

A Phonological Sketch of Ngiemboon-Bamileke

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1. Introduction

The phonology of Ngiemboon was first described in detail in Anderson (1976a). It used a prosodic interpretation and did not use the International Phonetic Alphabet (IPA). This section of the dictionary is therefore just a brief overview of the Ngiemboon sound system, but in a more transparent model and also using IPA symbols for all the phonetics. Since Ngiemboon phonology is quite complex, it is difficult to present it in a concise manner. The present sketch will attempt that goal by describing the various phonological subsystems in a series of charts with the bare minimum of prose explanation.

2. Morpheme Types

1. Roots

Ngiemboon roots consist of the following: $C_1 (S_1) V_1 (C_2) (V_2)$, i.e. an obligatory root-initial consonant, an optional semivowel, an obligatory vowel, and optional final consonants and vowels.

2.1 Affixes and Pronouns

Ngiemboon prefixes (on nouns and verbs) and some pronouns may, in addition to simple CV(C) syllables, have just a syllable nucleus, consisting of either a vowel or of a homorganic nasal consonant (symbolized as “N”). Ngiemboon suffixes are only two in number: /-te/ or a vowel.

3. Consonants

3.1 Underlying consonants

Ngiemboon has 16 underlying consonants (any of which can fill the C_1 position mentioned above), as shown in the following chart:

		Labials	Coronals	Velars
Stops:	Voiceless		t	k
	Voiced	b	d	g
Affricates:		pf	ts	
Fricatives:	Voiceless	f	s	
	Voiced	v	z	
Nasals:		m	n	ŋ
Semivowels:			j	w

3.2 Consonant variation by position in the root

The six consonants below change their phonetic realization when they appear in various root positions: root-initial after no prefix or after a prefix ending in a vowel (combined under the title “word-initial”); root-initial after a nasal prefix; root-medial between two vowels; root-final before a /-te/ suffix; and root-final at the end of an utterance, as seen in the chart below:

Underlying Consonant	Word-initial variant	After /N-/ prefix	Between vowels	Before /-te/ suffix	Utterance-final variant
/b/	p	b	β	p	p̣
/d/	l	d	l	t	ṭ
/g/	ɣ	g	ɣ	q	q̣
/k/	k	k	ʔ	ʔ	ʔ̣
/m/	m	m	m	m	ṃ
/ŋ/	ŋ	ŋ	ŋ	ŋ	ŋ̣

Four additional consonants are only found root-initial and so change their shape only according to the presence or absence of a preceding nasal prefix, as below:

Underlying Consonant	Word-initial variant	After /N-/ prefix
/v/	v	bv
/z/	z	dz
/j/	j	gj
/w/	w	gw

3.3 Consonant variation before high back vowels [u] and [ʊ]

Most coronal consonants have back variants (grooved alveopalatal and retroflexed) before high back vowels (whether a rounded [u] or an unrounded [ʊ]) and have front variants (grooved alveolar and plain dental respectively) before all other vowels, as below:

Underlying Consonant	Before high back vowels	Before other vowels
/s/	ʃ	s
/z/	dʒ	dz
	ʒ	z
/ts/	tʃ	ts
/t/	t̪	t̪
/d/	d̪	d̪
	l	l
/n/	ɲ	ɲ

3.4 Consonant variation by predictable aspiration

In other places (Anderson, 1982:32, 58), I have shown that the “aspiration” that is common in Grassfields Bantu languages is realized as a homorganic voiceless fricative offglide in Ngiemboon. It therefore varies following different consonants, as below:

		BiL	L-D	Den	Alv	Ret	A-P	Vel
Stops:	Voiceless	p̥		t̥		t̥		kx
	Voiced	b̥		d̥		d̥		gx
Affricates:	Voiceless				ts:		tʃ:	
	Voiced		bvf		dzs		dʒʃ	
Fricatives:	Voiceless		f:		s:		ʃ:	
	Voiced		vf		zs		ʒʃ	ɣx
Liquids:				l̥		l̥		

The process which produces these modified consonants happens whenever a root-initial syllable contains all three of the following conditions: an open syllable; the presence of one or the other of the semivowels after the initial consonant; and a mid vowel (i.e. “aspiration” is only present if the vowel is either /e/ or /o/). Ngiemboon has in fact many pairs of similar words that show this contrast, as below:

[ɲkjé] “to jump”
 [ɲkxjé] “to abandon”

3.5 Consonant variation by unpredictable aspiration

In contrast to the predictable “aspiration” shown above, there are limited cases of unpredictable aspiration. These occur in the same environment as the predictable aspiration, but in the absence of the semivowel. In addition they are limited to the following consonants:

		BiL	L-D	Den	Alv	Ret	A-P	Vel
Affricates:	Voiceless							
	Voiced		bvf		dzs			
Fricatives:	Voiceless		f:		s:			
	Voiced		vf		zs			

This unpredictable “aspiration” gives rise to minimal pairs between short and long consonants, but only for the voiceless fricatives shown below:

[fó] “to come” [sé] “his” [sǒ] “friend”
 [f:ò] “leaf” [s:é] “ground/god” [s:ó] “fish”

3.6 Homorganic syllabic nasal prefixes

Like most Grassfields Bantu languages, nasal prefixes in Ngiemboon are completely homorganic to the following consonant, giving all the phonetic realizations shown below:

		BiL	L-D	Den	Alv	Ret	A-P	Vel
Nasals:		m	ɱ	ɳ	n	ɲ	ɳ	ŋ

Like many but not all Grassfields Bantu languages, the Ngiemboon nasal prefixes are also syllabic. In addition, Ngiemboon syllabic nasal prefixes are able to carry either high or low tones, a property not very frequent in Grassfields Bantu.

3.7 Flapped “r”

Ngiemboon has a flapped [r] that only occurs in fast speech, occurring as [l] in careful, slow speech, as in the following example:

[ésàlè] ~ [ésrè] “to turn”

3.8 Resulting phonetic consonant chart

Excluding the complexities of “aspiration”, one finds the following phonetic consonants in Ngiemboon:

		BiL	L-D	Den	Alv	Ret	A-P	Vel	Uvl	Glott
Stops:	Voiceless	p		t̚	t	t̚		k	q	ʔ
	Voiced	b		d̚		d̚		g		
	Unreleased	p̚			t̚				q̚	ʔ̚
Affricates:	Voiceless		pf		ts		tʃ			
	Voiced		bv		dz		dʒ			
Fricatives:	Voiceless		f		s		ʃ	x		
	Voiced	β	v		z		ʒ	ʝ	ʁ	
Nasals:		m	ɱ	ɳ	n	ɲ	ɳ	ŋ		
	Unreleased	m̚						ŋ̚		
Liquids:			l̥	r	l					
Semivowels:	Unrounded						j	ɥ		
	Rounded						ɥ	w		

4. Vowels

4.1 Underlying vowels

Ngiemboon has seven underlying vowels, most of which can be modified by length and/or nasalization, as in the following chart:

Underlying Vowels	Short oral	Long oral	Short nasalized	Long nasalized
/i/	i	i:	ĩ	ĩ:
/e/	e	e:	ẽ	ẽ:
/ɛ/	ɛ	ɛ:		
/a/	a	a:	ã	
/ɔ/	ɔ	ɔ:		õ:
/o/	o	o:	õ	õ:
/u/	u	u:	ũ	ũ:

4.2 Vowel variation before syllable-final consonants

The mid vowel /e/ is centralized before syllable-final nasal consonants, as shown below:

/sèm/ [səm̚] “tomtom” /mèŋ/ [mẽŋ̚] “I”

Similarly, the mid vowel /o/ becomes unrounded before syllable-final nasal consonants:

/fóm/ [fóm̚] “to mould”

4.3 Vowel variation by merger with semivowels

Some semivowel-vowel combinations merge into the “fused vowels” [y] and [w]. These processes are discussed in section 5.2 below.

4.4 “Echo vowels”

When open syllable monosyllabic roots are lengthened (e.g. verbs with imperfective aspect), the vowel becomes long. When closed syllable monosyllabic roots are lengthened, the roots takes on an additional, weak “echo vowel”, a weak version of the vowel in the first syllable. This happens because the first syllable of roots in Ngiemboon is always stressed, the second syllable and any suffix is always unstressed. Here is an example:

PERFECTIVE	IMPERFECTIVE	GLOSS
[fàʔ]	[fàʔà]	“to work”

4.5 Vowel nasalization

There are two different kinds of vowel nasalization in Ngiemboon, with quite different distribution. The first is the fact that vowels that immediately precede /ŋ/ are always nasalized, as below:

PERFECTIVE	IMPERFECTIVE	GLOSS
[sǎŋ̃]	[sǎŋ̃á]	“to count”

In the second case, the nasal vowel is always long and does not change with imperfective aspect (where roots normally receive additional vowel length), as below:

PERFECTIVE	IMPERFECTIVE	GLOSS
[zõ:]	[zõ:]	“to curse”

One can thus say that, whenever a vowel is already long in its shortest (i.e. lexical) form, it can not receive additional length, even if an additional vowel suffix is merged with it. In addition, since both /m/ and /ŋ/ are frequent consonants to end Ngiemboon words, and since /n/ is never used in that place, the underlying lexical form for the lengthened nasalized vowels is assumed to contain the /n/ consonant as well as inherent length.

4.6 Resulting phonetic vowel chart

As a result of the variations shown above, one finds the following phonetic oral vowels in Ngiemboon:

SHORT ORAL	[+ front] [- back] [- round]	[+ front] [- back] [+ round]	[- front] [- back] [- round]	[- front] [- back] [+ round]	[- front] [+ back] [- round]	[- front] [+ back] [+ round]
[+ high] [- low]	i	y			ɯ	u
[- high] [- low]	e		ə		ɤ	o
[- high] [+ low]	ɛ		a			ɔ

5. Semivowels

In this section, we are not discussing the two semivowels that occur as regular consonants but the special class of four semivowels (labeled “S”, in contrast to “C” and “V”) that can occur between a root-initial consonant and the following vowel.

5.1 Underlying semivowels

The simplest way to understand Ngiemboon phonology is to recognize the four phonetic semivowels as underlying units, even though the parallel four high vowels in Ngiemboon are not all underlying.

Phonetic vowels	i	y	ɯ	u
Underlying semivowels	j	ɥ	ɯɥ	w

Note: The chart above uses the following IPA symbols:

[i]	Front high spread vowel,
[j]	Palatal approximant (i.e. front high spread) semivowel,
[y]	Front high rounded vowel,
[ɥ]	Labial-palatal approximant (i.e. front high rounded) semivowel,
[ɯ]	Back high spread vowel,
[ɯ̹]	Velar approximant (i.e. back high spread) semivowel,
[u]	Back high rounded vowel, and
[w]	Labial-velar approximant (i.e. back high rounded) semivowel.

The following examples show that each of the four underlying semivowels can occur on the surface in an identical environment, thus showing their importance in Ngiemboon :

Semivowel	Example	Gloss
(none)	[kê]	“(question marker)”
j	[kjé]	“jump!”
w	[kwé]	“attach!”
ɥ	[kɥè]	“get out!”
ɯ̹	[kɯ̹é]	“monopolize (it)!”

5.2 “Fused Vowels”

Ngiemboon has two cases of “fused vowels” where underlying semivowel-vowel sequences are realized on the surface as a unique fused vowel. The more transparent case is the following, where Ngiemboon speakers freely vary between the semivowel-vowel sequence and the fused vowel :

[kỹ]	~	[kɥĩ]	“bone”
[kýʔ]	~	[kɥíʔ]	“namesake”

A less transparent, though symmetric, case is the following, where Ngiemboon speakers always and only used the fused vowels (from posited underlying /j/ plus /u/) :

[ɲkù]	“to put inside of”
[ɲkùŋ]	“to carve”

6. Tone

Ngiemboon, Yemba (Dschang) and other Eastern Grassfields Bantu languages are known for the complexity of their tone systems. The most complex part of these systems is found in their tone perturbations, how tones of individual words change when they are put into sentences. The reader who is interested in these changes is advised to examine the dissertation by Anderson (1983). Fortunately, it is not necessary to understand these changes in order to learn to read and write Ngiemboon, as it is underlying, lexical, word-level tone that is written.

6.1 Underlying tone patterns

As with similar languages, Ngiemboon has four main tone melodies on noun stems. For example, monosyllabic noun stems with a preceding low-tone prefix display the following stem tones in isolation:

Rising:	[ɲḁǎm̃]	“god”	[ɲḁḁ̃:]	“(fruit)”
Downstepped high:			[ɲḁḁ̃:]	“thigh”
Low:	[ɲḁḁ̃m̃]	“buttocks”		
Low-falling:	[ɲḁḁ̃m̃]	“argument”	[ɲḁḁ̃:]	“interval”

Verb roots have simpler underlying forms in that they have only a two way contrast, between H and L tones. Ngiemboon is a language that has a very high number of verb roots that are members of tone minimal pairs, meaning that the underlying lexical tone for verbs carries a very high functional load in this language.

6.2 Pitch changes in the Tense-Aspect-Mood (TAM) System

The place of most tonal complexity lies in the tone changes that happen to conjugated verbs. This is due to the presence of a lot of tonal morphemes (i.e. floating tones that are present to indicate a tense, aspect or mood (TAM) grammatical category, but which show their presence only by the changes they cause to adjacent tones). Fortunately, most of these tonal morphemes are in addition to separate segmental TAM markers, so their presence is also signaled by these small grammatical particles, even if these particles are not adjacent to the verb. Thus, if a Ngiemboon reader recognizes all the words in a sentence (written with their underlying lexical tone), he can pronounce the sentence without difficulty with all the perturbed phonetic pitches in the right places.

7. BIBLIOGRAPHY

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