

Melodic Tones in Karanga Shona

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Abstract

The melodic system of Karanga Shona can largely be reduced to the addition of a H tone positioned at the left or right edge of the stem, depending on lexical tone. There is significant complexity in the interaction between the melodic H and rightward spreading, which gives rise to somewhat different surface patterns according to inflectional category. The choice of melodic pattern is almost entirely predictable from general morphosyntactic properties of the word.

Keywords: final vowel, melodic tones, spreading, clause type

1. Introduction

The tonal system of Karanga Shona is analyzed in detail in Odden (1981, 1984). Fortune (1980), Fivaz (1973), Fivaz & Ratzlaff (1978) and Myers (1987) provide tonal data on Zezuru. Descriptions of languages close enough to be termed Shona dialects (Korekore, Kalanga, Ndau, Manyika) do not presently cover melodic tones. See Fortune (1980) for a tone-marked reference grammar.

Shona has an extremely productive system of morphology, and given the range of combinable morphemes, it is not possible to give an exhaustive listing of all inflectional categories. Fortunately, tone melodies are not distributed randomly; rather, a few parameters regarding polarity, clause type and the final suffix govern the selection of tone melodies. The system of melodies can largely be reduced to a three-way distinction between non-melodic vs. two related melodic patterns, with category-specific complications.¹

2. Non-melodic stem tone

The infinitive exemplifies the basic tone pattern of the stem when no melodic tones are present. H stems (left column) spread that H to the following two stem vowels,² and L stems (right column) are all L-toned (unmarked).

(1)	ku [pá]	‘to give’	ku [tí]	‘to say’
	ku [tórá]	‘to take’	ku [bika]	‘to cook’
	ku [tórésá]	‘to c. take’	ku [bikisa]	‘to c. cook’
	ku [tórésána]	‘to c. e.o. take’	ku [bikisana]	‘to c. e.o. cook’
	ku [tórésérana]	‘to c. e.o. take for’	ku [bikisirana]	‘to c. e.o. cook for’

C- roots like **-p-** ‘give’ all behave like H-toned roots, though when derivationally extended, a L vs. H distinction emerges (**kupá** ‘to give’, **kupísá** ‘to c. give’; **kubá** ‘to steal’, **kubísá** ‘to c. steal’; but cf. **kubvá** ‘to come from’, **kubvisa** ‘to c. come from’; **kuná** ‘to rain’, **kunisa** ‘to rain int.’).

The tonology of verb prefixes is very complex and cannot be totally accounted for here. Three main rules – Rhythm, Doubling, and Unbounded Spreading – govern alternations in or at the hands of prefixes. See Odden (1981) ch. 4 for full details of prefix tone. Some prefixes are H in all contexts (subject to regular lowering between Hs), for example object prefixes like **/-mú-/** ‘cl. 1’ or the tense prefixes **/-chá-/** ‘future’, **/-ngá-/** ‘potential’, combined with the H root **/-tór-/**.

(2)	ku-mú [tórérá]	‘to take for him’	ku-chí [tórá]	‘to take it ₇ ’
	ndi-chá [tórá]	‘I will take’	ndi-ngá [tórá]	‘I may take’

¹ Subscripted numerals refer to noun class. Stems are enclosed in square brackets.

² There are no long vowels, so ‘vowel’ and ‘syllable’ are empirically interchangeable.

The Rhythm rule lowers a prefixal H which is both preceded and followed by H tones, exemplified below (the lowered syllable is italicized).

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|-----|--------------------------|--------------------|---------------------------|--------------------------------|
| (3) | ndi-chá-mu [tórá] | ‘I will take him’ | ndi-ngá-chi [tórá] | ‘I may take it ₇ ’ |
| | <i>á-cha-mú</i> [tórá] | ‘he will take her’ | <i>á-nga-chí</i> [tórá] | ‘he may take it ₇ ’ |

Rhythm self-bleeds, applying from left-to-right, as the contrasting behaviors of 1s and 3s forms in (3) show.

Other prefixes are basically L, for example /-sa-/ ‘neg.’, and all monosyllabic ‘deficient verb’ prefixes ending in [o].

- | | | | | |
|-----|--------------------|--------------------|--------------------|----------------------|
| (4) | ku-sa-bika | ‘to not cook’ | ku-zo-bika | ‘to rem. cook’ |
| | ku-ndo-bika | ‘to go cook’ | ku-to-bika | ‘to have to cook’ |
| | ku-do-bika | ‘to cook (polite)’ | ku-ngo-bika | ‘to be able to cook’ |

These L prefixes undergo a general rule spreading H unboundedly to the right in the prefix domain, as long as L follows.

- | | | | | |
|-----|------------------------------|--------------------------------|------------------------------|--------------------------------|
| (5) | ti-chá-ndó-bika | ‘we will go cook’ | ti-chá-zó-bika | ‘we will rem. cook’ |
| | ti-chá-dó-bika | ‘we will cook (polite)’ | ti-chá-tó-zó-bika | ‘we will rem. have to cook’ |
| | ti-chá-tó-zó-ndó-bika | ‘we will rem. have to go cook’ | ti-chá-tó-zó-ndo-tórá | ‘we will rem. have to go take’ |

Observe that Rhythm does not apply to such derived H sequences.

Doubling spreads H from a prefix to a following vowel which is root-initial and non-final L. The habitual prefixes -no- and -i-, whose tone is the opposite of that of the preceding syllable, do not trigger Doubling, nor does a H derived from Unbounded Spreading, as (5) shows.

- | | | | | |
|-----|-----------------------|------------------|-------------------------|----------------------------|
| (6) | ku-mú [tí] | ‘to say to him’ | ku-chí [bíka] | ‘to cook it ₇ ’ |
| | ku-mú [bíkisa] | ‘to c. him cook’ | ku-mú [bíkisira] | ‘to c. him cook for’ |
| | ndi-nó [bika] | ‘I cook’ | nd-a-í [bika] | ‘I used to cook’ |

If preceded by a H-toned prefix, the triggering H can itself become L due to the Rhythm rule, thus /**ti-chá-mú-rima**/ becomes **tichámúríma** via Doubling, and surfaces as [tichámuríma] ‘we will plow it’ by Rhythm.

³ Rhythm is not particularly surface-transparent. It is not triggered by prefixes preceding the subject prefix, e.g. **ngá-tí** [tóre] ‘let us take’. There are lexical exceptions such as the negative prefix /-sí-/ which does not undergo Rhythm, and only optionally serves as the lefthand context for the rule.

The basic stem pattern, with no melodic tones, occurs in affirmative main clause tenses, subject relative forms, a limited class of negative and subjunctive forms, and some conditional tenses. Most examples will be illustrated with the L-toned lp subject prefix, which facilitates making stems longer via the reciprocal suffix.⁴ Affirmative main clause tenses are seen in (7): lexically H verbs will appear on the left and L verbs will appear on the right. Lexically L stems receive initial H after most underlyingly H prefixes via Doubling, and as noted above, the pre-stem prefix may undergo Rhythm, obscuring the source of the initial H in L stems (e.g. **tóchirima**). Regardless of the realization of prefix tone, H verbs have H on the first three vowels, and L verbs only have an initial tone, due to Doubling.

(7)	á [shámwárídza]	‘he befriended (hod.)’	v-á [bíkirana]	‘they cooked for e.o (hod.)’
	t-a-	‘we c. take for e.o’	t-a-	‘we cooked for e.o’
	ká [tórésérana]		ká [bíkirana]	
	t-a-í [tórérána]	‘we used to take for e.o’	t-a-í [rimirana]	‘we used to plow for e.o’
	ti-nó [tórésérana]	‘we c. take for e.o’	ti-nó [rimisana]	‘we c. e.o. plow’
	ti-chá [pútsísána]	‘we will c. e.o hit’	ti-chá [bíkirana]	‘we will cook for e.o’
	ti-ngá [tórésésa]	‘we may really take’	ti-ngá [bíkisana]	‘we may c. e.o. cook’
	t-a-ká-si [pútsáná]	‘we freq. hit e.o’	t-a-ká-si [rimisa]	‘we freq. c. plow’
	vá-no-sí [pútsá]	‘they used to hit hab.’	vá-no-sí [ríma]	‘they used to plow hab.’
	t-ó [pútsá]	‘we’re about to hit’	t-ó [ríma]	‘we’re about to plow’
	t-ó-chi [tórésá]	‘let us now c. take’	t-ó-chi [ríma]	‘let us plow now’
	ti-chá-ka [gútá]	‘we are still full’	ti-chá-ká [neta]	‘we are still tired’

Verbs in subject-headed relative clauses, which differ from their main clause variants only in having a L subject prefix for 3rd person (which is otherwise H-toned), likewise have the base pattern.

(8)	va-	‘they who beat e.o’	va-	‘they who cooked for e.o’
	ká [pútsáná]		ká [bíkirana]	
	va-nó [tórésá]	‘they who c. take’	va-nó [bíkirana]	‘they who cook for e.o.’

⁴ Prefix tone also varies according to categories of verbal inflection, as discussed in 4. In most instantiations of the base tone pattern, 3rd person subject prefixes have H tone and 1st and 2nd persons have L.

va-í-	‘they who used to	a-í-	‘he who used
si [pútsáná]	beat e.o’	sí [bhururuka]	to fly’
a-chá [tórá]	‘he who will take’	a-chá [bíka]	‘he who will
			cook’

Hortatives, consecutives, negatives and conditionals which have no melodic H are given in (9).

(9)	ngá-tí-	‘let us now take’	ngá-tí-	‘let us now
	chi [tórá]		chi [ríma]	plow’
	va-	‘then they beat	va-	‘then they
	ka [pútsáná]	e.o’	ka [bikirana]	cooked for e.o’
	ku-sá [úráyá]	‘to not kill’	ku-sá [bvúnza]	‘to not ask’
	va-ka-	‘then they didn’t	va-ka-sa [bíka]	‘then they didn’t
	sa [tórá]	take’		cook’
	u-sá [tórá]	‘you shouldn’t	u-sá [bíka]	‘you shouldn’t
		take’		cook’
	nd-a-í-	‘I wasn’t break-	nda-í-sá [ríma]	‘I wasn’t cook-
	sa [pútsá]	ing’		ing’
	kana ti-	‘if we take’	kana ti-	‘if we cook’
	ka [tórá]		ka [bíka]	
	kana va-	‘if they are tak-	kana va-	‘if they are
	chí [tórá]	ing’	chí [bíka]	cooking’
	kana ti-ka-	‘if we then don’t	kana ti-ka-	‘if we then don’t
	sa [tórá]	take’	sa [bíka]	cook’

2.1. Nominalizations

Agent and instrument nominalizations have a related sub-pattern, where L verbs have no H in the stem, whereas H verbs have H on the second vowel plus a non-final third vowel. Agent nominalizations take the final vowel -i.

(10)	mu [pí]	‘giver’		
	mu [tórí]	‘taker’	mu [biki]	‘cook’
	mu [tórési]	‘c. taker’	mu [bikiri]	‘cooker for’
	mu [úráísi]	‘c. killer’	mu [bhururuki]	‘flyer’
	mu [úráísiri]	‘c. killer for’		

Instrument nominalizations require the causative suffix -is- and the final vowel -o, and have the same variant of the basic tone pattern.

(11)	chi [písó]	‘thing to give with’	chi [bviso]	‘thing to come
				from with’
	chi [tórési]	‘thing to take with’	chi [bikiso]	‘thing to cook
				with’
	chi [úráíso]	‘thing to kill with’	chi [bhururu]	‘thing to fly

kiso] with'
chi [nyéngétéreseso] ‘thing to int. pray with’

The tone-tripling pattern in H toned verbs is a bit of a typological puzzle, since options for tone spreading across languages nearly universally reduce to either binary spreading or unbounded spreading. At least three dialects of Shona (Karanga, Zezuru and Manyika), as well as the closely related language Venda and less-closely related Copperbelt Bemba (Bickmore & Kula 2013) present this unusual pattern of H spreading. The restriction observed in nominalizations, that there is no spreading to a word-final third vowel, may shed light on the development of the tone-tripling pattern, perhaps indicating that a second round of tone spread affected just one verbal suffix.

2.2. Subjunctive

Subjunctives with the final vowel **-e** where the subject prefix immediately precedes the stem have what could be seen as another variant of the basic non-melodic pattern. L verbs have an initial H due to Doubling from the subject prefix, as expected, and H verbs spread the root H as far as the third stem vowel. However, unlike the base pattern, the final vowel is always L toned, which can lead to deletion of the lexical H in monosyllabic stems.

(12)	ú [pe]	‘you should give’		
	ú [tóre]	‘you should take’	ú [bíke]	‘you should cook’
	ú [tórére]	‘you should take for’	ú [bíkire]	‘you should cook for’
	ú [tórésére]	‘you should c. take for’	ú [bíkisire]	‘you should c. cook for’
	mú [tórésérane]	‘you pl. should c. e.o. take for’	mú [bíkisirane]	‘you pl. should c. cook for e.o.’

The hortative, which adds the initial prefix **ngá-** to the subjunctive, behaves the same way.

(13)	ngá-tí [pe]	‘let’s give’		
	ngá-tí [tóre]	‘let’s take’	ngá-tí [bíke]	‘let’s cook’
	ngá-tí [tórére]	‘let’s take for’	ngá-tí [bíkire]	‘let’s cook for’
	ngá-tí [tórésére]	‘let’s c. take for’	ngá-tí [bíkisire]	‘let’s c. cook for’
	ngá-tí [tórésérane]	‘let’s c. e.o. take for’	ngá-tí [bíkisirane]	‘let’s c. cook for e.o.’

The best analysis of the subjunctive pattern would seem to be that a L tone is superimposed on the final vowel, overriding stem-internal tone-tripling.

3. Melodic patterns

There are four stem tone patterns involving addition of H tones, connected with tense/clause distinctions, presence of the reflexive, and deverbal derivation.

3.1. The main melodic pattern

The most general melodic pattern is encountered in many tenses which select the final vowels **-a** and **-e** (not **-i**). In this pattern, illustrated in (14-15) with the hodiernal negative tense, an additional H appears either on the second stem vowel (in L verbs) or on the final vowel (in H verbs). There is also a L towards the right edge of the stem, appearing before the melodic H in H stems and after the melodic H in L stems (thus limiting rightward spread of the melodic H). H verbs thus add LH and L verbs add HL.

(14)	ha-t-á [tóresá]	‘we didn’t c. take’	ha-t-á [bikísa]	‘we didn’t c.cook’
	ha-t-á [tóréserá]	‘we didn’t c. take for’	ha-t-á [bikísíra]	‘we didn’t c.cook for’
	ha-t-á [tóréséraná]	‘we didn’t c. take for e.o’	ha-t-á [bikísírana]	‘we didn’t c.cook for e.o’
	ha-t-á [shámwáridzisir á]	‘we didn’t c. befriend for’	ha-t-á [bhurúrukisira]	‘we didn’t c. fly for’
	ha-t-á [shámwáridzisir aná]	‘we didn’t c. befriend for e.o’	ha-t-á [bhurúrukisirana]	‘we didn’t c. fly for e.o’
	ha-t-á [tóresá]	‘we didn’t c. take’	ha-t-á [bikísa]	‘we didn’t c.cook’

Shorter verbs then present complications. All monosyllabic stems such as **pa** have H which lowers after a prefixal H (and not after a L): only monosyllables undergo such lowering, discussed in more detail below, so this is a unique property of the melodic tone pattern. In disyllabic stems, the final vowel has a tone opposite that of the preceding root-initial syllable, thus H stems add L and L stems add H.

(15)	ha-t-á [pa]	‘we didn’t give’		
	ha-t-á [tóra]	‘we didn’t take’	ha-t-á [biká]	‘we didn’t cook’

There is optional H spreading under the melodic pattern for all stems with at least 5 syllables, and (14) gives the pattern with the minimum degree of H spreading. Optionally, H spreads to any number of following syllables, as long as the penult remains L in H verbs and the final vowel remains L in L verbs: the L which is part of this melody must be preserved.

- (16) **ha-t-á** [shámwáridzísiraná] **ha-t-á** [bhurúrukísirana]
ha-t-á [shámwáridzísiraná] **ha-t-á** [bhurúrukísirana]
ha-t-á [bhurúrukísirána]

This unbounded spreading pattern is only found in connection with melodic patterns: otherwise, a lexical H only spreads to the third stem vowel.

Notice in (17) that the position of tones is relative to the stem, not the macrostem, thus the position of the melodic H is not recomputed when an OP is present.

- (17) **ha-t-á-** ‘we didn’t c. **ha-t-á-** ‘we didn’t c.
va [tóresá] them take’ **va** [bikísa] them cook’
ha-t-á- ‘we didn’t c. **ha-t-á-** ‘we didn’t
mu [tóréserá] take for her’ **mú** [bikísíra] c.cook for her’

In tenses selecting this tone melody, monosyllabic roots have H after a L prefix.

- (18) **ha-nd-á-ka** [pá] ‘I didn’t give’
ha-nd-á-mu [pá] ‘I didn’t give him hod.’
ha-ndí-za-ká-mu [pá] ‘I didn’t give him’
ha-nd-á-ka-zó-mu [pá] ‘I didn’t give him (rem.)’
ra-nd-á-ka [pá] ‘that which I took’
ra-v-á-i [pá] ‘that which they used to give’
nd-á-ka [pá] ‘I having given’
ndí-cha [pá] ‘I being about to give’

After a H prefix, they have L tone.

- (19) **ha-ndá-ka-mú** [pa] ‘I didn’t give him’
ha-ndí-za-ká [pa] ‘I didn’t give him’
ha-nd-á-ka-zó [pa] ‘I didn’t give rem.’
ra-v-á-i-mú [pa] ‘that which they didn’t used to give him’
nd-á-kamú [pa] ‘I having given him’
ra-nd-á [pa] ‘that which I gave hod.’
nd-á [pa] ‘I having given hod.’

The computation of the pre-stem tone is based on the Rhythm rule, thus **handákamú**[pa] derives from /**handákámú** [pá] /, and **handízakámu**[pá] derives from /**handízákámú** [pá] /. Recall from below (3) that Rhythm lowers a prefix H between H tones, applying left-to-right. Monosyllabic roots always behave as though they are H toned, in that they provide the necessary righthand H context

for Rhythm, thus Rhythm must be applied before the surface realization of the tone melody is computed for monosyllables. Tone lowering in monosyllabic verbs is an exponent of this melodic pattern: compare **kumú[pá]** ‘to give him’ with the basic pattern and no lowering of the root tone after H.

Except for tenses with the final vowel **-i** discussed below, all negative tenses with the prefix **/ha-/** select this melody.

(20)	ha-t-á-ka [pútsirá]	‘we didn’t break for’	ha-t-á-ka [bikísa]	‘we didn’t c. cook hab.’
	ha-t-á-i [pútsa]	‘we didn’t break hab.’	ha-t-á-i [bikísa]	‘we didn’t cook hab.’
	ha-v-á-sa-ká [tóra]	‘they didn’t take’	ha-v-á-sa-ká [biká]	‘they didn’t cook’
	ha-t-á-sa [óna]	‘we haven’t seen hod.’	ha-t-á-sá [rimá]	‘we haven’t plowed hod.’

Non-subject relative clause tenses, which have an external head-agreement prefix, likewise select this melody.⁵

(21)	zva-v-á-ka [pútsa]	‘after they beat’	zva-v-á-ka [biká]	‘after they cooked’
	cha-t-á [óna]	‘what we saw hod.’	cha-v-á [biká]	‘what they cooked hod.’
	dza-v-á-i [pútsirá]	‘the ones they used to beat for’	va-v-á-i [bikísira]	‘the ones they used to c. cook for’
	zva-v-á-sa-ká [pútsa]	‘when they didn’t beat’	zva-v-á-sa-ká [biká]	‘when they didn’t cook’

Subordinate clause variants of main clause tenses can also be formed by inflecting verbs with this tone melody.

(22)	nd-á-ka [tóra]	‘I having taken’	nd-á-ka [biká]	‘I having cooked’
	nd-á [tóra]	‘I having taken hod.’	nd-á- [biká]	‘I having cooked hod’
	ndí-no [pútsa]	‘I usually beating’	ndí-nó [rimá]	‘I usually plowing’
	ndí-cha [tóra]	‘I being about to take’	ndí-chá [rimá]	‘I being about to plow’
	ndí-cha-ká [gúta]	‘I being still full’	ndí-cha-ká [netá]	‘I being still tired’
	ndí-cha-sí [tóra]	‘when I used to be taking’	ndí-chi-sí [rimá]	‘when I used to be plowing’

⁵ A conventionalized construction of this form has adverbial agreement in cl. 8, meaning ‘while, when, after’.

ndí-sa- chá [pútsa]	‘until I won’t beat’	ndí-sa- chá [biká]	‘until I won’t cook’
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Most conditionals select this melody.

(23) dei á- ka [pútsa]	‘had he beaten’	déi á- ká [rimá]	‘had he plowed’
déno ndí-sa- ká [pútsa]	‘had I not beaten’	ndí-sa- ká [rimá]	‘had I not plowed’
kana vá- cha [úrayá]	‘if they will kill’	vá- chá [bikísa]	‘if they will c. cook’
kana vá- no [tórerá]	‘if they take for’	kana vá- nó [bikísíran a]	‘if they c. cook for e.o’
kana tí- cha [pútsa]	‘if we will beat’	kana tí- chá [rimá]	‘if we will plow’
kana á [tóra]	‘if he took hod.’	kana á [rimá]	‘if he plowed hod.’

Negative subjunctive, subjunctive with object prefix, and deverbal ideophones do likewise.

(24) ngá-á-sa [tóra]	‘let him not take’	ngá-á- sá [biká]	‘let him not cook’
ndí- mu [pútsiré] [pútsisé]	‘I should beat for him’ ‘id. c. hit’	ndí- mú [rimíre] [rimíse]	‘I should plow for him’ ‘id. c. plow’

A variant melody occurs in two object-prefix related contexts, namely in the imperative with an object prefix (which is the subjunctive form minus the subject prefix), and in any tense with the reflexive object prefix **-zví-**. In imperatives with an OP, H verbs obligatorily become L, so all verbs have the L melodic pattern.

(25) mú [toré]	‘take it!’	mú [biké]	‘cook it!’
ndí [torére]	‘take for me!’	ndí [bikíre]	‘cook for me!’
vá [torésére]	‘c. them take for!’	vá [bikísíre]	‘c. them cook for!’
zví [torére]	‘take for s.!’	zví [bikíre]	‘cook for s.’

In any verb with a reflexive prefix, the stem also selects this melodic pattern. Reflexive examples across a range of tenses which do not otherwise select the melodic pattern are seen in (26a), in tenses which independently select the primary

melodic pattern in (26b), and in tenses with final -i which select the secondary melody (discussed in 3.2) in (26c).⁶

(26) a.	ku-	‘to beat for	ku-	‘to cook for s.’
	zví [pútsirá]	s.’	zví [bikíra]	
	ndi-chá-	‘I will hold	ndi-chá-	‘I will cheer s.’
	zví [báta]	s.’	zví [kuzá]	
	ti-ngá-	‘we may see	ti-ngá-	‘we may cook
	zví [óna]	s.’	zví [bikíra]	for s.’
	ndi-nó-	‘I take for s.’	ndi-nó-	‘I cook for s.’
	zví [tórerá]		zví [bikíra]	
b.	ha-ndí-za-ká-	‘I didn’t	ha-ndí-za-ká-	‘I didn’t cook
	zví [pútsa]	beat s.’	zví [bikíra]	for s.’
	ha-nd-á-sa-	‘I haven’t	ha-nd-á-sa-	‘I haven’t asked
	zví [óna]	seen s. hod.’	zví [bvunzá]	s. hod.
	zva-vá-	‘after they	zva-vá-	‘after they
	zví [pútsa]	beat s. hod.’	zví [bikíra]	cooked for s.
				hod.’
	cha-tí-sa-ká-	‘what we	cha-vá-sa-ká-	‘what they
	zví [tórerá]	didn’t take	zví [bikíra]	didn’t cook for
		for s.’		s.’
	t-á-ka-	‘we having	t-á-ka-	‘we having
	zví [tórerá]	taken for s.’	zví [bikíra]	cooked for s.’
	dei á-ka-	‘had he	déi á-ka-	‘had he carried
	zví [pútsa]	beaten s.’	zví [takúra]	s.’
	kana tí-cha-	‘if we will	kana tí-cha-	‘if we will plow
	zví [pútsa]	beat’	zví [rimíra]	for s.’
c.	ha-ndí-	‘I don’t beat	ha-ndí-	‘I don’t cook
	zví [pútsi]	s.’	zví [bikíra]	for s.’
	ha-ndí-nga-	‘I may not	ha-ndí-nga-	‘I may not plow
	zví [óni]	see s.’	zví [rimí]	for s.
	ha-tí-cha-	‘we will not	ha-tí-cha-	‘we will not
	zví [tórerí]	take for s.’	zví [bikíri]	cook for s.’
	tí-sí-nga-	‘we not	tí-sí-nga-	‘we not cooking
	zví [úrayí]	killing s.’	zví [bikíri]	for s.’

After a reflexive prefix, H roots optionally change the lexical tone to L, in which case the stem has the pattern LHL. Since such lowering is independently obligatory for imperatives, imperatives with reflexives always behave this way, as was seen in (25).

⁶ The point of the third set of examples is that the pattern of the reflexive is chosen, instead of the (different) pattern of i-final tenses which is seen in 3.2.

(27)	ku-	‘to beat for s.’	ndi-chá-	‘I will hold s.’
	zví [putsíra]		zví [batá]	
	ndi-nó-	‘I take for s.’	ha-nd-á-sa-	‘I haven’t seen
	zví [toréra]		zví [oná]	s. hod.’
	zva-v-á-	‘after they beat s.	v-á-ka-	‘they having
	zví [putsá]	hod.’	zví [toréra]	taken’
	dei á-ka-	‘had he beaten s.’		
	zví [putsá]			

3.2. Final -i

Negative non-past tenses which select the final vowel *-i* have a slightly different tone pattern compared to the previous. As illustrated in (28) with the habitual negative, H verbs may exhibit no reflex of a melodic H. L verbs always have H from the second vowel to the end of the word, with no final L. Monosyllabic roots are systematically H-toned.

(28)	ha-vá [pí]	‘they don’t give’		
	ha-vá [tórí]	‘they don’t take’	ha-vá [bikí]	‘they don’t
				cook’
	ha-vá [tóresí]	‘they don’t c. take’	ha-vá [bikírí]	‘they don’t
				cook for’
	ha-	‘they don’t c. take	ha-vá [bikísírí]	‘they don’t c.
	vá [tóreséri]	for’		cook for’
	ha-	‘they don’t c. take	ha-	‘they don’t c.
	vá [tóresérani]	for e.o’	vá [bikísírání]	cook for e.o’

H roots with at least three syllables may, optionally, manifest a melodic H on the final vowel with an intervening L, which is to say that the primary melody seen in section 3.1 can optionally be selected, if both the L and H elements of the melody can be realized.

(29)	*ha-vá [pí];			
	*ha-vá [tórí]			
	ha-vá [tóresí]	‘they don’t c. take’	ha-	‘they don’t c.
			vá [tóreserí]	take for’
	ha-vá [tóresérani]	‘they don’t c. take for e.o’		

This pattern is found in all tenses which select the final vowel *-i* (negative non-past tenses).

(30)	ha-tí-nga [tóreráni]	‘we may not	ha-tí-	‘we may not
		take for e.o’	ngá [bikírání]	cook for e.o
	~ha-tí-nga [tóreráni]			
	ha-tí-cha [tóreráni]	‘we will not	ha-tí-	‘we will not
		take for e.o’	chá [bikírání]	cook for e.o

~ha-tí-cha [tórérání]			
kana tí-sí-sa [tórérání]	‘if we are not taking for e.o.’	kana tí-sí-sá [bikírání]	‘if we are not cooking for e.o.’
~kana tí-sí-sa [tórérání]			
tí-sí-nga [tórérání]	‘we who are not taking for e.o.’	tí-sí-ngá [bikírání]	‘we who are not cooking for e.o.’
~tí-sí-nga [tórérání]			

This pattern is also used in ‘way of V-ing’ nominalizations, which require the applied suffix and the final vowel -e. It is unknown whether trisyllabic and longer H stems may optionally omit the melodic H.

(31) mu [píréré]	‘way of giving’	mu [bviréré]	‘way of coming from’
mu [tóreréré]	‘way of taking’	mu [rimiréré]	‘way of plowing’
mu [shámwáridzisaniréré]	‘way of befriending e.o.’	mu [bikísísíránéré]	‘way of really cooking for e.o.’

3.3. Imperative

The melody of the imperative is quite similar to that of final-i tenses. L verbs have H on the second and subsequent vowels. H roots do not take a melodic tone, and there is no optional realization of the melody on H verbs.

(32) pá	‘give!’	biká	‘cook’
tórá	‘take!’	takúra	‘carry’
úráyá	‘kill!’	bhurúruká	‘fly!’
shámwáridza	‘befriend!’	bhurúrukísá	‘c. fly!’
shámwáridisa	‘make befriend!’		

3.4. Perfects

The final melodic pattern is encountered in the lexically restricted stative conjugation which reflects the imbrication pattern of the Bantu perfect stem. The six roots in **ku-gar-a** ‘to be seated’, **ku-vát-á** ‘to sleep’, **ku-rar-a** ‘to sleep’, **ku-zár-á** ‘to be full’, **ku-nyárár-á** ‘to be quiet’ and **ku-mír-á** ‘to be still’ front their vowel and select the final vowel -e in these tenses. When the prefix before the stem is L toned, all of the stem vowels are H (regardless of underlying root tone). Derivational extensions are not allowed in this construction.

(33) ndi [vété]	‘I am asleep’	ndi [géré]	‘I am seated’
ndi [nyéréré]	‘I am quiet’		

á-chi [vété]	‘he is still asleep’	á-chi [géré]	‘he is still seated’
á-chi [nyééré]	‘he is still quiet’		
ha-ndí-chi [vété]	‘I am not still asleep’	ha-ndí-chi [géré]	‘I am not still seated’
ha-ndí-chi [nyééré]	‘I am not still quiet’		

When the pre-stem prefix is H toned, the non-final vowels are L and the final vowel is H.

(34) á [vété]	‘he is asleep’	á [géré]	‘he is seated’
á [nyeréré]	‘he is quiet’		
ndí-chí [vété]	‘I am still asleep’	ndí-chí [géré]	‘I am still seated’
ndí-chí [nyeréré]	‘I am still quiet’		
ha-ndí [vété]	‘I am not asleep’	ha-ndí [géré]	‘I am not seated’
ha-ndí [nyeréré]	‘I am not quiet’		

Selection of this specific melody overrides the general pattern of both i-final and a-final negative tense melodies. The fact that this tense has a melodic tone is anomalous from the perspective of the synchronic typology of melodic tone inflection, since stative tenses have no obvious connection to clause-type. This melody is also anomalous in involving the replacement of lexical L with H.

4. Prefix tones and melodies

Tone in verbal prefixes is also affected by the system of melodic H inflection. Certain prefixes vary between H and L according to morphosyntactic context, or according to ad hoc phonological rules. The habitual prefixes /-no-/ and /-i-/ have H after a L-toned SP and L after a H toned SP (35a).⁷ 3rd person SPs are H toned in all contexts (35b) except in subject relative and consecutive forms (35c), whereas 1st and 2nd person prefixes are generally L (35d) but are H in the subjunctive as well as in tense-variants selecting a melodic H (35e).

(35) a.	ti-nó [tórá]	‘we take’	t-a-í [tórá]	‘we used to take’
	vá-no [tórá]	‘they take’	v-á-i [tórá]	‘they used to take’
	ti-nó [bika]	‘we cook’	t-a-í [bika]	‘we used to cook’
	vá-no [bika]	‘they cook’	v-á-i [bika]	‘they used to cook’

⁷ Since the tone of these prefixes is determined only by the preceding tone and not the following tone, this cannot be due to the Rhythm rule.

b.	á [tóra]	‘he took hod.’	v-á-ka [tóra]	‘we c. take for e.o.’
	á-cha [tóra]	‘he will take’	á-nga [tóra]	‘he may take’
	vá [tóre]	‘they should take’		
c.	v-a-ká [tóra]	‘they who took’	va-nó [tóra]	‘they who take’
	a-í-si [tóra]	‘he who used to take’	a-chá [tóra]	‘he who will take’
	a-ka [tóra]	‘and then he took’	a-ka-sa [tóra]	‘and then he didn’t take’
d.	nd-a [tóra]	‘I took hod.’	nd-a-ká [tóra]	‘I took’
	ndi-nó [tóra]	‘I take’	t-a-í [tóra]	‘we used to take’
	u-chá [tóra]	‘2s will take’	mu-ngá [tóra]	‘2p may take’
e.	ndí [tóre]	‘I should take’	ngá-ndí [tóre]	‘let me take’
	ha-ndí-sa-ká [tóra]	‘I didn’t take’	ha-t-á-sa [tóra]	‘we haven’t taken hod.’
	nd-á-ka [tóra]	‘I having taken’	ndí-no [tóra]	‘I usually taking’
	ndí-cha [tóra]	‘I being about to take’		

However, in tenses which take the stem melodic tone, all monosyllabic prefixes from the SP rightward have H tone, including those such as /zo, ndo/ which are lexically L-toned. Because of the general Rhythm rule, there is a surface alternating pattern of H tones, thus **handíchazóndombóbiká**, not ***handícházóndóbiká**. Without melodic H assigned to L prefixes, underlying /**handícházóndombobiká**/ would become ***handícházóndómbóbiká** by unbounded spreading of H in the prefix domain – cf. **ácházóndómbóbika** ‘he will go cook a bit rem.’, where no melodic tone is added.

(36)	ha-ndí-cha-zó- [tóra]	‘I won’t take rem.’	ha-ndí-cha-zó- [biká]	‘I won’t cook rem.’
	ha-ndí-cha-zó-ndo- [tóra]	‘I won’t go take rem.’	ha-ndí-cha-zó-ndó- [biká]	‘I won’t go cook rem.’
	ha-ndí-cha-zó-ndo-mbó [tóra]	‘I won’t go take a bit rem.’	ha-ndí-cha-zó-ndo-mbó- [biká]	‘I won’t go cook a bit rem.’

ha-tí-nga-tó-zo-vá- [tóréri]	‘we may not ever have to go take for them’	tí-sí-nga-tó- zo-mbó- [bikíri]	‘we who are not having to go cook for a bit’
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Such data suggest that the scope of melodic tone assignment has expanded, relative to the general situation in Bantu, from being added just to the stem, to being added every structural node at the level of stem or higher, so every constituent above the VP up to the subject prefix is assigned H.⁸

Strong evidence for multiple assignment of melodic Hs comes from the pattern of polysyllabic prefixes. There are numerous prefixes conveying nuances on the action of the verb, some illustrated in (37), which are at least diachronically related to independent verbs, indicating that they arose from the grammaticalization of auxiliary plus infinitive constructions. Some (e.g. **-sviko-**) have initial L and others (e.g. **-zívo-**) have initial H.

(37) á-no-sviko- [rima]	‘he arrives and plows’	á-no-svika kurima	‘he arrives to plow’
á-no-zívó- [rima]	‘he knows how to plow’	á-no-zívá kú- rima	‘he knows (how) to plow’
á-no-chímbidzo- [rima]	‘he plows quickly’		

When these prefixes appear in tenses inflected with a melodic H, they also manifest the appropriate version of the basic tone melody, that is, L-initial prefixes have the pattern LH and H prefixes have the patterns HL and HLH.

(38) ha-nd-á-ká-svikó [rimá]	‘I didn’t plow on arrival’
ha-nd-á-ka-zívo [rimá]	‘I didn’t know how to plow’
ha-nd-á-ka-chímbidzó [rimá]	‘I didn’t plow quickly’
ha-nd-á-ka-zívo-svikó [rimá]	‘I didn’t know how to plow on arrival’
ha-vá-chá-svikó [rimí]	‘they won’t plow on arrival’
ha-vá-ka-zívo [rimí]	‘they won’t know how to plow’
ha-vá-ka-zívo-svikó [rimí]	‘they won’t know how to plow on arrival’
ha-vá-ka-zívo-svikó [tórí]	‘they won’t know how to take on arrival’

Contrast the data in (38) with the phrasal analogs in (39), which shows that the tense-determined selection of final vowel and the tone melody are limited to the leftmost auxiliary in multi-word analogs of (38).

⁸ Since the OP is underlyingly H-toned anyway, it is impossible to determine whether the OP is in the scope of melodic H assignment.

(39)	ha-nd-á-ká-sviká kurima	‘I didn’t arrive to plow’
	ha-nd-á-ka-zíva kurima	‘I didn’t know to plow’
	ha-nd-á-ka-zíva kusvika kurima	‘I didn’t know to arrive to plow’
	ha-vá-chá-svikí kurima	‘they won’t plow on arrival’

This indicates that merged auxiliaries are in fact prefixes within the verb word, and that virtually all prefixes are inflected with the melodic H. The only prefixes which do not have H (prior to application of Rhythm) are the pre-SP prefixes negative /**ha-**/ and the class-agreeing external-head agreement [NCP-**a**], e.g. **chandáno[tóra]** ‘what I take’.

5. The predictability of the melodic pattern

We have observed that the melodic H is highly predictable from clause-type, where the melody appears on the verb of dependent clauses (excluding subject-headed relative clauses) and negative verbs with the pre-SP prefix **ha-**. Included in the class of dependent clauses are conditionals, examples given in (40).

(40)	dei á-ka [tóra]	‘had he taken’	déno ndí-sa- ká [tóra]	‘had I not taken’
	kana vá- cha [tóra]	‘if they will kill’	kana vá- no [tóra]	‘if they take’
	kana tí- cha [pútsa]	‘if we will beat’	kana á [tóra]	‘if he took hod.’
	kana á-ka [tóra]	‘if he took’	kana t-á- ka [tóra]	‘if we took’

It is therefore somewhat puzzling that certain (apparent) conditionals with **kana** do not take the melodic tone on the stem, and also lower the tone of the otherwise H toned 3rd person SP.

(41)	kana ti-ka [tóra]	‘if we take’	kana ti-ka- sa [tóra]	‘if we then don’t take’
	kana va- chí [tóra]	‘if they are taking’		

Further research into the morphosyntax of tenses may reveal an explanation for this puzzle. The verb form underlying the first two examples is in fact the consecutive tense (**ti-ka[tóra]** ‘then we took’, **ti-ka-sa[tóra]** ‘then we didn’t take’), and the last form is used as a more general imperfective participial in constructions like **ndi-chá-nge ndi-chí[ríma]** ‘I will be plowing’.

Melodic tone patterns are used in all negative tenses which have the pre-SP prefix **ha-** (**ha-t-á-ka[pútsa]** ‘we didn’t break’, **ha-t-á-i[pútsa]** ‘we didn’t break hab.’, **ha-t-á-sa[óna]** ‘we haven’t seen hod.’), but are not found in negatives which select only the post-SP prefix **-sa-** (**ku-sá[úráyá]** ‘to not kill’, **v-a-ka-sa[tóra]** ‘then they didn’t take’, **u-sá[tóra]** ‘you shouldn’t take’) – unless the verb

is a subordinate-clause form (**cha-v-á-sa-ká[pútsa]** ‘what they didn’t beat’, **ndí-sa-chá[pútsa]** ‘until I won’t beat’). This indicates that selection of the tone melody is governed by structural properties – the negative prefix required by the tense – and not semantic negation.

Abbreviations

c.= causative, e.o = reciprocal, hab. = habitual, hod. = hodiernal, int. = intensive, rem. = remote (time or possibility – ‘long ago’, ‘may perhaps’ etc.), id. = ideophone, s. = reflexive, OP = object prefix, SP = subject prefix.

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