

Animacy Constraints on Prepositional Objects in Medumba, a Grassfields Language

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and Catherine O'Connor

1. Introduction

Medumba is a Grassfields language spoken in West Province, Cameroon, by approximately 210,000 speakers. Medumba has four core locative prepositions: *mbàŋ* (next to), *mbá* (in front of), *nám* (behind), and *nùm* (on). This paper will focus on the preposition *nùm* (on), which we propose carries a tonal agreement morpheme whose value is [+animate].¹

In many analyses of Differential Object Marking (DOM), animacy is a major factor (Aissen 2003). A [+human] nominal is more likely to receive differential marking (case marking or verb agreement) than a [-animate] nominal (Woolford 2001). However, no research that we know of has addressed different realization patterns for animate vs. inanimate objects of *locative prepositions*. Thus when we encountered examples like (1a) and (1b), differential (prepositional) object marking was not an obvious explanation.

(1a)	3	5	(1b)	3 5	3
	num	tʃu		num	mɛn
	on	tree		on	child
	“On the tree”			“On the child”	

When the object of the preposition *nùm* denoted a human entity, speakers would tend to produce a tonal contour (LH) on the preposition (in (1b) above, a “3 5”). When the object of the preposition was inanimate, speakers would produce *nùm* with its unmarked level L tone (in (1a), a “3”). Many nouns followed this pattern, as we will describe below.

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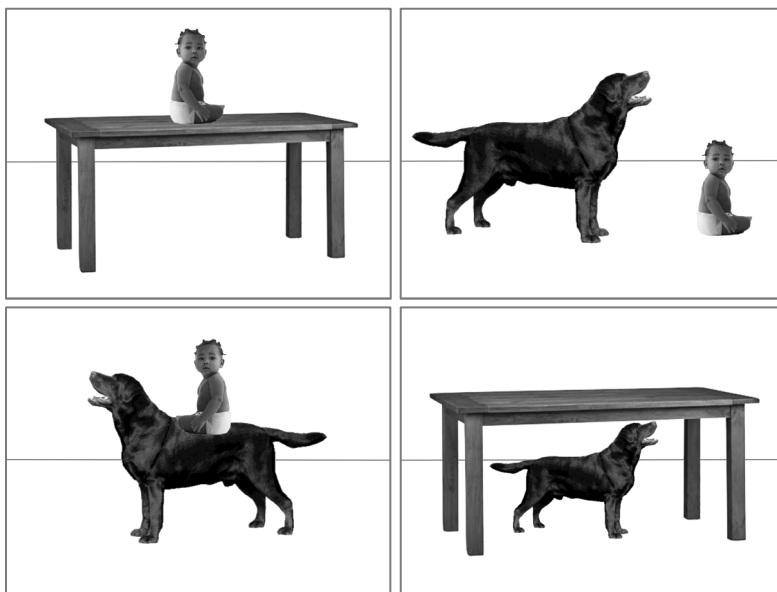
¹ We posit a Low underlying tone on the preposition *nùm* in isolation. In this paper, we will mark both underlying tone and pronounced tone. Medumba has two underlying tones, which we will mark using H (High) and L (Low). In the context of a phrase or sentence, where combined tones create more complex melodies, we will use a number system (5 is High, 3 is Low Level, and 1 is Low Falling).

Yet an animacy distinction seemed an unlikely explanation. Medumba does not display DOM with verbal objects, and only two Medumba prepositions, *nùm* (on) and *nàm* (behind), showed this distinction at all. Because of the rarity of attested cases of an animacy distinction within locative prepositional phrases, we decided to explore a range of explanations for the phenomenon. In this paper, we will (1) examine four hypotheses that might explain this pattern, (2) examine how the distinction held up across 17 speakers, (3) offer hypotheses about the underlying structure of the phenomenon, and (4) lay out next steps for our project.

2. Setting and Methods

During one month of fieldwork in Bangangté and surrounding villages in Cameroon, we worked with 17 Medumba speakers, men and women, ranging in age from 23 to 70 years old, of varying educational backgrounds. For the part of our fieldwork that focused on spatial relations, we used the Topological Relations Picture Series from the Max Planck Institute for Psycholinguistics (Bowerman & Pederson 1992), but supplemented it with a range of additional visual stimuli. While the Max Planck series uses scenes designed to clearly depict a wide range of spatial relations, our stimuli were developed using scenes depicting central examples of a few spatial relations with figure and ground entities of varying animacy, in order to systematically explore the tonal effects of +/- animate nominals. It quickly became clear that the tone of the preposition is determined by the animacy of the ground (the object of the preposition) rather than the animacy of the figure (the grammatical subject). Examples of these stimuli are shown in the figure below.

Figure 1. Spatial relation stimuli for exploration of Medumba prepositions



We asked speakers to first identify and then locate the figure in each of the images, using the Elicitor prompts in Example (2). Typical responses from speakers are represented.

- | | | | |
|-----|-----------|--------------------------|-----------------------------|
| (2) | Elicitor: | <i>à bɔ̀ɔ̀ kù? lì ɔ̀</i> | ‘What is this?’ |
| | Speaker: | <i>à bɔ̀ɔ̀ mèn</i> | ‘It is a child’ |
| | Elicitor: | <i>mèn bɔ̀ɔ̀ jɔ̀</i> | ‘Where is the child?’ |
| | Speaker: | <i>mèn bɔ̀ɔ̀ nùm kù?</i> | ‘The child is on the table’ |

We also elicited from each speaker a range of nouns after the preposition *nùm* (on) in order to determine which nouns co-occur with a contour tone on *nùm* and which co-occur with a level tone. In

the next section, we present more evidence that this distinction is based on animacy by explicating how many speakers use this contour with a large set of nouns.

3. Initial Results: An Animacy Distinction?

Within our elicitations, as mentioned above, we noticed something surprising happening with the preposition *nùm*, meaning “on.” In many of the examples that we elicited, its tone was level, as shown in (1a) repeated below. We also elicited many examples where its tone was contoured, as in (3b).

(1a)	3	5	(3b)	3 5	1
	num	tʃu		num	ɱvən
	on	tree		on	chief
	“On the tree”			“On the chief”	

A pattern began to emerge. Speakers often produced nouns such as “child” (H tone) and “chief” (L tone) with a contour tone on *nùm*, while other nouns such as “table,” “tree,” and “water” were produced with a level tone on *nùm*. Moreover, nouns like “dog” frequently seemed to pattern with the human entities. Figure 2 reveals the percentage of speakers that used a contour tone on *nùm* before the range of nouns shown. (As mentioned above, the tonal distinction is associated with the animacy of the ground, not the animacy of the figure.)

Figure 2. Percentage of speakers (n=13) using contour tone on *nùm*

Noun		Tone (without floating tone L prefix)	% Contour
men	<i>child</i>	H	70%
ɱvən	<i>chief</i>	L	70%
mBu	<i>dog</i>	H	38%
busi	<i>cat</i>	MH	38%
ndzəndzə	<i>fly</i>	MHL	31%
sang	<i>bird</i>	H	31%
ntʃu	<i>heart</i>	H	15%
tʃu	<i>head</i>	H	8%
lak	<i>eye</i>	H	8%
ntsə	<i>water</i>	M	0%
tʃu	<i>tree</i>	H	0%
kuʔ	<i>table</i>	L	0%

The display in Figure 2 actually understates the systematicity of this distinction. It just presents averages. We wanted to ask whether, for individual speakers, these animacy categories form an implicational hierarchy. In other words, if one speaker used the contour tone for “fly,” would that speaker necessarily also use the contour tone for “bird,” “cat,” “child,” and so on? The answer is, by and large, yes, and the results are Guttman scalable.

In a Guttman scale, the answer to one question predicts the answer to questions further along the scale. The first part of a Guttman scale for our phenomenon ranks nouns in order of least to most animate along one axis. It also has a second dimension that is ordered. This is usually a scale that orders speakers according to their likelihood of making a particular set of judgments. Figure 3 shows an example of a perfect Guttman scale.

This kind of ordering indicates that although speakers may differ in where they draw the line, they share the same set of distinctions. So how did the judgments of the Medumba speakers line up? Their judgments on a set of 17 words, ranging from inanimate to human, formed a strong Guttman scale. Figure 4 shows that wherever a speaker starts using a contour on *nùm*, in general, every word to the right will also get the contour.

can be used to mean ‘it,’ all speakers agreed that it cannot, thus leading us to conclude that Medumba personal pronouns are inherently [+animate]. Thus it is still possible to maintain the hypothesis that the tonal contour indicates the presence of a tonal animacy agreement morpheme.

4. Discussion: Alternative Hypotheses

The evidence above points to the tonal contour being associated with the animacy of the object of the spatial preposition. However, there is reason to question this. While there are many examples of an animacy distinction on direct and indirect objects of verbs, we have found no evidence in the literature of an animacy distinction on objects of *locative prepositions*. Moreover, in Medumba, dative verbs do not have a prepositional phrase as their complement, and we have not identified any tonal distinction on verbs linked to the animacy of direct or indirect objects. Since this finding is so unusual, it is important to consider other possible explanations. In this section, we will explore three alternative hypotheses that one might propose to account for the differential marking that we observed.

Our primary hypothesis is as follows: all pronouns carry the feature [+animate]. The preposition *nùm* (and for some speakers, the preposition *nâm*) carries a tonal agreement morpheme whose value is [+animate]. This agreement on *nùm* would be parallel to what has been observed for many languages that have differential object marking on verbs. In such languages, some direct object nominals seem to trigger agreement on the verb. Those nominals tend to be highly ranked on animacy scales (Woolford 2001). While the parallel is plausible, we must examine alternative accounts and rule those out, if possible.

4.1. Alternative Hypothesis 1: Object noun carries floating tone prefix

The first alternative hypothesis is that there may be an underlying high tone prefix on certain nouns that could cause the upward contour to appear on *nùm*. Grassfields languages are known for their complex tonal systems and, in particular, for their floating tones (Hyman & Tadadjeu 1976). Floating tones are active remnants of morphemes that historically existed in the language, but have since lost their segmental realization. This hypothesis would suggest that all animate nouns have a high floating prefix. There is evidence that all nouns in Medumba do have a floating prefix. However, strong evidence suggests that these prefixes are all **low** (Voorhoeve 1971). Since a low floating prefix cannot cause an upward contour on the preceding preposition, the hypothesis that the contour on *nùm* is caused by a floating prefix is not supported by the preponderance of work on the Medumba lexicon and tonal system.

4.2. Alternative Hypothesis 2: Contour reflects lexical tone of object noun

Here we consider the possibility that the upward contour on *nùm* may be triggered by the lexical tone of the noun. Recall examples (1a,b):

(1a)	3 5	(1b)	3 5	3
	num tʃu		num	mɛn
	on tree		on	child
	“On the tree”		“On the child”	

The noun “child” is preceded by a contoured *nùm*, but the noun “tree” is preceded by a level *nùm*. One might suspect that this is due to the underlying lexical tones of the nouns. However, as shown in Figure 5, “child” and “tree” actually have the same underlying tone; they are both High in isolation. And in object position, they carry the same tone.

Figure 5. Tonal realizations of “child” and “tree”

In isolation:

H
tʃu

H
mɛn

In object position:

H	!H	!H	H	!H	!H
mə	jʊn	tʃu	mə	jʊn	mɛn
1sg.	saw	tree	1sg.	saw	child

The question then arises, what causes these two nouns to carry a different tone after *nùm*? “Child” is produced with a low tone, while “tree” gets a high tone in (1a,b). This is due to the phenomenon known as downstep, in combination with the animacy-linked tonal contour we’ve described.

4.2.1. The Issue of Downstep

Some readers may have noticed that in object position, both of these H tone nouns are lower than one might expect. Part of the complexity of Medumba lies in its floating tones, as described above. These floating tones can trigger what is known as downstep (Hyman & Tadadjeu, 1976). A floating low tone, indicated by (L), triggers downstep on the following adjacent high tone. In Figure 6, we see downstep on the verb and on the direct object (downstep is marked with “!”).

Now, let us return to these two nouns when they are objects of the preposition *nùm*. Downstep predicts that when a floating Low tone occurs between two High tones, the second High sounds lower than the first. As mentioned above, nouns generally have a floating L tone prefix. Therefore, with the floating L on *mɛn* “child,” this [H (L) H] pattern that is present in “on the child,” shown in (6) below, causes “child” to sound low, even though it has an underlying High tone.

(6)	<i>Realized Tone:</i>	LH	!H
	<i>Underlying Tone:</i>	LH	(L)H
	<i>Medumba:</i>	num	mɛn
	<i>English Gloss:</i>	on	child

In the phrase below, “on the tree,” there is no High tone on *nùm*, so the [H (L) H] pattern required for downstep is not present. Therefore, due to the absence of downstep, “tree” is realized as a true High tone. This is shown in Example (7) below.

(7)	<i>Realized Tone:</i>	L	H
	<i>Underlying Tone:</i>	L	(L)H
	<i>Medumba:</i>	num	tʃu
	<i>English Gloss:</i>	on	tree

Another piece of evidence against Alternative Hypothesis 2 is that many of the examples of nouns that co-occur with the contour tone have different lexical tones. For example, both (1b) and (3b) display the contour on *num*, despite the differing lexical tones on “child” and “chief.” Based on this evidence, we know that the lexical tone of the noun does not determine whether or not *nùm* has a contour tone, and so we can rule out Alternative Hypothesis 2.

4.3. Alternative Hypothesis 3: Contour tone is due to Noun Class membership of the object noun

Since the tonal distinction on *nùm* appears linked to animacy, some might suggest that there may be a relationship to the noun class system. Some Grassfields languages do not have robust noun class systems (Good 2012). However, Medumba does seem to reflect noun class in two ways: through the noun formation pairs, and through concord marking on possessive pronouns. First, we will look at the

noun form markings for the singular and plural. Figure 6 shows the most recent description of the Medumba noun classes (see Goldman et al., this volume). There are five noun classes; the “F” in the Noun Form Pair column stands for “formative,” meaning the stem or root of the noun (Voorhoeve 1968). “N” stands for any nasal consonant. In class A, the stem is preceded by prefix “m-” in the singular and “b-” in the plural, easily recognizable as Bantu class 1/2.

Figure 6. Noun singular – noun plural pairings

	Noun Form Pair	Singular	Plural	Gloss
A	mF/bF	móŋkékʔ	bóŋkékʔ	<i>small child</i>
B	F/NF	sáŋ	nzáŋ	<i>bird</i>
C	NF/NF	mɓú	mɓú	<i>dog</i>
D ₁	NF/FF	ŋvə̀n	fə̀n fə̀n	<i>chief</i>
D ₂	NF/NFNF	ndʒə̀p	ndʒə̀p ndʒə̀p	<i>V.I.P.</i>
E	F/F	ʃúnó	ʃúnó	<i>friend</i>

All five noun class marking pairs above include human entities. Each of these nouns, human and non-human animates, would trigger a contour tone on *nùm* for at least some speakers. Since noun class pairs do not seem to have a semantic distinction based on animacy, they cannot be the basis for the contour tone on *nùm*.

But there is one more dimension to the noun class system: the concord marking that we find on possessive pronouns. We know that in Medumba (Voorhoeve 1968; Goldman et al. this volume), possessive concord marking pairs are not tightly linked with the noun class marking pairs above, so it is possible that they might provide the basis for the use of the contour tone on *nùm*.

To explore this question, we will compare the concord marking pairs for animate and inanimate nouns. If this alternative hypothesis is correct, we would expect to find different concord marking pairs for nouns that co-occur with the contour tone and those that co-occur with the level tone. We have found there to be at least four distinct marking pairs (Goldman et al. this volume). Example (8) displays one inanimate and one animate noun, “machete” and “friend,” and their possessive concord.

(8)	<i>Singular</i>	<table border="1"><tr><td>ŋwí-ǰm</td></tr><tr><td>“my machete”</td></tr></table>	ŋwí-ǰm	“my machete”	<table border="1"><tr><td>ʃún-ǰm</td></tr><tr><td>“my friend”</td></tr></table>	ʃún-ǰm	“my friend”
		ŋwí-ǰm					
“my machete”							
ʃún-ǰm							
“my friend”							
<i>Plural</i>	<table border="1"><tr><td>ŋwí-tǰm</td></tr><tr><td>“my machetes”</td></tr></table>	ŋwí-tǰm	“my machetes”	<table border="1"><tr><td>ʃún-tǰm</td></tr><tr><td>“my friends”</td></tr></table>	ʃún-tǰm	“my friends”	
ŋwí-tǰm							
“my machetes”							
ʃún-tǰm							
“my friends”							

As shown, these two nouns both take the *ǰm/tǰm* marking pair, despite ranking differently in animacy and triggering different tones on *nùm*. It is possible to make the same point with other concord markers and animate/inanimate pairs of nouns.

To summarize, we have shown that Noun Form pairs do not correlate with the use of the contour tone on *nùm*, and Concord Marking pairs also do not correlate with the use of the contour tone on *nùm*. Knowing that these are the two components of the Noun Class system in Medumba, and that they do not correspond with our findings for the animacy distinction on *nùm*, it appears that this prepositional contour is not based on noun class.³

³ We are grateful to an anonymous reviewer who pointed out that in other Eastern Grassfields languages, there are tonal distinctions that parallel this one, but in object marking: e.g. in Bamileke-Dschang there is a H-tone agreement marker for nouns in Class 1 and 9, which contain singular humans and singular animals, respectively. S/he points to the importance of examining the use of this distinction with singular versus plural objects, and suggests that this could be the origin of the phenomenon. We agree that this is well worth pursuing.

5. Conclusion and Further Questions

There is fairly strong evidence to support our claim that Medumba displays a typologically rare phenomenon: a distinction that is sensitive to the animacy of objects of spatial prepositions. The typological oddity of this is increased by the fact that the language does not appear to display differential object marking (DOM) in direct or indirect objects of the verb. As we continue to explore differential prepositional object marking (DPOM), we would like to tackle several issues.

As Woolford (2001) has discussed, animacy, specificity, and person may all contribute to the potential for Differential Object Marking.

Figure 7. Animacy/topicality hierarchies adapted from Woolford 2001

• specific	>	non-specific		
• human	>	animate	>	inanimate
• first person	>	second person	>	third person

Will they contribute to DPOM as well? In many cases of differential direct object marking, animacy and specificity interact, as mentioned above. For example, in some languages, an inanimate nominal that is specific can trigger agreement. Therefore, do inanimate objects of *nùm* (or entities low on the animacy scale) trigger a contour tone if they are specific and in focus?

Additionally, direct object nominals that trigger agreement are assumed (by Woolford and others) to occupy a different structural position than nominals that do not trigger agreement. Therefore, do objects of *nùm* that trigger a contour tone also show syntactic differences? Finally, we would like to continue to seek evidence of this typologically unusual phenomenon within surrounding languages.

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