The phonological systems of the Mbam languages of Cameroon with a focus on vowels and vowel harmony

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5
Classification of the Mbam languages

In this chapter, we will look into various methods of classifying the Mbam languages; in particular historic sound changes, structural changes and lexicostatistics in order to classify and further understand the differences in the vowel inventories and vowel-harmony systems of these languages.

5.1 Historical classification

In section 5.1.1, we will look at the diachronic vowel derivations from proto-Bantu, then, in sections 5.1.2, 5.1.3 and 5.1.4, the various sound changes in evidence, and finally, in section 5.1.5, we will present a possible analysis of the derivations of the Mbam languages from proto-Mbam.

5.1.1 Mbam diachronic vowel derivations from proto-Bantu.

The vowels of proto-Bantu,*į *i *e *a *o *u *ų, are generally considered to correspond with the phonetic vowels [i, ɪ, ɛ, a, ɔ, ʊ, u]. With this assumption in mind and for the ease of reading, this study will refer to the proto-Bantu vowels using these phonetic transcriptions.

Diachronically, the most straightforward derivations from proto-Bantu are in noun and verb stems with ***i *u*** and ***a***, which generally have reflexes /i/, /u/ and /a/ in the Mbam languages. In the examples below, all words are included, even those which are not regular cognates of the proto-Bantu stem or have different lexical roots.

Example 369: Reflexes of proto-Bantu *i, *u and *a in Mbam languages

	language	**item**	**BLR 3**[284]	***gloss***
***i>i**	**PB**	***-bîì**	**6425**	***excreta***
	Nen	-pí		
	Maande	-bí		
	Yambeta	-bì		
	Tuki	-mí		
	Gunu	-bíì		
	Elip	-bí		
	Mmala	-bì		
	Yangben	-pì		

[284] The proto-Bantu reconstructed forms come from Bantu Lexical Reconstruction 3 (BLR3) database from the Royal Museum for Central Africa in Tervuren, Belgium: http://www.africamuseum.be/collections/browsecollections/humansciences/blr. The number in this column is the ID of the reconstructed PB form from BLR3.

	language	item	BLR 3[284]	*gloss*
	Baca	-pìh		
	Mbure	-pí		
	PB	***-dìbà**	**1025**	***water***
	Nen	-nífə		
	Maande	-ɲífə		
	Yambeta	-ní		
	Tuki	-tíjá		
	Gunu	-ìᵐpò		
	Elip	-ìᵐbì		
	Mmala	--- (-dígà)		
	Yangben	-òᵐb		
	Baca	-ìᵐb		
	Mbure	-ìᵐpʰ		
	PB	***-jínò**	**3472**	***tooth***
	Nen	-íɲə		
	Maande	-íɲə		
	Yambeta	-ìŋ		
	Tuki	-ìjó		
	Gunu	-íɲò		
	Elip	-íɲ		
	Mmala	-íɲ		
	Yangben	-ìɲ		
	Baca	-îj		
***u>u**	**PB**	***-tíkɔ̀ var.*-t<u>ú</u>kɔ̀**[285]	**2917 (3105)**	***night***
	Nen	-lú		
	Maande	-ətú		
	Yambeta	-dúk		
	Tuki	-tú:		
	Gunu	-dúgú		
	Elip	-dúg		
	Mmala	-dúg		
	Yangben	-túk		
	Baca	-túk		
	Mbure	-pɛ̀ɾ		

[285] It is from the variant rather than the main form that these tokens are derived.

language	**item**	**BLR 3**[284]	***gloss***
PB	***-túd-**	**3101**	***forge***
Nen	-lún-		
Maande	-tún-		
Yambeta	-tún-		
Tuki	-tún-		
Gunu	-dún-		
Elip	-dún-		
Mmala	-dún-		
Yangben	-tún-		
Baca	-tún-		
Mbure	-tùŋ-		
PB	***-gùbʊ́**	**1532**	***hippopotamus***
Nen	-ᵑgùpú		
Maande	-júbú		
Yambeta	--- (-góáŋ)		
Tuki	-ʤúwé		
Gunu	---		
Elip	-súb		
Mmala	-sùb		
Yangben	-súp		
Baca	-súp		
Mbure	-sùp		
PB	***-kúpà**	**2132**	***bone***
Nen	-ùhɔ́		
Maande	-úhɔ́		
Yambeta	-gú		
Tuki	-tí-[286]		
Gunu	-gúé-		
Elip	-gʊ̌gè		
Mmala	-kò		
Yangben	-kóó		
Baca	-kóh		
Mbure	-sɔ́hà		

[286] Both Tuki and Gunu have reduplicated stems. Only the reduplicant is indicated here.

	language	item	BLR 3[284]	*gloss*
***a>a**	**PB**	***-tátɔ̀**	**2811**	***three***
	Nen	-láló		
	Maande	-tátó		
	Yambeta	-dáád		
	Tuki	-tátó		
	Gunu	-dàdó		
	Elip	-dád		
	Mmala	-dádɔ̀		
	Yangben	-tátɔ̀		
	Baca	-tát		
	Mbure	-tá:t		
	PB	***-dà**	**773**	***abdomen***
	Nen	-nà		*intestines*
	Maande	-nà		
	Yambeta	--dɔ̀		
	Tuki	-nà		
	Gunu	-ɔ̀nà		
	Elip	-nɔ̀à		
	Mmala	-nà		
	Yangben	-nà		
	Baca	-ɲà		
	Mbure	-nà		
	PB	***-nyàmà**	**3180**	***animal***
	Nen	-ɲàmà		
	Maande	-ɲàmà		
	Yambeta	-ɲàm		
	Tuki	-nàmà		
	Gunu	-ɲàmà		
	Elip	-ɲàm		
	Mmala	-ɲàm		
	Yangben	-ɲàm		
	Baca	-jàm		
	Mbure	-ɲàm		

In some cases, where the proto-Bantu stem has both ***a** and ***i**, the reflex in some of the Mbam languages is the [+ATR] vowel, **ạ** /ə/. This primarily happens in Nen and Maande, and on one occasion in Tuki. Yangben, Mmala and Elip tend to have a reflex /a/ but in these cases, the ***i** has a [-ATR] reflex /ɪ/, as in the words for *leaf* and *two*. In the examples below, the ***a>ạ** process is underlined.

Example 370: Reflexes of PB *a...i and *i...a in the Mbam languages

	language	item	BLR 3	*gloss*
***a...i>ạ**	**PB**	***-kádí**	**1674**	***woman***
		comp.*-káíntɔ̀[287]	**(9300)**	
	Nen	-ə̀ⁿdú		
	Maande	-ɔ́ⁿdʒú		
	Yambeta	-kíìd		
	Tuki	-kótó		
	Gunu	-kɔ́dɔ̀		
	Elip	-gáⁿdó		
	Mmala	-gáⁿdó		
	Yangben	-kàⁿdò		
	Baca	-ká:ⁿd		
	Mbure	-káⁿd		
***i...a>ạ**	**PB**	***-dá**	**780**	***louse***
		var. *-ìdá[288]	**(9653)**	
	Nen	-ìnɔ́		
	Maande	-ìnɔ́		
	Yambeta	-náŋ		
	Tuki	-ìnɔ́		
	Gunu	-ìŋó		
	Elip	-ìŋì		
	Mmala	-ŋìní		
	Yangben	-pàl		
	Baca	-sɛ̂l		
	Mbure	-séɾ		
	PB	***-bàdí**	**36**	***two***
	Nen	-fàⁿdí		
	Maande	-fə̀ⁿdí		
	Yambeta	-bààn		
	Tuki	-wá		
	Gunu	-àⁿdí		
	Elip	-áⁿdì		
	Mmala	-àⁿdì		
	Yangben	-àⁿdí		
	Baca	-áⁿʧî		
	Mbure	-pàⁿd		

[287] While the BLR 3 main entry for this reconsturction is found in Zone A, it is hard to justify the *i>*ʊ variation. The complex form, also found in Zone A as *woman* may be the actual source in the Mbam languages. Interestingly, the word for man (male) is also a complex form, therefore, it is perhaps not so strange that *woman* should be complex as well.

[288] BLR 3 has this variant for Zone A only. Neither the main entry nor the other variant, ***-ná**, lists that they occur in Zone A.

	language	item	BLR 3	*gloss*
***a...i>a**	**PB**	***-jánì**	**1567**	***leaf***
	Nen	-áⁿdʒì		
	Maande	-áɲí		
	Yambeta	-áɲánán		
	Tuki	-àní		
	Gunu	-áⁿʧî		
	Elip	-ǎɲ		
	Mmala	-ǎɲ		
	Yangben	-àɲ		
	Baca	-àɲ		
	Mbure	-kás		

The PB ***ɔ** generally has the reflex /ɔ/ in the Mbam languages; although in a few cases /ʊ/ also occurs.

Example 371: Reflexes of PB *ɔ in the Mbam languages

	language	item	BLR 3	*gloss*
***ɔ**	**PB**	***-tɔ́**	**2954**	***ashes***
	Nen	-ɔ̀lɔ́		
	Maande	-ɔ̀tá		
	Yambeta	-dɔ̀		
	Tuki	-tɔ́		
	Gunu	-dɔ̂		
	Elip	-dɔ́		
	Mmala	-dɔ́		
	Yangben	-tɔ́		
	Baca	-tɔ̂		
	Mbure	-tɔ́		
	PB	***bɔ́kɔ̀**	**260**	***arm, hand***
	Nen	-kátá		
	Maande	-ɔ̀bɔ́		
	Yambeta	-pɔ̀k		
	Tuki	-bɔ̌		
	Gunu	-bɔ́gɔ̀		
	Elip	-bɔ́g		
	Mmala	-bɔ́g		
	Yangben	-pɔ̀k		
	Baca	-pɔ̂k		
	Mbure	-kàɾ		

In some PB stems, with ***i** or ***u** as a second vowel, ***ɔ** often has the reflex /o/. The ***ɔ>o** variation is underlined in Example 372 below.

Example 372: Reflexes of PB *ɔ...u and *ɔ...i in Mbam languages

	language	item	BLR 3	*gloss*
***ɔ**	**PB**	***-kɔ́bú**	**1865**	***navel***
	Nen	-ló		
	Maande	-tó		
	Yambeta	-tòk		
	Tuki	-tɔ́ⁿdɔ́		
	Gunu	-dégù		
	Elip	-dégù		
	Mmala	-dégú		
	Yangben	-tèkù		
	Baca	-ték		
	Mbure	-ték		
***ɔ**	**PB**	***-jɔ̀nì**	**1627**	***bird***
		var. *-nɔ̀dì	**(2285)**	
	Nen	-nòní		
	Maande	-nòŋí		
	Yambeta	-sàk		
	Tuki	-nôːní		
	Gunu	-nòní		
	Elip	-nòŋì		
	Mmala	-nòní		
	Yangben	-nòní		
	Baca	-nòŋó		
	Mbure	-nòn		
***ɔ**	**PB**	***-gɔ̀dí**	**1417**	***string***
	Nen	-kòlí		
	Maande	-kòlí		
	Yambeta	-wòò		
	Tuki	-èɾí		
	Gunu	-èlí		
	Elip	-ólì		
	Mmala	-ólì		
	Yangben	-òlí		
	Baca	-gòlɔ́		
	Mbure	-káhì		

The sound changes ***ɔ**> /o/ and ***a**> /ə/ mentioned above are evidently the result of [ATR] harmony. Stewart (2000: 51-3) proposes that an initial sound change from PB to proto-Nen must have included [+ATR] spreading, this sound change is summarised in Example 373.

Example 373: Stewart's (2000: 51-3) proto-Nen [+ATR] spread

PB	*i	*ɪ	*ɛ	*a	*ɔ	*ʊ	*u
[+ATR] spread	i	ɪ/i	ɛ/e	a/ə	ɔ/o	ʊ/u	u

5.1.2 Origins of ATR harmony and proto-Bantu *i (and *u)

ATR is historically derived from dominant ***i*** (and to a lesser extent ***u**). Kutsch Lojenga (2009: 4-6) in her study of certain Bantu languages of the Great Lakes Region and a little beyond in the Democratic Republic of Congo (DRC), Uganda, and Tanzania finds that there are five [+ATR] suffixes which all relate to proto-Bantu forms with the extra high vowels ***i*** and ***u**.[289] These [+ATR] suffixes will often trigger ATR harmony in various languages. In the Mbam languages, only the Agentive ***-i*** and the causatives ***-i*** and ***-ici*** trigger ATR harmony. These suffixes are as follows:

Table 84: Proto-Bantu suffixes which may trigger ATR harmony

Agentive ***-i***	(Schadeberg 2003: 80)
Causative ***-i*** and ***-ici***	(Schadeberg 2003: 73)
Perfective / Past ***-ide***	(Nurse 2003: 96)
Adjectiviser ***-u***	(Schadeberg 2003: 81)
Plural Addressee ***-Vni***	(Nurse 2008: 277)

What is it about /i/ and /u/ that makes them the best candidates to introduce ATR harmony? Are there any acoustic or articulatory reasons why these vowels should trigger tongue-root harmony? While acoustic studies of ATR harmony show that F1 is probably the most reliable acoustic correlate between [+ATR] and [-ATR] vowel pairs, it is not evident that even though, the F1 values of /i/ and /u/ are lower than the F1 values of /e/ and /o/, they should trigger the genesis of ATR harmony.

As concerns the question of what makes /i/ and /u/ the best candidates to introduce ATR harmony, Archangeli and Pulleyblank (1994) posit that vowel height and ATR are related and that, if a vowel is high, it will also be [+ATR]. This HI/ATR constraint "... expresses the optimal enhancement relation between highness and advancement" (Ola 2001: 118-9). As both height and ATR affect F1 values to the extent that [+high] [+ATR] vowels always have the lowest F1 values, could it be that this "optimal enhancement" between height and ATR is the reason the high vowels synchronically trigger ATR harmony and diachronically are responsible for the evolution of ATR harmony?

In regards to articulatory reasons why the high vowels should trigger tongue-root harmony, Ladefoged and Maddieson (1996: 300-1) show x-ray tracings redrawn

[289] The vowels of proto-Bantu,*į *i *e *a *o *u *ụ, are generally considered to correspond with the phonetic vowels [i, ɪ, ɛ, a, ɔ, ʊ, u]. With this assumption in mind, for the ease of reading, this study will refer to the PB vowels using the phonetic transcription.

from Lindau (1975) of the articulatory positions of non-low vowels in the Akan dialect Akyem. These x-ray tracings show that the tongue-root advancements of /i/ and /u/ are greater than that of /e/ and /o/. Could the more extreme advancement of the tongue root be a possible reason why /i/ and /u/ are the best candidates to introduce ATR harmony historically?

It is interesting to note that these same two vowels, *i and *u also trigger other phonological phenomena such as spirantisation. “Meinhof's term 'heavy vowels' was intended to catch the mysterious property of his reconstructed vowels *i and *u to trigger spirantisation” (Schadeberg 1994/95: 75). More recently, Maddieson (2003) suggests that “... the distinctive characteristic of these original vowels was ... an unusually narrow constriction nearly consonantal in character” (Maddieson 2003: 19-20). This narrow constriction gives rise to a “noisy release” of a stop which is assumed to be the genesis of assibilation or “spirantisation” in various Bantu languages (Bostoen 2008: 309). Fricative vowels such as those found in Mambila in Cameroon are also considered derived from the proto-Bantu super-close vowels *i and *u (Ladefoged and Maddieson 1996: 314).

However, this view is not universally accepted. Bostoen argues that “The major objection against these theories is the fact that such ‘super-close’ vowels are nowhere (convincingly) attested in Bantu today. Phonetically speaking, the highest vowels in all present-day 7V languages are always [i] and [u]...” (Bostoen 2008: 307).

Whether the proto-Bantu vowels ***i** and ***u** were “super-high” or, phonetically speaking, like the present day [i] and [u] is a question that cannot be answered here. Of interest is that the proto-Bantu suffixes which may trigger spirantisation are generally the same as the suffixes which may trigger ATR harmony (compare Table 85 with Table 84, above), and generally have reflexes of *i and *u. Bostoen (2008: 311-2) lists four proto-Bantu suffixes which trigger spirantisation as a morphological alternation; all four are also implicated in triggering ATR harmony:

Table 85: proto-Bantu suffixes which often trigger spirantisation

1) the agentive suffix ***-i**
2) the causative suffix ***-i**
3) the perfect and/or past tense suffix ***-ide**
4) the adjectival derivation suffix ***-u**

Maddieson (2003: 20-1) raises the question of how “... the role of ATR interacts with ... the nature of the high vowels, as the *super-high/*high contrast might have been an expression of an ATR contrast, or transformed into one in daughter languages” (Maddieson 2003: 20-1).

While many of the Bantu languages have undergone spirantisation and, a subsequent a seven-to-five (7>5) vowel merger, a number of other languages took a different path involving ATR spreading to a 7>9/10 vowel system and ATR harmony (cf. Hyman 2003, among others). Stewart (2000: 51-3), in effect, proposes such a sound change from proto-Bantu to proto-Nen.[290]

It is interesting to note that in one Mbam language, Mbure, both ATR harmony and spirantisation/assibilation/aspiration occur distinguishing between the proto-Bantu ***i**, ***u** and ***ɪ**, ***ʊ**.

In Mbure, a high [+ATR] vowel will trigger aspiration or assibilation of the preceding stop. The vowel itself is sometimes reduced to mere aspiration or assibilation on the occlusive. The [-ATR] high vowels do not cause aspiration/assibilation, as in Example 374.

Example 374: Aspiration of Mbure occlusives preceding /i/ and /u/

surface forms			**underlying form**	***gloss***
kʰùtʰùɾ	~	kʰtʰùɾ	kù≠tùɾ	*dull (v)*
kʰùbʰítʰíbʰínì	~	kʰpʰítʰpʰínì	kù≠pít-íp-ín-ì	*make dirty*
ǹtʰú			ǹ≠tú	*ear*
kʰìpʰùg-è	~	kʰpʰugè	kì≠pùk-à	*close*
jòtʰìnè	~	jòtʰnè	j≠òtìnè	*star*
kòkóŋà			kò≠kóŋ-à	*hunt (v)*
kìpòmá			kì≠pòmá	*dust*
kìdídīmà			kì≠tí-tímà	*butterfly*
kǐǐ̀			kǐ̀≠ǐ̀n	*yam sp.*
màbìdìgà			mà≠pìt-ìk-à	*think (v)*

Of all of the Mbam languages, Mbure is the only one where the phonetic distance between the high vowels is very small, whereas in most of the other languages,[291] the distance between the high vowels is so large that the [-ATR] high vowels are perceptibly closer phonetically to the mid vowels. The aspiration/assibilation on consonants preceding [+ATR] high vowels in Mbure gives an additional phonetic clue distinguishing the [+ATR] from the [-ATR] high vowels.

There are many tantalising hints concerning whether the acoustic and/or articulatory characteristics of the high vowels, /i/ and /u/, shed light on why they are the best candidates for introducing ATR harmony. We have seen diachronically that the proto-Bantu extensions with ***i** and ***u** are most likely not only to trigger ATR harmony, but also spirantisation/assibilation in the daughter languages. While this

[290] Stewart is specifically looking at Nen in his article, but one could expand this analysis to include proto-Mbam. Stewart's (2000) study of Nen is discussed in greater depth in Chapter 5.
[291] Elip is the only other exception, and it has an allophone of /ɪ/, [ɛ] occuring in certain contexts.

study can not give a definitive response to any of these questions, it is hoped that its contribution will lead to the greater understanding of vowel harmony in general.

5.1.3 Sound change: from ɪ, ʊ to e, o?

Many of the Mbam languages have the same vowel inventory as Nen, so a further discussion of Stewart's (2000) analysis of Nen with an eye to the other 8-vowel Mbam languages is in order.

In comparing Nen vowels with the proto-Bantu vowels, Stewart (2000: 47-53) posits a series of sound changes and arrives at a vowel inventory for Nen of seven vowels /i, ɛ, ə, a, ɔ, o, u/. The sound change which is the most important for this study is the one that posits a change from **ɪ**, **ʊ** to **e**, **o**, with a later lowering of **e** to **ɛ** in stems. In prefixes, Stewart (2000: 55) claims that the vowel **e** still occurs in the context of [-ATR] noun roots that do not have the vowel **ɛ**. My analysis of the synchronic situation, however, is different from Stewart's.

Based on my own acoustic and phonological research, the vowel ***ʊ** in proto-Bantu stems, in most instances, corresponds with /ʊ/ in Nen. Although there are a few examples were found where PB ***ʊ** corresponds with /ɔ/. Where a proto-Bantu stem has ***i** or ***u** as an additional vowel, often,[292] ***ʊ** has the reflex /u/ in Nen.

Example 375: Reflexes of proto-Bantu *ʊ in Nen

	gloss	**proto-Bantu**	**BLR3 ID**	**Boyd**	**Stewart/Van Leynseele 1979**
*ʊ>ʊ	*to wash*	*-cʊ̀k-	711	-só	-sʊ̀
	to fight	*-dʊ̀	1150	-nʊ̀	-nʊ̀
	to bite	*-dʊ́m-	1181	-nʊ́m-	-nʊ́m-
	head	*-tʊ́è	3023	-lʊ́á	-lʊ́
	hair (body)	*-bʊ̀dì	369	-hʊ̀tá	---
	dog	*-bʊ́à	282	-mʊ́à	---
	to be dry	*-kʊ́t-	5215	-kʊ́t	---
	three (3)	*-tátʊ̀	2811	-láló	-làl[293]
	to send	*-tʊ́m-	3055	-lʊ́m-	---
	to fall	*-gʊ̀	1466	-kʊ̀	-kɔ̀
	leg	*-gʊ̀dʊ̀	1490	-kʊ̀lʊ́	---
*ʊ>ɔ	*nose*	*-jʊ́dʊ̀	1620	-ɔ̂nɔ̀	-ɔ́n
	pig	*-gʊ̀dʊ̀bè	1494	-kɔ̀nífí	---
*ʊ>u	*ear*	*-tʊ́ì	3030	-lúə́	---
	goat	*-bʊ́dì	303	-múíɲí	---

[292] There are exceptions, e.g. *-bʊ̀dì *body hair* in the examples given.
[293] From Stewart 2000: 52.

The other Mbam languages follow a similar pattern, with ***ʊ** corresponding to either /ʊ/ or /ɔ/ (underlined in Example 376 below).

Example 376: Reflexes of PB *ʊ in the other Mbam languages

	language	**item**	**BLR 3**	***gloss***
***ʊ**	**PB**	***-dʊ́m-**	**1181**	***bite***
	Nen	-nóm-		
	Maande	-nóm-		
	Yambeta	-nóm-		
	Tuki	-nóm-		
	Gunu	-nóm-		
	Elip	-nóm-		
	Mmala	-nóm-		
	Yangben	-nóm		*cling to teeth*
	Baca	-nɔ́m-		
	Mbure	-nɔ́m-		
***ʊ**	**PB**	***-gʊ̀**	**1466**	***fall***
	Nen	-kʊ̀		
	Maande	-kʊ̀-		
	Yambeta	-tə́ə̀ŋ-		
	Tuki	-dúm-		
	Gunu	-ʊ̀b-		
	Elip	-gʊ̀-		
	Mmala	-gʊ̀-		
	Yangben	-kʊ̀-		
	Baca	-kʊ̀-		
	Mbure	-kʊ̀w-		
***ʊ**	**PB**	***-gʊ̀dʊ̀**	**1490**	***leg***
	Nen	-kʊ̀lʊ́		
	Maande	-kʊ̀lʊ́		
	Yambeta	-gʊ̀ʊ̀		
	Tuki	-gʊ̀rʊ́		
	Gunu	-gɔ́ⁿdɔ́		
	Elip	-gɔ́ⁿd		
	Mmala	-gɔ́ⁿdɔ́		
	Yangben	-kɔ́ⁿd		
	Baca	-kɔ́ⁿd		
	Mbure	-kɔ̀ⁿd		

language	item	BLR 3	*gloss*
PB	***-kót-**	**5215**	***to be dry***
Nen	-kót-		
Maande	-kót-		
Yambeta	-kɔ́s-		
Tuki	-kót-		
Gunu	-kót-		
Elip	-gòd-		
Mmala	-gòd-		
Yangben	-kót-		
Baca	-kɔ́t-		
Mbure	-kɔ́ŋ-		

As with other vowels where a proto-Bantu stem has ***i** or ***u** as an additional vowel, *ʊ often has a reflex /u/ in the Mbam languages.

Example 377: Reflexes of PB *ʊ...i in the Mbam languages

	language	item	BLR 3	*gloss*
***ʊi**	**PB**	***-tʊ́ì**	**3030**	***ear***
	Nen	-lúɔ́		
	Maande	-ə̀tú		
	Yambeta	-tóìŋ		
	Tuki	-tú		
	Gunu	-dû		
	Elip	-dú		
	Mmala	-dú		
	Yangben	-tù		
	Baca	-tû		
	Mbure	-tú		
***ʊ...i**	**PB**	***-bʊ́dì**	**303**	***goat***
	Nen	-múíŋí		
	Maande	-búŋì		
	Yambeta	-bòm		
	Tuki	-búíní		
	Gunu	-búŋè		
	Elip	-búíŋì		
	Mmala	-búŋ		
	Yangben	-púŋ		
	Baca	-bûŋ		
	Mbure	-pùn		

The non-back vowels present another problem. While Stewart's **ʊ>o** merger is excluded based on acoustic data which shows the current existence of both vowels in Nen and the other 8-vowel Mbam languages, the same cannot be said for his **ɪ>e**

merger. All previous analyses of Nen present only four contrastive non-back vowels **i**, **ɛ**, **ə**, **a**. A very straightforward diachronic explanation would be as Stewart proposes:

*i > i
*ɪ > e > ɛ
*ɛ > ɛ
*a > a, ə

However, as this study has shown, non-back vowels are in reality /i, ɪ, ə, a/, and the proto-Bantu ***ɛ*** reflex is generally /ɪ/, or as is also the case, /a/ in Nen. Where the gloss in Nen differs slightly from the proto-Bantu, the Nen gloss is added.

Example 378: Reflexes of PB *ɛ in Nen

	gloss	**P-Bantu**	**BLR3**	**Nen**	***gloss***
*ɛ>ɪ	*sand*	*-cèkɛ̀	528	-sí	
	walk, travel	*-gɛ̀nd-	1362	-kìnd-	
	bell	*-gèngɛ́dɛ́	1365	-ŋgíŋí	
	cricket	*-jɛ́njɛ́	1583	-ìndʒí	*cockroach*
	(der. cockroach)		(3311)		
	blow (wind)	*-pɛ́p-	2463	-fíf-	*blow, fan*
	slip	*-tɛ̀dɪd	2817	-tìl-	*slip, smear*
	put pot on fire, stand up	*-tɛ́dɪk	2821	-tíním-	*stand, get*
	(TR)	(*-tɛ́dam)	(2816)		*up*
*ɛ>a	*be honoured*	*-dɛ̀m[294]	907	-ɲàm-	*be famous*
				-ɲàm-ì-ə	*to honour*
	molar tooth	*-gègɔ̀	1355	-kà	*molar*
	cut	*-kɛ̀t-	1782	-kà-	*chop up*

Unlike the back vowels, where the proto-Bantu derived vowels reflect rather closely the modern Mbam reflexes, the proto-Bantu derivations of the non-back vowels are not so close. The proto-Bantu ***ɛ*** has a wider range of reflexes, including **a**, **ạ** and **ɪ**. Several languages have reflexes which may not be regular cognates of the proto-Bantu stem, despite their similarity. Reflexes with /ɪ/ or /ɛ/ are italicised, reflexes with **a** or its [+ATR] counterpart **ạ** (/ə/ or /e/) are underlined in Example 379.

[294] The verb -lɛ̀m- *be heavy* in Nen is also derived from the PB *-dèm. Apparently -lɛ̀m- does not have the connotation *be honoured.*

Example 379: Reflexes of PB *ɛ in the Mbam languages

	language	item	BLR 3	*gloss*
***ɛ**	**PB**	***-cɛ̀kɛ̀**	**528**	***sand***
	Nen	*-sí*		
	Maande	-síbíá		
	Yambeta	--- (-sájín)		
	Tuki	*-tʃìtʃìrì*		
	Gunu	--- (-sánánà)		
	Elip	*-sílìg*		
	Mmala	--- (-sánɔ́)		
	Yangben	*-sélɛ̀k*		
	Baca	*-sèlɛ̀k*		
	Mbure	--- (-sásáán)		
***ɛ**	**PB**	***-dɛ̀dù**	**897**	***beard, chin***
	Nen	-tə́lù		*chin*
	Maande	-ⁿdʒə̀lú		*chin*
	Yambeta	-às		*chin*
	Tuki	-àsó		*chin*
	Gunu	---		
	Elip	-sèlù		*chin*
	Mmala	-sèlú		*chin*
	Yangben	-sèlú		*chin*
	Baca	-kègé		*chin*
	Mbure	-ⁿdʒɛ̀rì (-às)		*beard (chin)*
***ɛ**	**PB**	***-tɛ́dɪk**	**2821**	***put pot on fire,***
		der *-tɛ́dam	**(2816)**	***stand up(TR)***
	Nen	*-tíním-*		*redress*
	Maande	-tálím		*stand*
	Yambeta	*-tíím-*		*stand up*
	Tuki	-tírîn-		*put pot on fire*
	Gunu	*-dílìm-*		*stand*
	Elip	-délím-		
	Mmala	-délím-		
	Yangben	-téŋ-		
	Baca	-téŋíb-		
	Mbure	-tíᵐb-		

	language	**item**	**BLR 3**	***gloss***
***ɛ**	**PB**	***-bɛ́ɛ̀dɛ̀**	**125**	***breast***
	Nen	-pɔ́ᵐbì		
	Maande	-bánà		
	Yambeta	-dɔm		
	Tuki	-bání		
	Gunu	*-pínì*		
	Elip	-bánà		
	Mmala	-bánà		
	Yangben	*-pɛ́nɛ̀*		
	Baca	*-pʲɛ́nɛ̀*		
	Mbure	-ŋúk		
***ɛ**	**PB**	***-gɛ̀nd-**	**1362**	***walk, travel***
	Nen	*-kìnd-*		
	Maande	-kànd-		
	Yambeta	-táŋ-		
	Tuki	-ndìnd-		
	Gunu	*-ìnd-*		
	Elip	-ànd-		
	Mmala	-ànd-		
	Yangben	*-ènd-*		
	Baca	*-ènd-*		
	Mbure	*-ènd-*		

Furthermore, proto-Bantu ***ɪ** also has a reflex /ɪ/ in Nen. Rather than Stewart's sound changes, one finds that both proto-Bantu ***ɪ** and ***ɛ** both have reflexes /ɪ/ in Nen.

Example 380: Reflexes of PB *ɪ in Nen

*ɪ>ɪ	*boil up*	*-bíd	181	-fìn-
	eat	*-dí	944	-ní
	cry, wail	*-dìd	959	-lìl-
	tree	*-tí	2881	-lí
	heart	*-tímà	2895	-límá

In the Mbam languages with eight or fewer vowels, ***ɪ** generally has a reflex /ɪ/; in those languages with nine vowels, the proto-Bantu ***ɪ** will have a reflex in either /ɪ/ or occasionally /ɛ/. In Example 381, the words with a reflex /ɪ/ are underlined. The few cases of an /ɛ/ reflex of ***ɪ** are underlined below.

Example 381: Reflexes of PB *ɪ in the other Mbam languages

	language	**item**	**BLR 3**	***gloss***
***ɪ>ɪ**	**PB**	***-dí**	**944**	***eat***
	Nen	-ní-		
	Maande	-ɲí-		
	Yambeta	-ní-		
	Tuki	-ɲí-		
	Gunu	-ɲí		
	Elip	-ɲí-		
	Mmala	-ɲí-		
	Yangben	-ɲì-		
	Baca	-ɲì-		
	Mbure	-ɲí-		
***ɪ>ɪ/ɛ**	**PB**	***-tí**	**2881**	***tree***
	Nen	-lí		
	Maande	-ìtí		
	Yambeta	-ìd		
	Tuki	-ɾítí		
	Gunu	-ítì		
	Elip	-dí		
	Mmala	-dîd		
	Yangben	-tɛ́		
	Baca	-àsá		
	Mbure	-ᵐbúm		
***ɪ>ɪ/ɛ**	**PB**	***-tímà**	**2895**	***heart***
	Nen	-límá		
	Maande	-tímá		
	Yambeta	-tím		
	Tuki	-tímá		
	Gunu	-dímá		
	Elip	-dím		
	Mmala	-dìm		
	Yangben	-tím		
	Baca	-tʃɛ́m		
	Mbure	-tím		

A further indication that, while the ***ɛ>ɪ*** reflex seems odd, Nen verbs derived from ***ɛ*** will go to /i/ with the [+ATR]-dominant causative suffix in the same fashion that verbs derived from *ɪ go to **/i/** with the causative suffix, as seen in Example 382. In the 9-vowel Mbam languages, verbs derived from proto-Bantu *ɛ tend to have a reflex /e/ with the causative, not /i/.

Example 382: Reflexes of PB *ɛ and *ɪ with the causative in Nen

	gloss	PB	BLR 3	Nen V	der. V	*gloss*
*ɛ>ɪ	*walk*	*-gɛ̀nd-	1362	-kìnd-	-kìnd-ì-ə̀	*cause to walk*
	stand	*-tɛ́dɪk	2821	-tíním-	-tín-ím-ì	*to redress,*
	TR	(*-tɛ́dam)	(2816)			*straighten*
*ɪ>ɪ	*boil up*	*-bíd	181	-fìn-	-fìn-ì-ə̀	*boil (food)-CAUS*
	eat	*-dí	944	-ní-	-ní-ə́s-ì-ə̀	*eat (CAUS)*

5.1.4 Sound change: e >ə?

In this section, Stewart's (2000) proposed sound changes and mergers account for the changes from proto-Bantu, through proto-Nen to present-day Nen. In this section, his proposal is described and discussed. This study builds on Stewart's analysis for the diachronic sound changes in Nen, and by extension, the other Mbam languages which will be presented in detail in section 5.1.5 below.

While in many of the studies on Nen (especially in Dugast 1971), the [+ATR] vowel **e** is present, most studies either account for it in a sound change (i.e. **e** >**ə** as in Stewart 2000: 53, simply ignore it (De Blois 1981: 12: "Roots having [e] as the only vowel are very restricted in number and will be left out of discussion"). The existence of the vowel **e** in modern-day Nen is doubtful. The various analyses in previous studies of the vowel **e** are discussed briefly.

Dugast contrasts **e** and **ə**, but she (1971: 29) admits that "... /e/ apparaît rarement dans les radicaux des substantifs..." She lists only a few words, many of which are derived forms. For the others, where she lists "e", my databases have /ə/, some examples are found in:

Example 383: Comparison of words with "e" in Dugast (1971)

Gloss	Dugast (1971: 33)	Boyd
uncle	ì-sen	ì≠sə̀n
give birth	-bíen	-pʲə́n-
field of yams	ì-ten	ì≠tə́ní
fly swatter	bù-kiek-i	from ì≠kʲə̀ *fly*
lion	ŋgwêy	ì≠ŋə̀ⁿdə́

Dugast also admits that in many words, there is "une réalisation intermédiaire" between /ə/ et /e/. This "réalisation intermédiaire" of Dugast is similar to other synchronic variations in a number of the Mbam languages. While some, like Maande and Yambeta, clearly have a central [+ATR] vowel /ə/ (although in both instances, it is written in the orthography as **e**), in other languages such as Yangben (or Kalɔŋ: Hyman 2003a) and Gunu, as Robinson (1984: 50) found: -Chez certains locuteurs la réalisation (du phonème /e/) est légèrement centralisée." This being the case, [e] is likely a realisation of the central [+ATR] vowel /ə/.

Stewart (2000: 54-5), using data from Dugast (1967, 1971), found a lowering of certain Nen prefixes (those with **e-**) before a stem vowel **ɛ.** While the vowel /ɪ/ is acoustically rather low, it is also quite widespread in its acoustic space. While I do not doubt that there is some phonetic variation, I found no evidence in my databases or acoustic analysis of a lowering such as Stewart found. Stewart's examples are as follows:

Stewart (2000: 55)	Boyd	*gloss*
nè-sɛ̀k	nì≠síkí	*termite*
nè-bàt	nì≠pàtà	*cloth*
né-hɔ̀k	nì≠hóká	*axe*
nè-bók	nì≠pókà	*forehead*
nì-bíl	nì≠pílə	*palm tree*
nì-fù	nì≠fʷə́	*bundle*

Stewart (2000: 53-4) therefore suggests an additional sound change, merging /e/ from proto-Bantu ***ɛ** and /ə/ from ***a** due to [+ATR] spread. In support of this, he shows a few cases where proto-Bantu ***ɛ** has the reflex /ə/ in Nen.

As seen above, when proto-Bantu has ***i** or ***u** in the stem (often, but not always in final position), a non-high vowel in the same stem has a reflex that is [+ATR] in Nen. In Example 384, the low vowels are bolded in both the proto-Bantu derivation and the [+ATR] reflex in Nen.

Example 384: [+ATR] reflexes of PB low vowels in Nen

*a>ə	*give birth*	*-bí**a**d-	226	-pí**ə́**n-	
	name	*-jín**à**	3464	-íɲ**ə̀**	
*ɔ>o	*string*	*-g**ɔ̀**dí	1417	-k**ò**lí	*string, thread*
	bird	*-jɔ̀nì	1627	-n**ò**ní	
		var. *-n**ɔ̀**dì	(2285)		
	navel	*-k**ɔ́**bú	1865	-l**ó**	
*ɛ>ə	*elephant*	*-jɔ̀gù	1607	-s**ə̀**kù	
		var. *-j**ɛ̀**gù	(1580)		
	beard	*-d**ɛ̀**dù	897	-t**ə́**lù	*chin*

There are instances where ***ɛ** has a reflex /ə/ in Nen where there is not an obvious high vowel in the proto-Bantu stem:

speak	*-dɛ́b-	7745	-jə́m-	*speak*
father (his)	*-cɛ́	501	-sə́	*father*

After [ATR] spread, Stewart (2000: 53) proposes three sound changes to arrive at his inventory of vowels for Nen 1) **ɪ, ʊ>e, o** 2) **e>ə** and 3) **stem e>ɛ**. In this manner,

he accounts for the **ɛ/i** ATR harmony pair. A fourth change is the ouster of the **ɛ/ə** harmony pair in lexical items. With these changes, Stewart arrives at a Nen inventory of i ɛ/i,[295] a/ə, ɔ/o, o/u, u.

In light of the other Mbam languages, however, a different analysis is possible, which fits the wider data collected from the ten Mbam languages discussed in this study.

5.1.5 Towards proto-Mbam

Stewart (2000) proposes three sound changes to arrive at his inventory of vowels for Nen 1) **ɪ, ʊ>e, o** 2) **e>ə** and 3) stem **e>ɛ**. This study presents a different analysis for each of these proposals. Stewart's first sound change, **ɪ, ʊ>e, o**, is excluded since my data shows evidence that **ɪ** and **ʊ** are present in modern-day Nen as well as in all of the other Mbam languages. It is rather **e** and, in the case of Tuki, also **o** which are lost rather than the high vowels. Stewart's second sound change, **e>ə**, is plausible but unnecessary and the presence of **ə** can be more simply accounted for as the [+ATR] counterpart of /a/ without other sound change necessary. The third sound change, stem **e>ɛ**, is excluded since in my data, there is no reflex /e/ of either ***ɛ** or ***ɪ**, as seen in the discussion above. In this section I present my proposal of the sound changes from proto-Mbam.

Following Hyman's (2001, 2003a) and Dresher's (2009) idea of identifying only those features which are "phonologically active" in the vowel system, using either Hyman's four features: ATR, front, round and open or Dresher's contrastive-feature hierarchy, most of the Mbam languages which have nine contrastive vowels have a "phonologically active" feature [front] and those with eight or fewer vowels lack a "phonologically active" feature [front].

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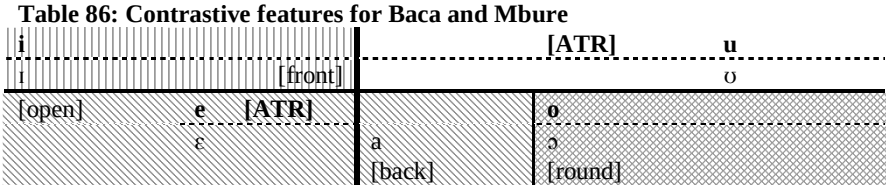
[295] Stewart (2000: 54) does claim that ɛ/ə occurs in "the diminutive extention **-ɛl/-əl**" only. The situation, however, isn't so easy as this. There is no phonological conditioning as there were, or still are, two different extensions which are similar: one is **-ɪl/-il** (possibly a reflex of ***-id** (n°2188)) and the other **-al/-əl** (/-ɔl/-ol) (possibly a reflex of ***-ad** (an expansion or ill-defined suffix (Meeussen 1967: 90)). Another possibility is that **-al/-əl** may be a reflex of ***-at**. One word has been found which contains both extenstions: ò≠tóᵐb-**ál**-i̲l-à *approach s.o.* (from the verb ò≠tóᵐb-à *pass, succeed*). Below is a paradigm of all the forms found in the corpus with each extension (bolded). While not all forms have been attested, there are enough examples to show the differences, as presented in the example below.

ù≠tìŋ-**ɔ̀l**-ə̀	*attach*	ù≠míŋ-**íl**-ə̀	*polish*
ò≠sìk-**àl**-à	*slice*	ò≠sìk-**ìl**-à	*winnow*
ò≠sál-**ál**-à	*whistle*	ò≠tát-**íl**-à	*wait*
ù-pí≠hʲáŋ-**ɔ́l**-ə̀	*soar*	---	---
ò≠tɔ̀ᵐb-**ɔ̀l**-à	*peel*	ò≠mʲɔ̀t-**ìl**-à	*press*
ù≠ɲòŋ-**òl**-ò	*tickle*	---	---
ò≠kóp-**ál**-à	*insult*	ò≠tóᵐb-ál-**ìl**-à	*approach s.o.*
ù≠pùl-**ɔ̀l**-ə̀	*stir*	ù-pí≠kúp-**íl**-ì-ə̀n-ə̀	*capsize, blow down*

While they could be allomorphs which are (exceptionally) not phonologically conditioned, the fact that they do co-occur in one stem gives credence to the argument that they were, at least historically, two differenct morphemes, despite dificulty of determining the difference in meaning.

Baca, with ten surface vowels, most closely resembles proto-Mbam after the [+ATR] spread from the proto-Bantu vowels. The hierarchy of contrastive features for Baca, as well as my proposal for proto-Mbam is as follows: open>>back/front>>round>>ATR, and illustrated in Table 86.

Table 86: Contrastive features for Baca and Mbure



The only sound change in Baca from proto-Mbam is the loss of contrast between the [+ATR] and [-ATR] low vowels **a/ạ**. While the [+ATR] vowel is still found as an allophone, it is no longer contrastive.

Table 87: Baca sound changes from PB

proto-Bantu	i	ɪ	ɛ	a	ɔ	ʊ	u
(1) [+ATR] spread	i	i/ɪ	ɛ/e	a/ạ	ɔ/o	ʊ/u	u
(2) Loss of contrast of ạ				(ạ)			
Baca	i	ɪ/i	ɛ/e	a/[ɜ]	ɔ/o	ʊ/u	u

While Mbure has the same contrastive-feature hierarchy as Baca (open>>back/front>>round>>ATR), it has an additional sound change. The third sound change proposed is the merger of ạ>e.[296] Mbure, Yangben and Mmala undergo this sound change.

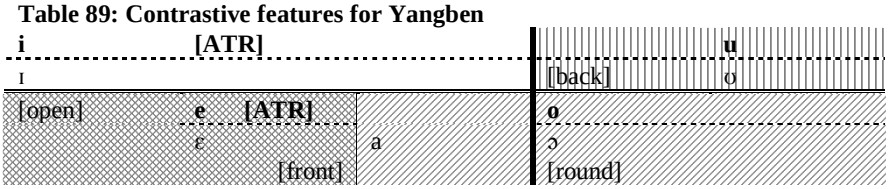
Table 88: Mbure sound changes from PB

proto-Bantu	i	ɪ	ɛ	a	ɔ	ʊ	u
(1) [+ATR] spread	i	ɪ/i	ɛ/e	a/ạ	ɔ/o	ʊ/u	u
(3) Merger of ạ>e				a/e			
Mbure	i	ɪ/i	ɛ/e	a/e	ɔ/o	ʊ/u	u

The other 9-vowel languages, Yangben and Mmala, have similar vowel inventories and vowel features as Mbure, but their contrastive hierarchies differ from each other and from Mbure. Yangben's contrastive-feature hierarchy differs from the Mbure's contrastive-feature hierarchy by a change in the order of the features. The contrastive-feature hierarchy for Yangben is open>>round/back>>front>>ATR.

[296] While Mbure does have instances where /a/ may occur in [+ATR] contexts, this is discussed elsewhere and is not important here.

Table 89: Contrastive features for Yangben



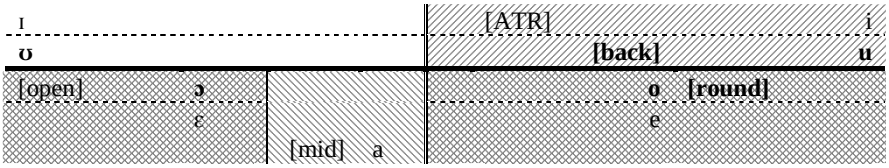
An additional sound change evident in both Yangben and Mmala, namely, a gradient phonetic lowering of **ɪ** and **ʊ** in certain environments (sound change #4), as is seen in Table 90.

Table 90: Yangben and Mmala sound changes from PB

proto-Bantu	i	ɪ	ɛ	a	ɔ	ʊ	u
(1) [+ATR] spread	i	ɪ/i	ɛ/e	a/ạ	ɔ/o	ʊ/u	u
(3) Merger of ạ>e				a/e			
(4) Lower ɪ,ʊ (phonetic)		ɪ~ɛ				ʊ~ɔ	
Yangben, Mmala	i	ɪ/i	ɛ/e	a/e	ɔ/o	ʊ/u	u

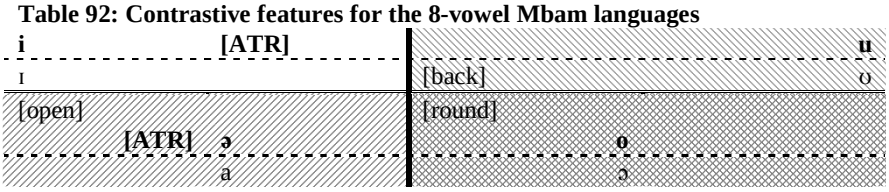
While Yangben and Mmala have the same vowel inventory and have undergone the same sound changes, their contrastive hierarchies are very different. Instead of a contrastive feature, *front*, Mmala has a height feature *mid*. Mmala's contrastive feature hierarchy is then ATR>>open>> mid>>round/back.

Table 91: Contrastive features for Mmala



In the 8-vowel languages, another sound change is evident. Hyman (2001: 155) concludes that in Gunu, the feature [front] is not required in underlying representations. While certain vowels in a general sense are *front* vowels, the feature [front] is not active in the vowel system. All of the vowels in Gunu and the other 8-vowel languages can be accounted for with the contrastive feature hierarchy and is open>>round/back>>ATR

Table 92: Contrastive features for the 8-vowel Mbam languages



With the loss of [front], the gap left by its absence triggers the lowering of the [-ATR] high vowel. In Nen, /ɪ/ occurs only optionally (depending on the speaker) in certain noun-class prefixes, when not lowered by the vowel **ɔ** in the noun root.[297]

Table 93: Nen, Maande and Yambeta sound changes from PB

proto-Bantu	i	ɪ	ɛ	a	ɔ	ʊ	u
(1) [+ATR] spread	i	ɪ/i	ɛ/e	a/ạ	ɔ/o	ʊ/u	u
(5) Loss of feature: [front]			---				
(6) Lowering of ɪ>[ɛ]		ɛ/i					
Nen, etc.	i	ɛ/i	---	a/ə	ɔ/o	ʊ/u	u

However, among the 8-vowel languages, the situation of two, Elip and Gunu, is more complicated. Both Elip and Gunu have undergone a sound change similar to sound change #3 (a merger of ạ>e) as well as the loss of the feature [front], sound change #5. There are two possibilities for classifying these two languages:

- Elip and Gunu should be grouped with Yangben and Mmala as having undergone sound changes #1, #3 and #4, which precludes sound change #5, which they also seem to both have undergone, or
- Elip and Gunu should be grouped as a separate subgroup along with the other 8-vowel languages which have not undergone sound change #3, but have undergone sound changes #5 and #6.

Both these options have their difficulties. The first option would argue that the loss of the feature *front* in both Elip and Gunu would have come about later through contact. We will discuss this scenario in section 5.2 below.

The second option would have to account for the high F2 frequency of the [+ATR] counterpart of /a/ which surfaces in the acoustic space of [e] and for the limited and optional height harmony found in Elip. The latter is likely influenced by contact with Mmala.

In the latter scenario, the F2-raising of /ə/ can be perhaps attributed to either contact with the neighbouring languages to the south and/or maximising the acoustic space due to the loss of the feature *front* similar to the lowering of the high front vowel found in sound change #6. A seventh sound change is therefore proposed, that of the fronting or F2-raising of **ə**.

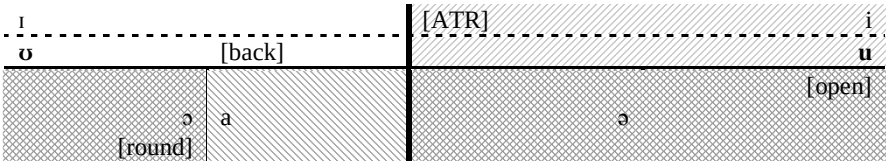
[297] Of the recordings of three Nen speakers, only one had a *slightly* lower F1 for noun-class 5 or 7 prefixes on [-ATR] nouns. The vowel [ɔ] in the noun root nullified this lowered F1 in the prefix, although it was still evident when [ʊ] was in the noun root.

Table 94: Possible Elip and Gunu sound changes from PB

proto-Bantu	i	ɪ	ɛ	a	ɔ	ʊ	u
(1) [+ATR] spread	i	ɪ/i	ɛ/e	a/ạ	ɔ/o	ʊ/u	u
(5) Loss of feature: [front]			---				
(6) Lowering of ɪ>[ɛ]		ɛ/i					
(7) "Fronting" or F2-raising of **ə**				a/e			
Gunu, Elip	i	ɛ/i	---	a/e	ɔ/o	ʊ/u	u

A final sound change is in process in the tenth language, Tuki. The open [+ATR] round vowel [o] is no longer contrastive. The vowel [o] occurs only as the [+ATR] allophone of /ɔ/. Tuki's contrastive feature hierarchy is: open>>ATR>>round/back.

Table 95: Contrastive features for Tuki



In Tuki, the vowel [o] does not occur in noun roots or verb stems unless another [+ATR] vowel is present. In these cases, it can be interpreted as a [+ATR] allophone of /ɔ/ within the root or stem.

Table 96: Tuki sound changes from PB

proto-Bantu	i	ɪ	ɛ	a	ɔ	ʊ	u
(1) [+ATR] spread	i	ɪ/i	ɛ/e	a/ạ	ɔ/o	ʊ/u	u
(5) Loss of feature: [front]				ə			
(6) Lowering of ɪ>[ɛ]		[ɛ]/i	---				
(8) Loss of contrast of o					(o)		
Tuki	i	[ɛ]/i	---	a/ə	ɔ/[o]	ʊ/u	u

We have discussed the sound changes which may have occurred from proto-Bantu to arrive at the current vowel inventories of the Mbam languages. The eight primary sound changes proposed above are listed in Table 97.

Table 97: Proposed historic sound changes in the Mbam languages

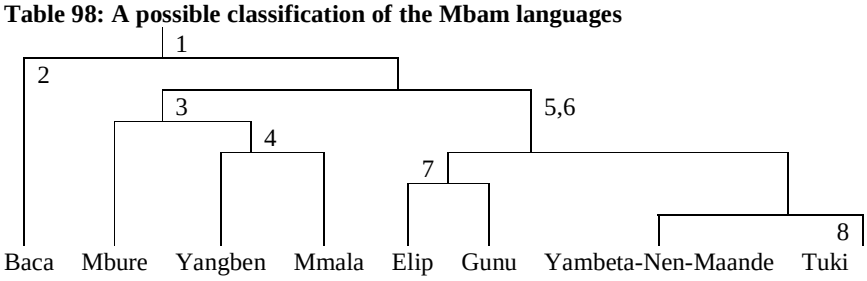
1. [+ATR] spread
2. Loss of contrast of ạ
3. Merger of ạ>e
4. Lower ɪ,ʊ (phonetic)
5. Loss of feature: [front]
6. Lowering of ɪ>[ɛ]
7. "Fronting" or "F2-raising" of **ə**
8. Loss of contrast of o

Along with the historical sound changes discussed above and summarised in Table 97, there are also hints of possible sound changes occurring now, perhaps due to language contact with Basaa. Both Mbure and Baca are at the extreme south of the Mbam and adjacent to the greater Basaa region. Mbure in particular has a very narrow distance between the high vowels and may be undergoing a vowel merger of the high vowels; for example a 9>7 vowel merger. However, the distinction is being preserved by aspiration or assibilation on consonants preceding /i/ and /u/, which does not occur on consonants preceding /ɪ/ and /ʊ/. This aspiration/assibilation is similar to Schadeberg's (1994/95: 73) finding that "No language has undergone [a] 7>5 [vowel merger] but not Spirantisation".

Mbure seems to be in a process of undergoing a merger influenced by contact with Basaa: that of merging [-ATR +high] vowels with either the [+ATR] high or the [-ATR -high -low] vowels.

The Mbam languages are classified from proto-Mbam with the above sound changes noted (by the numerals listed above). It is assumed that proto-Mbam had ten vowels, so the loss of contrast (sound change #2) is the change where Baca splits off. The next sound change #3, along with sound changes #5 and #6 separates Mbure, Yangben and Mmala from Elip, Gunu, Yambeta, Maande, Nen and Tuki. The non-contrastive lowering of the [-ATR] high vowels, sound change #4, distinguishes Mbure from Mmala and Yangben. Sound change #7, the "fronting" or F2-raising of the vowel **ə** separates Elip and Gunu from Yambeta, Maande, Nen and Tuki. The final vowel change, #8, the loss of contrast of /o/, separates Tuki from Yambeta, Maande and Nen, as in Table 98:

Table 98: A possible classification of the Mbam languages



5.2 Structural issues in language classification

A fuller understanding of the history of the Mbam languages must include language contact. The dilemma of Elip which manifests a trace of height harmony like Mmala indicates either a long shared history with, or borrowing, not only of lexical items but of structural features, from Mmala.

In this section, we will consider some structural changes evident in these languages, in order to investigate the scenario of contact to explain the differences in the vowel-harmony systems which are not accounted for by historic sound changes alone.

As mentioned above, Elip and Gunu appear to have undergone similar historic sound changes as Yambeta, Maande and Nen, but also to have undergone a similar historic sound change as Mbure, Yangben and Mmala. In addition, Elip shares an obvious trait with Mmala, that of having a trace of height harmony. The question is whether Elip and Gunu are better classified as belonging to the same subgroup as Mmala, but borrowing structural features from the Yambeta-Maande-Nen subgroup (mentioned above), or are better classified as belonging to the same subgroup as Yambeta-Maande-Nen, and borrowing structural features from the Mmala subgroup.

In Table 98 above, Yangben and Mmala are not differentiated by a sound change (they both have the same vowel inventory). The difference between Yangben and Mmala is structural. As has been seen in Chapter 4, they have different contrastive hierarchies of their vowel systems. The main structural difference that distinguishes Mmala from Yangben is the replacement of the feature *front* with the feature *mid*. While this structural change has no bearing on the surface vowels, it does have a critical effect on the vowel-harmony systems of these two languages.

While the historic sound changes alone would favour the classification found in Table 98 above, taking into consideration structural features, Elip and Gunu can be classified differently. Assuming that a sound change may have a structural change at its root, but that not all structural changes have an associated sound change, we will start out with the sound changes presented above in Table 97, to which we will add two structural changes to account for both the differentiation of Mmala from Yangben and resolve the dilemma of Elip.

The first structural change proposed, is the replacement of the feature *front* with the feature *mid* (structural change #4a. [front]>[mid]), which distinguishes Mmala (ATR >>open >>**mid** >>round/back) from Yangben (open >>round/back >>**front** >>ATR). If we assume that both Elip and Gunu have undergone sound change #3 (the merger of **ạ>e**), they can now be connected with the larger subgroup Mbure-Yangben-Mmala rather than the larger subgroup Yambeta-Maande-Nen-Tuki, which has not undergone sound change #3. A further structural change, the loss of the feature *mid* (structural change #4b), can thus be proposed to distinguish Elip and Gunu (open>>round/back>>ATR) from Mmala (ATR>>open>>**mid**>> round/back), see Table 99 below. The differences in ranking are language-specific and do not

have any bearing on the structural change[298] between languages (see discussion of the contrastive-feature hierarchy in Chapter 4).

Table 99: Proposed historic sound and structural changes in the Mbam languages

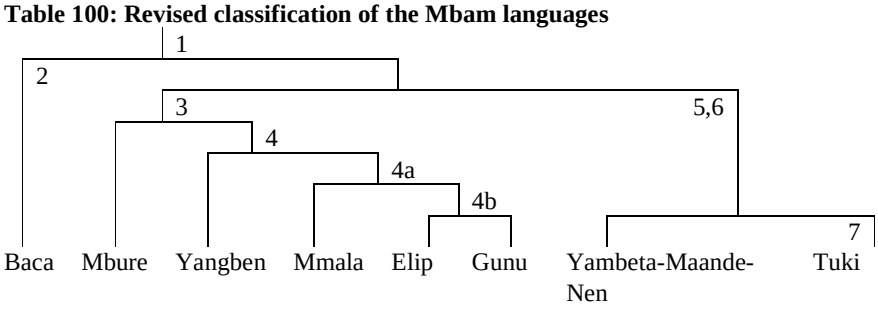
1.	[+ATR] spread
2.	Loss of contrast of ạ
3.	Merger of ạ>e
4.	Lower ɪ,ʊ (phonetic)
4a.	[front]>[mid]
4b.	Loss of feature: [mid]
5.	Loss of feature: [front]
6.	Lowering of ɪ>[ɛ]
~~7.~~	~~"Fronting" or F2 raising of ə~~
7.	Loss of contrast of o

With the loss of *mid*, Elip and Gunu would be historically closer to Mbure-Yangben-Mmala but would structurally more closely resemble Yambeta-Maande-Nen (which also have a contrastive-feature hierarchy: open>>round/back>>ATR). Although similar, the contrastive-feature hierarchy of Gunu and Elip would be the result of a different series of historic changes than the contrastive-feature hierarchy of Nen, the latter due to the loss of the feature *front*, the former due to the loss of the feature *mid*.

With these two structural changes, we can account for why both Elip and Gunu have a [+ATR] counterpart of /a/ with a surface form [e], unlike the Yambeta-Maande-Nen-Tuki subgroup, and account for the trace of height harmony found in Elip, now interpreted as a remnant left over after structural change #4b. This reinterpretation would eliminate the necessity of proposed sound change #7 in Table 97 (and barred in Table 99 above) since Elip and Gunu are no longer considered a part of the Yambeta-Maande-Nen-Tuki subgroup that requires it. The modified tree would then be as found in Table 100 below.

[298] Both Baca and Mbure have the same contrastive-feature hierarchy, but, due to historic sound changes, are separated in the classification tree.

Table 100: Revised classification of the Mbam languages



The advantage of considering structural innovations along with historic sound changes is that it presents a more complete picture of the classification of the Mbam languages.

The position of Elip in the classification of the Mbam languages is a dilemma. It has a shared history either with the Yambeta-Maande-Nen subgroup and, through contact, borrowed a trace of height harmony from Mmala, or it (and Gunu) has a shared history with the Mbure-Yangben-Mmala subgroup and due to contact with the other Mbam languages, has lost its feature *mid*, leaving only a remnant of height harmony, generally retained only be the oldest speakers of the language. While there is no synchronic evidence that Gunu ever had height harmony, it is generally considered to be more closely related to Baca, Mbure, Yangben, Mmala and Elip than to Nen and Maande.

5.3 Lexicostatistical classification

Generally languages are classified by their lexical similarities. This section presents my own lexicostatistical analyses of these ten Mbam languages, and considers whether the lexicostatistical evidence supports or contradicts the classification based on historic sound and structural changes discussed above.

There is some discussion about what is the best size of wordlist to use. With a shorter list, each word has a higher importance in the percentages. However the longer lists likely include cultural vocabulary and may have lateral influences from neighbouring languages (Piron 1997: 535). On the other hand, while a list of 100 words is sufficient to establish a synchronic classification, it is too small for establishing regular phonological correspondences, which are essential as they form the basis for deciding whether a partial divergence is phonological or merely phonetic (Möhlig 1986: 23).

In collecting data for this study, a Swadesh 200-word list[299] was elicited for each of the ten languages included in this study. Due to various lacunas in several of the

[299] These wordlists are included in the larger lists mentioned in the introduction.

languages, the actual number of terms compared is between 165 and 190. Table 101 gives the results.

Table 101: Lexicostatistical comparison of the Mbam languages

N[300]									
53%	Ma								
37%	33%	Ya							
33%	36%	33%	T						
33%	39%	38%	44%	G					
36%	41%	35%	44%	60%	E				
36%	41%	34%	43%	61%	81%	M			
36%	40%	34%	37%	52%	65%	74%	Yg		
41%	38%	35%	36%	48%	55%	58%	66%	B	
37%	30%	34%	34%	41%	43%	44%	51%	59%	Mb

The two extreme methods of lexicostatistical subclassification are Nearest Neighbour (NN) and Furthest Neighbour (FN). "NN assumes that the distance is equal to the closest distance between any member of X and (any member of) Y; FN takes the greatest distance as its measure" (Schadeberg 1986: 71-2). A third method, often called Branch Average (BA), takes the average between the greatest and the closest distance. Table 102 presents the result of the cluster analyses. Each row indicates the distance between languages or clusters of languages according to the three calculations. For example, Elip and Mmala have a distance of 810 (81%) and form the first cluster. In the next row, by the Nearest Neighbour calculation cluster 1 (i.e. Elip-Mmala) and Yangben have the next closest distance at 740 (74%) and form the second cluster, while the Furthest Neighbour calculation, the next closest distance is between Yangben and Baca at 660, and they form cluster 2. The Branch Average calculation, like the Nearest Neighbour, groups cluster 1 (Elip-Mmala) with Yangben at 695 (69.5%). Cluster 2 in row three includes the elements found in the second row and compares with the next closest language or cluster of languages.

[300] Abbreviations are as follows:

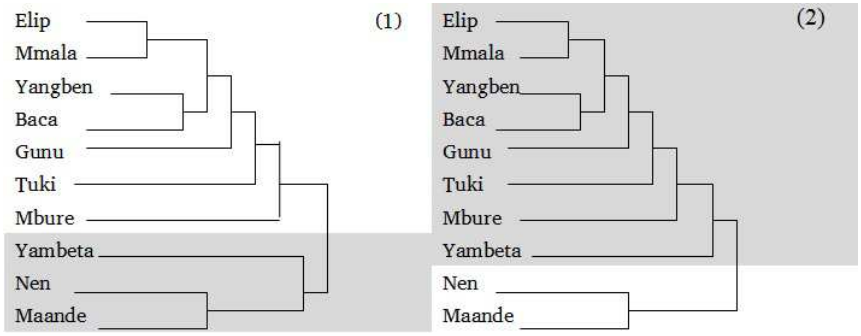
E = Elip	M = Mmala	Yg = Yangben	B = Baca	Mb = Mbure
G = Gunu	Ma = Maande	T = Tuki	N = Nen	Ya = Yambeta

Table 102: NN, FN, and BA Cluster Analyses

Clusters	Nearest Neighbour			Furthest Neighbour			Branch Average		
	lg x	lg y	1/1000	lg x	lg y	1/1000	lg x	lg y	1/1000
1	E	M	810	E	M	810	E	M	810
2	cl.1	Yg	740	Yg	B	660	cl.1	Yg	695
3	cl.2	B	660	cl.1	cl.2	650	cl.2	B	605
4	cl.3	G	610	cl.3	G	600	N	Ma	530
5	cl.4	Mb	590	N	Ma	530	cl.3	Mb	530
6	N	Ma	530	cl.4	T	430	cl.5	G	483
7	cl.5	T	440	cl.6	Mb	340	cl.6	T	400
8	cl.7	cl.6	410	**cl.5**	**Ya**	**330**	cl.7	cl.4	352
				cl.7	**Ya**	**330**			
9	cl.8	Ya	380	cl.7/5	cl.8	300	cl.8	Ya	350

In the Furthest Neighbour analysis, Yambeta has 33% similarity with both the Nen-Maande cluster and with the Elip-Mbure cluster. If Yambeta is grouped with the Nen-Maande cluster, it joins the Elip-Mbure cluster at 30%, and vice versa. Therefore two Furthest Neighbour trees are possible depending on to which group Yambeta is attached. In Table 103, Yambeta is bolded and the competing classifications are shaded.

Table 103: Furthest Neighbour subclassifications (1) & (2)

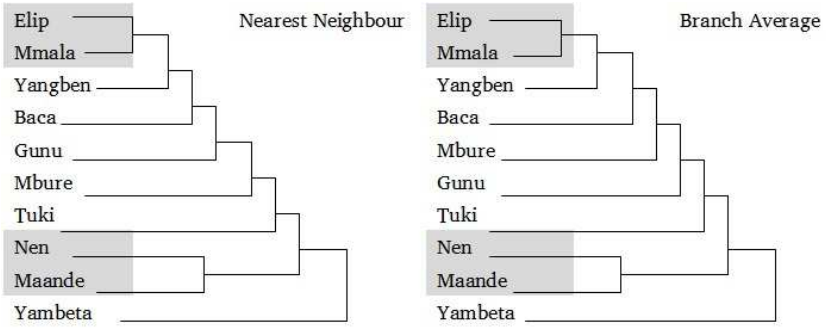


The unstable position of Yambeta in the Furthest Neighbour subclassification is reflected differently in the Nearest Neighbour and Branch Average classifications. Yambeta is the most distant language in both of these subclassifications.

In all three subclassifications, two nodes are evident: the Elip-Mmala node and the Nen-Maande node. No other nodes are evident in all the subclassifications. While Furthest Neighbour classification has a Yangben-Baca node, this is not found in the Nearest Neighbour or Branch Average subclassification in which Yangben and Baca join the Elip-Mmala node one after the other. Gunu, Tuki and Mbure join the Elip-Mmala-Yangben-Baca node successively in all three subclassifications, but in

different orders. In the Furthest Neighbour classification, the order is Gunu, Tuki and Mbure (Table 103). In the Nearest Neighbour classification it is Gunu, Mbure and Tuki and in the Branch Average classification it is Mbure, Gunu and Tuki (Table 104).

Table 104: Nearest Neighbour and Branch Average subclassifications



These classifications differ from Phillips' (1979) comparison of Yambeta with eight other languages of the Mbam region: Bafia and Bape (A50), Maande, Nen, Alinga (a Nen dialect), Bonek (A40), Gunu, and Tuki (A60).[301] Her conclusions were that Yambeta more closely related to Gunu and Tuki than to Maande or Nen. My analysis indicates otherwise. The Furthest Neighbour trees put Yambeta at equidistance from both the Gunu-Tuki subgroup and the Maande-Nen subgroup. The Nearest Neighbour and the Branch Average trees, put the Maande-Nen subgroup closer to the Gunu-Tuki group than to Yambeta.

While earlier studies may differ in calculating the distance between Yambeta and its neighbours, it is interesting to note that the position of Yambeta as being in between the other clusters is not different. Mous and Breedveld (1986: 187) note that "Yambeta occupies a position in between different groups." While Mous and Breedveld indicate a distance of 60% with Maande, they acknowledge 14 missing items between Yambeta and Maande (Mous and Breedveld 1986: 184), which is substantial in a list of 100 items. Yambeta forms a group with the other languages in the same group as Maande (Nen, Alinga, and Bonek) at only 34.5% (Mous and Breedveld 1986: 187) which is similar to my findings.

5.4 Conclusions

In comparing the lexicostatistical classification (section 5.3) with that of the historic sound and structural changes discussed in section 5.2, there are several conclusions that may be drawn:

[301] Phillips (1979: 22-35) uses a 120-word list based on the Swadesh basic wordlist.

- The revised classification (Table 100) is more similar to the Nearest Neighbour and Branch Average classifications (Table 104) than the classification proposed in Table 98.
- In every lexicostatistical subclassification (Nearest Neighbour, Furthest Neighbour and Branch Average), Elip and Mmala form a node. This supports the argument that Elip and Mmala have a long shared history and supports the revised classification (Table 100). The other languages, Yangben, Baca, Mbure and Gunu join the Elip-Mmala node earlier than the languages of the other historic subgroup, Yambeta, Maande, Nen and Tuki.
- While the historic classification groups Yambeta and Tuki more with the Nen-Maande subgroup, the lexicostatistical classification groups Tuki distantly to the Gunu-Elip-Mmala-Yangben-Baca-Mbure subgroup and Yambeta as between the two groups. A possible explanation is that Yambeta, structurally closer to the Nen-Maande node, has probably borrowed substantially from the Gunu-Elip-Mmala-Yangben-Baca-Mbure subgroup.

Due to their close proximity, it is not surprising that Tuki should pattern lexicostatistically with Baca, Mbure, Yangben, Mmala, Elip and Gunu. These are small groups with a high degree of intermarriage and movement between them. An indication of this mobility and intermingling of populations is the long-time presence of a displaced Tuki village, Nyamanga I,[302] established between the Elip village Kananga and the Yangben village Omende. Dugast (1949) also relates substantial movement of most of these people groups even as late as the late 1800's, preceding German colonisation.

Of additional interest is the fact that Mbure, historically and physically close to Baca and Yangben in particular, is lexicostatistically relatively distant from them. One reason appears to be geographic. The Mbure people live at the southernmost extremity of the Mbam region along the banks of the Liwa River, which forms part of the border of the Mbam-et-Inoubou District with the Sanaga-Maritime District (Littoral Region) and Basaa country. The Mbure people tend to look south towards Basaa more than north towards their Mbam relatives. Most Mbure people are bilingual in the dialect of Basaa spoken south of the Liwa River, and they are more likely to frequent the closest Basaa markets to the south, than the closest market to the north in the Yangben village of Batanga.

The road which accesses the village of Mbola from the north dwindles down after the Yangben village of Batanga and, in 2011, when I last visited the village, the bridge over the Liwa River was barely passable; few vehicles other than motorcycles were able to reach Mbola. This relative isolation counteracts the historical relation of

[302] I do not know the date of the founding of this village, but Dugast's (1949: 49, 65-7) maps of the area identified it as a Tsinga-Betsenga (i.e. Tuki) village.

Mbure with the neighbouring Mbam languages, and is perhaps a reason for the lower lexicostatistical similarities between it and them.

Baca, like Mbure, is a border language, but the road south of Yangben village to Bongo village is a major road (joining the Douala road south of Yaoundé at Mboumnabel) and has relatively dense traffic. Baca, therefore, is less isolated. Furthermore, there is another language, Bati, which is located between Baca and the larger Basaa community. This geographic location of both Baca and Mbure near the border with Basaa also explains the intermediary position of these two languages with reduced vowel-harmony systems, between the strong vowel harmony of Yangben and Mmala on one hand, and the absence of vowel harmony in Basaa, on the other.

The situation of Yambeta is also interesting. Historically, it is unambiguously grouped with the other eight-vowel languages, but lexicostatistically, it is equidistant between the two groups Nen-Maande and the Mbure-Baca-Yangben-Mmala-Elip-Gunu-Tuki group. Their oral histories indicate an affiliation with both groups.

The two Yambeta dialects claim different origins in their oral histories with the *Nɛdɛk* people coming from Bamoun like the Nen, and the *Nigii* claiming correlation with the other children of Ombono, especially the Gunu. This division in the oral histories is suggestive and leads one to imagine a possible blending of two speech forms to create a new one. Such a blending could explain a structural tie to the Nen-Maande group and a lexical tie to the Mbure-Baca-Yangben-Mmala-Elip-Gunu-Tuki group.

5.5 Classification of the Mbam languages in the wider linguistic context

This chapter started with a discussion of the interrelationships and subgroupings of the Mbam languages within the context of the wider group by means of diachronic sound and structural changes and synchronic lexicostatistical subclassifications. In this section, we will look at the relationship of the Mbam languages in the wider linguistic context. First we will look at two neighbouring languages, Basaa and Nyokon (section 5.5.1), and then we will consider how the Mbam languages have been classified in the wider context of the Bantu and Bantoid languages (section 5.5.2).

5.5.1 Basaa and Nyokon

Any discussion about the Mbam languages and their placement in the wider linguistic context should also include a discussion of two additional languages: Nyokon, due to it purported close relationship with Nen and its location in the Mbam region, and Basaa, the largest of the A40 languages.

5.5.1.1 Nyokon

A recent study of Nyokon posits a somewhat unusual 9-vowel inventory, /i, ɪ, ɛ, ɨ, ə, a, u, ʊ, ɔ/ (Lovestrand 2011: 13-14). However, [ɪ] is uncommon and occurs following a palatal approximant in every case. It is in complementary distribution with [ɨ], which is more common. Lovestrand (2011: 15) also posits "... that the other near-close back vowel [ʊ] may also be disappearing from the language by merging with the close back vowel [u]... If so, the language is moving from a symmetrical 9-vowel system to a symmetrical 7-vowel system."

While the presence of /ɨ/ in Nyokon is hard to explain in the context of the Mbam languages, it can be explained in the context of the Bamileke (Mbam-Nkam) languages. Nyokon is on the border with the Bamileke languages which *do* tend to have vowel inventories similar to Nyokon's. A near neighbour of Nyokon, a Mbam-Nkam language, Medʉmba, is reported to have ten vowels, /i, ɪ, ɛ, a, ɨ, ə, u, ʊ, ɔ, ɑ/. The influx of the Bamileke into the Nyokon area perhaps explains the presence of /ɨ/ in the language.

The other peculiarity of Nykon is that it does not appear to have an active ATR-harmony system. Lovestrand (2011: 15) notes:

> "Evidently, the language once had an ATR harmony system but lost it at some point in the not-so-distant past. The hypothesis regarding the near-close vowel [ɪ] is that once the binary phonological feature separating it from the close vowel [i] stopped being part of an active phonological process, the need to distinguish the binary pair also disappeared. It is suspected that the other near-close back vowel [ʊ] may also be disappearing from the language by merging with the close back vowel [u]..."

The primary domain of vowel harmony is the word root. As is seen in many of the Mbam languages, the scope of vowel harmony spreads to a greater or lesser extent from the root. Nyokon, which structurally has at least 80% of nominal stems being monosyllabic (Lovestrand 2011: 25), vowel harmony will be less evident, especially if it does not spread beyond the word root. Structurally, Nyokon reduces the possibility of vowel harmony even if the vowel inventory permitted it.[303]

Nyokon, situated at the northern limit of the Mbam region, has a vowel system which resembles many of the Mbam-Nkam (Southern Bantoid) languages to its

[303] While the presence of central vowels does not preclude ATR harmony, as is evident in some of the Kru langauges, such as Kpokolo, which has six [+/-ATR] pairs: i/ɪ, e/ɛ, ɨ/ɬ, ə/ɜ, u/ʊ, o/ɔ plus /a/ and ATR harmony (Kaye et al. (1985), the Mbam-Nkam languages nearest geographically and genetically to the Mbam languages do not have ATR harmony.

north and west. It has a vowel system distinctly different from the vowel systems of the other Mbam languages which have ATR harmony.

Rather than the idea put forth in Lovestrand (2011) that Nyokon *lost* ATR harmony, perhaps another way to look at it, is that Nyokon never *developed* ATR harmony.

5.5.1.2 Basaa

While Basaa is an A40 language like Nen and some of the others, it has never been considered a part of the Mbam languages. Basaa has been described as having a typical seven vowel system, i, e, ɛ, a, ɔ, o, u (Hyman 2003: 258). However, Basaa has a "vowel raising" process that occurs in verb roots when either the causative or applicative extensions are added to the verb (Hyman 2003: 274-275).

Example 385: Vowel raising in Basaa (Hyman 2003: 274)

		causative	applicative
lim	*be silent*	limis	limil
ɓép	*beat*	ɓíbîs	ɓíbîl
kɛ́p	*tattoo*	kébês	kébêl
kun	*choose*	kúnûs	kúnûl
hól	*sharpen*	húlûs	húlûl
ɓɔl	*rot*	ɓólôs	ɓólôl
pát	*pick off*	pédês	pédêl

The Basaa vowel raising looks suspiciously like the ATR harmony found in the Mbam languages.

Schlindwein Schmidt (1996: 241-2) sees similarities in the Basaa "vowel raising" and the Nen vowel harmony discussed by Stewart and van Leynseele (1979). She gives the pattern for Basaa:

Basaa harmonic sets (Schlindwein Schmidt 1996: 242)

basic vowels ([-ATR])	i	e	ɛ	a	ɔ	o	u
raised vowels ([+ATR])	i	i	e	e	o	u	u

In similar fashion to Nen and other languages, the vowels **e**, **o** in Basaa surface in both [+ATR] and [-ATR] contexts. In the latter, they have **i**, **u** as their [+ATR] counterparts. She goes so far as to say that the [-ATR] **e**, **o** must be **"**... in some sense really /ɪ/ and /ʊ/" (Schlindwein Schmidt 1996: 243).

While Schlindwein Schmidt rejects the idea of absolute neutralisation, she finds that "... the surface realisations of /ɪ/ and /ʊ/ are indistinguishable from the raised versions of [ɛ] and [ɔ]..." (Schlindwein Schmidt 1996: 245).

Contrary to Schlindwein Schmidt (1996: 247), Mutaka and Kody (2001: 17-18) explain the **ɛ ~ i** instead of the expected **ɛ ~ e** alternation in certain Basaa verbs and posit a [-ATR +high] vowel **ɪ**, in the underlying representations, which has "either merged with the [+ATR] high or the [-ATR -high -low] vowels", resulting in an underlyingly nine-vowel inventory.

Basaa vowel raising, however, is limited to verb morphology and does not appear to be found in stems, and there are no vowel co-occurrence restrictions found in noun roots. For this reason, although in many ways similar, Basaa vowel raising differs from the vowel harmony in the Mbam languages.

Basaa did not undergo the Mbam sound change that introduced ATR vowel harmony. The raising here reported is unlikely to be the remnant of vowel harmony as it is different in nature from vowel harmony.

5.5.2 The Mbam languages in the wider context of Bantu and Bantoid

Guthrie's original classification of the languages of the District of the Mbam divides them into three groups: A50, the Bafia group, A60, the Sanaga group, and A40, the Basaa group. It is the latter two groups which are of concern in this study, specifically the A60 group, and part of the A40, notably A44-A46 languages. Guthrie (1971: 31-2) lists the languages in Figure 32 in his A40 and A60 groups. The bolded languages are the ones that are discussed in this study. The A40 group in particular has a divide between the A41-A43 languages and the A44-A46 languages; the latter are physically located in the District of the Mbam-et-Inoubou. There are also important linguistic differences between the two parts of Guthrie's A40 group.

Guthrie identifies A61 and A64 as separate languages that are elsewhere considered dialects of Tuki. Of the other two languages identified by Guthrie in the Sanaga group, *Leti* (one of the two languages of the Mengisa people) or *Tungijo*, as other Tuki speakers call it, is considered by the Tuki as a dialect of Tuki (Kongne Welaze 2004: 8-9).

A.40 (Basaa group)
- A.41 Lɔmbi (Rombi)
- A.42 Bakon (Abo)
- A.43a Mbɛnɛ (Basa, Koko, Mvele)
- A.43b N. Kogo
- A.43c S. Kogo
- **A.44 Banɛn**
- **A.45 Nyɔ'ɔ (Nyokon)**
- **A.46 Mandi (Lemande)**

A.60 (Sanaga group)
- A.61 Ngɔrɔ [Tuki dialect]
- **A.62 Yambassa**
- A.63 Mengisa [Leti]
- **A.64 Bacɛnga [Tuki dialect]**
- A.65 Bati

Figure 32: Guthrie (1971: 31-2) A40 and A60 languages[304]

The Atlas Linguistique du Cameroun (ALCAM) (Dieu and Renaud 1983), taking note of the linguistic differences in Guthrie's A40 group, divides A.40 into the Basaa group and the (Tu)nen group, and groups the latter with Guthrie's A60. There is no question that the Nen A40 group is linguistically much more closely related to the A60 group than to the other A40 languages. Both the Nen group and the A60 group have robust vowel harmony which the Basaa A40 group lacks. ALCAM also separates these languages from narrow Bantu (Equatorial, Zambesi) referring to the whole group as “le bantou du Mbam”. Figure 33 lists the Benue-Congo languages of Cameroon from ALCAM, in particular the Mbam languages (bolded) discussed in this study.

[304] Comments between square brackets are additions by author.

Benue-Congo
- Junkunoid
- Cross River
- Bendi
- Bantoid
  - Mambiloid
  - Bantu
    - Jarawan
    - Tivoid
    - Ekoid
    - Nyang
    - Beboid
    - Grassfields
    - Tikari, Ndemli
    - Equatorial
    - Zambesi
    - **Mbam**

ex-A40	**(1)**	**[514] nyɔ'ɔ (Nyokon)**
		[511] tunen (Nen)
		[513] tuɔtɔmb
		[512] numand (Maande)
	(2)	**[520] nigi (Yambeta)**
	(3)	[530] bati
ex-A60	**yambassa**	
		[541] nugunu (Gunu)
		[542] yambassa central
		-mmaala (Mmala)
		-nu yangben (Yangben)
		-nu libie (Elip)
		[543] nubaca (Baca)
		[544] dumbulɛ (Mbure)
	sanaga	
		[551] tuki (Tuki)
		-tu ngɔrɔ
		-tukɔmbe
		-tonjo
		-tocenga
		-tutsingo
		-tumbɛlɛ
		[552] leti

Figure 33: ALCAM classification of the Mbam languages in Benue-Congo.

One problem with the ALCAM classification (Dieu and Renaud 1983) is that its conclusions are generally impressionistic rather than based on any rigorous lexicostatistical count (Watters 1989: 410) or comparative historical research.

Watters and Leroy (1989: 433, 435) modify the ALCAM classification slightly by separating Bantoid into two groups, northern and southern, with the Mbam languages in Southern Bantoid. The Mbam languages are split into three subgroups: West, Yambassa, and Sanaga, following ALCAM (Dieu and Renaud 1983).

I. Northern Bantoid
II. Southern Bantoid
- A. Tivoid
- B. Jarawan
- C. Mbe
- D. Ekoid
- E. Mamfe (Nyang)
- F. Beboid
- G. Wide Grassfields
- H. Tikar
- J. Ndemli
- **K. Mbam**
  - **1. West**
  - **2. Yambassa**
  - **3. Sanaga**
- L. (Narrow) Bantu

Figure 34: Southern Bantoid (Watters and Leroy 1989: 433)

While Dieu and Renaud (1983) and Watters and Leroy (1989) group the Mbam A40 (Nen group) and A60 languages as a subgroup of (Southern) Bantoid or (wide) Bantu, the placement of the Mbam languages is not so simple. Others, notably Bastin et al. (1983), Piron (1995), Bastin and Piron (1999), note that these languages statistically sometimes pattern with Bantu north-west and other zone A and some zone B languages, and sometimes with Bantoid non-Bantu languages, depending on which method (Group Average or Furthest Neighbour) is used (Piron 1997: 624-630). The place of the Mbam Bantu languages shifts depending on which method is employed, as seen in Figure 35.

Bastin and Piron (1999: 155) summarise this tendency by stating that "... la clef de l'articulation entre bantou et bantoïde se situe dans le bantou du Mbam qui tantôt attire le reste de la zone A et B/10, 20, 30 vers le bantoïde, tantôt est associé, avec le seul A50, à un embranchement bantoïde non bantou."

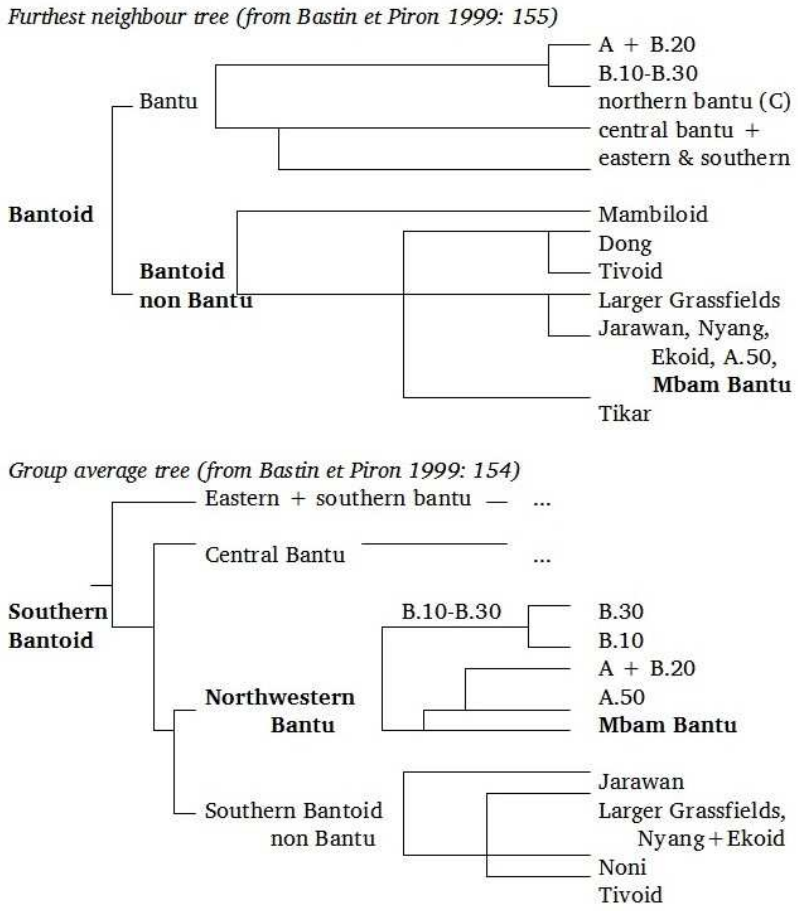


Figure 35: Lexicostatistical trees from Bastin and Piron 1999: 154-5

Grollemund (2012: 403-5) expands on the thesis of Bastin and Piron (1999) in saying that the "clef de l'articulation" between Bantu and Bantoid is localised in the Mbam languages. Based on her classification (Figure 36), and exploiting the well-known split in the A40 languages between the languages like Basaa which are clearly "bantu-like", and the Mbam A40 languages, like Nen, which are more "bantoid-like", Grollemund identifies a similar split in her so-called A60 languages.

She identifies two groups “A40-60-Bantoid” (i.e. the Mbam languages) and her “A40-50-60-70 Bantu”.[305]

[305] Grollemund (2012) lists Mengisa (A63) and three little-known languages mentioned in Guarisma and Paulian (1986) which she labels as "Ngoro-Asom", "Ngoro-Lunda" and "Ngoro-Bisoo" (A61) as among the A60 "Bantu-like" languages which fit into North-West Bantu as opposed to the Mbam A40-A60 languages, which pattern more as Bantoid. She however acknowledges (2012: 233) that all these languages are lexico-statistically closer to the A70 "Yaunde-Fang" group. Mengisa, in particular, is confusing as there are two distinct languages spoken by the Mengisa people, one, *Leti* is most definitely an A60 language and is often considered a dialect of Tuki. The other, *Njowi* (the source of Grollemund's data (2012: 232)), is definitely an A70 language (see footnote 13). The confusion is perhaps due to the possiblity that Guthrie's classification was based on *Leti* whereas others since then have instead studied *Njowi* (Guarisma and Paulian 1986: 94, footnote 2, posit this explanation as well for the A60 code for Mengisa). As for the A61 varieties, Breton et Fohtung (1991: 39) report, "Enfin se trouvent dans le Mbam trois petit îlots de populations de langue **bəti-faŋ** (i.e. A70) détachés du dialecte septentrional eki; les Feuk- parlant le *bafək* et le *yaŋavɔk* (yangafok) - et les Yasəm" (***asəm***). The languages *Bisoo* (bìsɔ̀ɔ̀) and *Lùndá* mentioned in Guarisma and Paulian (1986: 94-6 footnote 3) are not mentioned in the atlas. Bisɔɔ is mentioned in Dieu et Renaud (1983: 100) as a dialect of Bakoko [402] and closely related to Basaa (A43): "Au Nord-est le *bisɔɔ*, du canton Basso (arr. de Ndom, département de la Sanaga-Maritime), parler des ɓasɔɔ ɓa likol ("Basso du Nord")..." While Grollemund connects *Bisoo* with *Lunda* and *Asəm* based on Guarisma et Paulian (1986: 94, see Grollemund 2012: 232 footnote 57), I suspect she misread Guarisma et Paulian's chart, which lists *Lunda, Asom* and *Bisɔɔ* as numbers 12, 13, and 14 with only 12 and 13 connected with Guthrie's A61 Ngɔrɔ. Guarisma et Paulian's (1986: 95) map places *Bisɔɔ* much further south near Yaoundé, not at all in the vicinity of Ngoro, and Maho (1999: 284) lists Bisoo as A79. Although I have not been able to find a language called *Lunda* in the Mbam region in any written source, I did get oral information about it. According to Ambonda Olounou Martin (about 70 years old), a dignitary of the Supreme Chief of Ngoro, the *Lunda* people include four groups which migrated from Adamawa, The *Bɔkɔ* (village of Boko, 4°58'60" N et 11°13'0" E, west of Ngoro), the *Nanda* as well as the *bafək* and the *yaŋavɔk*. They are located in the village of Séréré (4°58'60" N, 11°22'60" E) in the District of Ngoro. It is considered as one of the **bəti-faŋ** "dialects" mentioned in ALCAM (Dieu et Renaud 1983: 101) which lists the *Yaŋavɔk*, *Bafək* and *Yasəm* all in "l'extrémité nord de l'arr. de Ngoro, dép. du Mbam." All of these supposed A60-Bantu languages are in reality A70 languages.

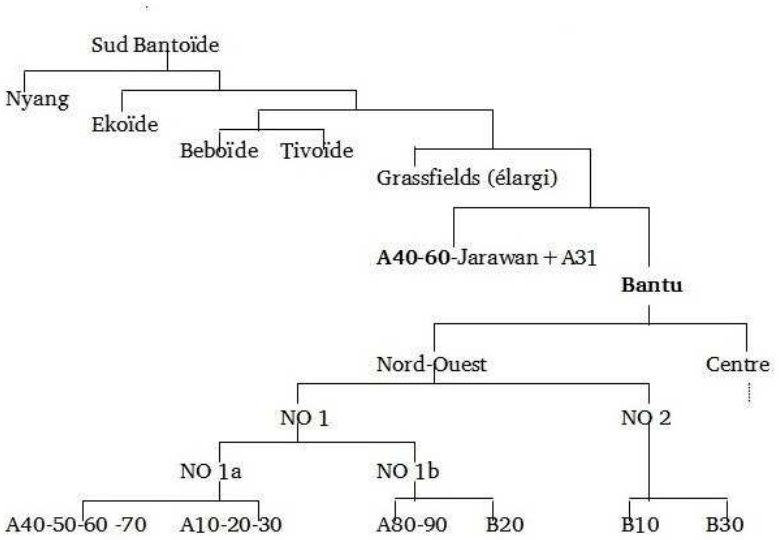


Figure 36: Grollemund's (2012: 391) simplified tree: Neighbour-Joining

This split in A40 languages between "A40-Bantoid" and "A40-Bantu" and Grollemund's supposed similar split in the A60 languages below) is one of her arguments that the foyer of the Bantu languages was in the Mbam, and that those groups which migrated out of the Mbam could be the earliest of the Bantu languages. She summarises as follows:

> "La division de ce groupe A40-60 semble résulter de la séparation entre bantoïdes et bantu. En conséquence, le centre de diffusion proto-bantu, a partir duquel auraient débuté les migrations bantu, se situerait a proximité de la région du Mbam ... Cette division des langues A40 constitue un premier argument en faveur d'une possible migration bantu ayant débutée dans cette région. En effet, les langues A40 bantu se séparent et migrent en direction du sud-ouest. Elles donnent ensuite naissance aux autres langues appartenant au groupe NO 1. Au sein du groupe "A40 bantu" le basaa A43a constitue la première langue à diverger (selon l'étude de l'arbre Neighbor-Joining) ... Si l'on suppose que la migration bantu ait débuté dans la région du Mbam, cela permettrait d'expliquer la division des langues A40-60 (ainsi que le statut ambivalent des langues A50 observée dans notre classification)" (Grollemund 2012: 404).

While Grollemund's A60 split is not well founded, her supposition of migration is not necessarily wrong. In much of the Mbam region, there is a migration legend telling about the crossing of "the river" (usually considered to be the Sanaga River).

In this story, the people find themselves trapped at the banks of a vast river they cannot cross. In the morning, they discover that a miraculous bridge has appeared overnight. Overjoyed, they begin crossing the river on this "bridge". At one point during the crossing, something happens: in one account, an old blind man using his spear as his walking stick, stumbles and plants the point of his spear into the "bridge", which turns out to be an immense boa. The boa, in pain, sinks into the water and flees, thus dividing the immigrants into two groups; those who have successfully crossed and those left behind. The Mengisa people, who are effectively divided by the Sanaga and speak two distinct languages, a variety similar to Tuki (A63) in the Mbam region and along the banks of the Sanaga river, and a variety similar to Eton (A71) south of the river, lend an oral-history credibility to the theory of migration from the Mbam region.

Interestingly, almost all the language groups of the Mbam region have a river-crossing story, although in some, such as in one of the Elip versions (Abiadina Samba 1988: 5-6), the migrating peoples cross the Sanaga from the south to the north to access the vast savannas of the Mbam region or as in the *Nigii* Yambeta version, it was the Noun river that was so crossed. The Yangben have two river-crossing stories, one south-to-north over the Sanaga and the other back south.

It is not only in the Mbam region and its surroundings where the story of the crossing of the Sanaga is found. On a trip to Campo, on the Gulf of Guinea at the border with Equatorial Guinea, I heard another version of this story by an Iyassa (A33) speaker, Patrice Ipoua (13 August 2014. p.c. in the village of Campo Beach). The Iyassa also claim a connection to the Mbam region. They say that they left the Mbam region as a people and crossed the Sanaga on the back of a huge snake, but when the majority had crossed, the snake disappeared leaving only a small number behind on the other side. The *Iyassa* call the people who were left behind the *Isanaga*.[306] Patrice Ipoua assured me that among the *Isanaga*, they recount the story of how they were once a much larger group, but that some of them crossed the river and went to the sea in search of salt.

[306] A rather suggestive name! Generally the Tuki people are called the Sanaga by outsiders.

The migration traditions about crossing a river are shared by many peoples speaking Mbam languages. These traditions show a sense of unity among the Mbam peoples and one that is, by a perceived common history, linked to a major river, possibly the Sanaga. While these histories are not direct evidence for a historical event of such a river-crossing, they do suggest that these traditions are shaped to forge an idea of common origin.