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NOUN CLASSES AND TONE IN NGIE

BY

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1. INTRODUCTION

Ngie[1] is a language spoken in the following villages of the Bamenda area in Western Cameroon: Andek, Teze, Etui, Abebung, Ebang, Angong, Anjei, Tinechong, and Ungom.[2] The dialect described here is spoken in Teze.[3] Williamson (1971:278) lists Ngie among the unclassified languages of the Mamfe Bantu subgroup of Bantoid. More recent work by the Grassfields Bantu Working Group (Hyman and Voorhoeve 1977) and especially by Stallcup (1977, in preparation) provides additional data allowing a more accurate classification of Ngie. Stallcup classifies Ngie as one of the Momo languages of Western Grassfields. The classification proposed by the Grassfields Bantu Working Group is represented in Figure 1.

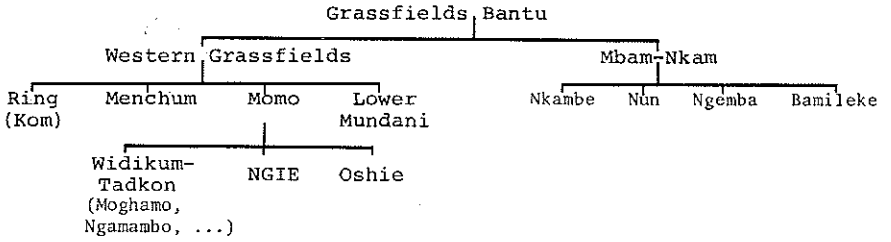

FIGURE 1. Genetic Classification of Ngie

In this paper I shall be mainly concerned with the tone system of bisyllabic nouns. In order to facilitate our understanding of this complex tone system which exhibits 10 contrastive patterns on bisyllabic words, a description of the noun classes will be provided first. It will be shown that these 10 patterns have developed historically from a two-tone system.

2. NOUN CLASSES

The noun classes of Ngie are listed in Table I. As is the case in most Grassfields Bantu languages, noun classes cannot be identified from prefixes alone in Ngie. The pronoun 'my' is used in Table I in order to differenciate all the noun classes. As can be seen from these forms, only four prefixes are found in Ngie: i-, a-, u-, and Ø- (the latter is restricted to classes 1, 2, 9, and 10). It is interesting to point out that the initial vowel of

TABLE I. Noun Classes in Ngie

Class	Prefix	Example		'my'
1.	T̄-	T̄tà	'friend'	òŋgù
	ā-	ābû	'lady'	
	ū-	ūfɔ̂n	'chief'	
	Ø-	wâ	'person' [also analyzeable as w-â]	
2.	T̄-	T̄tà	'friends'	òmbūŋ
	ā-	ābû	'ladies'	
	ū-	ūfɔ̂n	'chiefs'	
	Ø-	bâ	'persons' [also analyzeable as b-â]	
3.	ū-	ūkɔ́n	'bed'	òŋgū
4.	T̄-	T̄kɔ́n	'beds'	ìɲT̄
5.	T̄-	T̄kɔ́n	'bean'	ìɲT̄
6.	ā-	ākɔ́n	'beans'	ìɲǾ
7.	ā-	āwú	'bone'	ìɲǾ
8.	ū-	ūwú	'bones'	òmbū
9.	ì-	ìbɛ̄	'dog'	ìɲǾ
	Ø-	bɛ̄	'dog'	
10.	ì-	ìbɛ̄	'dogs'	ìtT̄ŋ
	Ø-	bɛ̄	'dogs'	
13.	T̄-	T̄kǐ	'floors'	ìtT̄ŋ
19.	ū-	ūbɛ́	'knife'	òfūŋ
6a.	ū-	ūné	'water'	òmbūŋ

of the concord is either [i] or [o]. In both cases, this vowel is realized as intermediate in quality between the high vowels [i] and [u] and the higher-mid vowels [e] and [o].

The noun classes represented in Table I can be grouped by pairs to constitute the following genders in Table II.

TABLE II. Genders in Ngie

1/2	5/6	7/8	19/13
3/4	5/13	9/10	6a

A few nouns do not have singular or plural forms and thus constitute single class genders such as 6a, 1, 13. Representative nouns from each gender are provided in Appendix A.[5]

Gender 1/2. Most of the nouns contained in this gender are human. In most cases the singular form is identical to the plural form. (When singular and plural forms are identical, only one of them is given in Appendix A.) The tone of the prefix can be either L (low) or M (mid). It is interesting to notice that even in cases where the prefix of the singular form is different from the prefix of the plural form, the tone is not changed.

Gender 3/4. The prefix always carries M tone. There is only one exception: ùnàŋ° 'bamboo'. This gender is very regular as far as prefixes are concerned (sg. u-, pl. i-). They clearly correspond to Proto-Bantu (PB) mu-/mi-.

Gender 5/6. The prefixes of this gender are also very regular (sg. i-, pl. a-), corresponding to PB (l)i-/ma- and Proto-Benue-Congo (PBC) li-/a-.

Gender 5/13. Both singular and plural forms carry a i- prefix. The only difference between class 13 and class 10 is in the tone of the prefix. Class 13 has a M tone prefix as opposed to a L tone prefix for class 10. Stallcup (1977) found that in another dialect of Ngie, the concords were different for these two classes ('my' was realized etɨŋ for class 10 vs. etigɣ for class 13). Five nouns do not have a M tone prefix: ìbɛ̀ 'liver', ìčǾ 'landslide', ìɲǏ 'anus', ìfɐ̆ 'face', and ìkǏ 'pipe'. Note that three of these nouns have a rising (R) tone in the second syllable. We shall come

back to this point in section 3.2.

Gender 7/8. From its content, this class corresponds to PE ki-/bi and PBC ki-/bi-. Although the change from bi or bi to u is reasonable through the labialization caused by the consonant the vowel, the change ki > a, attested in much of Grassfields Ban is much more difficult to explain by natural sound changes. Mos of the nouns of this gender have a M tone prefix; however, four exceptions are found: àsɔ̀ 'soap', àtɨ̀ŋ° 'grasshopper', àbɛ̀° 'mo key', and àndû? 'gorilla'.

Gender 9/10. In both singular and plural forms the prefix ì-. All the prefixes in this gender have L tone. Thus, it is i possible to make a singular/plural distinction in citation forms However, one of my language assistants pointed out that it is po sible (although it is not normally used?) to indicate the plural form by a slight lowering of the vowel quality of the plural pre This may or may not reflect an earlier distinction. Such a dis- tinction between vowel qualities of class markers for classes 9 10 has been reconstructed for PB and is still found in certain Cross-River languages (de Wolf 1971:168). However, in these lat cases the vowel quality is higher for the plural class than for singular class.

A number of 9/10 nouns can be uttered without any prefix, f example: ìnjìm or ǹjìm 'back', ìŋgʷɛ̀° or ŋ̀gʷɛ̀° 'pig', ìbɛ̄ or bɛ̄ 'dog', ìɲî or ɲî 'animal', ìsú or sú 'fish'. Stallcup (1977) gi these nouns without a prefix for the singular form. If the addi of a prefix is an innovation, this may explain why some of these nouns exhibit a different tonal development from other nouns whi had a prefix at an earlier stage. This point will also be consi ered in section 3.2.

Gender 19/13. Two nouns in this gender have an a- prefix f both singular and plural: àjì 'fly' and ànɨ̀ 'ant'. They are listed in this gender because of their concord (ɔ̀fūŋ/ìtǏŋ 'my'). /f/ is found quite often in Grassfields Bantu as the consonantal concord of the class corresponding to PB 19 (see Hyman and Voor- hoeve 1977). Four nouns with the regular u-/i- prefix alternatic have a L tone prefix: ùnɔ̀ŋ° 'pipe (to carry water)', ùnɛ̀n° 'bird

ùtāp 'branch', and ùtɥǏ 'twig (of tree)'. Considering the number of exceptions, it is not completely obvious that the regular pre- fix carries M tone. I will attempt to account for these exceptions when considering the historical development of the various tone patterns in section 3.2.

Gender 6a. This one class gender contains liquids such as oil, water, wine. Note that 6a is different from class 6 (the plu- ral of class 5).

It is becoming clearer and clearer that an important problem connected with noun classes in Ngie is the tone of the prefix. Al- though there are a number of exceptions especially in genders 1/2, 7/8, and 19/13, the present investigation of the Ngie noun class system leads one to believe that prefix tones were once completely predictable. Since the tone of the prefix is in part dependent on the tone of the stem, I will first describe the tone patterns of bisyllabic Ngie nouns before considering the relationship between noun classes and the tone of prefixes.

3. THE TONE SYSTEM

We will limit our investigation of Ngie tones to bisyllabic nouns in isolation and in the associative construction.

3.1. Nouns in Isolation

Most Ngie nouns have the following shape: V_1-C_1(G)V_2(C_2). The first vowel, the prefix, can either be i-, a-, or u-, and can have either L or M tone. The second vowel can have one of the following six tone patterns: L [◌̏] (low, with downgliding be- fore pause), L° [◌̀] (low level), M [◌̄] (mid), H [◌́] (high), F [◌̂] (falling), and R [◌̌] (rising). Out of the twelve theor- etically possible combinations, ten are found, as seen in Table III.[6] The two patterns which are lacking are M-L° (mid followed by level-low) and M-R (mid followed by rising tone).

The phonetic shapes of the ten tone patterns are presented in Figure 2. These curves were obtained by measuring the fundamental frequencies (F_o) values (averaged over two glottal periods) at the beginning, the middle, and the end of the two vowels of each word presented in Table III. Each point represents the average of five

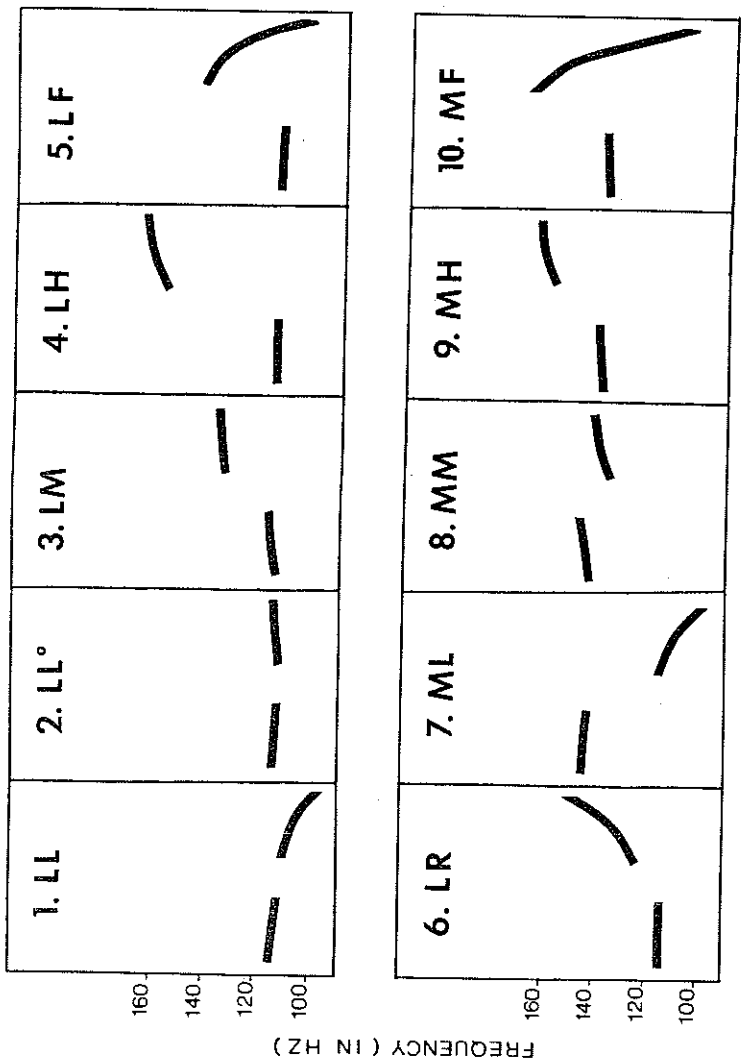

FIGURE 2. Phonetic shapes of Ngie tone patterns

TABLE III. Tone Patterns of Ngie Nouns in Isolation

1.	L-L	ìbɛ̀	'liver'	6.	L-R	ìŋǐ	'anus'
2.	L-L°	àbɛ̀°	'monkey'	7.	M-L	m̄fɔ̀ŋ	'leopard'
3.	L-M	ìbɛ̄	'dog'	8.	M-M	m̄bɛ̄	'kolanut'
4.	L-H	ìbɛ́t	'war'	9.	M-H	m̄bɛ́t	'excrements'
5.	L-F	ìŋî	'animal'	10.	M-F	ūfɔ̂n	'chief'

repetitions of each word read by one speaker. Measurements were made directly on the digitized waveform (sampled at 10 KHz). Since vowel quality and consonantal environment affect the F_o of a given vowel, we should be careful in comparing any two of these ten lexical items. As can be seen from Figure 2, a number of facts concerning the phonetic shapes of the tones are obscured by our tone marks. Especially two points should be noticed: 1) tone pattern 8, which is transcribed as M-M, is in fact realized as M-'M (mid followed by a lower-mid); 2) if we compare tone patterns 5 and 10, we can see that the F tone starts higher when preceded by M than when preceded by L. With respect to the first point, I have found two exceptional nouns, ānɔ̄m 'man' and āyē 'woman', which are realized as true M-M, rather than M followed by 'M. Finally, it should be noted that verb tones permit different patterns from those reported for nouns, e.g. 'M-'M, M-R.

Let us now consider the possibility that this complex tone system derives historically from a simple two tone system.

3.2. Origin of the Tone Patterns

We shall first examine the tonal correspondences which can be established between Ngie, Proto-Bantu, and Proto-Grassfields. The forms given in Table IV illustrate very clearly the following three sets of correspondences:[7]

a) L-L, L-F, and M-F Ngie tone classes correspond to an earlier L-L sequence on the stem.

b) L-L° and M-M Ngie tone classes correspond to an earlier L-H sequence on the stem.

c) L-M and M-H in Ngie correspond to an earlier H-L sequence on the stem.

The corpus is too small and the correspondences too contradictory to allow any conclusion about the other three tone classes: L-H,

TABLE IV. Correspondences between Ngie, PG, and PB Tone Classes

Tone Class	Ngie	Proto-Grassfields (after Hyman)	Proto-Bantu (after Guthrie)	Gloss
L-L	ìnjìm	-jàm`	-yìmà	'back'
	àjì	-jì(njì)	-gìŋgì	'fly'
	ìbɛ̀	-bì`		'liver'
	ìnjèk		-ŋkògò	'sheep'
L-L°	ùnèŋ°	-lèŋ´	-dèŋgí	'bamboo'
	ùnèn°	-nòn´	-nònɨ́	'bird'
L-M	ùtāp	-tám`	-tápì	'branch'
	ìsū?		-cúpà	'calabash'
	ìbɛ̄	-bá`	-búà	'dog'
	ìbɛ̄	-bɨ`	-búdì	'goat'
	ìbī		-bɨ́dà	'palmnut'
	ùŋgʷāŋ	-ŋgʷáŋ`		'salt'
L-H	ìjɛ́	-jú`	-júkì	'bee'
	ìsú	-sú`	-cṵ́	'fish'
	ìbɛ́t	-bɛ́t´	-bìtá	'war'
L-F	ìnî	-nàm`	-yàmà	'animal'
	ìnôŋ	-nòŋ`		'hair'
L-R	ìnǐ	-nì	-nìò	'anus'
	àtǒŋ	-túŋ´	-túé	'ear'
	ìfǔ	-sú`	-cìó	'face'
	ìkǐ	-kìŋ´		'pipe'
M-L	Ītɔ̀ŋ	-fùn´		'leopard'
M-M	ūbūŋ		-bòŋgó	'brain'
	Ībɛ̄	-bì´	-bìdú	'kola'
	Ītɔ̄ŋ	-tòŋ´	-tòdṵ́	'navel'
	Īwɔ̄ŋ	-kòŋ´	-gòŋgá	'spear'
	ūkɔ̄n	-kùn´	-gùndú	'tail'
	Īsɔ̄ŋ	-sòŋ´	-cùŋgá	'tooth'
M-H	Īkɔ́n	-kún`	-kúndè	'bean'
	ānɛ́m	-lɛ́m`		'blood'
	Īnó	-nṵ`	-yṵ́tù	'body'
	āwú	-kúp´	-kúpà	'bone'
	Ībɛ́n	-bɨn`	-bɛ́ɛ́dè	'breast'
	Īwú	-kúò	-kṵ́à	'death'
	Īyɛ́	-ík`	-yícò	'eye'
	Īfúŋ	-fóm`		'fat'
	ūwɛ́ŋ	-kwín`	-kúnì	'firewood'
	ātɸ́	-tú`	-túè	'head'
	ūnɔ́m	-lúm`	-dúmè	'husband'
	ūŋɔ́t	-vút`	-gṵ́tà	'oil'
	ūjí		-jíbì	'thief'
	ādó?		-dɛ́kà	'throat'
M-F	Ībûm	-bùm`	-bṵ̀mò	'belly'
	ūfɔ̂n	-fòn`		'chief'
	ūčɸ	-cù`		'mouth'

L-R, and M-L.

In order to check the validity of the correspondences established on historical grounds and to try to get data suggesting the possible origin of the three tone classes L-H, L-R, and M-L, the noun-noun associative construction (N_1 of N_2) was investigated. In this construction N_1 keeps the same tone pattern as in citation forms, but the tone pattern of N_2 depends both on its citation tone class as well as the noun class of N_1. If N_1 belongs to class 1 or 9, a floating L tone associative marker will be inserted between N_1 and N_2. If N_1 belongs to any other noun class, a floating H tone will be inserted, which conditions a M tone on the first syllable of N_2 regardless of its original prefix tone. Table V provides data relevant for our purposes here. The noun ìnjìm 'back' is associated with the ten tone classes. Note that ìnjìm belongs to class 9 and consequently is followed by an associative floating L tone.

TABLE V. The Associative Construction

	Tone Class	Phonetic Realization		Gloss
1.	L-L	ìnjìm ìsɔ̀p	[_ _ _ _]	'back of slave'
2.	L-L°	ìnjìm àbɛ̀ɛ̀°	[_ _ _ _]	'back of monkey'
3.	L-M	ìnjìm ìbɛ̄	[_ _ _ –]	'back of dog'
4.	L-H	ìnjìm ìsǔ	[_ _ _ ‿]	'back of fish'
5.	L-F	ìnjìm ìnî	[_ _ _ ¬]	'back of animal'
6.	L-R	ìnjìm ìkǐ	[_ _ _ ‿]	'back of pipe'
7.	M-L	ìnjìm Ītɔ̀n	[_ _ - ¬]	'back of leopard'
8.	M-M	ìnjìm ìbɛ̀ɛ̀°	[_ _ _ _]	'back of kolanut'
9.	M-H	ìnjìm ìnō	[_ _ _ –]	'back of body'
10.	M-F	ìnjìm ùfɔ̀n	[_ _ _ ¬]	'back of chief'

A number of interesting points can be seen in Table V.

(i) The tone pattern of N_1 is not affected by N_2.

(ii) The correspondences established in comparing Ngie with PG and PB tone classes are validated in the sense that they exhibit a similar tonal behavior. Thus, numbers 1, 5, and 10 in Table V give the same tonal sequence although they have different tone pat-

terns in their citation forms. It has already been seen that the three tone classes correspond to L-L stems at an earlier stage. Similarly, numbers 2 and 8, on the one hand, and 3 and 9, on the other, have the same tonal behavior, corresponding to L-H and H-I stems, respectively.

(iii) A new fact that we could not obtain from the correspor dences appears in the associative construction: numbers 4 and 6 (L-H and L-R) have the same tonal behavior in the associative cor struction. Therefore, I would like to speculate that both L-H ar L-R derive from H-H stems. This speculation is based on the following considerations. First, H-H is the only historical tone cl which has not been identified with a modern Ngie tone class. Second, àtɔ̀ŋ 'ear' and ìbɛ́t 'war' are reconstructed with H-H on the stem, and ìndɥ́ 'cloth' should probably also be reconstructed wit H-H. The reconstruction of ìsú 'fish' is not absolutely clear ar here too a reconstruction with H-H cannot be ruled out. Finally, in a closely related language, Ngamambo (Asongwed and Hyman 1976) proto *L-H-H is realized L-R.

The tonal correspondences between the PB and the Ngie tone patterns including prefixes and stems are summarized in Table VI. It is assumed that all prefixes were L in PB.

TABLE VI. Correspondences between PB and Ngie Tone Patterns

Ngie Reflexes		L-L-L	L-L-H	L-H-L	L-H-H
1.	L-L	x			
2.	L-L°		x		
3.	L-M			x	
4.	L-H				x
5.	L-F	x			
6.	L-R				x
7.	M-L				
8.	M-M		x		
9.	M-H			x	
10.	M-F	x			

Two questions can be raised at this point:

a) why should these specific tone shapes derive from the proto tone patterns?

b) why should two (and sometimes three) reflexes derive from a single proto tone pattern?

In order to answer these questions let us imagine the following historical sequence of events. First, the various stages involved in deriving bisyllabic patterns from trisyllabic proto forms are seen in Table VII (cf. Asongwed and Hyman 1976, Hyman and Tadadjeu 1976)

TABLE VII. Derivation of Bisyllabic Tone Patterns

(a)	(b)	(c)	(d)	(e)
L-L-L	L-$\widehat{\text{LL}}$	L-L		
L-L-H	L-$\widehat{\text{LH}}$		L-L°	
L-H-L	L-$\widehat{\text{HL}}$			L-M
L-H-H	L-$\widehat{\text{HH}}$	L-H		

The four proto tone sequences on trisyllabic nouns are given in (a) In (b) the final syllable is lost and its tone is assigned to the remaining stem syllable to the left. In (c) L-$\widehat{\text{LL}}$ and L-$\widehat{\text{HH}}$ have become L-L and L-H by coalescing like tones. In (d) L-$\widehat{\text{LH}}$ has simplified as L-L°, and finally, in (e), L-$\widehat{\text{HL}}$ has simplified as L-M. The net result is that the modern tone patterns correspond more or less to those of the first two syllables of the reconstructed patterns.

As a second development, following the derivations represented in Table VII, certain prefixes became M, the others staying L. In this process of prefix-raising, the relationship between the two tones (i.e. the tone of the prefix and the tone of the stem) was maintained. This "bifurcation" of tone patterns in seen below in Table VIII. Although the first three categories are quite straightforward, the last category is not. (Also note that the exceptional M-L category is not explained at all.) Since the claim being made here is that a tone raising occurred on bisyllabic nouns with their original tone intervals/contours preserved, category IV can be explained in the following way. First, while L-M was free to go up by one tone level to become M-H, L-H could not do so without creating a new (super-) H level. In order to avoid creating a new tone level, tone-raising was thus blocked, with L-H remaining L-H

TABLE VIII. Bifurcation of Bisyllabic Tone Patterns

I.	L-L	[_ _]	→ L-L	[_ ¬]
			→ M-F	[– ¬]
II.	L-L°	[_ _]	→ L-L°	[_ _]
			→ M-M	[– –]
III.	L-M	[_ –]	→ L-M	[_ –]
			→ M-H	[– ¯]
IV.	L-H	[_ ¯]	→ L-R	[_ ⌣]
			→ L-H	[_ ¯]

in the tone-raising environments (see below). Perhaps tied in with this inability to undergo tone-raising, L-H became L-R in th non-tone-raising environments (including N_2 position, where all noun prefixes bear L tone, as we saw in Table V).[8]

Let us turn now to the L-F sequence. Up to now we have only considered stems with prefixes, although it was mentioned that a number of nouns could be uttered without a prefix. It is possibl that items without prefixes developed slightly different tone pat terns. The fact that ìɲî 'animal', ìŋgʷɔ̀° 'pig', ìbɔ̄ 'dog', and ìsú 'fish' can be pronounced ɲî, ŋ̀gʷɔ̀°, bɔ̄, and sú suggests the following development for stems without prefixes.

TABLE IX. Derivation of Monosyllabic Tone Patterns

Ø-L-L	L	[_]	→ F	[¬]
Ø-L-H	L°	[_]		
Ø-H-L	M	[–]		
Ø-H-H	H	[¯]		

The L tone may have changed into [¬] to emphasize the falling contour in order to make it maximally distinct from L°. These to were thus not subject to the modifications occurring when prefixe were raised. Recently, however, a L tone prefix was added. This resulted in merging stems without prefixes with stems with L pre-fixes in the case of L-L°, L-M, and L-H, but created a new patter in the case of L-F [_ ¬], which is different from L-L [_ ¬].

It is obvious now that the problem of the tone of the prefix

provides a key element in understanding the development of the Ngie tone patterns. Our complete understanding of this problem will, in addition, have important implications for the reconstruction of ear-lier stages such as PG, PB, and PBC.

Considering the amount of data now available, the most likely historical scenario seems to be the following:

1) All prefixes were L (CV̀- prefixes for all classes except in 9 and 10, which had Ǹ-).

2) In certain contexts (e.g. citation forms), the tone of the prefix was changed from L to M except in cases in which the prefix was followed by a NC consonant cluster.

3) Nasals were lost when followed by a voiceless segment and they merged with the following segment when the latter was also a (homorganic) nasal.

There are at least five questions raised by this development.

a) why should the tone of the prefix go up in certain contexts such as citation forms?
b) why should this raising of L tone be stopped by NC clusters?
c) where would these NC clusters come from?
d) can the simplification of N [-voice, C] and NN sequences be justified?
e) can the exceptions to these historical developments be accounted for?

Unfortunately, at this point, I have only hints of answers to all of these questions. It is possible that the raising of the L tone prefixes to M can be attributed to the noun preprefix reconstructed for Proto-Bantu (de Blois 1970). Various papers in this volume have demonstrated that this preprefix carried H tone in the proto language. The reason why the H preprefix would have led to a M tone in all classes except 9 and 10, but to a L tone in 9 and 10 can be attributed to syllabification problems.[9] The preprefix $\acute{V}_1$ followed by a $CV̀_2$ prefix resulting in $\bar{V}_2$ after the loss of V_1 and C (the change from HL into M is attested in bisyllabic noun stems). In the case of a Ǹ- prefix, the consonant cluster N (from the pre-fix) followed by C (the first consonant of the stem) would have had a depressing effect on the fundamental frequency of neighboring

vowels which resulted in keeping a L tone on the vowel. Data fr Chichewa (Trithart 1976) suggest that it is possible that NC clu ters can have a more important depressing effect than N or C tak separately. This solution, which takes phonological shapes intc consideration rather than, for instance, attributing a priori a tone to class 1 and 9 and a H tone elsewhere, seems to be prefer able for two reasons. First, in Ngamambo (Asongwed and Hyman 19 the shape of the prefix is also related to its tone. Second, th fact that 9 and 10 are paired together (that is, the two classes which have a N- prefix) rather than the usual class 1 and class suggests strongly that the shape of the prefix was the determini factor. It is impossible at this point, however, to justify the loss of nasals before all voiceless segments (which is required order to account for nouns which exceptionally take L tone pre- fixes), except by saying that this process is not uncommon in Gr fields Bantu. Thus, àtɔ̌ŋ 'ear' may reconstruct with -nt-, the nasal later dropping out.

Other exceptions are answered in the following way. First, forms such as àbə̀° 'monkey' and ùdâ 'cutlass' should not be four since they reconstruct with a CV- prefix. We can speculate that these words were monosyllabic, and that the addition of a prefix is a recent innovation. (The only other alternative is that the nouns are borrowed from another language and keep their original tone properties.) Finally, such forms as ùnə̀ŋ° 'bamboo' and ùnə̀ 'bird' can be accounted for by assuming that they were originall in class 9 (rather than in class 3 and class 19), and since the initial consonant of the stem was a nasal, the nn clusters had t same depressing effect as other NC clusters. Subsequently, nn w simplified to n, and these nouns were shifted into other classes Whether the above attempt to account for the various kinds of ex ceptions is completely correct is something which will have to a wait further comparative studies in the area.

NOTES

[1]Also called Angie, Baminge, Mingi, Ngi, and Ugie.

[2]Villages are ordered according to the number of speakers i each one (Andek having the greatest number of speakers).

[3]Some phonological differences are found in the different villages (see Hombert, in preparation).

[4]The pronoun 'my' has been selected because it differentiates more classes than any other pronoun.

[5]The tone marks used in Appendix A are explained in section 3.

[6]A list of words arranged by tone patterns is presented in Appendix B.

[7]It should be borne in mind that the first tone in Ngie is the tone of the prefix as opposed to PG and PB, where the two tones belong to the stem.

[8]The only other alternative is that the Ngie M-H tone pattern collapses both historical L-H-L and L-H-H by tone-raising, as has been demonstrated for Ngamambo (Asongwed and Hyman 1976). In this case, Ngie L-H nouns would be treated as Ø-H-H, i.e. underlyingly prefixless (cf. the discussion immediately below).

[9]I wish to thank I. Maddieson and L. Goldstein for suggesting this explanation.

APPENDIX A. CONTENT OF NOUN GENDERS IN NGIE

In the following lists, lexical items are arranged by tone patterns rather than in alphabetical order.

Gender 1/2. prefix i-, a-, u-, Ø / i-, a-, u-, Ø
concord òŋgʷ / òmb

wâ / bâ	'person'	Tfòŋ	'leopard(s)'
ìsɔ̀p / ùsɔ̀p	'slave'	ūtù	'vehicle(s)'
àtì / ùtì	'young girl'	ūnɔ́m	'husband(s)'
ùdâ / ìdâ	'cutlass'	ūfɔ̂n	'chief(s)'
Ttà	'friend' ("pal")	ābû	'lady/ladies'

Gender 3/4. prefix u- / i- concord ùŋg / ìnj

ùnə̀ŋ° / ìnə̀ŋ°	'bamboo'	ūjí / Ī-	'thief'
ūkɔ́n / Ī-	'bed'	ūtím / Ī-	'termite mount'
ūkɸ́ / Ī-	'deaf person'	ūzɔ́k / Ī-	'witchcraft'
ūfɸ́ / Ī-	'fever'	ūkə̂n / Ī-	'message'
ūwɛ́ŋ / Ī-	'firewood'	ūčɸ̂ / Ī-	'mouth'
ūbɔ́k / Ī-	'hole'	ūmə̂ / Ī-	'sauce'
ūkɔ́p / Ī-	'money'	ūbūŋ / Ī-	'brain'
ūkúm / Ī-	'name'	ūzə̄k / Ī-	'cloth (to carry baby)'
ūɣɔ́p / Ī-	'palmtree'	ūwɛ̄t / Ī-	'fire'
ūnʃ? / Ī-	'rope'		

Gender 5/6. prefix i- / a- concord ìnj / ìnj

Īkɔ́n / āɔ́n	'bean'	Īɣɸ̂ / ā-	'eye'
Ībɔ́n / ā-	'breast'	Ībœ̂ / ā-	'kola'

m̄wɔ̄ŋ / ā-	'spear'	m̄sɔ̄ŋ / ā-	'tooth'
m̄kīŋ / ā-	'pot'		

Gender 5/13. prefix i- / i- concord ìnj¯/ ìt¯

ìbɛ̀	'liver(s)'	m̄kí	'floor(s)'
ìčǫ́	'landslide(s)'	m̄jɛ́k	'food(s)'
ìɲ̄	'anus(es)'	m̄yúŋ	'market(s)'
ìfɯ̄	'face(s)'	m̄tú	'wine(s)'
ìkɨ̄	'pipe(s)'	m̄bûm	'belly/bellies'
m̄ɲó	'body/bodies'	m̄jə̂ŋ	'firesite(s)'
m̄wú	'death(es)'	m̄tɔ̄ŋ	'navel(s)'

Gender 7/8. prefix a- / u- concord ìnj¯ / òmb¯

àsɛ̀ / ùsɛ̀	'soap'	āzí / ū-	'friend'
àtɨ̀ŋ° / ù-	'grasshopper'	āt̄á / ū-	'head'
àbɛ̀° / ù-	'monkey'	āsʃŋ / ū-	'place'
àndû? / ù-	'gorilla'	ādó? / ū-	'throat'
ānám / ū-	'blood'	āt̄ŋ́ / ū-	'trap'
āwú / ū-	'bone'	āzát / ū-	'tree'
ābé / ū-	'country'	āzɛ́? / ū-	'yam'
āná / ū-	'cut'	ābɔ̄m / ū-	'egg'
ākɛ́ŋ / ū-	'crab'	āyə̄ / ū-	'foot'
ānɛ́ / ū-	'day'	āyē / ū-	'hut (for chicken)'

Gender 9/10. pref. i-, Ø / i-, Ø concord ìnj` / it¯

ìnjìm	'back(s)'	ìbɛ̄	'dog'
ìnjàm	'dream(s)'	ìsū?	'calabash'
ìpà?	'cloud(s)'	ìbī	'palmnut'
ìkɥ̀ì	'maize(s)'	ìŋgə̄	'fowl'
ìkɨ̀ŋ	'nest(s)'	ìbə̄	'goat'
ìnjàk	'sheep'	ìkə̄	'nail'
ìtà°	'flower(s) from cocoyam'	ìɲî	'animal'
ìmbù°	'collective work(s)'	ìfîŋ	'heart'
ìŋgʸà°	'horse(s)'	ìnə̂ŋ	'hair'
ìŋgʷɛ̀°	'pig(s)'	ìndɥ́í	'cloth'
ìjɯ̄ŋ	'axe(s)'	ìsú	'fish'

Gender 19/13. prefix u- / i- concord ùf¯ / ìt¯

àjì	'fly/flies'	ùtɥ̄ì / ì-	'twig (of tree)'
ànɨ̀	'ant(s)'	ūbɛ́ / ū-	'knife'
ùnàn° / ìnàn°	'bird'	ūfú? / ī-	'leaf'
ùnɔ̀ŋ° / ì-	'pipe (to carry water)'	ūčǫ́ / ī-	'hummingbird'
ùtāp / ì-	'branch'	ūsǫ́ / ī-	'pepper'
		ūnə̄? / ī-	'spice'

Gender/Class 6a. prefix u- concord òmb¯

ūŋɔ́t	'oil'	ūné	'water'	ūnɛ̂?	'wine'

Gender/class 1. prefix varies Gender/Class 13. prefix i-

ìbɛ́t	'war'	m̄bɛ́t	'excrement'

APPENDIX B. Tone Patterns in Ngie

1. L-L, notation ṾCṾ [_ ⌐]

ànɨ̀	'ant' 19	ìkɥ̀ì	'maize' 9
ìnjìm	'back' 9	ìkɨ̀ŋ	'nest' 9
ìpà?	'cloud' 9	ìnjàk	'sheep' 9
ìnjàm	'dream' 9	ìsɔ̀p	'slave' 1, 9
ìsɔ̀ŋ	'elephant grass' 9	àsɛ̀	'soap' 7
àjì	'fly' 19	àtì	'young girl' 1
ìbɛ̀	'liver' 5		

2. L-L°, notation ṾCṾ° [_ _]

ùnàŋ°	'bamboo' 3	ìŋgʸà°	'horse' 9
ùnàn°	'bird' 19	àbɛ̀°	'monkey' 7
ìmbù°	'collective work' 9	ìŋgʷɛ̀°	'pig' 9
àtɨ̀ŋ°	'grasshopper' 7	ùnɔ̀ŋ°	'pipe (to carry water)' 19

3. L-M, notation ṾCV̄ [_ —]

ìjɯ̄ŋ	'axe' 9	ìbə̄	'goat' 9
ùtāp	'branch' 19	ìkə̄	'nail' 9
ìsū?	'calabash' 9	ìbī	'palmnut' 9
ìbɛ̄	'dog' 9	ùŋgʷāŋ	'salt' 19
ìŋgə̄	'fowl' 9		

4. L-H, notation ṾCV́ [_ ¯]

ìjɛ́	'bee' 9	ìsú	'fish' 9
ùbúŋ	'children' 2	ìbɛ́t	'war' 1
ìndɥ́í	'cloth' 9		

5. L-F, notation ṾCV̂ [_ ¯̂]

ìɲî	'animal' 9	ìfîŋ	'heart' 9
ùdô	'cutlass' 1	ìcǫ̂	'landslide' 5
àndû?	'gorilla' 7	ùbâ	'persons' 2
ìnə̂ŋ	'hair' 9		

6. L-R, notation ṾCV̌ [_ ⌣]

ìɲ̌	'anus' 5	ìkɨ̌	'pipe' 5
àtɔ̌ŋ	'ear' 7	ìtɥ̌ì	'twig (of tree)' 19
ìfɯ̌	'face' 5		

7. M-L, notation V̄CṾ [— _]

m̄tà	'friend' (colloq.) 1	ūtù	'vehicle' 1
m̄fɔ̀ŋ	'leopard' 1		

8. M-M, notation V̄CV̄ [— —]

ūbūŋ	'brain' 3	āyə̄	'foot' 7
ūzə̄k	'cloth (to carry baby)' 3	m̄bɛ̄	'kola' 5
ābɔ̄m	'egg' 7	m̄tɔ̄ŋ	'navel' 5
ūwɛ̄t	'fire' 3	m̄kīŋ	'pot' 5

T̄wɔ̄ŋ	'spear' 5	ū̄kɔ̄n	'tail' 3, 19
ū̄nø̄?	'spice' 19	T̄sɔ̄ŋ	'tooth' 5

9. M-H, notation V̄CV́ [– ¯]

T̄kɔ́n	'bean' 5	ū̄fú?	'leaf' 19
ū̄kɔ́n	'bed' 3	T̄yúŋ	'market' 5
ū̄tɥí	'belt' 19	ū̄kǎp	'money' 3
ā̄nɔ́m	'blood' 7	ū̄gúm	'mountain' 3
T̄nó	'body' 5	ū̄čǒ	'hummingbird' 19
ā̄wú	'bone' 7	ū̄kúm	'name' 3
T̄bɛ́n	'breast' 5	ū̄ŋɔ́t	'oil' 6a
ā̄bé	'country' 7	ū̄ɣǎp	'palmtree' 3
ā̄kɛ́ŋ	'crab' 7	ū̄sǒ	'pepper' 19
ā̄nɛ́	'day' 7	ā̄síŋ	'place' 7
T̄wú	'death' 5	ū̄ní?	'rope' 3
T̄yǒ	'eye' 5	ū̄tím	'termite mount' 3
ū̄fǒ	'fever' 3	ū̄jí	'thief' 3
T̄fúŋ	'fat' 10	ā̄dó?	'throat' 7
T̄kí	'floor' 5	ā̄tɛ́ŋ	'trap' 7
ū̄wɛ́ŋ	'firewood' 3	ā̄zát	'tree' 7
T̄jɛ́k	'food' 5	T̄bɛ́t	'excrement' 13
ā̄zí	'friend' 7	ū̄né	'water' 6a
ā̄tɔ́	'head' 7	T̄tú	'wine' (fermented) 5
ū̄bǎk	'hole' 3	ū̄zǎk	'witchcraft' 3
ū̄nɔ́m	'husband' 1	ā̄zɛ́?	'yam' 7
ū̄bɔ́	'knife' 19		

10. M-F, notation V̄CV̂ [– ¬]

T̄bûm	'belly' 5	ā̄nâm	'lamp' 7
ū̄fɔ̂n	'chief' 1	ū̄kân	'message' 3
ū̄bâk	'dye (used for a bride)' 3	ū̄cɔ̂	'mouth' 3
T̄jêŋ	'firesite' 5	ū̄mê	'sauce' 3
ā̄bû	'lady' 1	ū̄nɛ̂?	'wine' 6a

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