Stem Tone Patterns of the Lacustrine Bantu Languages

John Goldsmith
The University of Chicago

0. Introduction

The comparative study of Bantu tone systems is still in its infancy. In the explorations of the present paper, I am going to look at the patterns of stem-tone assignment in some of the Eastern Bantu languages. In each of these languages, a pattern of tones is spread over the stem of the verb, a pattern which is determined in part by the lexical tone, High or Low, of the verb radical, and in part by the tense of the verb as a whole. Within a particular subset of the Eastern Bantu languages, the Lacustrine group, a simple set of tone patterns can be found, and I shall use this set of patterns as my point of departure in this comparative survey.

My goal is to explain what the three tone patterns that can be found across the Lacustrine group are; to discuss some interesting twists in which the patterns have evolved in a transparent way in some of these languages; to point out some Lacustrine languages where the evolution is far from transparent; and to look outside the Lacustrine group a bit for some comparison at a slightly higher level.

I should begin with some comments on the basic genetic relations of the northeastern Bantu languages that I will adopt for the purposes of this paper. Derek Nurse has offered us an interesting hypothesis concerning the genetic relationships among these languages; he suggests a division into four groups: (1) the Lacustrine group, (2) the Northeast group in a strict sense, (3) the Thagicu group , and (4) the Chaga-Gweno group. These are given in (1).

(1) *Analysis of Northeastern Bantu languages according to Derek Nurse (1979)*

I. Lacustrine

A. Luhya

B. E. Nyanza/Suguti
- 1 Suguti: Jita, Kwaya, Ruri, Regi
- 2 E. Nyanza
  - b2.1 Gusii
  - b2.2 Kuria, Zanaki, Bata, Ngurimi, Shashi

C. Interlacustrine
- 1 North Nyanza: Ganda, Soga, Gwere
- 2 Rutara: Nyoro, Tooro, Chiga, Nyankore, Haya, Zinza, Nyambo, Kerewe
- 3 Western Highlands: Rundi, Rwanda, Ha, Vinza, Hanganza, Shubi

II. North East Group

A. Coast
- 1 Sabaki
  - 1.1 Pokomo
  - 1.2 Mijī Kenda
  - 1.3 Swahili
- 2 N. Pare S. Pare, Taveta
- 3 Saghala

B. Greater Ruvu
- 1 West Ruvu: Gogo, Kagulu, Sagara
- 2
  - 2.1 Setua: Shambala, Bondei, Ngulu, Zigula
  - 2.2 Lugulu
  - 2.3 East Ruvu: Doe Dwere, Zalamo, Kutu, Kami

C. West Tanzania/Langi (WTL)
- 1 Langi
- 2
  - 2.1 West Tanzania: Sumbwa Sukuma Nyamwezi
  - 2.2 West Tanzania: Kimbu, Nyaturu, Nilyamba

III. Thagicu

A. Sonjo

B. Kikuyu, Embu, Cuka, Mwimbi

C. Meru

D.
1 Kamba
2 Daiso

IV. Chaga-Gweno

A. Gweno

B.
1 Western Kilimanjaro
2 Central Kilimanjaro
3 Rombo

The Lacustrine group itself is divided, Nurse suggests, into three subgroups: (1) the Luhya subgroup, north of Lake Victoria, (2) the East Nyanza/Suguti subgroup, and (3) the Interlacustrine group, largely south of Lake Victoria. Nurse's data base do not extend further south or west essentially than the Kenya/Tanzania/Burundi/Rwanda area described here, so he leaves the question open as to whether the Lacustrine group (or the Interlacustrine subgroup, for that matter) extends further west or south into Zaire or Zambia.

Since comparative work of the sort I am suggesting requires a reasonably complete, in-depth study of the tonal system of a language, it is rather fortunate that each subgroup of Nurse's Lacustrine group offers at least one well-studied tonal system. Closely related to Luhya is Bukusu, studied by Cheryl Austin in her 1974 dissertation, and in Suguti is CiRuri, studied in detail by David Massamba. In the Interlacustrine subgroup are several closely studied languages: in C1 is LuGanda, analyzed by Stevick and others; in C2 is Haya, analyzed by Hyman and Byarushengo; in C3 is KiRundi, analyzed by a number of scholars, though in the matter at hand I will use primarily the analysis done jointly by the present author and Firmard Sabimana. Also to be included in the Interlacustrine group are MaShi, analyzed by Louise Polak-Bynon, and KiHunde, analyzed by myself (Goldsmith to appear a); both languages are spoken in eastern Zaire.

When we look at the tone patterns of the verbs in the Lacustrine group, we find the following general pattern. Holding aside the subjunctive and imperative forms, each tense of the verb must be placed in one of three tonal patterns. One of the patterns is quite simple: it

consists simply of the lexical tone of the radical realized on the first vowel of the stem, that is, on the lexically appropriate vowel as in (2).

(2) CVC - VC -VC - V KiHunde: i-tém-er-a "to cut for [s.o]"
T H H

I will call this the Simple Stem Tone pattern. It is found in the infinitive, and in a few other tenses; in some languages it is restricted to the infinitive.

The second pattern that can be found consists of the Simple Stem Tone pattern followed by a High tone on the second vowel of the stem. This High on the second vowel is lowered to Low when the radical is High, so it looks on the surface like the second stem vowel takes on the opposite or polar tone of the immediately preceding radical vowel. This "second vowel" may be the second vowel of a long-vowel radical, or an extension vowel if the radical is short, or the Final Vowel if the radical is short and there are no extensions. The underlying pattern of what I will mnemonically call the "Second Vowel" or "V-2" pattern is given in (3); the second High tone is lowered to Low after a High radical by Meeussen's Rule, given in (4).

(3) "Second Vowel" Stem tone pattern

CVC - VC - VC - _ - V a ní mú [tém er a "I am cutting for him"
T H H L [H H
L

a ní mu [som ér a "I am reading for him"
H L[L H

(4) *Meeussen's Rule*

$$H \rightarrow L \ / \ H \_\_$$

We may think of this pattern as being the result of a simple High tone suffix, a suffix that will automatically associate autosegmentally to the leftmost unassociated vowel, by any version of the universal principles of tone association in the literature. (I am endebted for this point, in a slightly different guise, to Pulleyblank (1983)).

The third pattern found in the Lacustrine languages is the most interesting, and for want of a better term I will call it the "Complex

Stem Tone pattern". On the surface what we find in the tenses displaying this pattern is this: when the radical is High toned, then the the radical and the Final Vowel are High; when the radical is Low toned, the second vowel of the stem is High, and the Final Vowel is low. It is easily seen that the Complex stem tone pattern and the Second vowel pattern are identical when the radical is Low.

(5) *High tone radical* (KiHunde)
tu na [tém er an á "we cut for each other"

Low tone radical
tu na [som ér an a "we read for each other"

The first time attention was drawn to this pattern in the literature in a reasonably clear way was in Hyman and Byarushengo's (1984) analysis of Haya, circulated in 1981. But a study of a number of Lacustrine languages reveals the same pattern. It is strikingly seen in KiHunde, and can be found in Shi, Luganda, and Bukusu as well. I propose analyzing this pattern as an elaboration of the Second vowel pattern in the following way.

The Complex Stem tone pattern looks at first blush like a suffixal H tone that shifts back and forth between the second vowel of the stem and the Final Vowel. While this may be correct synchronically in some cases (Shi is the only case I have in mind), this is, I believe, not a plausible original account. What we have here rather is a tone pattern built from two High tone suffixes, one of which is exactly the V-2 suffix High tone; the other is a High tone that associates strictly to the Final Vowel. Just as we saw a moment ago, the V-2 High tone lowers to Low after a High tone radical; and thinking in similar terms, we can see that the High tone attached to the Final Vowel lowers to Low just in case the V-2 High tone surfaces as a High. Thus, technically speaking, all we need to say is that Meeussen's Rule iterates from left to right, from the radical rightward (or cyclically), first lowering the Second-Vowel High tone when it can, and then lowering the Final Vowel High tone when it can. Since the extensions have no tones of their own, the High tone on the second vowel and the High tone on the Final Vowel are adjacent on the tonal tier, and so when the 2nd-vowel High is High (that is, has not been lowered by a High radical), in that case the Final Vowel is lowered. Thus we get a double polarity: polarity beween the Radical vowel tone and the 2nd vowel tone, and a polarity between the 2nd vowel tone and the Final Vowel.

Having sketched, then, these three stem tone patterns, I would like to make the following points:

1. Languages where these three stem tone patterns dominate the verbal system can be found throughout the Lacustrine group;

2. There are some Lacustrine languages without these patterns; two that I am familiar with are KiRundi and CiRuri.

3. The other languages of the Northeast do not show clear indications of these patterns, to my knowledge.

4. There are at least two languages outside the Lacustrine area where these three patterns, or something like them, do show up: Tonga (M64, Zambia) and KiKongo, as described by Hazel Carter. I will return to these below.

5. Languages like KiKuyu and Shona have characteristics that are clearly similar to the picture I have sketched for the Lacustrine family. The system that I have proposed has two ways for tonal suffixes to be added in the verbal system: they can either be "inner layer" suffixes, in which case they associate with the 2nd vowel of the stem, or they can be "outer layer" suffixes, in which case they associate with the Final Vowel. I will return to the theoretical status of this contrast immediately. However, the point that this is an important distinction, and one that is maintained in other parts of the Bantu family, shines through in such accounts as Clements' of Kikuyu and Odden's of Shona.

In these accounts of Kikuyu and Shona, we see a consistent division of tonal association into the "inner layer" (Clements calls these the "mobile suffixes") and an "outer layer" (Clements' "stable suffixes") , where the outer layer in question consists precisely of the Final Vowel. Thus, for example, in certain subordinate forms in Shona that Odden discusses, a copy of the radical tone is reassociated with the Final Vowel, while in Kikuyu a separate melody is assigned to the inner layer and a tone from a separate melody, frequently LH, is assigned to the Final Vowel (these tones are shifted one vowel to the right by the general phrase-level principles of the language).

I would like to propose the following perspective which makes some sense out of this situation. We propose, essentially with Meeussen, that the Bantu verb stem is composed of a "base" on the first layer of the morphology; this includes the radical and any number of extensions. On the second layer of the morphology, the Final Vowel is added, and then the inflec-

tional prefixes (Object Markers, Tense Markers, etc.) Tonal suffixes can be added on either layer. Normally, free tones and free vowels will associate by the familiar association conventions, giving precedence to the leftmost tone and vowel on either tier; however, when a free vowel and a free tone have each been introduced on a given layer (and here the relevant case is introduction of each on Layer 2), then priority is given to associating them to each other. This principle is one that gives priority to alignment of phonology with morphology, it can be seen.

With this by way of background, it is a straightforward step to the conclusion that the Complex stem tone pattern was formed by a Layer 1 High tone suffix followed by a Layer 2 High tone suffix, with Meeussen's rule applying cyclically. In other cases, as with the Shona stem pattern that Odden describes, the Layer 2 tone can be something other than H – a copy of the radical tone, for example.

In some languages this account is no longer synchronically accurate. In Shi, where Proto-Bantu High is reanalyzed as Low and Proto-Bantu Low is reanalyzed as no tone, we still find the effects of the Complex Stem tone pattern. However, when the opposition is a purely privitive one, as it is now in Shi (that is, the opposition is between between Low and nothing), an account of the sort I have suggested is no longer directly formulable. (We should not be surprised that in Tonga, where the same reanalysis as is just mentioned for Shi has also occurred, the Complex Stem tone pattern has disappeared, and is replaced by a fixed Low pattern on the Final Vowel)

In the remaining space, I will touch on the additional points listed above.

1. The Lacustrine languages appear to be dominated by systems in which the stem tone patterns can be divided into the three patterns: Simple, V-2, and Complex. In the paper on Llogori (E 41) presented at this conference by Elizabeth Leung, for example, the same familiar division of the tenses was found. A list of some languages with the division of the tenses is found in the Appendix to this paper.

2. In CiRuri, which should by rights act like a Lacustrine language, we find a certain amount of controlled chaos instead. (See Massamba (1982), (1984), and Goldsmith (to appear b), which supersedes Goldsmith (1982)). First of all, CiRuri is the only language of those in this area that has been well-studied in which there is an across-the-board rightward shift of tone by one syllable (though Shi comes close to this). Thus a High tone on the radical will surface on the second vowel, a High on the second vowel will surface on the third vowel, and so on. Perhaps it is for this reason, perhaps for another – but there is no simple correspondence to our three way stem-tone division. There is a rough three way breakdown of the stem tone patterns

of the tenses, but the correspondence is less than clear. To be sure, in many tenses there are no suffixal high tones, i.e., High tones added suffixally by the tense to the radical's tone. There are two tenses (the present continuous and the subjunctive) where a High tone is underlyingly assigned to the Final Vowel if and only if the radical is underlyingly Low, a pattern that does not fit in directly with the picture I have just sketched, though it is reminiscent of the V-2 pattern; and in two of the tenses (the Recent Past formed with *-ire* suffix and no Tense Marker, and the *-li-* Future tense), the Final Vowel has a High tone and all preceding High tones are deleted (reminiscent of the situation in Haya). This pattern is conceivably related to the Complex pattern; but CiRuri fits into the larger comparative picture is not clear at this point. It may be that it has been wrongly classified.

KiRundi and Kinyarwanda fail to fit the pattern in a different way. In each, the V-2 and the Complex pattern have merged in favor of the V2 pattern, but the in each case, too, the lexical tone of the radical is lost; the radical's lexical tone only emerges in what correponds to the Simple stem pattern. Much more significantly, the tenses in no case govern or determine the stem tone pattern. The V-2 High tone appears under syntactically determined conditions: it appears in negative and subordinate clauses. The only respect in which tense governs stem tone is that in the Future and the Far Past, a High is always assigned to the Radical (overriding the lexical tone in these two tenses). (This effect is rendered a bit opaque in the Future tense for reasons internal to the system.)

3. Other languages of the northeast that have been closely studied (such as Kikuyu, Chaga, Digo, or even KiLangi, not to mention languages further south, such as CiCewa or Shona) display patterns corresponding to the three patterns under discussion here.

4. However, as noted above, CiTonga has a three way contrast in stem tone patterns: a Simple pattern, a V-2 pattern, and a third pattern (which in Goldsmith 1984 I called "the Stable Final Vowel pattern") in which the Low tone, now descendent of the original High tone, is fixed on the Final Vowel, and will not undergo the descendent of Meeussen's Rule (that is also the case for the Final Vowel High tone in CiRuri; whether this is significant or not remains to be seen). Still, the correspondence to the three patterns of the Lacustrine languages is not implausible at all.

In Kikongo (or rather, Zombo, the KiKongo language that Carter (1973) studied), we also find the three way stem tone split – and this quite surprisingly, in light of Zambo's placement in the west of Zaire. In fact, Carter gives the Past forms (with Tense Marker *-a-*) that may be derived directly from the V-2 pattern. She writes, "[t]he patterns throughout can be stated for [etymologically Low] radicals as 'high tone on first radical vowel'

and for [etymologically High] radicals as 'high tone on pre-radical vowel'. Inclusion of object infix, and addition of continuative suffix, make no difference to the description." (Carter, 1973). This is easily interpretable as the V-2 pattern shifted leftward one vowel (a shift which is certain, in light of the realization of the High radical's tone on the pre-radical vowel).

**High*		**Low*	
he saw	w-á-mon-a-anga	he carried	w-a-nát-a-anga
he remembered	w-á-sungaman-a-anga	he forgot	w-a-vílakan-a-anga

The Complex pattern can also be found. This pattern is given by Carter essentially for the infinitive, the Future, and Present forms, as well as for the Subjunctive when there is an Object Marker in the verb (without the Object Marker, the verb is all Low).

Infinitives:

remember: s-súngamená forget v-vilíkana

H H LH

In conclusion, then, I have tried in this paper to motivate a tripartite division of stem tone patterns in Lacustrine Bantu languages. This in turn requires, as a very minimum, the consistent analysis of verb tone patterns as compositions of stem plus inflectional prefixes; but in addition I have suggested that the stem can most usefully be analyzed as composed of a base (in Meeussen's terminology), constructed in the first layer of the morphology/phonology, and a Final Vowel, added at the beginning of the second layer. This distinction then leads to a historical account of the Complex Stem tone pattern. Finally, I have suggested that traces of this pattern in non-Lacustrine languages are most interesting places for comparative Bantuists to start looking for historical connections.

Notes

1. This paper comprises the second half of a presentation delivered at the African Linguistics conference, and, for better and for worse, perhaps, reflects the fact that it was intended as an oral presentation. I am endebted to Larry Hyman for some suggestions in 1982 that lead, directly and indirectly, to the material presented here. This material is based upon work supported by the National Science Foundation under Grant No. BNS-8421245.

APPENDIX

Language	I. Simple	II. V-2	III. Complex
1. *KiHunde*			
	Infinitive i-	Present Contin. a-SM	Present Habit. -na-
	Recent perfect a-me	Perstitive -ki-	Just past -ana-
	Today Future -e-	Simultaneous -sha-	
	Tomorrow Future -ká-	Neg. Pres. Habit. ta-	
2. *Bukusu*	Immediate Past Ø–ile	Present Ø–a	Perstitive sí
	Remote Past a–a	Remote Future li–a	Immediate Fut lá
		Near Past a–ile	Near Future xá
		Imperative –a	Perfect a

But in Bukusu, lexical tone has inverted: *H corresponds to present-day L, and *L corresponds to present-day H. Nonetheless, grammatical correspond-

In addition, there is a rule that pulls back a High tone from an Object NP into the verb stem when the post-radical vowels are all toneless.

5. *Shi*	Remote Past	Recent Past
	-á-(High)	-a-
	Present/Future	
	-áa-(High)	

Shi is also opaque in that an underlying (at least, etymological) High tone is generally realized as a downstep on the following vowel. (It may well be – it is likely – that Shi should be reanalyzed in this regard along the lines of Tonga; cf. text).