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Biographical prologue to Doug: Congratulations to you with all of my admiration and friendship on this important milestone in your distinguished career! For the occasion I am submitting something which overlaps with our first exchanges on tone. We first met when you were a graduate student at MIT and I was chair of linguistics at USC. Although you had turned down our offer to be a graduate student with us (I have a vague memory of returning your admissions file to you—shhh!), I was so excited when you accepted a faculty position in the USC department in 1984, where we were colleagues until we both left in 1988. During this time I was very influenced by your research on lexical phonology, tonal underspecification, and tone features (Pulleyblank 1983, 1986) and your subsequent work on parametric and grounded phonology (Archangeli & Pulleyblank 1991). A lot of this can be seen in our one co-authored paper (Hyman & Pulleyblank 1988) where we treated parameters of tone rules. One memory I have while we were preparing this paper was working on our clunky computers at USC. I had a baby simple word processing software that was not up to the task, whereas you had a more advanced one—which, however, had the downside that you couldn't tell what the product would look like on the screen, rather only when you printed it! Hopefully you will be able to decipher what the following looks like, in fact, tell me how I should analyze this tantalizing problem in Tiania tonology. Congratulations on your "promotion" -- and welcome to the club! *Larry*

The Mystery of the Level Low Tone in Tiania

Tiania has two basic tones /H/ (high) and /L/ (low), each of which has two variants.[1] In the case of /L/, there is a contrast between a level L˚ and the much more common falling L before pause. Although it is hard to find exact minimal pairs, the two L tones contrast both after a L and H tone, as seen in the following nouns:

(1)	a.	**n-guru**	'tortoise'	**m-baata**	'duck(s)'
		n-gutu˚	'girl'	**n-thaara˚**	'straps'
	b.	**m-pára**	'hunger'	**n-jɔ́ka**	'snake'
		m-páka˚	'cat'	**n-jɔ́ta˚**	'star'

As seen, we mark H tone with an acute accent and leave L tone unmarked. Prepausal level L is marked with the symbol ˚.[2] The contrast between L and L˚ is neutralized whenever another tone follows, whether H or L:

(2)	a.	**m-baata cíákwá**	'my ducks'
		n-thaara cíákwá	'my straps'
	b.	**m-pára e Makɛ́na**	'Makena's hunger'
		m-páka e Makɛ́na	'Makena's cat'

[1] The two kinds of /H/ tone are regular H and raised or "superhigh" (S), discussed below and in Hyman & Mbûûi (2023). This work is part of the Tiania Language Project initiated with Mwaambi G. Mbûûi to whom I owe an enormous thanks. Thanks also to Will Leben and Keith Snider for very helpful comments on an earlier draft of this paper. Tiania is an understudied variety of the Central Kenya Bantu Kimeru dialect cluster.

[2] An alternative that would avoid ˚ would be to mark the falling L with a grave accent: **n-gurù** 'tortoise' vs. **n-gutu** 'girl'. The downside of this choice is that prepausal falling L is much more common than level L. Out of 562 L(˚)-final nouns in our lexicon, 492 end L and 70 end L˚. Final L is also more common than L˚ in the verb paradigm.

Contributed to DougSchrift: A Collection of Squibs and Puzzles presented to Doug Pulleyblank, 2025. https://arts-pulleyblank-2024.sites.olt.ubc.ca/

What this likely means from a phonological point of view is that the L˚ does not have a "floating" H tone after it, as it typically does in Grassfields Bantu and other languages which have the L vs. L˚ contrast. If there were a floating H, we would have expected it to show up when it is followed by a L tone. However, as seen in **m-páka e Makɛ́na** 'Makena's cat' in (2b), this doesn't happen. On the other hand, as we will now see, final L˚ syllables seem to act as if they have a bimoraic /CVV/ structure.

To show this, consider the following infinitive forms which contrast L vs. L˚:[3]

(3)	a.	**ko-thw-a˚**	'to set (of the sun)'	(***cò-**)
		ko-rw-a˚	'to fight'	(***dɔ̀-**)
	b.	**ko-thɔ-a**	'to scratch'	
		ko-rɔ-a	'to bewitch'	(***dòg-**)
		INF-root-FV		

Although we have transcribed the phonetically distinct verb stems differently in (3a) and (3b), they actually sound quite similar segmentally, distinguished mostly by timing. (The [ɔ] in (3b) is very short.) The verb stems in (3a) are monosyllabic (deriving from *CV- roots in Proto-Bantu), while those in (3b) are bisyllabic, derived by loss of an intervocalic consonant, e.g. the ***g** of Proto-Bantu ***dòg-** 'bewitch'). The same contrast is found on nouns. The three monosyllabic stems with L˚ in (4a) consist of a CVV syllable vs. the three L.L stems in (4b), which are bisyllabic CV.V.

(4)	a.	**mo-cie˚**	'family'	
		n-dio˚	'eagle'	
		ke-rio˚	'banana'	
	b.	**n-jo.u**	'elephant'	(***-jògù**)
		mo-ro.i	'sorcerer'	(***-dòg-ì**)
		mo-a.a	'healer'	(***-gàngà**)

As seen in (4b) and elsewhere below, where earlier proto forms have been proposed, we can observe that ***p**, ***g** and some cases of ***b** drop out unless preceded by a homorganic nasal. What this means is that these CV.V stems were historically CVCV (compare the loss of ***p** in **ko-rɛ-a** 'to pay' < ***dɪp-**). There thus is some reason to think of L˚ characterizing final CVV syllables in general, which we will also see in causative and passive verb forms below.

Such a distinction between CVV and CV.V. is quite widespread in Tiania. In fact, since words historically underwent final vowel shortening, all stems that end in a long vowel today are underlyingly bisyllabic:

(5)	a.	**mo-kó.o**	'figtree'	(***-kójɔ̀**)
		n-cho.ó	'nut, pea etc.'	(***-jɔ̀gɔ́**)
	b.	**o-tá.a**	'to draw water'	(***táp-**)
		ko-a.a	'to distribute'	(***gàb-**)
		INF-root.FV		

[3] Infinitives consist of a **/ko-/** prefix and an **/-a/** inflectional final vowel (FV).

To a limited extent final L˚ can be predicted. First, all /L/ monomoraic stems are L˚:[4]

(6) a. **e-me**˚ ‘dew’ (***-mè**)
b. **n-da**˚ ‘belly’ (***-dà**)
c. **mo-ri**˚ ‘root’ (***-dì**)
d. **e-tu**˚ ‘cloud’ (***-tù**)

If our hypothesis is correct this would mean that monosyllabic stems were (are?) underlyingly bimoraic in Tiania, but undergo final vowel shortening (as in Luganda and many other Eastern Bantu languages). Of longer stems, the only all L stems ending in short CV˚ are **ngutu**˚ ‘girl’ and **n-thaara**˚ ‘straps’ in (1a) and the root **-ɛmbɛ**˚ in **ng’ɛɛmbɛ**˚ ‘fig’ and **mw-ɛɛmbɛ**˚ ‘figtree’, suggesting that these are exceptional. In (7) we provide CVV˚ final nouns with all L tone:

(7) a. **n-dɛɛwa**˚ ‘bull, ox’
b. **mw-itiɔ**˚ ‘uphill’ < **w-iitia**˚ ‘to go up, ascend’
n-kucaniɔ˚ ‘misunderstanding’ < **o-kuc-an-i-a**˚ ‘to pull/stretch each other’
e-thwaania˚ ‘idea, thought’ < **ko-thwaan-i-a**˚ ‘to think’

We assume that the last syllable of **n-dɛɛwa**˚ ‘bull’ has the bimoraic structure **Cwa** from earlier **CVa** with loss of the pre-**w** consonant. The three deverbal nouns in (7b) all involve the causative **-i-** suffix which, whose [i] is very short, but in any case forms a single C**i**V syllable.

Besides **m-páka**˚ ‘cat’ and **n-jɔ́ta**˚ ‘star’ in (1b), we have found 10 other final CV˚ nouns which have a preceding H:

(8) a. **kúro**˚ ‘dog’ **úko**˚ ‘squirrel’
e-rúke˚ ‘monkey’ **e-cɛ́rɛ**˚ ‘shell’
n-cúku˚ ‘granary’ **ro-tára**˚ ‘platform’
b. **e-tɛtɛ́ma**˚ ‘swamp’ **e-kɔrɔmɔ́ndɛ**˚ ‘crab’
ro-chaáo˚ ‘hoof’ **n-kinɔrɔ́chɔ**˚ ‘leopard’

The noun stems in (8a) have a H-L˚ pattern, while the longer stems in (8b) all end in H-L˚. In addition, there are derived names that end in CV˚: **Ke-ruóra**˚ (lit. opener; **ko-ruor-a** ‘to open’), **Mo-túma**˚ (lit. one who sews; **o-túm-a** ‘to sew’), **Kathuúrɛ**˚ (lit. chosen one; **ko-thuur-a** ‘to choose’).

The examples in (9) show nouns with a penultimate H tone followed by final CVV˚:

(9) a. **ke-buluútie**˚ ‘butterfly’
b. **n-tómwa**˚ ‘message’ < **o-tóm-w-a**˚ ‘to be sent’
c. **ke-ráariɔ**˚ ‘porridge’ < **ko-ráar-i-a**˚ ‘to make sleep overnight’
n-thóondiɔ˚ ‘ground swelling’ < **ko-thóond-i-a**˚ ‘to swell up (ground)’
mo-cámaniɔ˚ ‘meeting’ < **o-cáman-i-a**˚ ‘to meet’
ru-íkúmiɔ˚ ‘pride’ < **w-ií-kúm-i-a**˚ ‘to praise oneself’
d. **Ka-weéria**˚ (name; makes happy) < **ko-weer-i-a**˚ ‘to make happy’

[4] The root **-nto** in words such as **muu-nto** ‘person’, **ee-nto** ‘thing’ and **oo-nto** ‘place’ is not an exception since the nasal is underlyingly moraic, conditioning pre-NC vowel lengthening.

Except for ‘butterfly’ in (9a), all of the nouns are derived from verbs, either with the passive suffix **-w-** in (9b) or the causative suffix **-i-** in (9c), the latter also occurring in the name in (9d).

When we turn to verbs we will see more evidence that causative **-i-a** and passive **-w-a** condition a L˚ tone in contexts where non-causative and non-passive verbs end with L. First, note, however, the examples in (10) that end in **Cua**˚ (of which we will see more examples in verb forms below):

(10) a. **n-cíkua**˚ ‘eyebrows’
b. **m-bácua**˚ ‘sickness’ < **w-aác-u-a**˚ ‘to be sick’

Although final **Cua**˚ contrasts with **Cwa**˚, it still functions as one CVV syllable. While the source of ‘eyebrows’ is less clear, the reason why the tone is L˚ in ‘sickness’ (whose stem-initial [b] occurs only after a nasal) is that the **Cua**˚ of **w-aác-u-a** ‘to be sick’ consists of the fusion of the causative **-i-** and passive **-w-** suffixes as **-u-**. Although **w-aác-i-a**˚ presently has the meaning ‘to lack’, a more transparent causative example is **ko-weer-i-a**˚ ‘to make happy’ from which the passive **ko-weer-u-a**˚ ‘to be happy’ is derived. Thus, the expected ***w-aác-i-w-a** and ***ko-weer-i-w-a** are realized with final **-u-a**˚. Since **ko-weer-u-a**˚ can be used as a noun or verb, it can be glossed both as ‘to be happy’ and ‘happiness’ but looks again to be a passivized causative: ‘to be made happy’.

We turn now to verbs. Recall from (3) that monosyllabic CVV verb stems are realized L˚ rather than L.[5] They also can be H, as seen in (11b).

(11)	a.	**ko-thw-a**˚	‘to set (of the sun)’	(***cò-**)
		ko-rw-a˚	‘to fight’	(***dò-**)
		ko-w-a˚	‘to fall’	(***gò-**)
	b.	**ko-y-á**	‘to become burnt’	(***pí-**)
		o-t-á	‘to throw away’	(***tá-**)
		ko-rɛ́-á	‘to eat’	(***dí-**)
		INF-root-FV		

Bisyllabic CV.V stems either have L.L or H.L tone:

(12)	a.	**ko-rɛ-a**	‘to pay’	(***dìp-**)
		ko-rɔ-a	‘to bewitch’	(***dòg-**)
		ko-a-a	‘to distribute’	(***gàb-**)
	b.	**ko-rú-a**	‘to cook’	(***dúg-**)
		ko-nɔ́-a	‘to be tired’	(***nóg-**)
		o-tí-a	‘to leave behind’	(***tíg-**)
		INF-root-FV		

Longer stems generally end L in the infinitive:

(13)	a.	CVCV	**ko-rem-a**	‘to cultivate’	(***dèm-**)
		CVVCV	**ko-noor-a**	‘to sharpen (an edge)’	(***nòòd-**)

[5] One exception is **o-thia** ‘to grind’ (***cè-**). We note that Bantu Lexical Reconstructions (BLR) also reports ***cìd-** and ***cèag-** as regional reconstructions of ‘grind’.

	CVCVCV	**ko-rongor-a**	'to burn (intr.)'	(***dòngʊd-**)
b.	CV́CV	**ko-róm-a**	'to bite'	(***dóm-**)
	CV́VCV	**ko-rɔ́ɔt-a**	'to dream'	(***dóot-**)
	CV́CVCV	**o-kúnek-a**	'to cover'	(***kúnɪk-**)

However, as we have seen, causative **-i-** and passive **-w-** (< ***-ʊ-**) convert a final L to L˚:

(14)	a.	**ko-thaamb-a**	'to bathe' (intr.)
		ko-thaamb-i-a˚	'to bathe' (tr.)
		ko-thaamb-u-a˚	'to be bathed'
	b.	**ko-róm-a**	'to bite'
		ko-róm-i-a˚	'to feed, give a bite'
		ko-róm-u-a˚	'to be fed, given a bite'

As pointed out above, the expected causative + passive sequence **-i-w-** is realized **-u-**.

The above broadly summarizes the distribution of final L˚. As mentioned, many more nouns end in L than in L˚. The numbers of entries in our current lexicon are as follows, arranged by stem shape (where final CVV stands for either CVV or CV.V):

(15)

		final L	final L˚	all L + L	all L + L˚	H + L	H + L˚
a.	CV	0	14	--	--	--	--
b.	CVV	55	10	17	5	38	5
c.	CVCV	172	19	77	1	97	18
d.	CVVCV	178	13	76	8	70	5
e.	CVCVV	23	8	6	5	5	2
f.	CVCVCV	59	1	22	0	11	1
g.	CVCVCVV	5	5	0	3	5	2
	TOTALS:	492	70	198	22	226	33
			12%		10%		13%

As seen, only 70 out of 562 L(˚) final nouns (or 12%) end in L˚, with the remaining 495 (or 88% ending L. Those L˚ nouns which are all L or have a preceding H in their stem are roughly equal (20 vs. 25).

While there is a minority group of about 12% of the L-final nouns that unpredictably end in L˚, verbs are quite different. First, verbs end in an inflectional final vowel (FV), which has been the default FV **-a** in the infinitives we have cited. While this FV is most commonly preceded by a consonant, thereby creating a final CV syllable, we have seen two situations where the FV is preceded by a vowel: (i) monosyllabic CV-**a** stems; (ii) causative XC-**i-a**, passive XC-**w-a**, and causative-passive XC-**u-a** stems. Once verbs with these endings are removed from the 636 verbs in our lexicon, not a single L˚ occurs. While these CVV syllables are required to get L˚, the reverse does not hold: Excluding 8 H tone CV́-a monosyllabic stems, there are 182 verbs in our lexicon that end in a L or L˚ CVV. Of these 140 end L˚ with the other 42 ending L. We have already seen some of these latter verbs, which we assume to be analyzed as CV.V, i.e. not as a bimoraic syllable, rather as two syllables CV and V whose historical intervening consonant has been lost. In other words, with the right syllable structure, we can largely predict the contrast between L and L˚.

This doesn't of course explain why L˚ should be required on most or all non-H CVV final syllables. What we can say is that the fall of L is not realized on an underlying /CVV/ syllable—recalling that the passive **-w-** on verbs like **o-tóm-w-a˚** 'to be sent' must count as a vowel.

But this isn't all there is to say about L˚ in verbs. In all of the above discussion we have considered only infinitives which end with the L FV **/-a/**. As in other Bantu languages, there are inflectional feature combinations of tense, aspect, mood and polarity which impose different tone melodies on the verb stem. The resultant forms are illustrated in Table 1 with a class 2 subject prefix **bá-** 'they' and the L tone verb root **-tharim-** 'bless' followed by the reciprocal suffix **-an-** as they occur in main clause affirmative (MCA), relative clause affirmative (RCA), main clause negative (MCN) and relative clause negative clauses:[6]

	MCA	RCA	MCN	RCN
Pres	í-bá-ko-tharim-an-a	bá-ko-tharim-an-a	ba-tɛ̋-ko-tharim-an-a	ba-té-ko-tharim-an-a
Hab	í-bá-tharim-an-aá	bá-thariman-a.á	ba-té-tharím-án-áá	
Stat	í-bá-tharím-i˚	bá-tharím-i˚	ba-té-tharím-i˚	ba-té-tharím-i˚
Perf	í-bá-tharím-án-éetɛ˚	bá-tharím-án-éetɛ˚	ba-té-tharím-án-éetɛ˚	ba-té-tharím-án-éetɛ˚
Past0	ba-ko-tharim-an-a	bá-tharim-an-ă	ba-tá-a-tharim-an-a	ba-tá-á-tharim-an-a
Past1	í-bá-tharím-án-érɛ˚	bá-tharímán-érɛ˚	ba-té-tharím-án-érɛ˚	ba-té-tharím-án-érɛ˚
Past2	í-ba-á-tharim-an-erɛ	ba-á-tharim-an-erɛ	ba-tɛ̋-ɛ̋-tharim-an-erɛ	ba-tá-á-tharim-an-erɛ
Past3	í-ba-tharím-án-éré	ba-tharím-án-éré	ba-tɛ̋-a-tharím-án-éré	ba-tá-a-tharím-án-éré
AntP1	í-bá-ko-tharim-an-eetɛ	bá-ko-tharim-an-eetɛ	ba-tɛ̋-ko-tharim-an-eetɛ	ba-té-ko-tharim-an-eetɛ
AntP2	í-ba-á-tharim-an-eetɛ	ba-á-tharim-an-eetɛ	ba-tɛ̋-ɛ̋-tharim-an-eetɛ	ba-tá-á-tharim-an-eetɛ
AntP3	í-ba-tharím-án-éétɛ́	ba-tharím-án-éétɛ́	ba-tɛ̋-a-tharím-án-éétɛ́	ba-tá-a-tharím-án-éétɛ́
Exp	ba-rá-tharim-an-a	ba-tharím-án-á	ba-tɛ̋-a-tharím-án-á	ba-tá-a-tharím-án-á
Fut	ba-ká-tharim-an-a	bá-ka-tharim-an-ă	ba-tɛ̋-tharim-an-ă:	ba-té-tharim-an-ă:
Sbjv	kɛ̋ bá-thárím-ɛ̃n-ɛ˚		ba-ka-tharím-án-á	
+OP	kɛ̋ bá-tó-tharím-ɛ́		ba-ka-ré-tharím-á	
Imp	tharím-ɛ̃n-a˚		o-ka-tharím-á	
+OP	tó-tharím-ɛ́		w-aa-mo-tharím-á	

Table 1. The Tiania Verb Paradigm

The color-coding refers to the stem tone "melodies":[7]

(16) Yellow : all L
Green : H from the second mora to the FV
Red : H from the second mora to the penultimate mora; L˚ on the FV
Blue : L to the penult, LH rising tone on the FV
Orange : H to the antepenult, superhigh (˝) on the penult, L˚ on the FV

To see the contrast between L and L˚ we illustrate the yellow, green and red patterns with the verbs **ko-thaamb-a** 'to bathe (intr.)' and **ko-róm-a** 'to bite' and their causative forms **ko-thaamb-i-a˚**

[6] The abbreviations in the first column stand for present, habitual, stative, stative, perfect, three degrees of past and anterior past tense, experiential ('to have done something before'), future, subjunctive, and imperative (OP = object prefix). Examples: **í-ba-tharim-an-aá** 'they bless each other' (MCA habitual), **ba-té-tharím-án-éetɛ˚** 'they haven't blessed each other (MCN perfect), **kɛ̋ bá-tó-tharím-ɛ́** 'may they bless us!' (subjunctive affirmative with object prefix **-tó-** 'us').

[7] A /H/ verb like **/-nánor-an-/** 'pamper each other' would have a stem-initial H in all cells.

'to bathe (tr.)' and **ko-róm-i-a˚** 'to feed, give a bite to', where the tenses distinguished are Immediate Past (P0), Today Past (P1), Yesterday Past (P2) and Remote Past (P3).

(17)	P0:	**ba-ko-thaamb-a**	**ba-o-mo-thaamb-i-a˚**	'they have just bathed (him/her)'
	P3:	**í-ba-thamb-érɛ́**	**í-ba-mo-thamb-ér-í-ɛ́**	'they bathed (him/her)' (remote)
	P1:	**í-bá-thamb-érɛ˚**	**í-bá-mo-thamb-ér-i-ɛ˚**	(today)
	P2:	**í-ba-á-thamb-erɛ**	**í-ba-á-mo-thamb-er-i-ɛ**	(yesterday)
	P0:	**ba-ko-róm-a**	**ba-o-mo-róm-i-a˚**	'they have just bitten/fed him/her'
	P3:	**í-ba-róm-érɛ́**	**í-ba-mo-róm-ér-í-ɛ́**	'they bit/fed him/her' (remote)
	P1:	**í-bá-róm-érɛ˚**	**í-bá-mo-róm-ér-i-ɛ˚**	(today)
	P2:	**í-ba-á-róm-erɛ**	**í-ba-á-mo-róm-er-i-ɛ**	(yesterday)

As can be seen, in all cases the root-initial syllable maintains its /H/ or /L/ tone. Consider first the Past0, which is the yellow pattern: As seen, all stem vowels are L except for the H on the root **-róm-** 'bite' in the second set of examples. As seen from the prefix **ko-**, this tense is based on the infinitive, which has also taken the yellow pattern in all of the examples cited earlier.

When we turn to the green pattern in the Past3, we see that the inflectional ending **-érɛ́** is all H. Had there been more syllables, e.g. derivational suffixes, they too would have been H, e.g. **í-ba-tharím-án-érɛ́** 'they blessed each other' (**-tharim-** 'bless', **-an-** 'reciprocal').

In the Past1 the red pattern shows a H on the penultimate syllable and a L˚ tone on the FV. Had there been more syllables, they too would have been H: **í-bá-tharím-án-érɛ˚** 'they blessed each other'.

The Past2 also has the yellow (all L) tone pattern, which differs in an interesting way from the Past0. As can be seen in the right column of data in (17), the corresponding causative **-i-** appears right before the FV. In the case of the **-erɛ** suffix, this means placing it between **-er-** and **-ɛ˚**. As seen in the Past0, the causative is realized with a L˚ tone in the all L (yellow) tone pattern, as it was in the infinitive in (14). Not surprisingly, the H of the Past3 green pattern also affects the causative **-i-** and FV, and the final L˚ of the red pattern carries over to the causative forms. What is surprising is that the all L (yellow) pattern of the Past2 blocks the L˚ of the causative! For this reason it may be better to split the yellow cells into those whose FV is toneless (Ø) which yields to L˚ vs. /L/, which is maintained in the correponding causative, passive and causative-passive. As these examples show, ˚ can both be derived (e.g. by causative **-i-** and passive **-w-**), but also blocked by a final /L/.

To recapitulate, we have thus far found, first, that the L˚ is attested only before pause. Although there is a contrast on longer stems, we further observed that L˚ correlates with being on a monosyllabic CV or CVV noun stem, where falling L is virtually absent. In other languages where contrastive L˚ has been attested, e.g. in Bamileke and other Grassfields Bantu, there is clear evidence of a final floating H which blocks final "downgliding", but which has an effect when a L tone follows it, e.g. Bamileke-Fe'fe' **mbɑɑ˚** 'meat' vs. **mbɑ̌ɑ ba** 'my meat' (Hyman 1972: 144). In contrast, we have thus far seen that Tiania L˚ merges with L internally, whether followed by a L or H tone. However, we now consider evidence that a H tone may be involved. This has to do with three contexts we have discovered where a word ends with a LH rising tone on a short vowel:[8]

[8] The only other final LH rising tones on a short vowel in our lexicon of over 2,200 entries concern the question morpheme **bǐ** 'what' and the interjection **nǐ** 'please', which we did not test after a H tone.

The first concerns certain cells of the verbal inflectional paradigm where the verb stem has all L tone up to the penult, with a LH rising tone on the FV, colored in blue in Table 1. This rising tone can be seen in the MCA future negative example in (18a).

(18) a. **ba-tḗ-tharim-ă** 'they will not bless'
b. **ba-tḗ-tóm-a˚** 'they will not send'
c. **ba-tḗ-tóm-a mo-ritani** 'they will not send a teacher'
d. **ba-tḗ-tharim-ă mo-ritani** 'they will not bless a teacher'

In (18b) we see that the expected /LH/ is instead realized as L˚ when preceded by a H tone. (18c) shows that this L˚ merges with L when followed by another word, as originally seen in (2) above, without any effect of the H part of the simplified LH rising tone. The LH in (18d) is maintained, as it is on the final **a.a** sequence (from earlier ***-ag-a**) of the corresponding imperfective future :

(19) a. **ba-tḗ-tóm-a.á** 'they will not be sending'
b. **ba-tḗ-tóm-a.á mo-ritani** 'they will not be sending a teacher'

A second case of a LH rising tone on a final short vowel concerns the numeral 'one' in (20a), which also becomes L˚ when preceded by a H tone in (20b).

(20) a. **mo-remi omwɛ̌** 'one farmer' (noun class 1)
b. **mobukɔ yómwɛ˚** 'one bag' (noun class 3)
c. **mobukɔ yómwɛ yɔ́ mo-chɛ́ɛrɛ** 'one bag of rice'

As in other examples, (20c) shows that this L˚ merges with L when followed by another word.

A third case concerns a contraction between the focus marker and the third person singular pronoun.

(20) a. **í-mw-aána** 'it's a child' (class 1) **/mo-ána/** 'child'
b. **né á-na** 'it's children' (class 2) **/a-ána/** 'children'
c. **í (w)oóní** 'it's me'
í (w)oówɛ́ 'it's you sg.'
í baátúé 'it's us'
í baábúé 'it's you pl.'
í bɔ́w 'it's them'
vs. **né wɛɛ́** → **[nɔ́ɛ˚]** ~ **[núɛ˚]** 'it's him/her'

As seen in (20a,b), Tiania focus marker has two allomorphs, **/í/** before a consonant, **/né/** before a vowel. The full class 1/class 2 pronominal paradigm is shown in (21c), where **(w)** indicates the common deletion of **[w]**. Although the pronoun 'him/her' is pronounced **wɛɛ́** in isolation, the **/né/** allomorph shows that it is considered to begin with a vowel, as if it were underlyingly **/uɛ́/**. Interestingly, when the two morphemes fuse, the result is HL˚. Again, the sequence H-LH is not allowed if the LH is on a short vowel (***nɔ́ɛ̌**, ***núɛ̌**).

What these last examples suggest is that L˚ is derived from /LH/ by delinking of the H, which then has no effect other than to condition the level L˚ pitch before pause. This potentially takes care of all of the words that end H-L˚. However, this doesn't answer why we get words with final

L-L˚, e.g. **n-gutu**˚ ‘girl’. Why aren’t these pronounced L-LH (***n-gutŭ**)? Similarly, there is the additional problem of monosyllabic CV stems. Why aren’t **mo-ri**˚ ‘root’ and **mo-cie**˚ ‘family’ pronounced ***mo-rĭ** and ***mo-cĭe**? The fact is that final short LH is found only in 6 out of the 60 cells in Table 1, on the numeral ‘one’, in the contraction ‘it’s him/her’ and on the morphemes **bĭ** ‘what’ and **nĭ** ‘please’ (cf. note 8). This suggests either that there is a general constraint against final LH rising tone which has these exceptions or that the above cases have an extra abstract final mora that licenses the LH rising tone. The question would still remain why final CVV is realized L˚ rather than LH.

There is one last relevant set of facts that we need to consider. In Tiania a final H + superhigh boundary tone (HS%) marks questions as well as the right edge of any internal phonological phrase (e.g. the subject noun phrase, the first object before another object, the first noun modifier before another modifier).[9] This HS% give us another insight into the difference between L and L˚. We now illustrate the realization of HS% with examples occurring after **o-kwɔ̆n-a** ‘have you seen a ___?’:

(21) If the final or penultimate syllable has a H tone, the last or only H becomes S (marked by ˝). L tones which precede the S remain L.[10]

L-H	**mo-té**	‘tree’	**o-kwɔ̆n-a mo-tḗ**
L-HH	**a-cíó**	‘knife’	**o-kwɔ̆n’ a-cḯő**
L-H.H	**mo-táɛ́**	‘captive’	**o-kwɔ̆n-a mo-táɛ̋**
L-H.L	**nyumɔ́ɔ**	‘animal’	**o-kw-ɔ̆n-a nyumɔ̋ɔ**
L-H-H	**n-gókó**	‘chicken’	**o-kwɔ̆n-a n-gókő**
L-H-L	**n-jɔ́ka**	‘snake’	**o-kwɔ̆n-a n-jɔ̋ka**
L-HH-H	**ke-lɛ́ɛ́lɛ́**	‘bat’	**o-kwɔ̆n-a ke-lɛ́ɛ́lɛ̋**
L-HL-L	**mo-cɛ́ɛrɛ**	‘rice’	**o-kwɔ̆n-a mo-cɛ̋ɛrɛ**
L-LH-L	**n-thuúwa**	‘jigger’	**o-kw-ɔ̆n-a n-thuűwa**
L-L-H	**ke-thaká**	‘bush’	**o-kwɔ̆n-a ke-thaká**
L-LL-H	**mo-cɔɔrɛ́**	‘friend’	**o-kwɔ̆n-a mo-cɔɔrɛ̋**

(22) If there is no H in the penultimate or final syllable and the word ends L-L, it becomes S-L. Any L tones that precede the S-L in the same word are raised by the H of the HS% boundary tone sequence.

L-L	**i-nto**	‘things’	**o-kwɔ̆n-á ḯ-nto**
L-L.L	**n-jɔu**	‘elephant’	**o-kwɔ̆n-a n-jɔ̋u**
L-L-L	**mo-remi**	‘farmer’	**o-kwɔ̆n-a mó-rḗmi**
L-LL-L	**m-baata**	‘duck’	**o-kwɔ̆n-a m-bā̋ata**
L-L-L-L	**mo-ritani**	‘teacher’	**o-kwɔ̆n-a mó-rítā̋ni**
L-L-L-L-L	**mo-thuraneri**	‘preparer’	**o-kw-ɔ̆n-a mó-thúránḗri**
L-H-L-L	**mo-kóloki**	‘passer-by’	**o-kwɔ̆n-a mo-kólő̋ki**
L-H-LL-L	**ke-lámaathi**	‘gourd’	**o-kwɔ̆n-a ko-lámā̋athi**

[9] Thanks to Will Leben for suggesting HS%. I had originally assumed S% with a rule raising preceding L tones to H.
[10] Even though an initial **m-** or **n-** prefix is non-syllabic, it carries a L tone which is indicated in the schema in the first column.

The last two examples show that S% cannot target the H that is in the antepenultimate position.

(23) If the word ends L-L˚, the S tone goes on the final syllable. Preceding Ls in the same word are raised to H:

L-L˚	**n-gi˚**	'fly'	**o-kwɔ̌n-a ngí**
L-L-L˚	**n-gutu˚**	'girl'	**o-kwɔ̌n-a n-gútű**
L-LL-L˚	**n-dɛɛwa˚**	'bull'	**o-kwɔ̌n-a n-dɛ́ɛ́wǎ**
L-H-L-LL˚	**mo-sámaniɔ˚**	'meeting'	**o-kwɔ̌n-a mo-sámáníɔ̋**
L-L-LH-L.L˚	**ke-buluútie˚**	'butterfly'	**o-kwɔ̌n-a ke-buluútíě**

(24) If the word ends H-L˚, the L˚ syllable becomes a HS (ˊ˝) contour tone:

L-H.L˚	**e-túa˚**	'rich person'	**o-kwɔ̌n' e-túǎ**
L-H-L˚	**e-rúke˚**	'monkey'	**o-kwɔ̌n' ɛ-rúké˝**
L-H-LH-L˚	**n-dáthaángi˚**	'weeds (sp.)'	**o-kwɔ̌n-a n-dáthaángí˝**
L-L-L-LH-L˚	**e-kɔrɔmɔɔ́ndɛ˚**	'crab'	**o-kwɔ̌n' ɛ-kɔrɔmɔɔ́ndɛ́˝**

The crucial difference in the realization of HS% is the contrast between (21) and (22). In (21) we see that when a final or penultimate /H/ becomes S, preceding Ls are not affected. In (22) we see that when a penultimate L is realized S, preceding Ls are all raised to H. The HS% boundary tone sequence thus gives us another potential criterion for determining whether L˚ has a final floating H tone or not. Unfortunately, the results are not unambiguous. In (23) we see that the S is assigned to the final syllable of words that end L-L˚. Crucially, preceding Ls become H as they do on words that end L-L. This suggests that a floating H is not present or it would become S and the preceding Ls would not raise. Since we need something to block the S from reaching the penultimate syllable as it does on words ending L-L, we again wonder about the final floating mora idea, which would make the L˚ count as penultimate.

Turning to (24), where final H-L˚ is realized H-HS, if the S of the HS% boundary tone links to a floating H, just as it linked to a final or penultimate H in (21), we would have expected H-LS, without the L raising to H. However, since H-LS doesn't occur anywhere in the language, we could also consider H-LS → H-HS to be a motivated late phonetic adjustment.

We thus see that the HS% boundary tone does not give us evidence of a floating H. The only evidence we have, in fact, are those few cases where a final LH rising tone alternates with L˚. Of course there could be more than one source of L˚: LH for these last cases versus an abstract floating mora for the others. It can be noted in this context that none of the nouns we have cited with L˚ reconstruct with final *H or *LH in Proto-Bantu. As far as we know, they also do not have such tones in closely related languages, although this should be further investigated. While H tone is sometimes associated with causative ***-i-*** and passive ***-ʊ-***, though typically with restrictions, this is not likely a property of Proto-Bantu (see Hyman 2022 and references cited therein).

This is what we know about the L˚ tone as of now, still somewhat a mystery. A separate issue is how to analyze it synchronically. In the blue verb tone pattern a delinked H of a final LH rising tone is motivated, while representations of nouns like **n-gutu˚** 'girl' as **/n-gutŭ/** or **/n-gutu ˊ/** is not. More useful in this context would be the extra mora idea, i.e. **/n-gutuu/** or **/n-gutu μ/**. A separate question, assuming tone features, is whether the phonetic falling L vs. level L˚ distinction should ultimately have a tone feature difference in the output.

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