

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 two target questions pronounced by two different speakers.

(1) **Traditional Form:**

		á	↓jón	↓sáj	kí
(a)	"Did he see the bird?"	—	—	—	—
		3sg	see	bird	Q
(b)	"Did he see the dog?"	á	↓jón	↓mbú	↓kí
		—	—	—	—
		3sg	see	dog	Q

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Innovating Form:

	á	↓ jón	↓ sán	↓ kí
(c) "Did he see the bird?"	—	—	—	—
	3sg	see	bird	Q
	á	↓ jón	↓ mbá	↓ kí
(d) "Did he see the dog?"	—	—	—	—
	3sg	see	dog	Q

We see in (1) that while speakers who use the traditional form pronounce the noun *sán* 'bird' and the question particle *ki* with the same pitch level, they pronounce the question particle a pitch level lower than the noun *mbá* 'dog'. In the innovating form, speakers pronounce the two sentences with the same tone pattern: after both nouns, the question particle is lowered a pitch level. I refer to the first form as the 'traditional' form due not only to the fact that all previous literature documenting this language reflects this form, but also to the fact that older speakers, as will be seen, are significantly more likely to use this form. The 'innovating' form, in contrast, is significantly more likely to be used by younger speakers.

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 to which these tones once likely associated (2). In (3), 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	
		*lisónə	"tooth"

- (3) Medumba (L) L (H)
so “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 → H ↓ 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) (parentheses added to indicate floating tones)

<i>Proto-Bantu</i>	>	<i>Medumba</i>		
*kì-júmà + kí-á + mù-jánà		yú	ᵛmén	‘thing of child’
L H L H L H L		(L) H (L) (H)	(L) H (L)	
(pl. bà- jánà)		thing	AM	child

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-a* 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 *mén* ‘child’ 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, one possible reason for the tone change shown in (1) is that it results from a difference in the way older and younger speakers are representing the underlying tone structure of utterances like (1a,c), and thus where downstep is taking place. Whereas in (1a) the speaker would be producing no downstep between the noun for ‘bird’ and the question marker, the speaker in (1c) would produce a downstep there. If we apply Voorhoeve’s analysis here, the downstep on the question marker in (1c) 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 argue 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 (1c).

3. Medumba Noun Tone

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)¹.

(6)	a.	(L) H (H)		[—]
		səŋ	“bird”	
	b.	(L) H (L)		[—]
		mβu	“dog”	
	c.	(L) L (L)		[↘]
		mvən	“chief”	
	d.	(L) L (H)		[—]
		ndut	“cloud”	

In (6), we see that each noun has a floating L preceding it, once associated with a noun class agreement prefix. More importantly, though, each noun also has a H or a L floating tone following the noun root. As can be seen from the pitch track approximations in (6), there is a clear phonetic difference in the way that L nouns with a following floating L versus a following floating H are pronounced: the former is realized with a falling contour, whereas the latter is pronounced as a level L tone.

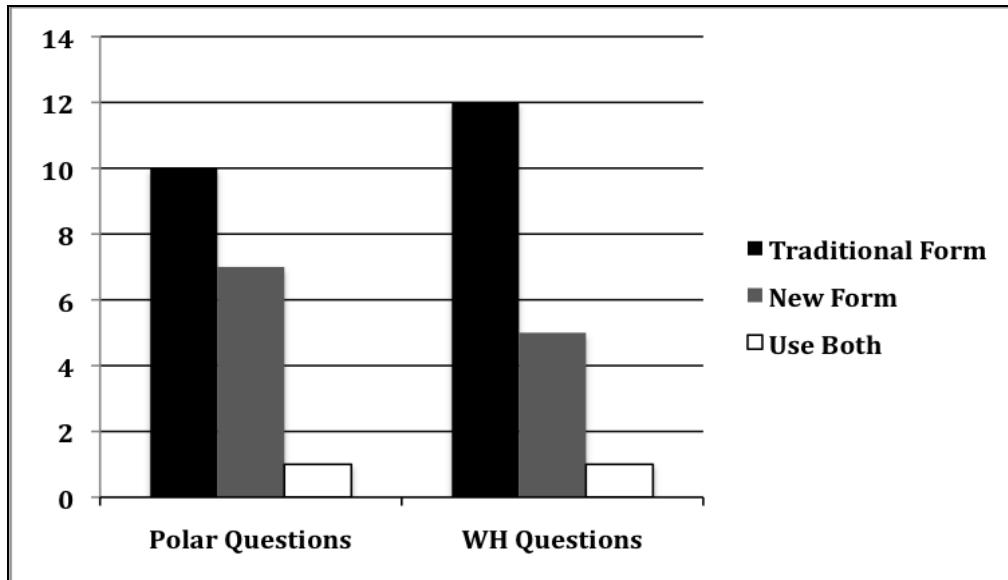
There is no difference, however, in the way that the two types of H nouns are pronounced: both have a level H realization. To be able to observe the difference in these two types of nouns, we must examine them in context. In (7) we see an example with *səŋ* ‘bird’ and *mβu* ‘dog’ as they are used in the traditional form, where ‘bird’ is a surface H with a floating H, and ‘dog’ is a surface H with a floating L. As indicated, the floating L tone on ‘dog’ will cause downstep on the H tone question marker *kí*, whereas there is no L tone after ‘bird’ to cause this to happen.

(7)	a.	səŋ	á	↓ jən	↓ səŋ	kí
		(L) H (H)	H	(L)H	(L)H(H)	H
		“bird”	3sg	see	bird	Q
			“Did he see the bird?”			

¹ The framework on which Voorhoeve's (1971) analysis is based predated autosegmental phonology (Goldsmith 1976) and much of the literature on the Obligatory Contour Principle (Leben 1973); clearly, we find many violations of the OCP in this analysis for Medumba nouns. Subsequent analyses (Hyman & Schuh 1974; Hyman & Tadadjeu 1976) propose that sequences of like tones can be absorbed into one tone and thus reduced; combining these tones ultimately has no effect on the tonal processes we present in this paper.

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 3).

Figure 3. 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 used more frequently in daily discourse than the other nouns.

Table 2. Frequency of new form speakers’ use of traditional tone patterns by noun token: Polar Questions (n=7)

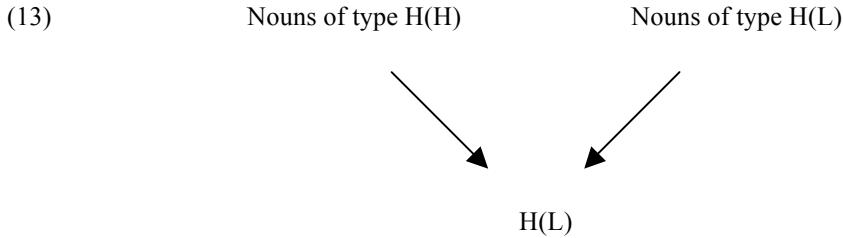
mènzwí “woman”	vók “bone”	nzít “fat”	sáj “bird”	mbáp “dust”	tʃú “tree”
2	1	1	0	1	0

Table 3. Frequency of new form speakers’ use of traditional tone patterns by noun token: WH Questions (n=5)

mènzwí “woman”	vók “bone”	nzít “fat”	sáj “bird”	mbáp “dust”	tʃú “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 (13).



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, a L (falling) tone is linked to the toneless WH question particle 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 among innovative speakers seems most likely linked with token frequency: for example, the word ‘woman’ occurs quite frequently in daily conversation, and thus may be more resistant to change than other nouns. Frequency of a different variety—the frequency of H(L) nouns as a type—may 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 noun 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 be linked to internal factors related to prosodic boundaries within which the two different question markers occur. Danis et al. (this volume) have shown that downstep in Medumba cannot take place within a phonological word. Parallel to this claim is that certain processes of lenition—namely spirantization and lateralization—are limited to occurring intervocalically and within prosodic words. If a word ending in a coronal or velar stop occurs pre-consonantly and shares a prosodic word with the particle that follows it, the stop will retain its underlying voiced form. Before a pause or at the right edge of a prosodic word, the stop will be devoiced.

Referring back to our two types of question particles (14), we see, again, that downstep occurs on the polar question (14a) but also that spirantization and lateralization must occur between a noun and the WH question particle (14b, c).

- (14)
- | | | | | | | | | | | | | |
|--|----|------|------------|--|----------------------------|-----|----------|------|-----|-----|----------|---|
| | a. | mvét | ‘relative’ | | á | jón | ↓ mvét | ↓ kí | | | | |
| | | | | | 3sg | see | relative | Q | | | | |
| | | | | | “Did he see the relative?” | | | | | | | |
| | b. | mvét | ‘relative’ | | à | bô | wó | zè | à | jên | mvél | à |
| | | | | | 3sg | is | who | COMP | 3sg | see | relative | Q |
| | | | | | “Who saw the relative?” | | | | | | | |

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 (16).

- (16) mvèn AM mén > > mvèn mén “the belly of the child”
 (L) L (L) (L) (L) (H) (L)

Based on the data presented so far, we see that the number of lexical floating tones is becoming reduced in the grammar of some speakers. This leads us to question whether this reduction process is limited to lexical tone, or whether it may also impact morphological tone like that found in the associative construction. To investigate this, 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 on Noun₁ in some contexts like those in (16) 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) show 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 (17). In the traditional form, the pronominal possessor generally follows inalienable nouns such as those that refer to body parts or family members, whereas it precedes alienable nouns.

- (17) Traditional speakers:

- a. lák
 (L) H (L)
 "eye"
- b. mbúí
 (L) H (L)
 "dog"
- c. lâk sám
 (L)HL H
 eye CLS5-1sg. Poss
 “My eye”

- d. **jàm** mɓúú
 L (L) H (L)
 CLS9-1sg. Poss dog

“My dog”

Innovating speakers:

- e. **jàm** lák
 L (L) H (L)
 CLS9-1sg. Poss eye

“My eye”

In 17e 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 (Guttman 1950) among innovating speakers (Table 4).

Table 4. An Implicational Scale of Changes in Alienability

	Participant Age	New Tone Pattern	Kin Terms	Body Parts
Participant 2	23	✓	✓	✓
Participant 4	24	✓	✓	✓
Participant 7	30	✓	✓	✓
Participant 1	18	✓	✓	X
Participant 5	27	✓	✓	X
Participant 6	29	✓	X	X
Participant 9	42	✓	X	X
Participant 3	23	X	X	X
Participant 8	39	X	X	X
Participant 10	45	X	X	X
Participant 11	45	X	X	X
Participant 12	46	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 present⁷. Instead, the contour that surfaces on the word for ‘eye’ in 17c actually reflects the lexical floating L tone after the H root of that word. As further evidence for this fact about possessive constructions, we see the word for ‘wound’ is L.H(H) in the traditional dialect, and therefore no contour surfaces in the possessive context.

⁷ A reviewer pointed out that the pronominal possessive constructions historically did involve the associative morpheme. For example, *jam* was actually derived from a combination of **ja-*, the class 9 marker, and *-a*, the segmental form of the associative marker (Muzenga 2003). The tone of this associative morpheme is no longer distinctive in the possessive morpheme, however.

(18) Traditional speakers

a. lâk súm
 (L) HL H
 “My eye”

b. kəkó? súm
 L H(H) H
 “My wound”

Innovating speakers

c. jùm lák
 L (L)H(L)
 “My eye”

d. jùm kəkó?
 L L H(H)
 “My wound”

Again, in 18c and d, we see that innovating speakers have begun to use exclusively the preposed ‘alienable’ order for possession. With the noun positioned after the pronoun, the floating tone on the noun in 18c will not have the opportunity to surface on the noun and form a contour. 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: there appears to be a higher number of H(L) nouns in the lexicon for 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 subject 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 (Chumbow & Nguendgio 1991), another Mbam-Nkam language, show that complete loss of lexical tone but preservation of morphological tone is a possible outcome.

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