Metatony in Abo (Bankon), A42

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1. What is metatony?

Within traditional Bantu studies, the term *metatony* was introduced to characterize tonal alternations on the final vowel of the class 15 *ku-* infinitive:

> "The final element has to be set up as *-a* (low) or *-á*... (with metatony: high if an object follows, low otherwise)." (Meeussen 1967: 111)

Canonical examples in (1) from Songye (L23) (Stappers 1964) are cited by Dimmendaal (1995:32) and Schadeberg (1995: 176) as representative of the phenomenon:

(1)   a.   ku-sep-a   'to laugh (at)'   (without metatony)
       b.   ku-sep-<u>á</u> mfumu   'to laugh at the chief'   (with metatony)

As seen in (1a), an infinitive ends with L(ow) tone in isolation, but acquires a final H(igh) if followed by an object noun phrase. Both Dimmendaal and Schadeberg point out that the "metatonic" final H is lacking when the infinitive is followed by a connective (genitive) NP:

(2)   ku-sep-a kwǎ-mbwá   'the laughing of the dog'   (without metatony)
      to laugh   of-dog

Citing several additional cases, Hadermann (2005: 405) shows that metatony can also be observed in verb conjugations built historically on the *ku-* infinitive, e.g. the present tense in Lega (D25) (from Meeussen 1971: 20):

(3)   a.   be-ko-bolót-<u>á</u> [↓]mózígi   'they are pulling the rope'   (with metatony)
       b.   be-ko-bolot-a tɔŋgɔ   'they are pulling also'   (without metatony)

Note that metatony occurs before the object noun in (3a), but not before the adverbial in (3b). Thus, to summarize, metatony originally referred to constructions which involve both the *ku- ... -a* infinitive and a following object NP.

Since (1967), the term *metatony* has been extended to describe tonal alternations in certain conjugated verb forms which clearly do not involve the infinitive *ku-* prefix, as well as cases where the following constituent need not be an object (to be exemplified below):

> "Metatony is the term used for those cases where the tone of the final (inflectional) suffix of certain verb forms is (underlyingly) high before an object and low otherwise." (Schadeberg 1995: 176)

> "La métatonie consiste à attribuer à la finale d'une forme nominale-verbale ou d'une forme verbale un ton haut si celle-ci est suivie d'un 'complément'. Bien que dans la majorité des exemples cités par les sources, la métatonie opère dans le contexte classique 'Verbe + Objet', nous n'utilisons pas le terme d'objet car la fonction syntaxique du syntagme qui suit le verbe ne nous paraît pas toujours facile à identifier." (Hadermann 2005: 404)
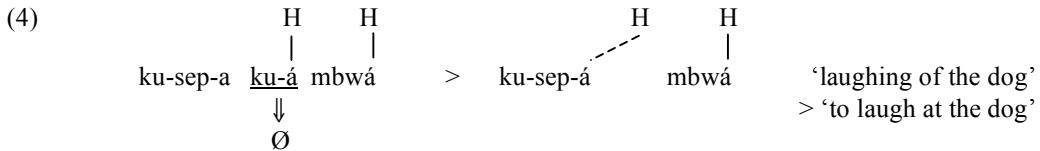
"Dans la phrase ɓàsàa la silhouette tonale d'un verbe conjugué avant pause est sensiblement différente de celle du même verbe, conjugué au même temps, mais suivi d'un mot quelconque." (Bitjaa-Kody 1990: 364)

In synchronic analyses, the general assumption appears to be that the final H is derived:

"In the languages concerned here [Duala (A24) and Basaa (A43)], a verb-final vowel becomes high when it is followed by a complement." (Costa & Kula 2008: 313)
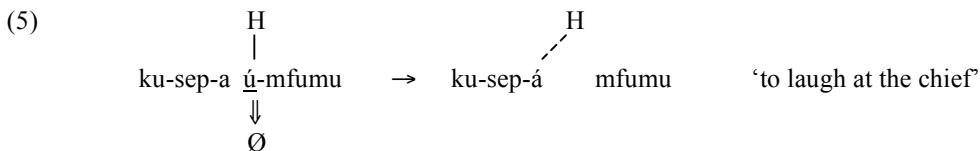
"...metatony, whereby in certain T[ense]A[spect] forms a high tone replaces a low or falling tone on post-radical syllables... if and only if the verb is not phrase-final, that is, followed by other material such as an object or adverbial." (Nurse 2008: 48)

Attention has, however, been more focused on the question of how metatony originates. Two diachronic origins have been proposed for an historical *H developing into metatony: (i) from the connective (genitive) *-á morpheme (Angenot 1971; but see Hadermann 2005: 408-9); (ii) from the initial *H "augment" morpheme on the following noun phrase (Dimmendaal 1995, Schadeberg 1995). The first proposal naturally accounts for why metatony is often restricted to infinitive + object. As seen in the hypothetical derivation in (4), when the segments of the class 15 connective marker /ku-á/ drop out, its H tone is reassociated to the final vowel of the preceding infinitive verb:

(4)

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        H   H                    H    H
        |   |                     ⸜    |
ku-sep-a ku-á mbwá    >    ku-sep-á       mbwá       'laughing of the dog'
        ⇓                                            > 'to laugh at the dog'
        Ø
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While such a development might seem reasonable, even intuitive, Hadermann (2005: 408-9) rightly points out the absence of evidence that a connective morpheme was ever present in the forms that become metatonic. In Bantu, when the *ku-* infinitive is used verbally, e.g. to mean 'to laugh at the dog', the NP object normally follows without any marking, as in (1b) and (3a).

Turning to the second proposed origin, as schematized in (5), when the vowel of the hypothetical class 1 "article-like" augment *ú- drops out, its H reassociates to the final vowel of the infinitive:

(5)

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        H                        H
        |                         ⸜
ku-sep-a ú-mfumu    →    ku-sep-á     mfumu       'to laugh at the chief'
        ⇓
        Ø
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This proposal makes two predictions: (i) metatony should only occur in languages which do not today have an overt augment; (ii) metatony could, at least originally, occur only before post-verbal nominals which could take the historical initial H augment, e.g. not kinship terms, proper nouns, etc. The languages cited by the above authors seem to support the first prediction, but probably not the second. (In any case, if metatony did occur before all objects, one could always propose that there had been an analogical extension to augmentless nominals.) While this reconstruction might account for why it is only objects which condition metatony, it would not be able to explain why the process is limited to infinitives in some languages. Still, Dimmendaal finds the augment source so appealing that he even extends it to account for pre-object verb-tone raising in distant non-Bantu Yoruba and Kana:

"...the metatony rule is so specific and similar in detail in the languages discussed above, that a hypothesis of an original augment causing the tonal alternation provides the most plausible explanation, despite the conjectural nature of this hypothesis." (Dimmendaal 1995: 37)

A more recent idea is that metatony is related to focus and the "conjoint-disjoint" distinction attested in a number of Bantu languages (see §2):

> "...in Duala and Basaa, where a tonal distinction with respect to a following complement can still be seen, we have [immediate after verb] focus as opposed to initial focus, pointing to the fact that the tonal effects... are the indicator of focus (via prosodic structure)." (Costa & Kula 2008: 313)

> "[Metatony] is often described as just a tonal process, but it is striking that it has certain characteristics linking it to focus.... This suggests it has a syntactic-semantic function...." (Nurse 2008: 204)

Perhaps these authors would also seek a relationship between focus and the presence vs. absence of the augment, as sometimes occurs, e.g. synchronically in Luganda (Hyman & Katamba 1993) and diachronically in Makhuwa (van der Wal 2009: 32, 121). However, in the relevant languages the observed tonal changes occur not only before an object, but before any post-verbal constituent occurring within the same clause. Either the original metatony has been analogized to new contexts or, as we shall argue, focus and conjoint/disjoint distinctions are not related to the canonical metatony observed in Songye, Lega etc., where infinitives are not expected to be followed by focused elements.

Finally, somewhat vaguer is the characterization of metatony as simply marking a special relation between the verb and what follows:

> "Even if the syntactic details are not known, it is clear that metatony is a syntactic marking of a certain relationship between a verb and a class of complements which includes what we call the object." (Schadeberg 1995: 176)

> "Nous préférons avancer que la métatonie est un phénomène suprasegmental conditionné par la syntaxe de l'énoncé qui consiste à mettre en évidence le lien « verbe-complément » ...." (Hadermann 2005: 409)

Despite the above, varying ideas, we suspect everyone would agree with Nurse (2008: 204): "The nature and origin of this whole tonal phenomenon needs more examination...." It is with this in mind that we now turn to consider "metatony" in Abo.

2. "Metatony" in Abo

In this section we describe apparent metatony in Abo (Bankon), a Cameroonian NW Bantu language designated as A42 in Guthrie's (1967-71) referential system. Spoken by an estimated 12,000 speakers (SIL, 2001), Abo is located to the north of Duala and to the west of Basaa, to which it is closely related, although it is more closely to Barombi (A41) (Lamberty 2002). Previous work on Abo includes Spellenberg (1922), Ittman (1926-7) and Atindogbe (1990, 1996). The present study is based on a yearlong field methods course, based on the speech of Achille Massoma, a 35 year old from Màŋgàmbà to whom we owe our deepest thanks, as well as to the other participants in the class.[1]

As seen in (6) Abo verb forms show three final tone patterns, illustrated with the L tone verb pɔ̀ŋɔ̀ 'make, create':[2]

(6)	suffix tone	TAM	pre-pause	+ bìtámbé 'shoes'	
a.	-L ~ -H	present	ǎ pɔ̀ŋɔ̀	ǎ pɔ̀ŋɔ́ bítámbé	'he is making shoes'
		past	à pɔ́ŋɔ̀	à pɔ́¡ŋɔ́ bítámbé	'he made shoes'
		perfect	à má pɔ̀ŋɔ̀	à má pɔ̀ŋɔ́ bítámbé	'he has made shoes'

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[1] Nadine Borchardt, Roslyn Burns, Toni Cook, Thera Crane, Rachele Delucchi, Stefanie Fauconnier, Greg Finley, Clare Sandy.

[2] As seen in the translations, the stative is also used transitively as a resultative, while the subjunctive is also used as a hortative. Depending on the verb, there may also be vowel modifications in the stative and/or subjunctive.

b.	-L	*future*	à káà pɔ̀ŋɔ̀	à káà pɔ̀ŋɔ̀ bìtámbé	'he will make shoes'
c.	-H	*stative*	à pòŋó	à pòŋó bìtámbé	'he has made shoes'
		imperative	pɔ̀ŋɔ́	pɔ̀ŋɔ́ bìtámbé	'make shoes!'
		subjunctive	sá pɔ́↓ŋɔ́	sá pɔ́↓ŋɔ́ bìtámbé	'let's make shoes!'

As seen, verbs either alternate between -L and -H, always end -L, or always end -H. As also seen, while the tone of the prefix of the class 8 noun *bìtámbé* 'shoes' is underlyingly L, it sometimes becomes H, to be discussed below.

The first question is how to analyze the metatony-like alternation in (6a) diachronically. First, it is highly unlikely that it derives from an infinitive + *H connective marker: There is no trace of *ku-* or any reason to think that an infinitive is involved in these forms, either synchronically or diachronically. In fact Abo does not have an infinitive, the verbal noun which does exist has a quite different form: *pɔ̀ŋlà(ghà) dí bítámbé* 'making of shoes'.

The tonal alternations in (6a) are also not likely to derive from a *H augment. The tenses in (6a) acquire a final -H even when followed by a non-object. That is, the final -L observed before pause becomes -H before all parts of speech and all constituents within the clause:

(7)	a.	ǎ sɔ̀ŋsè	'he is counting'	
	b.	ǎ sɔ̀ŋsé mɔ́↓ní	'he is counting money'	__ noun
	c.	ǎ sɔ̀ŋsé àmù mɔ̀ní	'he is counting this money'	__ demonstrative
	d.	ǎ sɔ̀ŋsé mɔ́	'he is counting it'	__ pronoun
	e.	ǎ sɔ̀ŋsé látâlá	'he is counting now'	__ adverb
	f.	ǎ sɔ̀ŋsé nì mìnnyɔ̀ɔ́ myé	'he is counting with his fingers'	__ preposition
	g.	ǎ sɔ̀ŋsé nì/tɔ̀ sák	'he counts and/or dances'	__ conjunction

Since pronouns, adverbs, prepositions and conjunctions are not marked by an augment in Bantu, a different source of the tonal alternations must be sought.

We now turn to the second question, which is how to interpret the alternating -L ~ -H tenses in (6a) synchronically. We first show that it has nothing to do with marking focus or with the tightness of the bond between the verb and what follows, e.g. Meeussen's (1959) "conjoint" vs. "disjoint" distinction. As seen in (8), metatonic -L → -H occurs independently of where the focus is within the sentence:

(8)	a.	*"neutral" focus*	mǎn ǎ sɔ̀ŋsé másɔ̌ŋ mé	'the child is counting his teeth'
	b.	*subject focus*	mǎn ndì ǎ sɔ̀ŋsé másɔ̌ŋ mé	'the CHILD is counting his teeth'
	c.	*non-subject focus*	mǎn ǎ sɔ̀ŋsé ndí másɔ̌ŋ mé	'the child is counting his TEETH'

Whether unmarked for focus as in (8a), or whether the focus marker occurs pre- or post-verbally, as in (8b,c), the verb /sɔ̀ŋsè/ 'count' is realized with a final -H. In (8c), the post-verbal focus marker *ndí* can indicate focus on the object, the lexical verb, or both. Hence, (9a) can be the answer to any of the questions in (9b) (Burns 2011):

(9)	a.		kém, mǎn ǎ sɔ̀ŋsé ndí másɔ̌ŋ mé
			no, child he count FOC teeth his
	b.	Is the child counting his fingers?	*Answer:* No, the child is counting his TEETH
	c.	Is the child cleaning his teeth?	*Answer:* No, the child is COUNTING his teeth.
	d.	Is the child cleaning his fingers?	*Answer:* No, the child is COUNTING HIS TEETH.

Since the same three-way distinction in final tone is observed in corresponding relative and other backgrounded clauses, where most focus distinctions are typically neutralized in Bantu, we can conclude, contrary to Costa & Kula (2008: 313), that the final -H is not an "indicator of focus":

(10)		*suffix tone*	*TAM*	*pre-pause*	+ bìtámbé 'shoes'	'the person who...'
	a.	-L ~ -H	*present*	mùt nú pɔ̀ŋɔ́	mùt nú pɔ̀ŋɔ́ bítámbé	'is making shoes'
			past	mùt nú póŋɔ́	mùt nú pɔ́ˈŋɔ́ bítámbé	'made shoes'
	b.	-L	*future*	mùt nú káà pɔ̀ŋɔ̀	mùt nú káà pɔ̀ŋɔ̀ bìtámbé	'will make shoes'
	c.	-H	*stative*	mùt nú pòŋó	mùt nú pòŋó bìtámbé	'has made shoes'

Can one however exclude the possibility that the -L ~ -H tenses realize a tighter bond between the verb and what follows? That is, that they represent a "conjoint" form of the verb? We follow Hyman & Watters (1984) in identifying two types of "conjoint" vs. "disjoint" distinctions:

(11) a. Type 1: syntactic [±focus]
 b. Type 2: morphologized [±F]

Consider the following characterization of syntactic [-focus] conjoint vs. [+focus] disjoint in Chibemba (M42):

> "[Conjoint forms] throw emphasis (if any) on what follows the verb, or more precisely, are strongly linked to what follows (and formally therefore *cannot* stand at the end of the sentence...) [Disjoint forms] throw emphasis on the verb itself, or more precisely, have only a weak link with what follows (and formally therefore may stand in mid-sentence or at sentence-end." (Sharman 1956: 30)[3]

More than tone can be involved in realizing the conjoint/disjoint distinction. In Chibemba the disjoint [+focus] present tense is marked by the prefix -la-, while the corresponding conjoint [-focus] is marked by -Ø- (Sharman 1956:40):

(12) a. *disjoint:* bušé mu-<u>la</u>-peep-a 'do you (pl.) smoke'?
 b. *conjoint:* ee tu-peep-a sekelééti 'yes, we smoke cigarettes'
 c. *disjoint:* bámó bá-<u>la</u>-ly-á ínsoka 'some people actually eat snakes'

While disjoint -la- must appear in a main clause final verb, as in (12a), both forms occur internally. In (12b) the verb is conjoint because it is [-focus]; in (12c) -la- appears because the verb is included in the focus. There are also (and sometimes only) tonal affects. As seen in (13a), disjoint verb forms are marked by spreading the H tone to the end of the word (Sharman 1956: 40):

(13) a. *disjoint:* nga mw-aa-tób-<u>á</u> úmutóndó, bálééisaafúlwá
 'if you BREAK the pot, they will get angry'
 b. *conjoint:* nga mw-aa-tób-a úmutóndó, tsáákuláatápíla múnsupa
 'if you break the POT, we will have to use a calabash to draw water'

The H of /-tób-/ 'break' does not spread in the conjoint form in (13b). As seen above in (9) and (10), the -L ~ -H alternations in Abo clearly have nothing to do with type 1 conjoint vs. disjoint.

In type 2 systems different tense-aspect-mood-polarity features result in a similar strong vs. weak prosodic bond between the verb and what follows. In Haya (JE22), all H tones of [-F] verbs are deleted in non-final position, while [+F] verbs retain their H tones (Hyman & Byarushengo 1984: 71-2; Hyman & Watters 1984: 260). In the following examples we see that the affirmative of the P1 (today past tense) is [-F], while the corresponding negative is [+F]:

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[3] In most type 1 systems, conjoint verb forms can occur at sentence-end if in a relative clause, where focus distinctions are minimized or prohibited. Thus, the final verb form in a sentence such as 'I picked up the book that fell' would be conjoint.

(14) a. [-F] bá-á-kôm-a 'they tied' (today) b<u>a</u>-a-k<u>o</u>m-a Káto 'they tied Kato'
      b. [+F] ti-bá-á-kom-a 'they didn't tie' ti-bá-á-kom-a Káto 'they didn't tie Kato'

In general, [+F] forms are intrinsically focused, "marked" values of tense, aspect, mood and polarity (Hyman & Watters 1984), while the "unmarked" values tend to be [-F], as in Haya:

(15) *Affirmative* [-F] *Affirmative* [+F] + *All Negatives* = [+F]
      0 tense (present habitual) PROG (progressive)
      P1 (today past tense) PERF (perfect 'to have already...')
      P2 (yesterday past tense) EXP (experiential 'to have done before')
      PH (past habitual) PRST (persistive 'still')
      F1 (today future) SJCT (subjunctive)
      F2 (general future) IMPER (imperative)

The most clear indication of this is that all negatives are [+F], indicating that they form a less tight bond with what follows. That this is not the case in Abo is seen in the negative forms in (16).

(16)   suffix tone TAM   pre-pause   + bìtámbé 'shoes'
      a.   -L ~ -H   *present*   à tá pòŋò   à tá pòŋó bítámbé   'he isn't making shoes'
                        past   à tá ꜜpóŋò   à tá ꜜpóꜜŋó bítámbé 'he didn't make shoes'
                        perfect   à tàá pòŋò   à tàá pòŋó bítámbé   'he hasn't made shoes'
      b.   -L   *future*   à táá pòŋò   à táá pòŋò bìtámbé   'he won't make shoes'
      c.   -H   *stative*   à tá pòŋó   à tá pòŋó bìtámbé   'he hasn't made shoes'
      d.   -L ~ -H   *imperative* ɔ̀ tɔ́ɔ̀ póŋò   ɔ̀ tɔ́ɔ̀ pɔ́ꜜŋɔ́ bítámbé 'don't make shoes!'
                        subjunctive sá táà póŋò   sá táà pɔ́ꜜŋɔ́ bítámbé 'let's not make shoes!'

As can be observed, the three final tone patterns of the affirmative forms in (6) stay the same in the negative except (16d). If inherent focus or markedness were conditioning a disjoint absence of metatony, we would expected the imperative and subjunctive negatives to be the least prone to the -L ~ -H alternations seen in (16d). We thus safely conclude that -L ~ -H alternation does not correspond with [±focus] or [±F]. Instead, the alternation has a strictly phonological basis, as we shall now see.

3. A phonological analysis

Given that there are only three suffix tone patterns on verbs, there are several possible phonological analyses:

(17)   suffix tone analysis #1 analysis #2 analysis #3 (etc.)
      a.   -L ~ -H   /-LH/   /-Ø/   /-H/
      b.   -L   /-L/   /-L/   /-L/
      c.   -H   /-H/   /-H/   /-HL/

In analysis #1, the metatonic tenses would end in a /-LH/ suffix sequence distinct from both /-L/ and /-H/. The H would be lost in final position, but kept in medial position. While simplifying a final LH to L would not be surprising, there would be no explanation for why the LH sequence is not simplified to a downstepped H after a H root, e.g. ǎ ꜜsálá bítámbé 'he is using shoes' (not *ǎꜜsáꜜlá bítambé). In analysis #2, the metatonic tenses would end in a toneless specification, which would acquire a L finally, but a H medially—the latter assignment being quite arbitrary. Analysis #3 assumes a contrast between /-H/, /-L/ and /-HL/. The /-H/ of the metatonic tenses would become -L finally by a common process of final lowering. In order to keep these distinct from those verb forms which remain -H in all contexts, these latter would have to be analyzed as having an underlying /-HL/ suffixal sequence. In

the remainder of this section we will argue for analysis #3, beginning with a demonstration that the contrasting /-HL/ representation is well motivated.

To make the argument we begin by observing in (18) that the -L ~ -H alternation not only raises the final tone of the verb, but also the L tone of a following noun prefix:

(18) a. L-L   →   H-L   ǎ sɔ̀ŋsé má-kɔ̀n   'he is counting plantains'   (mà-kɔ̀n)
          L-LH   →   H-LH   ǎ sɔ̀ŋsé má-cèé   'he is counting eggs'   (mà-cèé)
          L-H   →   H-H   ǎ sɔ̀ŋsé má-kɔ́ɔ́   'he is counting stones'   (mà-kɔ́ɔ́)
      b. L-L-L   →   H-L-L   ǎ sɔ̀ŋsé má-kàkò   'he is counting crabs'   (mà-kàkò)
          L-L-H   →   H-L-H   ǎ sɔ̀ŋsé má-ɓèndé   'he is counting cups'   (mà-ɓèndé)
          L-H-H   →   H-H-H   ǎ sɔ̀ŋsé má-póndó   'he is counting holes'   (mà-póndó)

In addition, when the noun has a floating L prefix, e.g. in class 9/10, a following L or LH stem will instead undergo raising:

(19) a. (L)-L   →   HL   ǎ sɔ̀ŋsé njɔ̂k   'he is counting elephants'   (ˋn-jɔ̀k)
          (L)-LH   →   H↓H   ǎ sɔ̀ŋsé mbé↓ɛ́   'he is counting pots'   (ˋm-bɛ̀ɛ́)
          (L)-H   →   H   ǎ sɔ̀ŋsé mbyɔ́   'he is counting dogs'   (ˋm-byɔ́)
      b. (L)-L-L →   H-L   ǎ sɔ̀ŋsé mbónjì   'he is counting flowers'   (ˋm-bònjì)
          (L)-L-H →   H-↓H   ǎ sɔ̀ŋsé ŋgɔ́↓ndɔ́   'he is counting beans'   (ˋŋ-gɔ̀ndɔ́)
          (L)-H-H →   H-H   ǎ sɔ̀ŋsé mbɔ́tí   'he is counting clothing'   (ˋm-bɔ́tí)

The forms in (20) show that the prefix of the second noun in a 'N₁ of N₂' construction undergoes the same L → H raising after a H connective marker, here /dí/, agreeing with class 5 /ìbók/ 'place':

(20) a. L-L   →   H-L   ìbók dí má-kɔ̀n   'place of the plantains'   (mà-kɔ̀n)
          L-LH   →   H-LH   ìbók dí má-cèé   'place of the eggs'   (mà-cèé)
          L-H   →   H-H   ìbók dí má-kɔ́ɔ́   'place of the stones'   (mà-kɔ́ɔ́)
      b. L-L-L   →   H-L-L   ìbók dí má-kàkò   'place of the crabs'   (mà-kàkò)
          L-L-H   →   H-L-H   ìbók dí má-ɓèndé   'place of the cups'   (mà-ɓèndé)
          L-H-H   →   H-H-H   ìbók dí má-póndó   'place of the holes'   (mà-póndó)
      c. (L)-L   →   HL   ìbók dí njɔ̂k   'place of the elephants'   (ˋn-jɔ̀k)
          (L)-LH   →   H↓H   ìbók dí mbé↓ɛ́   'place of the pots'   (ˋm-bɛ̀ɛ́)
          (L)-H   →   H   ìbók dí mbyɔ́   'place of the dogs'   (ˋm-byɔ́ɔ́)
      d. (L)-L-L →   H-L   ìbók dí mbónjì   'place of the flowers'   (ˋm-bònjì)
          (L)-L-H →   H-↓H   ìbók dí ŋgɔ́↓ndɔ́   'place of the beans'   (ˋŋ-gɔ̀ndɔ́)
          (L)-H-H →   H-H   ìbók dí mbɔ́tí   'place of the clothing'   (ˋm-bɔ́tí)

This demonstrates the common observation that V+NP and N+NP structures are parallel in Bantu, hence potential inputs to tone raising.

On the other hand, if the following word does not have a L- prefix, either overt or floating, it will not undergo raising, even if the form itself begins L:

(21) a. *demonstrative:*   ǎ sɔ̀ŋsé àyí njɔ̀k   'he is counting those elephants'
                             ìbók dí àyí njɔ̀k   'the place of those elephants'
      b. *preposition:*   ǎ sɔ̀ŋsé nì ndíŋ yě   'he is counting with his friend'
      c. *particles:*   ǎ sɔ̀ŋsé kì màkàkò   'he is also counting crabs'
                             à tá sɔ̀ŋsé tɔ̀ mùt   'he isn't counting anyone'

To account for the raising of a L prefix, one might naturally propose a rule of H tone spreading (HTS). However since a L prefix + H root becomes H-H, not the expected H-↓H, we must prevent the prefixal L from conditioning a downstep. There are two possible interpretations: (i) rather than HTS, the L of a

noun prefix is featurally changed to H in the above two contexts (i.e. L → H); (ii) the L of a noun prefix is deleted in the above contexts, followed by HTS. We adopt and illustrate this second interpretation in 'he is counting stones' in (22).

(22)   ǎ sɔ̀ŋsé + mà-kɔ́ɔ́   →   ǎ sɔ̀ŋsé + ma-kɔ́ɔ́   →   ǎ sɔ̀ŋsé + má-kɔ́ɔ́
    ∧ | | | ∨   ∧ | | ∨   ∧ | |⌐‑‑ ∨
    LH L H   L H   LH L H   Ø H   LH L H   H

While there are thus two aspects to "metatony" in Abo, final L → H on the verb + raising of the prefix tone of a following noun, it is important to note that the latter occurs only with the former. Crucially, L prefixes are not raised after verb forms which end -H (recall (6c), repeated below in (23a)):

(23) a. -H *stative*   à pòŋó   à pòŋó bì̀támbé   'he has made shoes'
         imperative   pɔ̀ŋó   pɔ̀ŋó bìtámbé   'make shoes!'
         subjunctive sá pɔ́[↓]ŋɔ́   sá pɔ́[↓]ŋɔ́ bìtámbé   'let's make shoes!'
    b. -H *stative*   à pòŋó   à pòŋó [↓]mbɔ́tí   'he has made clothing'
         imperative   pɔ̀ŋó   pɔ̀ŋó [↓]mbɔ́tí   'make clothing!'
         subjunctive sá pɔ́[↓]ŋɔ́   sá pɔ̀[↓]ŋɔ́ [↓]mbɔ́tí   'let's make clothing!'

As seen in (23b), H tone nouns which have a floating L prefix are realized with a downstep in (23), which does not occur after a metatonic -H (cf. (19)). Similarly, pronouns, which also have a floating L prefix, are realized H in (24a), but ↓H in (24c).

(24)   *suffix tone*   *TAM*   *pre-pause*   + byɔ́ 'them' (class 8) < /bì-ɔ́/ or /ˋbí-ɔ́/
    a.   -L ~ -H   *present*   ǎ pɔ̀ŋɔ̀   ǎ pɔ̀ŋó byɔ́   'he is making them'
             past   à pɔ́ŋɔ̀   à pɔ́[↓]ŋɔ́ byɔ́   'he made them'
             perfect   à má pɔ̀ŋɔ̀   à má pɔ̀ŋó byɔ́   'he has made them'
    b.   -L   *future*   à káà pɔ̀ŋɔ̀   à káà pɔ̀ŋɔ̀ byɔ́   'he will make them'
    c.   -H   *stative*   à pòŋó   à pòŋó [↓]byɔ́   'he has made them'
             imperative pɔ̀ŋó   pɔ̀ŋó [↓]byɔ́   'make them!'
             subjunctive sá pɔ́[↓]ŋɔ́   sá pɔ́[↓]ŋɔ́ [↓]byɔ́   'let's make them!'

Our proposal to account for this difference is that metatonic tenses end with an underlying /-H/, which undergoes H → L finally. Final -H tenses are underlying /-HL/, which simplifies to -H, with its delinked L conditioning downstep on a following H.

However, since nouns and pronouns begin with a (linked or floating) L tone prefix, we have not been able to demonstrate that the observed downsteps are indeed due to the L of suffixal /-HL/. In order to do this we need to test the hypothesis by placing an unambiguously /H/-initial constituent immediately after the /-HL/ tenses. This is rather hard to find, as most words in Abo begin with a L tone. One clear source of an initial H constitutent is a headless connective, e.g. class 8 *bí mán* 'those of the child, the child's', illustrated in (25).

(25)   *suffix tone*   *TAM*   *pre-pause*   + bí mán 'the child's' (e.g. bìtámbé 'shoes')
    a.   /-H/   *present*   ǎ pɔ̀ŋɔ̀   ǎ pɔ̀ŋó bí mán   'he is making the child's'
             past   à pɔ́ŋɔ̀   à pɔ́[↓]ŋɔ́ bí mán   'he made the child's'
             perfect   à má pɔ̀ŋɔ̀   à má pɔ̀ŋó bí mán 'he has made the child's'
    b.   /-L/   *future*   à káà pɔ̀ŋɔ̀   à káà pɔ̀ŋɔ̀ bí mán 'he will make the child's'
    c.   /-HL/   *stative*   à pòŋó   à pòŋó [↓]bí mán   'he has made the child's'
             imperative pɔ̀ŋó   pɔ̀ŋó [↓]bí mán   'make the child's!'
             subjunctive sá pɔ́[↓]ŋɔ́   sá pɔ́[↓]ŋɔ́ [↓]bí mán 'let's make the child's!'

In (25a) we observe the expected final H on the verb. Also as expected, in (25b) the final vowel of verb in the future tense in (25b) remains L. Crucially, the downstep preceding *bí mán* in (25c) shows the effect of the final L of the posited /-HL/ suffixal tone sequence. Our analysis is thereby confirmed: The "metatonic" tenses in (25a) end in a /-H/ suffix, which becomes L finally. Non-alternating final-L tenses such as the future in (25b) end /-L/, and non-alternating final-H tenses end /-HL/.

The last point to clarify is that the final /-H/ of metatonic tenses will be preserved only if the postverbal element occurs within the same clause. The H → L rule thus applies in recapitulative right-dislocations such as in (26).

(26) a. mǎn ǎ sɔ̀ŋsɛ̀ tɔ̀ nyé kì   'the child is counting, even he'
      b. ǎ sɔ̀ŋsɛ̀ mǎn   'he is counting, the child'
          (cf. ǎ sɔ̀ŋsɛ́ mán 'he is counting the child')

In (27) we formulate the rule as lowering the H suffix of a verb at the end of an intonational phrase:

(27) $H_{verb.sfx}$ → L / ____]$_{IP}$

With this established, we consider further evidence for the analysis in the following two subsections.

4. Curious further evidence concerning /H/ verbs

In our treatment of the different verb-tone patterns in Abo, we have thus far considered only /L/ verbs, where one can easily see the -L ~ -H alternation on the verb itself. Although /H/ verbs always end H, e.g. *sálá* 'use', the effect of the different tonal suffixes can be seen on the following word. Thus, the prefix *bì-* of *bìtámbé* 'shoes' is raised in (28a), but not in (28b,c).

(28)		*suffix tone*	*TAM*	*pre-pause*	+ bìtámbé 'shoes'	
	a.	/-H/	*present*	ǎ ꜜsálá	ǎ ꜜsálá bítámbé	'he is using shoes'
			past	à sálá	à sálá bítámbé	'he used shoes'
			perfect	à má ꜜsálá	à má ꜜsálá bítámbé	'he has used shoes'
	b.	/-L/	*future*	à káà sálá	à káà sálá bìtámbé	'he will use shoes'
	c.	/-HL/	*stative*	à sélé	à sélé bìtámbé	'he has used shoes'
			imperative	sálá	sálá bìtámbé	'use shoes!'
			subjunctive	sá sálá	sá sálá bìtámbé	'let's use shoes!'

The fact that *bì-* stays low after *sálá* in (28b) shows that the future has to have a /-L/ suffix which blocks HTS. Similarly, the floating L prefix of `*mbótí* 'clothing' is raised (or deleted) in (29a), where the noun follows the verb without a downstep:

(29)		*suffix tone*	*TAM*	*pre-pause*	+ `mbótí 'clothing'	
	a.	/-H/	*present*	ǎ ꜜsálá	ǎ ꜜsálá mbótí	'he is using clothing'
			past	à sálá	à sálá mbótí	'he used clothing'
			perfect	à má ꜜsálá	à má ꜜsálá mbótí	'he has used clothing'
	b.	/-L/	*future*	à káà sálá	à káà sálá ꜜmbótí	'he will use clothing'
	c.	/-HL/	*stative*	à sélé	à sélé ꜜmbótí	'he has used clothing'
			imperative	sálá	sálá ꜜmbótí	'use clothing!'
			subjunctive	sá sálá	sá sálá ꜜmbótí	'let's use clothing!'

In (29b,c), where the floating L prefix follows the /-L/ or /-HL/ suffixal tones, either of the two floating L tones in sequence would have conditioned the downstep. /H/ tone verb roots thus support the analysis.

Further evidence for the proposed underlying verb suffix tones comes from a curious, morpheme-specific tonal effect: a H tone verb becomes L before the complementizer *là* 'that', *but only in the tenses that exhibit metatony*! Thus, the verb *sáá* 'make' is realized *sàà* in (30a), but not in (30b,c).

(30)		suffix tone	TAM	final	+ là 6á jé 'that they eat'	
	a.	/-H/	*present*	ǎ ꜜsáá	ǎ sàà là 6á jé	'he is making them eat'
			past	à sáá	à sàà là 6á jé	'he made them eat'
			perfect	à má ꜜsáá	à má sàà là 6á jé	'he has made them eat'
	b.	/-L/	*future*	à káà sáá	à káà sáá là 6á jé	'he will make them eat'
	c.	/-HL/	*stative*	à séé	à séé là 6á jé	'he has made them eat'
			imperative	sáá	sáá là 6á jé	'make them eat!'
			subjunctive	sá séè	sá séè là 6á jé	'let's make them eat!'

Any H tone verb of however many syllables and any syllable shape will show the same alternations before *là*; This is illustrated again with the verb *yɔ́* 'say' in (31).

(31)		suffix tone	TAM	final	+ là kém (lit. 'that no')	
	a.	/-H/	*present*	ǎ ꜜyɔ́	ǎ yɔ̀ là kém	'he says no'
			past	à yɔ́	à yɔ̀ là kém	'he said no'
			perfect	à má ꜜyɔ́	à má yɔ̀ là kém	'he has said no'
	b.	/-L/	*future*	à káà yɔ́	à káà yɔ́ là kém	'he will say no'
	c.	/-HL/	*stative*	à yó	à yó là kém	'he has said no'
			imperative	yɔ́	yɔ́ là kém	'say no!'
			subjunctive	sá yó	sá yó là kém	'let's say no!'

Note that *là* conditions lowering whether it introduces an indicative or subjunctive clause:[4]

(32)	a.	ǎ ꜜtɔ́ŋ jé	'he wants food'
	b.	ǎ tɔ̀ŋ là á ꜜjé	'he wants to eat' (lit. 'he$_i$ wants that he$_i$ eats [indicative]')
		ǎ tɔ̀ŋ là à jé	'he wants him to eat' (lit. 'he$_i$ wants that he$_j$ eat [subjunctive]')
		ǎ tɔ̀ŋ là mǎn à jé	'he wants the child to eat'

In the above examples, pre-*là* lowering is illustrated with H tone verbs, e.g. *tɔ́ŋ* 'want', since its effect would be vacuous on a L tone verb. *là* may however be assumed to remove the suffix /-H/ of L tone verbs, e.g. *kɔ̀ŋgè* 'remember':

(33)		suffix tone	TAM	+ là à jé 'that he eat'	
	a.	/-H/	*present*	ǎ kɔ̀ŋgè là à jé	'he remembers to eat'
			past	à kóŋgè là à jé	'he remembered to eat'
			perfect	à má kòŋgè là à jé	'he has remembered to eat'
	b.	/-L/	*future*	à káà kòŋgè là à jé	'he will remember to eat'
	c.	/-HL/	*stative*	à kɔ̀ŋgé là à jé	'he has remembered to eat'
			imperative	kɔ̀ŋgé là ɔ̀ jé	'remember to eat!'
			subjunctive	sá kɔ̀ŋgé là à jé	'let's remember to eat!'

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[4] In these examples *jé → jé* in the subjunctive. Note that it is possible that the agreement marker which occurs in relative clause formation is L because it precedes *là*. This is particularly clear in subject relatives such as *mǎn nù là nú kɔ́* 'the child who fell' (roughly: 'child who (*nú → nù*) that who fell'), which provide the only context in which the class 1 marker /nú/ is realized with a surface L tone. The second /nú/ which occurs before the verb maintains its underlying /H/.

The lowering effect of *là* on a preceding H tone verb in metatonic tenses is significant for several reasons. First, it shows that "metatony" is not a raising process: Just looking at the L tone verbs in (33), one might at first conclude that "raising" is blocked before *là*. However since the H tone of the verb root is also affected, as in (30)-(32), a lowering process is clearly needed. Second, the fact that lowering is limited to metatonic tenses cannot be due to these latter tenses having an underlying /-L/ suffix. This is seen from the absence of lowering in the future tense, which unambigously ends /-L/. Finally, lowering before *là* supports our decision to set up the relevant tenses with a final /-H/ suffix. Consider the metatonic past tense forms of the verbs /kàŋà/ 'refuse (to s.o.)' and /nísé/ 'ask (for)' in (34).

(34) a. à káŋà   à nísé   'he refused/asked'
     b. à ká˧ŋá bítámbé   à nísé bítámbé   'he refused/asked for shoes'
     c. à káŋà là à jé   à nìsè là à jé   'he refused/asked that he eat'

As seen in (34a), the past tense has a prefixal H- tone which associates onto the first syllable of *káŋà*. According to our analysis the underlying representation would thus be /´+ kàŋá/, with the second syllable being realized L before pause. The final H is maintained in (34b), with the H + L-H sequence being realized as H-↓H. While the prefixal H- is not realized before a H tone verb such as *nísé* we do observe that the prefix of /bì-támbé/ undergoes HTS after both verbs, as we expect from a metatonic tense. What's of particular interest are the realizations in (34c). Since /´ + kàŋá/ is realized *káŋà*, it is clear that only the final H is lowered before *là*. The prefixal H is presumably protected by the /L/ of the root. However, note that /´+ nísé/ is realized nìsè, i.e. all L. What this means is that the prefix H + root H + suffixal H are all lowered before *là*. While we cannot explain why là has the effect that it does, its lowering effect supports our contention that the so-called metatonic tenses have an underlying /-H/ suffixal tone, not /-L/. As seen in (30c)-(32c), the tenses which end /-HL/ are notably not affected.

5. Variation and the focus marker ndí

Up until now we have proceeded as if the facts were completely clean and without variation. Quite late in our investigation we noted that our one speaker occasionally accepted forms in which a L prefix remained L after a metatonic H. Thus, in addition to the expected form in (35a), (35b) was also judged to be acceptable, but less preferred:

(35) a. ă sòŋsé bí-támbé   'he is counting shoes'
     b. ă sòŋsé bì-támbé

However, when the noun begins with a floating L prefix, e.g. /`njòk/ 'elephant(s)', /`mbyó/ 'dog(s)', the L cannot be maintained in the output:

(36) a. ă sòŋsé njòk   'he is counting elephants'   (*ă sòŋsé njòk)
     b. ă sòŋsé mbyó   'he is counting dogs'   (*ă sòŋsé ↓mbyó)

We therefore assume that sporadic cases like (35b) are innovative, something which should be investigated in more depth and with more speakers of different ages.

Another variation occurs with the focus marker ndi, which occurs either after a preverbal constituent or immediately after the verb. Curiously, *ndi* has a L tone when preverbal, but a H tone when postverbal. Thus recall the sentences from (8), repeated in (37a,b).

(37) a. *subject focus*   măn ndì ă sòŋsé másŏŋ mé   'the CHILD is counting his teeth'
     b. *non-subject focus*   măn ă sòŋsé ndí másŏŋ mé   'the child is counting his TEETH'
     c.   măn à káà sòŋsè ndí màsŏŋ mé 'the child will count his TEETH'

Our initial hypothesis was that *ndi* was underlyingly /L/, but became H in post-verbal position by the same HTS process that affects nouns. However, the sentence in (37c) convinced us that postverbal *ndi* must be underlyingly /H/ as it here follows the future verb ending in suffixal -L. We thus recognize postverbal /ndí/.[5]

What is much more puzzling is the effect that /ndí/ has (or does not have) on what follows. Compare the following sentences with those seen earlier in (6):

(38)

	suffix tone	TAM		
a.	/-H/	present	ǎ pɔ̀ŋɔ́ ndí bítámbé	'he is making SHOES'
		past	à pɔ́↓ŋɔ́ ndí bítámbé	'he made SHOES'
		perfect	à má pɔ̀ŋɔ́ ndí bítámbé	'he has made SHOES'
b.	/-L/	future	à káà pɔ̀ŋɔ̀ ndí bìtámbé	'he will make SHOES'
c.	/-HL/	stative	à pòŋó ↓ndí bìtámbé	'he has made SHOES'
		imperative	pɔ̀ŋɔ́ ↓ndí bìtámbé	'make SHOES!'
		subjunctive	sá pɔ́↓ŋɔ́ ↓ndí bìtámbé	'let's make SHOES!'

As seen, *ndí* is transparent to HTS: In (38a) the verb seems to have spread its final -H onto /bì-támbé/ right through *ndí*. No such effect is seen in (38b), where the future ends /-L/, or in (38c), where the final /-HL/ causes /ndí/ to be downstepped. Now compare the following sentences containing /bí mán/ 'those of the child, the child's' with the forms seen earlier in (25).

(39)

	suffix tone	TAM		
a.	/-H/	present	ǎ pɔ̀ŋɔ́ ndí bí mán	'he is making the child's'
		past	à pɔ́↓ŋɔ́ ndí bí mán	'he made the child's'
		perfect	à má pɔ̀ŋɔ́ ndí bí mán	'he has made the child's'
b.	/-L/	future	à káà pɔ̀ŋɔ̀ ndí ↓bí mán	'he will make the child's'
c.	/-HL/	stative	à pòŋó ↓ndí ↓bí mán	'he has made the child's'
		imperative	pɔ̀ŋɔ́ ↓ndí ↓bí mán	'make the child's!'
		subjunctive	sá pɔ́↓ŋɔ́ ↓ndí ↓bí mán	'let's make the child's!'

In (39a) *ndí* occurs in a H plateau from the verb onto the complement. In (39b), *bí mán* is downstepped after *ndí,* while in (39b) both *bí mán* and *ndí* itself are downstepped. In order to account for both sets of forms we must assume that the same suffixal tone occurs on *ndí* as on the main verb: /ndí + H/ in (39a), /ndí + L/ in (39b), and /ndí + HL/ in (39c). This suggests that *ndí* was once a verb, perhaps a copular verb, as it appears cognate with such forms found in other Bantu languages.

Despite the neatness of the above demonstration, again we find minor variation. Thus we have as well recorded *pɔ̀ŋɔ́ ndí bìtámbé* (without downstep) and *à káà pɔ̀ŋɔ̀ ndí bítámbé* (with HTS). Over a long period of elicitation varying the forms and contexts on different days, we found these variants to be in the minority. (We did not find such variations in the forms in (39).) In order to figure out exactly what the range of variations is, a much broader investigation involving more speakers would be required.

6. Summary and Conclusion

From the previous sections we can conclude that Abo metatony: (i) is not likely derived from the *H of either the connective or the augment; (ii) is not related to marking objects, focus, or the conjoint-disjoint distinction; (iii) can be accounted for in terms of underlying suffix tones on the verb; (iv) is best analyzed as an underlying /-H/ suffix which becomes L at the end of an intonational phrase. We speculate that such lowering may be part of a general tendency to lower final Hs in this region; cf.

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[5] It is of course entirely possible that preverbal /ndí/ becomes a L by a process similar to lowering before *là*, as it likely is a left-dislocation. là may not follow ndì, however, in (37a).

Tunen (A44) where, with the loss of final vowels, underlying trisyllabic /L-H-H/ is realized as disyllabic L-L, but /L-H-L/ is realized L-H, i.e. without lowering because the H is not final (Mous 2003: 286-7). Although metatony has been identified in mostly westerly Bantu languages, arranged below by Guthrie zone, more work is required in almost every case, especially languages such as Bakweri, which allows more verb tone patterns than Abo (Marlo & Odden 2007):

(40)	A22 Bakweri	B30 Pove	C25 Mboshi	D13 Mituku	L23 Songye
	A24 Duala	B42 Sango	C30 Binza	D14 Enya	
	A42 Abo	B70 Teke	C61 Mbole-Tooli	D25 Lega	
	A43 Basaa			D26 Binja-Sud	
	A53 Bafia			D30 Bodo	
	A71 Eton			D43 Nyanga	
	A72 Ewondo			D54 Bembe	

Relating the above cases to Eastern Bantu type 1 conjoint/disjoint distinctions is tenuous, at best: Even the distributional properties argue against such an identification. First, although metatony cannot occur when the verb is final in its clause, it occurs non-finally in all kinds of clauses. Second, both conjoint and disjoint verb forms can occur finally and non-finally, depending on clause type, as indicated in (41).

(41)

		final	*non-final*
conjoint	*main clause*	-	+
	relative clause	+	+
disjoint	*main clause*	+	+
	relative clause	-	-

Note also that conjoint/disjoint distinctions can be marked non-tonally and other than by differences in suffixal tone. One thing they do have in common so far is that metatony and conjoint/disjoint are both restricted by specific TAMs and polarity, but this may be only an accident.

The final question is what we should do concerning terminology. One possibility is to restrict the term metatony to Meeussen's (1967) original characterization of -H vs. -L suffixal tone alternations in infinitive verb + object constructions. The other is to allow it to refer to -H vs. -L suffixal tone alternations in any verb form and involving any a postverbal constituent. If we map out these variations, we arrive at the table with the four logical possibilities in (42).

(42)

	before object only	*before any word*
only infinitive verb forms	Songye, Lega	
various verb forms		Abo, Basaa

While both the Songye/Lega type and the Abo/Basaa type are now amply attested, the other cells and combinations most likely also exist.

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