

This printout has been approved by me, the author. Any mistakes in this printout will not be fixed by the publisher. Here is my signature and the date _____

Tonal Merger in Medumba (Bamileke) Nouns

Kathryn Franich, Catherine O'Connor, and Jonathan Barnes
Boston University

1. Introduction

Medumba is spoken by about 210,000 people in southwestern Cameroon (Ethnologue 2010). The language is classified as 'Bantoid' due to the fact that it shares characteristics with Bantu languages, including some trace of a noun class system, but has lost a great deal of the trademark noun class agreement morphology that Bantu languages possess (Hyman & Voeltz 1971). Like other Grassfields languages and most of the Niger-Congo language family, Medumba is a tone language. The present study focuses on data collected in Cameroon in 2010 from two major communities of Medumba speakers around the greater Bangangté area. In eliciting data from a number of speakers of different ages, it became apparent that there was a certain amount of variation in the way that participants were using tone. One environment where this variation is particularly evident is in polar questions. In (1) we see the same target question pronounced by two different speakers.

(1)	a. Traditional Form:	a	jən	saŋ	ki
		—	—	—	—
	“Did he see the bird?”	3sg	see	bird	Q
	b. Innovating Form:	a	jən	saŋ	ki
		—	—	—	—
	“Did he see the bird?”	3sg	see	bird	Q

We see in (1) that while speakers who use the traditional form pronounce the noun *saŋ* ‘bird’ and the question particle *ki* with the same pitch level, in the innovating form the speakers pronounce the question particle a pitch level lower than the noun. As will be seen, the traditional form shown above is typically used by older speakers in the community, and the ‘innovating’ form is generally used by younger speakers, though some older speakers also use it.

* This work was supported by a grant from the National Science Foundation Linguistics Program and Office of International Science Education, #BCS 1026724, Medumba [BYV] Linguistic Fieldwork and Collaborative Language Development (PI: M.C. O'Connor). The National Science Foundation does not necessarily endorse the ideas and claims in this presentation. Thanks to our incredible language consultant and friend Ariane Ngabeu, and all of the wonderful people in Bangangté and Bangoulap who participated in this research. Thanks to Ange Berson Lendja for his role in coordinating and assisting with this research. Many thanks also to our research partners on this project, Nick Danis, Andrei Anghelescu, Anna Belew, Rachel Hawkes and Elodie Paquette, as well as to Kate Mesh, for valuable feedback.

This innovation is of interest beyond the description of Medumba itself. In Bantu languages broadly speaking, we find complex morphology with complex tonal phenomena. In most Grassfields languages, the segmental morphology has been greatly simplified. In the historical development of the Grassfields languages, many of the lost segments and syllables have given rise to what are known in this literature as “floating tones.” The tones originally linked to the lost syllables and segments persisted and morphed into the current tonal systems. In some Grassfields languages, these floating tones have largely been lost. However, in others, such as Medumba, they are still robust. Because of the particularly complex nature of the interactions of floating tones, and the relative resilience of Grassfields tone in the face of language change (Hyman & Tadadjeu 1976; Hyman 1985, 2003), the variation described above may provide an interesting glimpse into the way these tones can evolve. The present study aims to provide description and analysis of this variation and to explore the possible implications of variation on the Medumba tone system and grammar.

2. Tone and Downstep in Medumba

The Medumba language has been used as a striking example of the existence and behavior of floating tones. Hyman and Tadadjeu (1976) use the reconstructed Proto Mbam-Nkam word for ‘tooth’, a trisyllabic word with a tone melody of LLH, to show the segments these tones once likely associated to (2). In (2), the present-day Medumba form for the same word, we see that the remaining segment of the root of the word resembles the second syllable of the Proto Mbam-Nkam form, but that it has no segmental noun class prefix or second root syllable. Instead, a L floating ‘prefix’ tone and a H floating ‘suffix’ tone remain. (Floating tones are indicated by parentheses).

- | | | | |
|-----|-----------------|------------------|---------|
| (2) | Proto Mbam-Nkam | L L H
*lisoŋə | “tooth” |
| (3) | Medumba | (L) L (H)
sɔ | “tooth” |

(Hyman & Tadadjeu 1976: 69)

Voorhoeve (1967, 1971) proposed that the peculiar behavior of tone in Medumba could be explained by a series of these floating tones. Specifically, in a sequence of two high tones with an intervening floating low tone, the second of the two high tones would be downstepped, or pronounced at a lower pitch level than the preceding high tone (4).

- (4) $H(L)H \rightarrow H \downarrow H$

Using observed patterns of downstep in the Medumba associative construction *Noun₁ of Noun₂*, Hyman (2003) compares the Medumba phrase for ‘thing of child’ with its reconstructed Proto-Bantu form, including all segments that are now represented as floating tones (5).

- (5) Proto-Bantu reconstruction of ‘thing of child’ (Hyman 2003: 9)

<i>Proto-Bantu</i>	>	<i>Medumba</i>	
*kì-júmà + kí-á + mù-jánà		yú	!!mén ‘thing of child’
L H L H L H L		L H L <u>H</u> L H L	

In (5), we see that the final CV segment for each noun has been reduced, leaving floating L tones behind. The prefixes for both nouns have also been reduced (though the [m] from the prefix of Noun₂ remains and is now realized on the root of the noun), also leaving floating L tones behind. The associative marker *ki-á* has also been lost, leaving behind a H tone (underlined). In present day Medumba, the H tone associative marker is downstepped from the preceding floating L (also notated as (L) in this paper), and the H tone on *men* is downstepped another level, resulting in a ‘double-downstepped’ H. This example provides evidence that, not only can surface H tones undergo downstep in Medumba, but floating H tones can undergo downstep and reset the ceiling for subsequent levels of downstep.

Given Voorhoeve’s analysis of floating tones, it seems likely that the tone change shown in (1) (reproduced below) results from a difference in the way that speakers are applying downstep. Whereas in (1a) the speaker produces no downstep between the noun for ‘bird’ and the question marker, the speaker in (1b) does produce a downstep there.

(1)	a. Traditional Form:	a	jən	saŋ	ki
		—	—	—	—
	“Did he see the bird?”	3sg	see	bird	Q
	b. Innovating Form:	a	jən	saŋ	ki
		—	—	—	—
	“Did he see the bird?”	3sg	see	bird	Q

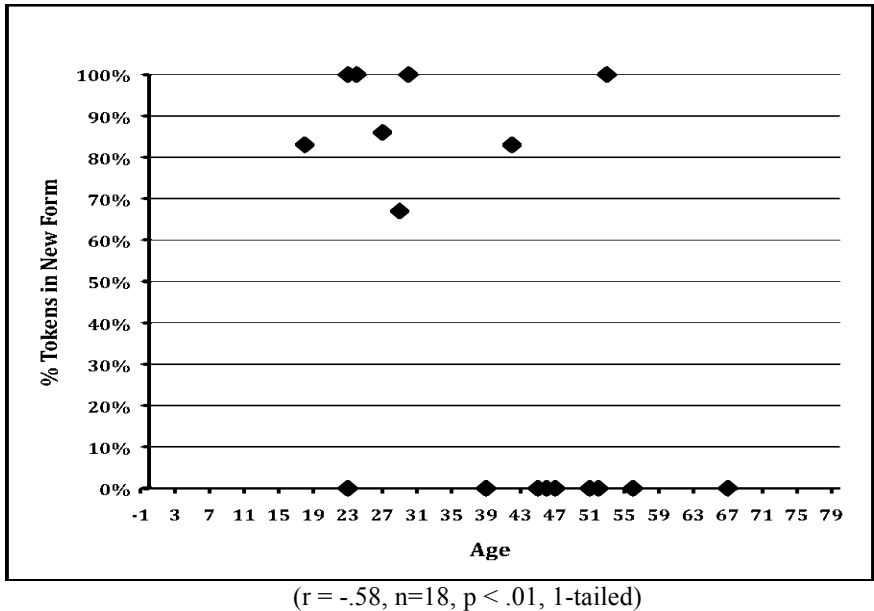
If we apply Voorhoeve’s analysis here, the downstep on the question marker in (1b) would then be the result of a floating L tone located between the H noun and the H question particle. The question becomes, then, where does this floating L come from? Is there a change originating with the noun, the question marker, or some other source? Or perhaps downstep in this case is not governed by lexical material, but rather by some kind of phrase-final lowering rule. The first goal of this paper will be to explore these possibilities and show that downstep most likely results from a change in the underlying tone structure of some nouns. The second goal of the paper will be to examine some of the external factors, such as age, gender, and education level, to see which factors are associated with use of the innovative pattern in (1b).

3. Medumba Noun Tone

In particular, Voorhoeve’s floating tones analysis has explained quite effectively why, in traditional dialects of Medumba, not all words pronounced as H on the surface behave in the same way: Voorhoeve (1971) proposed that some of these H words in fact had a floating H tone following the root of the noun, while others had a floating L after the root. The same was true for L tone words, so that in total, four underlying tone melodies for nouns were possible (6).

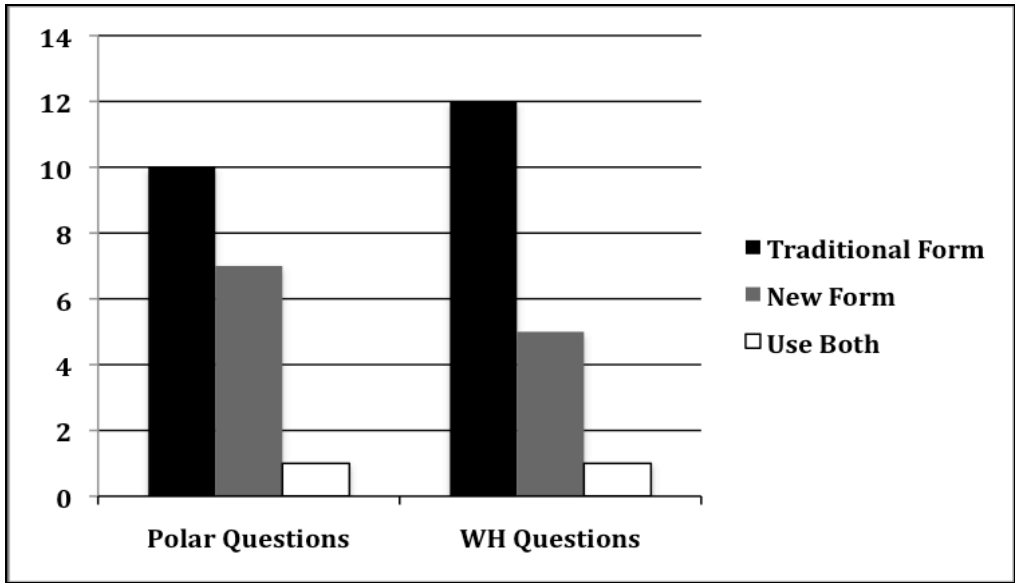
(6)	a.	(L) H (H)	—
		saŋ	“bird”
	b.	(L) H (L)	—
		mβɛ	“dog”

Figure 1. Percentage of Tokens Produced in the New Form by Age



Aside from age, there were no other demographic factors that correlated with use of the new form: Bantoum speakers were just as likely to use the new pattern as Bangoulap speakers, and neither gender, education level nor socioeconomic status was associated with the new pattern. Participants were found to use the new form in both polar and WH questions, though they were more likely to use the new pattern with polar questions (Figure 2).

Figure 2. Use of Traditional and New Forms by Question Type



Only two speakers produced exclusively the new form for all questions—other mostly innovating speakers would produce one token in the traditional form either in polar questions or in WH questions, or sometimes one in each question type. There was no clear pattern to the nouns that innovators produced in the traditional form (Tables 2 and 3), aside from the fact that the word ‘woman’ seemed to

be produced more frequently in the traditional form by innovators than any other noun. We believe this may be due to the fact that this noun is likely to be used more frequently in daily discourse than the other nouns.

Table 2. New form speakers' use of traditional tone patterns by noun token: Polar Questions

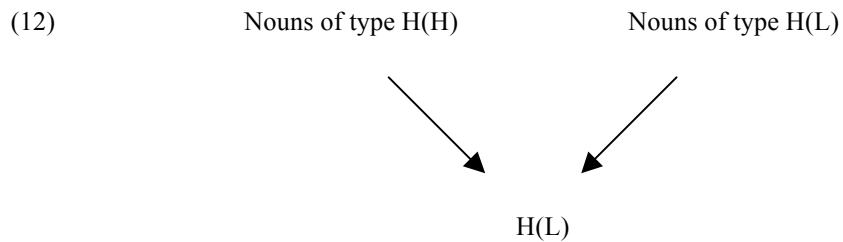
menzwi "woman"	vɔk "bone"	nzit "fat"	saŋ "bird"	mbap "dust"	tʃɛ "tree"
2	1	1	0	1	0

Table 3. New form speakers' use of traditional tone patterns by noun token: WH Questions

menzwi "woman"	vɔk "bone"	nzit "fat"	saŋ "bird"	mbap "dust"	tʃɛ "tree"
1	0	1	1	0	0

6. Discussion

These data indicate that the most likely cause for tone variation of the varieties described in Section 5 is a change in the underlying tone patterns of some nouns. Whereas in traditional dialects of Medumba one encounters two types of H tone nouns (one with a floating H tone and the other with a floating L), innovating forms of Medumba have begun to collapse the former group into the latter. What we seem to see, then, is a kind of tonal 'merger' whereby all H tone nouns are treated similarly, as H(L) nouns (12).



Evidence for this merger comes from two separate tonal processes in two different contexts: in polar questions, the H question marker is downstepped by a floating L between the noun root and the marker for all H nouns, and in WH questions, the toneless question particle absorbs a L (falling) tone after all H nouns.

One important thing to note about the merger is that nearly all speakers were accepting of both forms. There was very little social stigma associated with either form, indicating that the variation we observe is likely a more fundamental language change in progress, rather than a form of 'age-grading', whereby younger speakers seek to make their dialect distinctive from that of their elders as a way of forming a unique identity.

The merger is not 100% complete for most speakers, however, as most speakers still have some H nouns that they will treat with the traditional tone pattern in one or both question contexts, as shown in Tables 2 and 3. At this point, we believe that the preservation of the traditional tone pattern seems most likely linked with token frequency. Frequency of a different variety—the frequency of H(L) nouns as a type—seems to be implicated in the direction of change from H(H) to H(L). The Medumba lexicon for traditional speakers seems at this point to have fewer H(H) nouns than H(L) nouns, perhaps facilitating the acquisition of H(L)-related tone patterns over H(H) ones. In a sample of 116 nouns, 40% were found to be H(H) nouns, whereas 60% were H(L).

Speakers were more likely to use the innovating variety of the language in polar questions than in WH questions. This type of context-by-context, gradient innovation is a defining characteristic of language change via lexical diffusion (Wang 1969) or analogy (Kiparsky 1995). This context-related difference may also be linked to internal factors related to prosodic boundaries within which the two

bãm ! mén “the belly of the child”

We see that, in isolation, the word for ‘dog’ has a H tone, and the word for ‘belly’ has a L tone. When put into the associative constructions ‘the dog of the child’ and ‘the belly of the child’, each word gains another tone, in these cases creating a contour. ‘Bird’ has an additional L tone for a HL contour, and ‘belly’ has an additional H tone for a LH contour. For each of these examples, the additional tone essentially conveys a meaning translatable as ‘of’. Note that, in some contexts, the associative morpheme may match the tone of Noun₁ and thus no contour will arise.

Preliminary data were collected from speakers in the present study to examine their use of the associative marker. It was found that most speakers using the new noun tonal pattern in questions, as described above, seemed to produce their associative constructions similarly to the way that speakers using the traditional form would. What little difference there was in pronunciation of these forms had to do with the addition of a contour in some contexts where, as mentioned previously, a contour would normally not be pronounced in the traditional form. The fact that the associative construction has remained relatively intact for speakers using the newer tone forms in questions suggests that speakers identify the associative construction as one in which tone plays a particularly important role in expressing a grammatical relation. In another Mbam-Nkam language, Bangwa, Chumbow and Nguendgio (1991) argue that all lexical floating tones that formerly existed in the language have been lost, but that the language has preserved its morphological floating tones. It remains to be seen whether the tonal merger we observe in Medumba will eventually lead to the loss of lexical tones, and whether or not morphological tone will prove more resilient over time.

Tone change in Medumba is also linked to another parallel type of change taking place in the language, namely the process of noun class leveling. Though Medumba possesses only remnants of a noun class agreement system, the system can still be observed quite robustly in pronominal possessive constructions in the traditional form of the language. On the whole, innovating speakers seem to be making fewer noun class distinctions than their traditional counterparts. Additionally, innovating speakers have begun to lose noun/possessor alienability distinctions that traditional forms of the language would express through word order (15).

(15) Traditional speakers:

a. lāk sóm
 eye C3-1sg. Poss

“My eye”

b. jòm mbúí
 C2-1sg. Poss dog

“My dog”

Innovating speakers:

c. jòm lāk
 C2-1sg. Poss eye

“My eye”

In 15a and b we see that traditional speakers will express inalienability by positioning the possessor after the noun, and will use the opposite order when the noun is alienable, such as in the case of a body part, or a family member. In 15c we see that innovating speakers are beginning to lose this alienability distinction, positioning all pronominal possessors before the noun, regardless of alienability. This loss

of the alienability distinction is proceeding in a Guttman scale fashion among innovating speakers (Table 4).

Table 4. An Implicational Scale of Changes in Alienability

	New Tone Pattern	Kin Terms	Body Parts
Participant 2	✓	✓	✓
Participant 4	✓	✓	✓
Participant 7	✓	✓	✓
Participant 1	✓	✓	X
Participant 5	✓	✓	X
Participant 6	✓	X	X
Participant 9	✓	X	X
Participant 3	X	X	X
Participant 8	X	X	X
Participant 10	X	X	X
Participant 11	X	X	X
Participant 12	X	X	X

At first glance, this change may seem unrelated to the tone-related changes we discussed before. However, note that, in the case of pronominal possession, no associative marker is employed. Instead, the contour that surfaces on the word for ‘eye’ in 15a and 16a actually reflects the lexical floating L tone after the H root of that word. Note that the word for ‘wound’ is H(H) in the traditional dialect, and therefore no contour surfaces in the possessive context.

(16) Traditional speakers

a. lāk sóm
 HL H
 “My eye”

b. kəkó? sóm
 H H
 “My wound”

Innovating speakers

c. jòm lāk
 L H
 “My eye”

d. jòm kəkó?
 L L H
 “My wound”

Again, in 16c, we see that innovating speakers have begun to use exclusively the preposed ‘alienable’ order for possession. Therefore, not only is the alienability distinction lost, but the environment for

lexical floating tones on nouns to surface is also lost. This represents one more piece of the larger process of lexical tone leveling that we seem to be seeing throughout the language.

8. Conclusions

To conclude, we have shown that a change is in progress in Medumba, in which a tonal merger is taking place, collapsing two underlying tone melodies for H tones—H(H) and H(L)—into one type of H tone, H(L). The merger is linked with various internal and external factors. Internally, presence of the merger in a given context may be influenced by the prosodic structure of the noun and the particle that follows it. The direction of change from H(H) to H(L) appears to be driven at least in part by type frequency: H(L) nouns appear to be more common in traditional dialects of Medumba. In terms of external factors, age was the single most important factor in determining whether or not a speaker would employ the innovating tone patterns, with younger speakers significantly more likely to produce these forms. The merger shows patterns consistent with lexical diffusion or analogy, in that it appears to be taking place grammatical context by grammatical context, in a gradient manner (in some cases, noun by noun). The merger also shows interactions with a parallel process of noun-class and alienability leveling, in that both processes seem to be neutralizing the impact of lexical floating tones in the language. These data tell us, importantly, that lexical tone in Medumba is prone to variation and potentially to permanent leveling and change.

Preliminary data from the associative construction show us that tone in this construction appears to be more stable, in that speakers using the newer form with nouns in questions show little difference in their pronunciation of the associative construction when compared with traditional speakers. This may be due to the semantic load of the associative marker tonal morpheme, and to the fact that morphological tone in general may be less prone to leveling over time. Data from Bangwa, another Mbam-Nkam language, show that complete loss of lexical tone but preservation of morphological tone is a possible outcome.

References

- Chumbow, B. Sammy & Emile Nguendgio. (1991). Floating tones in Bangwa. *Journal of West African Languages* XXI, 1, 3-14.
- Hyman, Larry. (1985). Word domains and downstep in Bamileke-Dschang. *Phonology Yearbook*, 2, 47-83.
- Hyman, Larry. (2003). Why describe African languages? *Keynote Address: World Congress of African Linguistics 4/Annual Conferences on African Linguistics 34 Rutgers, June 18, 2003*.
- Hyman, Larry M. & Maurice Tadadjeu. (1976). Floating tones in Mbam-Nkam. *Studies in African Linguistics*.
- Kiparsky, Paul. (1995). The phonological basis of sound change. In John A. Goldsmith (Ed). *The Handbook of Phonological Theory*. Cambridge, Mass.: Blackwell, 640–70.
- Leben, William. (1973). *Suprasegmental Phonology*. PhD dissertation, MIT. Distributed by Indiana University Linguistics Club.
- Lewis, M. Paul (ed.). (2009). *Ethnologue: Languages of the World*, Sixteenth edition. Dallas, Tex.: SIL International. Online version: <http://www.ethnologue.com/>.
- Voorhoeve, Jan. (1967). Personal Pronouns in Bamileke. *Lingua* 17(4), 421–430.
- Voorhoeve, Jan. (1971). Tonology of the Bamileke Noun. *Journal of African Languages* 10, 44–53.
- Wang, William S.-Y. (1969). Competing changes as a cause of residue. *Language* 45, 9-25.