absence of a MH, a lexical H tone emerges on the penult mora of the stem (or the ultimate mora in the case of a bimoraic stem), while low stems remain toneless. The examples below list several tenses where the stem has only lexical tone. For each tense, monomoraic to 5-syllables verb stems have been exemplified, with L verb roots on the first line, and H roots on the second line. Because of space restrictions, the verb stems used were glossed once for all in the footnote5 below. We have assumed that the lexical H is located on the first mora of the stem, as in other Bantu languages, and we double underline this mora even though the lexical H never actually appears on this mora. Normal underlining is used to mark the mora to which the lexical H tone shifts. Our reason for this is that this H tone is a primary H that doubles onto the following mora in an appropriate context.

(22) Situative (‘if/when I do’) • SM-a-(OM-)VB-a
ddaa-(mu)ja -(mu)lima -(mu)sakula -(mu)libelela -(mu)roromeliha
-(mu)gulá -(mu)gulíha -(mu)gagbulela -(mu)gabuluwela

(23) Past Imperfective (‘I did’) • SM-a-ni-(OM-)VB-a
ddámi-(mu)ja -(mu)lima -(mu)sakula -(mu)libelela -(mu)roromeliha
-(mu)gulá -(mu)gulíha -(mu)gagbulela -(mu)gagbuluwela

(24) Negative Present (‘I am not doing’) • ka-SM-ni-o-(OM-)VB-a
kaddjño-(mu)ja -(mu)lima -(mu)sakula -(mu)libelela -(mu)roromeliha
-(mu)gulá -(mu)gulíha -(mu)gagbulela -(mu)bubuluwela

In the above data, the situative does not have a prefixal primary H tone, while the other tenses do. In these examples, the prefixal H is located at least two moras to the left of the macrostem, and doubles onto the following mora. When the verb is a L verb, the macrostem itself bears no surface H tone. When the verb is a H verb, the lexical H of the verb displaces to the final mora in the case of a bimoraic stem and to the penult in longer verbs.

All these examples show that the introduction of an object marker (OM) does not change the tonal pattern, neither for L verbs nor for H verbs. We have also assumed

---

5. L-toned verbs (1st line): -ja (eat) -lima (cultivate) -sakula (choose) -paganya (take leave of) -libelela (swear) -roromeliha (promise) // H-toned verbs (2nd line): -gulá (buy) -gulíha (sell) -gagbulela (break for) -walamuwela (joke with) -bubuluwela.

6. Longer verb stems sometimes neutralize the H/L lexical contrast, as in this example, where the stem is treated as low.
that even in the presence of an OM, the lexical H tone is deeply anchored on the first mora of the verb stem proper. This is supported by the example ddááni-mugulá, where the lexical H has the final H tone associated with bimoraic stems and not the penult H tone associated with longer stems.

3.1.2. Toneless stem

A number of tenses lack any MH tone. In several cases of this sort, the morpheme preceding the macrostem bears a primary H tone. Some examples:

(25) Neg. Infinitive (‘not to do’) \( \bullet \) a-hí-(OM)-VB-a

ohú-(mû)ja -(mû)lima -(mû)paganya -(mû)libelela -(mû)roromeliha
-(mû)gula -(mû)guliha -(mû)gabulela -(mû)bubuluwela

(26) Subsecutive Subjunctive (‘I should go and do’) \( \bullet \) SM-a-(OM)-VB-e

ddâ-(mû)je -(mû)lime -(mû)paganye -(mû)libelele -(mû)roromelihe
-(mû)gule -(mû)gulihe -(mû)gabulele -(mû)bubuluwela

(27) CJ Past Imperfective (‘I did’) \( \bullet \) SM-a-(OM)-VB-a

ddaá-(mû)ja... -(mû)lime... -(mû)paganya.. -(mû)libelela... -(mû)roromeliha
-(mû)gula... -(mû)gulihe... -(mû)gabulele.. -(mû)bubuluwela

Interestingly, all the examples above involve a H on the prefix immediately preceding the macrostem. As in Emakhuwa, one could propose that a MS1 H tone is assigned in these cases, but deletes because of OCP considerations when a H immediately precedes. This option is worth considering, although there is no data that provides empirical evidence for the MS1 H in such cases. However, two tenses have a completely toneless form, where subject prefix and both negative morphemes ka- and -hi- are toneless, as well as the macrostem: the negative prefixed imperative (28) and the negative subjunctive (29).

(28) Neg. prefixed Imperative (‘I must not do’) \( \bullet \) ka-SM-(OM)-VB-e

kaddi-(mu)je -(mu)lime -(mu)paganye -(mu)libelele -(mu)roromelihe
-(mu)gule -(mu)gulihe -(mu)gabulele -(mu)bubuluwela

(29) Neg. Subjunctive (‘I shouldn’t do’) \( \bullet \) SM-hí-(OM)-VB-e

ddihi-(mu)je -(mu)lime -(mu)paganye -(mu)libelele -(mu)roromelihe
-(mu)gule -(mu)gulihe -(mu)gabulele -(mu)bubuluwela

Remember that the overt toneless pattern of the negative subjunctive of certain Emakhuwa dialects can be considered a case of final H, where the H cannot appear because these dialects disallow a word-final primary H (see subsection 2.4). This constraint is not valid in Ecuwabo since the Final MH pattern exists (see section 3.2.4). Thus we conclude that in Ecuwabo there are stems without a MH, and whose lexical H tone is lost.
3.2. Melodic H tone patterns

There are four different tone patterns in which a MH tone appears on the verb stem. The most recurrent melodic patterns are on the first and the second macrostem mora. The penult and the final vowels may also be a target. Recall that the MH has the effect of cancelling the lexical tone contrasts on verbs: L and H verb forms exhibit the same tone pattern. Only a MS1 tone melody, by combining with lexical tone contrasts, constitutes an exception to this generalization.

3.2.1. MH assigned to MS1 + lexical tone contrast

MS1 is a common location for the MH in Ecuwabo. This position is particularly clear when the verb is lexically low: the MH tone anchors to the first mora of the macrostem when there is an OM, otherwise to the first mora of the stem, as shown in both the first and third lines of examples (30) to (32). We underline this H-toned mora since it doubles, just like any other primary H tone in Ecuwabo.

(30) Infinitive (‘to do’) $\rightarrow$ o-(OM-)VB-a

\[
\begin{align*}
\text{o-} & \quad \text{líma} & \quad \text{o-sákula} & \quad \text{o-líbélela} & \quad \text{o-rórómelih}\text{a} \\
\text{o-} & \quad \text{gúlá} & \quad \text{ó-gúlíha} & \quad \text{ó-gágúlélá} & \quad \text{ó-búbúlúwélá} \\
o- & \quad \text{mújá} & \quad \text{o-músákula} & \quad \text{o-múlíbelela} & \quad \text{o-múróromelih}\text{a} \\
o- & \quad \text{múgúlá} & \quad \text{ó-múgúlíha} & \quad \text{ó-múgúlélá} & \quad \text{ó-múbúlúwélá}
\end{align*}
\]

(31) Disjoint Present (‘I am doing’) $\rightarrow$ SM-ni-o-(OM-)VB-a

\[
\begin{align*}
dd\text{nó-} & \quad \text{líma} & \quad \text{-sákula} & \quad \text{-líbélela} & \quad \text{-rórómelih}\text{a} \\
& \quad \text{gúlá} & \quad \text{-gúlíha} & \quad \text{-gágúlélá} & \quad \text{-búbúlúwélá} \\
dd\text{nó-} & \quad \text{mújá} & \quad \text{-músákula} & \quad \text{-múlíbelela} & \quad \text{-múróromelih}\text{a} \\
& \quad \text{múgúlá} & \quad \text{-múgúlíha} & \quad \text{-múgúlélá} & \quad \text{-múbúlúwélá}
\end{align*}
\]

(32) Negative Present (‘I don’t do’) $\rightarrow$ ka-SM-ni-(OM-)VB-a

\[
\begin{align*}
kaddiń- & \quad \text{líma} & \quad \text{-sákula} & \quad \text{-líbélela} & \quad \text{-rórómelih}\text{a} \\
kaddiń(\text{i}) & \quad \text{gúlá} & \quad \text{-gúlíha} & \quad \text{-gágúlélá} & \quad \text{-búbúlúwélá} \\
kaddiń & \quad \text{mújá} & \quad \text{-mújíma} & \quad \text{-músákula} & \quad \text{-múlíbelela} & \quad \text{-múróromelih}\text{a} \\
kaddiní & \quad \text{-múgúlá} & \quad \text{-múgúlíha} & \quad \text{-múgúlélá} & \quad \text{no example}
\end{align*}
\]

Note that the MH cannot double in the case of o-líma because a phrase-final vowel cannot accept doubling, but it can double in o-múlíma, yielding a falling pitch due to the phrase-penult nature of the mora following the OM. Elsewhere, doubling yields a H tone on the mora following the initial macrostem mora: o-líbélela and o-múlíbelela.

The situation with H-toned stems on the right columns is more complicated in that the MH appears in addition to the lexical H tone. This MS1 melodic pattern is the only one which does not cancel the lexical tone contrast. The ‘co-habitation’ of lexical H and melodic H is not a simple one: the MH has to move out of the macrostem and docks on the first pre-macrostem mora while the lexical H tone docks on the PU (as it does in the absence of a MH, see subsection 3.1.1). This constraint on tone realization is summarized in (33).
Constraint on tone realization:
A MS1 and a lexical H tone may not both occur in a macrostem. To avoid violating this constraint, the MS1 H tone retracts to the prefix immediately preceding the macrostem.

If no OM is present, the retracted MH spreads rightward up to the lexical H that appears on the penult (e.g. ó-búbúlúwéla), forming a H-tone plateau (or bridge). The only complication here is when the lexical H has shifted to the final mora (the bimoraic stem case); in ó-gulá there is no spreading. This is a phrase-final effect, however, since in medial position the bridge is present: ó-gulá… Now, if an OM is present, the MH only doubles onto the OM itself, and does not spread to the penult. No H-tone bridge is formed. The theoretical explanation for this behavior is not obvious and in any case is beyond the scope of this study.

It should be noted that the “prefixed imperative” is assigned a MH on the first mora of the verb stem, without any lexical contrast on the stem, in contrast to verb forms discussed above.

Prefix Imperative (‘do!’) • ka-VB-a

<table>
<thead>
<tr>
<th>ka-já</th>
<th>ka-líma</th>
<th>ka-liibeela</th>
<th>ka-pírimindela</th>
</tr>
</thead>
<tbody>
<tr>
<td>ka-gúla</td>
<td>ka-gábulela</td>
<td>ka-wálámuwela</td>
<td></td>
</tr>
</tbody>
</table>

This pattern holds just in case there is no OM present (see the corresponding form with the OM in section 3.2.4). It is a puzzling but well-known fact that the presence or absence of an OM can drastically change the stem tone melody. Some tenses have a given melody only in the presence or absence of an OM. In (34), one could refer to the MH tone as either a S1 H tone or as MS1 H tone since in the absence of an OM, the stem and the macrostem are the same. In cases like this, where the simple verb stem is assigned a MH tone different from the case when an OM is present, we shall indicate this ambiguity by the symbol [M]S1.

The subjunctive too has a different tone pattern depending on whether an OM is present or not. Without any OM a MH tone appears on [M]S2 (see (38) in section 3.2.2). However, when an OM is present, a primary H tone is assigned on the OM itself (which, of course, may double) and there is no stem MH on the second mora as shown in (35).

Subjunctive + OM (‘I should do [cl.1]’) • SM-OM-VB-e

<table>
<thead>
<tr>
<th>ddi-muje</th>
<th>-múlime</th>
<th>-múpáganye</th>
<th>-múlihele</th>
<th>-múrómelihe</th>
</tr>
</thead>
<tbody>
<tr>
<td>-múgule</td>
<td>-múgúlihe</td>
<td>-múgáblele</td>
<td>-múbúbuluvelile</td>
<td></td>
</tr>
</tbody>
</table>

Similar facts obtain in Emakhuwa for this tense (see section 2.4). One could assume that in this tense, and this tense alone, the OM is specified with a H tone and that there is no MH in the stem. However a simpler analysis is to consider the H on the OM to be an instance of the MS1 H tone.
3.2.2. MH assigned to MS2

Another important MH pattern is one that targets MS2. Conjoint past perfective (36) and negative present perfective (37) illustrate this tone pattern.

(36) CJ Past Perfective (‘I had done...’) \( \text{SM-a-(OM-)}\text{VB-ile} \)

-\( \text{ddaa } \text{-jílé... -limílé... -pagányíle... -libélélile... -rorómélihile} \)
-\( \text{-gúlle... -gulíhíle... -gabúlélile... -bubúlwéle} \)

-\( \text{ddaa } \text{-mujílé... -mulímíle... -mupágányíle... -murórómélihile... -mugúlé... -mugúlíhíle... -mubúlwéle} \)

(37) Neg. Present Perfective (‘I have not done’) \( \text{ka-SM-OM-} \text{VB-ile} \)

-\( \text{kaddi } \text{-jíle... -limíle... -pagányíle... -libélélile... -rorómélihile} \)
-\( \text{-gúlle... -gulíhíle... -gabúlélile... -bubúlwéle} \)

-\( \text{kaddi } \text{-mujíle... -mulímíle... -mupágányíle... -murórómélihile... -mugúlé... -mugúlíhíle... -mubúlwéle} \)

In both tenses, if the second stem mora is word-final, the MH must retract to the preceding mora: \( \text{ddaa-jílé...} \) and \( \text{kaddi-jíle} \). Longer stems clearly reveal a MH on the second mora of the macrostem. Unexpectedly, an exception arises in (37) with the three-moraic stem \( \text{kaddi-límíle} \), where the MH appears on the first mora rather than the second. The explanation for this is not clear.

Other tenses exhibit a MH tone on the second mora of the stem, but only when there is no OM. We refer to this situation as a [M]S2 H tone, as seen above.

(38) Subjunctive without OM (‘I should do’) \( \text{SM-VB-e} \)

-\( \text{ddi-jé... -líme... -pagánye... -libélêle... -rorómélihe} \)
-\( \text{-gúle... -gulíhe... -gabúlélile... -bubúlwéle} \)

(39) Durative Situative without OM (‘if/when I do’) \( \text{SM-a-} \text{VB-ag-a} \)

-\( \text{ddaa-j-agá... -lim-ágá... -sakúl-ágá... -libélél-agá... -morómélih-agá... -gul-ágá... -gulíh-ágá... -gabúlél-agá... -bubúlwel-agá} \)

In the subjunctive (38), again the MH is not allowed to anchor on a word-final mora and is retracted to the preceding mora in the case of \( \text{ddi-líme} \). However, when the stem is monomoraic, and only has one available tone bearing unit, no retraction occurs and the MH is assigned to the final vowel: \( \text{ddi-jé} \). It seems that the [M]S2 MH tone must dock to the stem, and avoids the final vowel only when there is an available alternative in the stem.

The durative situative (39) corresponds to the situative \( \text{SM-a-} \text{VB-a} \) plus the habitual suffix \text{-ag-}, which adds a durative meaning. The addition of this suffix modifies the tone pattern from a lexical H contrast (see (22)) to a [M]S2 in (39).

Note that this assignment of a MH to the second mora is extremely regular in the durative situative; even in bimoraic stems - contrary to (36) - the MH does not retract to the penult, but rather anchors the word-final mora (\text{ddi-jagá}). This may be due to a specific propriety of the suffix \text{-ag-}, but this issue cannot be pursued here.
3.2.3. MH assigned to Penult

Three verb forms exemplify a pattern where a MH is located on the penult mora of the verb (=PU pattern). One of these tenses is the durative situative \( (SM-a-VB-ag-a) \), already discussed above in (39), in its objectless form. When an OM is present, the MH is located on the penult, as shown in (40).

(40) Durative Situative + OM (‘if/when I do [cl.1]’) \( \Rightarrow SM-a-OM-VB-ag-a \)

\[
\begin{align*}
\text{ddaa-muj-agá} & \quad \text{-mulim-ága} & \quad \text{-musakul-ága} & \quad \text{-muroromelih-ága} \\
\text{-mugul-ága} & \quad \text{-mugulih-ága} & \quad \text{-mububuluwel-ága}
\end{align*}
\]

The other two verb forms displaying the PU melodic pattern are worth mentioning. One is another durative situative form with the morphological formula \( SM-gaa-VB-ag-a \), in which the TAM prefix \( -gaa- \) is probably borrowed from Zone N languages. Again, the addition of the suffix \( -ag- \) triggers a MH on the habitual suffix, i.e. on the penult, both when there is no OM and when there is.

(41) Durative Situative (‘if/when I do’) \( \Rightarrow SM-gaa-(OM-)VB-ag-a \)

\[
\begin{align*}
\text{ddigaa} & \quad \text{-j-agá} & \quad \text{-lim-ága} & \quad \text{-sakul-ága} & \quad \text{-libelel-ága} & \quad \text{-roromelih-ága} \\
\text{-gul-ága} & \quad \text{-gulih-ága} & \quad \text{-gabulel-ága} & \quad \text{-bubuluwel-ága}
\end{align*}
\]

\[
\begin{align*}
\text{ddigaa} & \quad \text{-múj-ága} & \quad \text{-múlim-ága} & \quad \text{-músákul-ága} & \quad \text{-múrórómélíh-ága} \\
\text{-múgúl-ága} & \quad \text{-múgúlíh-ága} & \quad \text{-múbúbúlúwél-ága}
\end{align*}
\]

Notice that in addition to the PU MH tone, if there is an OM, it also bears a H tone. This H tone on the OM spreads, forming a bridge with the PU H tone.

The sequential verb form is another verb form which has its tone pattern changed in the presence of an OM. The MH goes from [M]S2 (see table section 3.3) to the penult (42) and the OM is assigned a primary H, which, like the durative situative in (41), spreads to the MH.

(42) Sequential + OM (‘and I did [cl.1]’) \( \Rightarrow (ba-)SM-OM-VB-a \)

\[
\begin{align*}
(ba)\text{ddi} & \quad \text{-múja} & \quad \text{-múlima} & \quad \text{-músákúla} & \quad \text{-múrórómélíha} \\
\text{-múgúla} & \quad \text{-múgúlíha} & \quad \text{-múbúbúlúwéla}
\end{align*}
\]

Verb forms in (41) and (42) are interesting in that we find two primary H tones in the macrostem, a MS1 H on the OM and the MH on the PU. Thus, in contrast to the ban on lexical H ‘co-habitation’ summed up in the constraint in (33) (repeated in (43)), we must allow two MH tones to co-occur in the same macrostem, as stated in (44).

(43) Constraint 1 on tone realization:
A MS1 and a lexical H tone may not both occur in a macrostem. To avoid violating this constraint, the MS1 H tone retracts to the prefix immediately preceding the macrostem.

(44) Constraint 2 on tone realization:
A MH tone can ‘co-habit’ on a verb macrostem with another MH tone (as long as it not a lexical H tone).
It is furthermore interesting to note that this structure with two MH tones in the macrostem triggers a tone-bridge like the tenses in section 3.1.1, where a tone bridge occurs between the (retracted) MS1 H tone and a lexical H tone. These two sets of data establish that for spreading to occur, there must be a MS1 H tone (retracted or not) and either a lexical or a MH on the penult. The only problem with this generalization was noted in section 3.1.1, where we saw that the presence of an OM prevents the tone bridge. Compare ó-gábúléla and ó-múgabuléla as well as the other examples in ((30)-(32)). We suspect that these data should be accounted for along the following lines. The first mora of the stem proper is a target for doubling when the preceding mora bears any sort of primary H tone (a prefixal H, a retracted MS1, an unretracted MS1). In ó-gábúléla, the initial stem syllable is affected by doubling, whereas in ó-múgabuléla it is not. This suggests that H tone spreading occurs when the first mora of the stem proper either bears a primary H tone or bears a doubled H tone. Spreading is triggered by the first mora of the stem proper being H, either inherently or as a result of doubling. Of course, it remains to be seen whether there is a theoretical account that can yield this result.

3.2.4. MH assigned to Final

Three tenses manifest a MH on the final vowel: the bare imperative (45), the conjoint present perfective (46) and the negative durative situative (47), this last one bearing also an additional prefix H on the negation marker -hí-. The examples also show that the final mora remains the target when an OM is included.

(45)  Bare Imperative (‘do!’), with singular / plural subject ▶ (OM-)VB-a
(mu-)já / ja-ní  (mu-)limá / lima-ní  (mu-)roromelihá / roromelihá=ní
(mu-)gulá / gula-ní  (mu-)bubuluwelá/bubuluwela=ní

(46)  Conjoint Present Perfective (‘I have done’) ▶ SM-(OM-)VB-ile
ddi-(mu-)jílé  ddi-(mu-)lim-ilé  ddi-(mu-)roromelih-ilé
   ddi-(mu-)gul-lé  ddi-(mu-)bubuluwel-ilé

(47)  Negative Durative Situative (‘if/when I do’) ▶ SM-hí-(OM-)VB-ag-a
ddihí-jága  ddihí-límbagá  ddihí-libelelagá  ddihí-pirimindel-agá
   ddihí-gúl-agá  ddihí-gábulagá  ddihí-wálamuwel-agá
▶ + OM:  ddihí-múlibelelagá / ddihí-múgabulagá

Finally, with the introduction of an OM, the prefixed imperative also displays a Final MH (versus a [M]S1 MH when no OM is present, see section 3.2.1).

(48)  Prefixed Imperative + OM ▶ ka-OM-VB-e
ká-mujé  ká-múlimé  ká-múlibelelé  ká-múpirimindélé
   ká-múgulé  ká-múgabulelé  ká-múwalamuwelé

In (48), a primary H tone appears on the imperative prefix ka- and doubles onto the object marker while the MH now docks onto the final vowel.
3.3. Summary of tone patterns in Ecuwabo

The following table summarizes the different tone patterns found in Ecuwabo and the tenses they are attested in.

Table 2: Recapitulative of the different tone patterns in Ecuwabo

| Stem Tone Melodies |
|-------------------|-------------------|
| **MH on MS1 + Lexical H** | **MH on [MJ]S2** |
| INF (INF-(OM-)VB-a) | INF (INF-(OM-)VB-a) |
| DJ.PRS (SM-ni-INF-(OM-)VB-a) | DJ.PRS (SM-ni-INF-(OM-)VB-a) |
| CJ.PRS (SM-ni-(OM-)VB-a) | CJ.PRS (SM-ni-(OM-)VB-a) |
| CJ.NEG.PRS (ka-SM-ni-(OM-)VB-a) | CJ.NEG.PRS (ka-SM-ni-(OM-)VB-a) |
| DJ.PRS.PFV (SM-hi-(OM-)VB-a) | DJ.PRS.PFV (SM-hi-(OM-)VB-a) |
| PST.CONT (SM-a-ela-INF-(OM-)VB-a) | PST.CONT (SM-a-ela-INF-(OM-)VB-a) |
| **MH on [MJ]S1** | **MH on [MJ]S1** |
| PFX.IMP “/” OM (ka-VB-a) | PFX.IMP “/” OM (ka-VB-a) |
| SBJV+OM (SM-OM-VB-e) | SBJV+OM (SM-OM-VB-e) |
| **MH on MS2** | **MH on MS2** |
| CJ.PST.PFV (SM-a-(OM-)VB-ile) | CJ.PST.PFV (SM-a-(OM-)VB-ile) |
| CJ.HYP (SM-gaa-(OM-)VB-ile) | CJ.HYP (SM-gaa-(OM-)VB-ile) |
| NEG.PRS.PFV (ka-SM-(OM-)VB-ile) | NEG.PRS.PFV (ka-SM-(OM-)VB-ile) |
| NEG.PST.PFV (ka-SM-a-(OM-)VB-ile) | NEG.PST.PFV (ka-SM-a-(OM-)VB-ile) |
| NEG.PFV.SIT (ba-SM-hi-(OM-)VB-ile) | NEG.PFV.SIT (ba-SM-hi-(OM-)VB-ile) |
| NEG.DJ.PST.PFV (ka-SM-a-(OM-)VB-e) | NEG.DJ.PST.PFV (ka-SM-a-(OM-)VB-e) |
| **MH on Penult** | **MH on Penult** |
| **MH on Final** | **MH on Final** |
| **Lexical H Contrast (no MH)** | **Lexical H Contrast (no MH)** |
| PST.IPFV (SM-g-ni-(OM-)VB-a) | PST.IPFV (SM-g-ni-(OM-)VB-a) |
| SIT (SM-a-(OM-)VB-a) | SIT (SM-a-(OM-)VB-a) |
| SIT (SM-gaa-(OM-)VB-a) | SIT (SM-gaa-(OM-)VB-a) |
| DJ.NEG.PRS (ka-SM-ni-INF-(OM-)VB-a) | DJ.NEG.PRS (ka-SM-ni-INF-(OM-)VB-a) |
| FUT (SM-ni-ELG-INF-(OM-)VB-a) | FUT (SM-ni-ELG-INF-(OM-)VB-a) |
| CF (ku-INF-(OM-)VB-a) | CF (ku-INF-(OM-)VB-a) |
| **Stem Tone Erasure** | **Stem Tone Erasure** |
| NEG.PFX.IMP (ka-SM-(OM-)VB-e) | NEG.PFX.IMP (ka-SM-(OM-)VB-e) |
| NEG.SBJV (SM-hi-(OM-)VB-e) | NEG.SBJV (SM-hi-(OM-)VB-e) |
| **OCP Deleting MS1 H Tone?** | **OCP Deleting MS1 H Tone?** |
| SUBS.SBJV (SM-a-(OM-)VB-e) | SUBS.SBJV (SM-a-(OM-)VB-e) |
| CJ.PST.IPFV (SM-a-(OM-)VB-a) | CJ.PST.IPFV (SM-a-(OM-)VB-a) |
| CJ.CONT.FUT (SM-ga-(OM-)VB-a) | CJ.CONT.FUT (SM-ga-(OM-)VB-a) |
| NEG.CONT.FUT (ka-SM-ga-(OM-)VB-a) | NEG.CONT.FUT (ka-SM-ga-(OM-)VB-a) |

*MH on MS1 + lexical H*:
- INF (INF-(OM-)VB-a)
- DJ.PRS (SM-ni-INF-(OM-)VB-a)
- CJ.PRS (SM-ni-(OM-)VB-a)
- CJ.NEG.PRS (ka-SM-ni-(OM-)VB-a)
- DJ.PRS.PFV (SM-hi-(OM-)VB-a)
- PST.CONT (SM-a-ela-INF-(OM-)VB-a)

*MH on [MJ]S2*:
- INF (INF-(OM-)VB-a)
- DJ.PRS (SM-ni-INF-(OM-)VB-a)
- CJ.PRS (SM-ni-(OM-)VB-a)
- DJ.PRS.PFV (SM-hi-(OM-)VB-a)
- PST.CONT (SM-a-ela-INF-(OM-)VB-a)

*MH on [MJ]S1*:
- PFX.IMP “/” OM (ka-VB-a)
- SBJV+OM (SM-OM-VB-e)

*MH on MS2*:
- CJ.PST.PFV (SM-a-(OM-)VB-ile)
- CJ.HYP (SM-gaa-(OM-)VB-ile)
- NEG.PRS.PFV (ka-SM-(OM-)VB-ile)
- NEG.PST.PFV (ka-SM-a-(OM-)VB-ile)
- NEG.PFV.SIT (ba-SM-hi-(OM-)VB-ile)
- NEG.DJ.PST.PFV (ka-SM-a-(OM-)VB-e)

*MH on Penult*:
- DJ.PST.PFV (SM-a-(OM-)VB-ile)

*MH on Final*:
- DJ.HYP (SM-gaa-(OM-)VB-a)
- DJ.FUT.CONT (SM-ga-ni-(OM-)VB-a)
- (NEG)NARR.INF (INF-(HI)-(OM-)VB-a)

*Lexical H Contrast (no MH)*:
- PST.IPFV (SM-g-ni-(OM-)VB-a)
- SIT (SM-a-(OM-)VB-a)
- SIT (SM-gaa-(OM-)VB-a)
- DJ.NEG.PRS (ka-SM-ni-INF-(OM-)VB-a)
- FUT (SM-ni-ELG-INF-(OM-)VB-a)
- CF (ku-INF-(OM-)VB-a)

*Stem Tone Erasure*:
- NEG.PFX.IMP (ka-SM-(OM-)VB-e)
- NEG.SBJV (SM-hi-(OM-)VB-e)

*OCP Deleting MS1 H Tone?*:
- SUBS.SBJV (SM-a-(OM-)VB-e)
- CJ.PST.IPFV (SM-a-(OM-)VB-a)
- CJ.CONT.FUT (SM-ga-(OM-)VB-a)
- NEG.CONT.FUT (ka-SM-ga-(OM-)VB-a)

*Subs.SBJV*:
- (ba)-(SM-hi-(OM-)VB-a)

*CF*:
- (ba)-(SM-hi-(OM-)VB-a)

*NEG CE*:
- (ba)-(SM-na-(OM-)VB-a)
4. Conclusion

There are obvious parallels between the tone structure of Emakhuwa and Ecuwabo. Furthermore, the locations for MH tone are in part similar (most significantly, first, second and final position), but Ecuwabo lacks completely the S3 MH that plays such a critical role in Emakhuwa.

The most critical difference between Emakhuwa and Ecuwabo is, of course, the occurrence of a lexical H tone in the latter. Ecuwabo bifurcates tenses into those where lexical tone occurs and those where a MH occurs. There is no such bifurcation in Emakhuwa: there are only MH tones. Interestingly, while Emakhuwa and Ecuwabo share the phenomenon whereby a word-final MS1 H tone may retract to the preceding mora, the rather more important case of retraction in Ecuwabo – namely, the retraction of the MS1 H tone when the verb stem contains a lexical H tone – is not found in Emakhuwa (since it does not have lexical H tones). The Ecuwabo tone-bridges that occur in cases where there is a MH followed by a penult (lexical or melodic) H tone do not occur in Emakhuwa.

Abbreviations

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References

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Résumé

Cet article décrit de manière quelque peu détaillée les schèmes de tons H mélodiques que l’on trouve dans diverses variétés de l’emakhuwa (P30), toutes présentant la propriété de ne pas posséder de tons lexicaux dans le système verbal. Alors que les dialectes emakhuwa partagent les mêmes schèmes de tons H mélodiques, ils montrent des différences considérables dans leur tonologie générale. Cela occulte quelquefois le fait que nous soyons en face de schèmes communs aux différents dialectes.

Le contact, dans le Nord du Mozambique, de l’emakhuwa et des langues extérieures à la zone P a conduit au développement de trois langues « mixtes ». Nous examinons le ton mélodique dans l’une d’elles, l’ecuabo, car il fournit le seul cas en zone P où l’on trouve à la fois un ton lexical dans le verbe et des tons H mélodiques.