

REDUPLICATION AND THE ORIGIN OF HIGH TONE ON NOUN PREFIXES IN EJAGHAM

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This paper discusses the presence of high tone on noun prefixes in Ejagham. Special attention will be given to Western Ejagham in which over 15% of the noun roots take high tone prefixes. These high tones are found in all noun classes. Their frequency and distribution is unexpected when compared to reconstructions for Proto-Benue-Congo and Proto-Bantu.

The evidence indicates that the high tone prefixes derive from roots which previously had a reduplicated syllable. These reduplicated syllables were simplified by the loss of the reduplicated CV segments. However, the reduplicated tone remained. The roots with reduplicated syllables may originate from Proto-Benue-Congo at which time they may have had a distributive sense.

Cette communication discute le problème du ton haut sur les préfixes nominaux dans la langue ejagham. Plus d'attention sera donnée à l'ejagham de l'ouest dans laquelle plus de 15% des racines nominales ont des préfixes avec ton haut. Ces tons hauts sont trouvés dans toutes les classes nominales. La fréquence et la distribution de ces tons hauts sur les préfixes nominales sont inattendus quand nous faisons la comparaison aux tons des préfixes nominaux reconstruits pour le proto-benue-congo et le proto-bantu.

Les données indiquent que les préfixes avec tons hauts ont leur origines dans des racines qui avaient auparavant une syllabe reduplicative. Ces syllabes reduplicatives ont été simplifiées par la perte de la consonne et de la voyelle reduplicative. Cependant, le ton reduplicatif a resté. Il se peut que les racines avec la syllabe reduplicative dérivent du proto-benue-congo, et qu'elles aient eu un sens distributif.

1. THE PROBLEM

The problem addressed in this study¹ concerns the presence of high tone prefixes in Ejagham, an Ekoid Bantu language. Even though such prefixes are found in every Ejagham dialect, special attention is given to their presence in the Western Ejagham (WE) dialect. High tone noun prefixes are found on individual nouns in every class in Ejagham. In WE they also co-occur with about one out of every six noun roots.

The presence of such prefixes poses a problem for the following reason: by comparing Proto-Bantu (PB) and Proto-Benue-Congo (PBC) tone on noun prefixes with that found in WE, the current frequency and distribution of high tone noun prefixes in WE would not be expected. Meeussen (1967) and Guthrie (1967/71) both reconstruct low tone for all noun class prefixes in PB. De Wolff (1971) reconstructs some high tone prefixes for PBC, but in this case only for specific noun classes. Thus, given the fact that WE derives from Proto-Ekoid, a daughter of PBC and a possible sister of PB, the presence of high tone noun prefixes in every noun class and their occurrence with one out of every six noun roots presents an anomaly that needs resolution from the perspective of any comparative, historical work.

In fact, the presence of high tone noun prefixes is not unique to Ejagham. Within Ekoid Bantu languages in general, both high and mid tone noun prefixes are found. Such non-low tone prefixes are also found in other sub-groups in the northwest area of Southern Bantoid. Those subgroups include Momo, Ring, Nyang and Tivoid (Watters and Leroy 1989:441).

¹ Jean-Marie Hombert was the first to ask me about the origins of high tone in Ejagham. Back in 1976 I did not have an answer, but the question remained in the back of my mind. I also want to thank Ludwig Gerhardt and Kay Williamson for comments which clearly set this study in the wider scope of Proto-Benue-Congo. This paper was first presented at the West African Linguistic Society Congress at Legon, Ghana, in April 1990.

2. PROTO-BENUE-CONGO (PBC), PROTO-BANTU (PB) AND PROTO-EKOID

In discussing the origin of non-low tones on noun prefixes, it is not simply a matter of relating PBC, PB and Proto-Ekoid. Figure 1 below, taken from Williamson (1989), Watters (1989) and Watters and Leroy (1989), suggests the complexity of the issue.

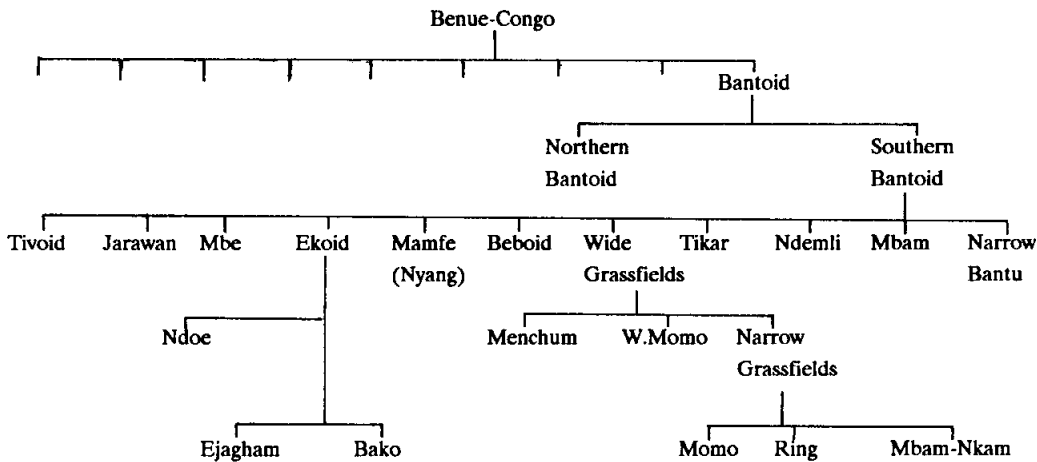


Figure 1

Figure 1 suggests that Ekoid is an immediate daughter of Southern Bantoid, but only one among eleven such daughters. One of the daughters is Narrow Bantu for which extensive PB reconstructions have been proposed by Meeussen (1967) and Guthrie (1967/71). At the level of PB only low tone noun prefixes have been reconstructed. As for the other sub-groups within Southern Bantoid, the Mbam-Nkam languages only have low tone noun prefixes, while the Momo and Ring languages have mostly non-low tone noun prefixes. The Mamfe (Nyang) languages are similar to Ejagham in the frequency and distribution of high tone on noun prefixes, probably attributable to areal spreading since these languages are geographical neighbors. Finally, Tivoid is also reported to have high tone noun prefixes.

At the highest level in the tree in Figure 1, namely at the level of Benue-Congo, de Wolf (1971) suggests that high tone noun prefixes were present in PBC, but only for certain noun classes. The gap between these two levels and the presence of eleven branches of Southern Bantoid raises two significant questions.

First, what do we find at the intermediate levels of Bantoid and Southern Bantoid? Up to the present, no one has proposed extensive reconstructions for these proto languages. Do the low tone prefixes of PB reflect only PB, or Proto-Southern Bantoid, or even Proto-Bantoid?

Secondly, what are the most likely sub-groups of Southern Bantoid? It is unlikely that Southern Bantoid broke into eleven parallel units. It is more likely that these eleven branches group with one another in various ways to form only a few branches of Southern Bantoid. However, as of the present, no clear evidence exists on how the eleven branches would group. This study will at least suggest an answer as to how close we should expect Proto-Ekoid to be to PB if one isogloss for sub-grouping were the tone on noun prefixes.

3. NON-LOW TONE NOUN PREFIXES IN NGIE AND NARROW GRASSFIELDS

Before dealing with high tone noun prefixes in WE, consider the explanations offered for such noun prefixes in two sub-groups of Narrow Grassfields: namely, the Momo languages (represented by Ngie), and the Ring languages. Like Ekoid languages, these are also from the Southern Bantoid borderland. Both make extensive use of non-low noun prefixes, but Hombert (1976) for Ngie and Hyman (1980:251) for the Ring languages differ in their reconstructions.

Hombert proposes a phonetic and morphological explanation. Morphologically, he proposes the historical presence of a preprefix with high tone, a widely attested phenomenon in Narrow Bantu. This preprefix interacted in various phonetically conditioned manners with the noun prefixes to derive non-low tones on the noun prefixes. Thus, Ngie is seen historically as having only low tone noun prefixes like PB, even though today it has a variety of non-low tone noun prefixes.

A contrasting view is offered by Hyman (1980). He suggests that for Proto-Ring, all classes probably had high tone noun prefixes except classes 1, 9 and 6a. He argues for this reconstruction for two reasons. First, de Wolf reconstructs high tone noun prefixes for some noun classes of PBC. Secondly, it is suggested that low tone is easier to derive from high tone than high tone is from low tone. Low tone prefixes would derive from high tone prefixes through loss of stem stress.

The implications of these two explanations are significantly different. In the first explanation, Proto-Narrow Grassfields and probably Proto-Wide Grassfields had low tones for all noun prefixes. This accounts for the presence of only low tone noun prefixes in the Mbam-Nkam languages, a parallel sub-group of Momo and Ring. Any high tone noun prefixes are recent innovations that must be accounted for by means of morphological and phonetic processes. This explanation suggests these languages are much closer to PB than to PBC.

The second explanation suggests that Proto-Narrow Grassfields and Proto-Wide Grassfields had high tones for all noun prefixes except perhaps classes 1 and 9. The low tone on noun prefixes of 6a would be an innovation of the Ring languages. The pervasive use of low tones on all noun prefixes of Mbam-Nkam would be the logical conclusion of this innovative process. This explanation claims that these languages are much closer to their historical roots in PBC than the Narrow Bantu languages are. More importantly for historical studies, it requires independent innovation of low tone prefixes on the part of the Mbam-Nkam languages and the Narrow Bantu languages. Therefore, the presence or absence of low tone noun prefixes would not serve as a valid isogloss for grouping Southern Bantoid languages genetically.

4. WESTERN EJAGHAM (WE)²

4.1 INTRODUCTION

Even though WE is only one dialect of Ejagham, a study of the origin or origins of high tone noun prefixes in WE can still provide possible explanations for similar phenomena in other Ejagham dialects and other Ekoid languages. In addition, the resulting conclusions from such a study could be indicative of what we might expect to reconstruct for Proto-Ekoid and perhaps have implications for similar phenomena within Southern Bantoid, Bantoid and Benue-Congo.

4.2 ORIGINS OF HIGH TONE PREFIXES IN WE

There are four different sources for high tone noun prefixes in WE: high tone concord, derivational morphology, borrowing and a historical process of reduplication and subsequent simplification. The first three sources need to be factored out before the major group of nouns with high tone noun prefixes can be considered.

4.2.1 High tone concord

The numeral concord of all classes but 1 and 9 take a high tone concord prefix. In 1. the enumerative forms are displayed, and in 2. the concurring forms for various classes are given.³

- | | | | | |
|----|--------|--------|---------------|-----------|
| 1. | é-bá'é | | 'two' | |
| | é-sá | | 'three' | |
| | é-ní | | 'four' | |
| | é-rôn | | 'five' | |
| 2. | à-nè | á-bá'é | 'two people' | (class 2) |
| | n-díg | m-bá'é | 'two ropes' | (class 4) |
| | bì-yù | í-bá'é | 'two yams' | (class 8) |
| | n-nyàm | é-bá'é | 'two animals' | (class 9) |

Assuming that numerals as a grammatical class can be treated as a sub-category of nouns, the high tone prefix on these nouns can be attributed to the current and historical use of high tone as part of the concord system.

4.2.2 Derivational morphology: nouns from verbs

Generally nominal forms derived from verb roots take a low tone noun prefix as in 3.

- | | | | |
|-----|----------|--------------------|--------------------------|
| 3a. | è-séŋ-éŋ | 'to write, carve' | (-séŋ 'to write') |
| b. | ò-séŋ | 'writing, carving' | |
| c. | ò-tíb | 'message' | (-tíb 'to give message') |

² Western Ejagham (WE) is one of the three major dialects of the Ejagham language, the others being Eastern Ejagham and Southern Ejagham. Most speakers of WE (40,000+) live in the Cross River State of Nigeria, but about 10,000 are also found in the South West Province of Cameroon. Eastern Ejagham (30,000+) is spoken only in Cameroon, and Southern Ejagham (10,000?) only in Nigeria in the Calabar area. Ejagham itself is one of three languages that form Ekoid Bantu, the other two being Ndoe and the Bako dialect cluster (see Crabb 1965, Watters and Leroy 1989).

³ The Ejagham examples used in this study are written phonologically rather than orthographically.

However, there is a class of adjectival nouns that take high tone noun prefixes as part of the derivational matrix. The matrix has the following form:

4. $\acute{\epsilon}$ -VerbRoot- $\acute{\epsilon}$

The prefix $\acute{\epsilon}$ - carries a high tone as does the final vowel - $\acute{\epsilon}$ which is a front vowel that assimilates to the height of the root vowel, as shown in 5:

5a.	bí	'to be red'	>	$\acute{\epsilon}$-bí-(í)	'red, redness'
b.	bád	'to be white'	>	$\acute{\epsilon}$-bád-$\acute{\epsilon}$	'white, whiteness'
c.	nyǎg	'to be black'	>	$\acute{\epsilon}$-nyàg-$\acute{\epsilon}$	'black, blackness'
d.	nǎ	'to be cool, fresh'	>	$\acute{\epsilon}$-nà-$\acute{\epsilon}$	'fresh, freshness'

In each case, the verb root takes its underlying high or low tone. The high tone noun prefixes derive from the derivational matrix. A possible explanation as to why such a matrix should include a high tone prefix is that these prefixes were historically concord prefixes, the roots behaving as adjectives rather than nouns.

4.2.3 Borrowing

Another sub-group of nouns with high tone noun prefixes are clearly nouns borrowed from neighboring languages, as shown in 6.

6a.	á-kpú	'cassava, fufu'	(Igbo)
b.	í-kíkéré	'thought'	(Efik)
c.	áŋ-gbáŋ	'pan'	(Efik)

4.2.4 Reduplication and subsequent simplification

Once these first three sources are factored out, the major group of nouns with high tone noun prefixes can be considered. Some of these nouns are clearly cognate with Proto-Bantu roots as well as with roots with a distribution wider than Southern Bantoid. Consider the following:

7a.	-tí	'tree, stick'
b.	-káǎ	'bone'
c.	-bám	'mosquito'
d.	-túg	'smoke'

A striking feature of the roots that take high tone prefixes is that the high tone prefixes are clearly associated with the given noun root rather than with a given noun class. The high tone occurs in both the singular class and in the plural class. It is not conditioned in any way by the given noun class. Both of these facts are shown in 8:

8a.	ń-sé	'father' (class 1)	á-sé	'fathers' (class 2)
b.	é-tí	'tree' (class 5)	á-tí	'trees' (class 6)
c.	é-káǎ	'bone' (class 5)	á-káǎ	'bones' (class 6)
d.	á-túg	'smoke' (class 6)		
e.	ń-bám	'mosquito (class 9)	ǎ-bám	'mosquitos' (class 14)
f.	í-tí	'stick' (class 19)	ń-tí	'sticks' (class 4)

Another feature of the nouns in 8. is that not only do the noun prefixes have a high tone, but each noun root also bears a high tone in these examples.

An even more striking feature is that for a number of these noun roots there is a corresponding form in Eastern Ejagham (EE) which is a reduplicated form, as in 11. In fact, correspondences between reduplicated forms in EE and non-reduplicated forms in WE are found for various tonal patterns. Consider the examples in 9. through 12.

9.	Pre-Ejagham *L-LL	EE L-LL	WE L-L		
		è-rèrù	è-dù	'caterpillar'	è-dùdù [O]
		è-bhìbhì	è-bhì	'mongoose'	è-bìbì [N]
		è-jèjòḡò	è-jòḡè	'thorn'	
10.	Pre-Ejagham *L-LH	EE L-LH	WE L-H		
		è-tètém	è-tém	'uninhabited land'	
		Ñ-jèjéḡ	Ñ-jíḡ	'fly'	
		Ñ-jéjé	Ñ-jéné	'guest, stranger'	mìḡ-kèḡkéḡ [A]
		Ñ-sèsú	isú	'pepper'	
		Ñ-jèjwí	N-júi	'sun'	
		Ñ-kyèkyé	N-ké	'termite'	ḡ-kèkè [A]
11.	Pre-Ejagham *L-H	EE L-HH	WE H-H		
		è-títí	é-tí	'tree'	è-réré [A]
		è-kékéb	é-kób	'bone'	è-kákéb [A]
		è-jéjógó	é-júgí	'breath'	
		è-jéjág	é-jág	'white-thighed hornbill'	
		Ñ-bébém	Ñ-bám	'mosquito'	m-búmbúm [A]
		è-yéyéghe	é-géghe	'raffia branch'	
		à-tétóghó	á-túg	'smoke'	
		Ñ-kèkú	Ñ-kú	'ghost'	
		Ñ-cící	Ñ-čí	'tip'	
		Ñ-kwékweḡ	Ñ-kód	'widow, widower'	
12.	Pre-Ejagham *L-HL	EE H-LHL	WE HL-HL		
		é-kèkénè	ê-čû	'palm nut fibre'	
		é-kèkú	ê-kû	'owl'	
		é-lèléme	ê-rûḡ/ê-rûḡ	'knee'	è-dùndúḡ [A]

Reduplicated noun roots are found in all Ekoid sub-groups. In 9. through 12. the forms marked [N] and [O] are from the Bako dialect cluster, while those marked [A] are from Ndoe. This distribution suggests that reduplication as a process was present at least in residual form at the Proto-Ekoid stage. In fact, it is not uncommon to find the root for 'tree', for example, as a reduplicated form in various languages of Benue-Congo (Kay Williamson, personal communication). In the Plateau languages, a branch of Benue-Congo, reduplicated forms are used to mark a distributive sense - individual items distributed geographically or from person to person (Ludwig Gerhardt, personal communication). These facts suggest the possibility that the reduplicative process was a Proto-Benue-Congo phenomenon, co-occurring with the singular and plural forms, something like that illustrated in 13.

- 13a. *è-tí 'tree'
 b. *à-tí 'trees'
 c. *è-títí 'individual trees distributed here and there'

The EE forms currently used would be residual forms of this earlier reduplicative process.

It is not possible today to find minimal pairs for each root that has a reduplicated form in EE or for each form that has a high tone prefix in WE. However, these irregularities are understandable if we trace the reduplicative process to PBC and its inherent antiquity. In WE the reduplicative process has been entirely lost, leading to forms with high tone prefixes as shown in 11. The processes of reduplication and subsequent simplification of the reduplicated form are the crucial elements in understanding why most nouns in WE with high tone noun prefixes have them.

1) Reduplication

The reduplication process as seen in EE might at first glance seem to involve a simple copying of the first consonant and vowel, and the subsequent spreading of the root tones, as in 14a-c.

- 14a. *è-bì > è-bìbì 'mongoose'
 | |
 L L
 b. *è-tí > è-títí 'tree'
 | |
 L H
 c. *è-tǎm > è-tètám 'uninhabited land'
 | |
 L LH

The copying process of the first consonant and first vowel follows the generalization in 15:

15. -C(1)V(C)(V) -> -CiC(1)i(C)(V)
 -CiC(1)ɪ(C)(V)
 -CɛC(1)V(C)(V)

The basic process consists of copying the first consonant in every case, and if the first consonant is lateralized (i.e. l), the lateralization is lost in the copying process. In the case of the vowel, any high, unrounded vowel in the first vowel slot is copied exactly in the reduplicated syllable, but if the vowel is any other, then the reduplicated vowel is generalized to ɛ.

However, the suggested spreading of the root tones does not appear to be correct, since the hypothesis suggested in 14. above does not account for all the cases. Consider the forms in 16. below.

16. *è-kû > é-kèkû 'owl'
 | |
 L HL

The hypothesis of tone spreading would incorrectly derive the form *è-kékû, when the correct form is é-kèkû.

In fact, the sequence H-L-H-L for ϵ -kèkû would suggest a second hypothesis: namely, the complete copying of the root tone in the reduplicative process. This copying hypothesis would benefit from the further assumption that the noun prefix is tonally unspecified in underlying form. Instead, it is assigned a default low tone if no other tone is associated with it at the end of the lexical association rules. (See Pulleyblank (1986) for further discussion of unspecified tones and default tones.) The process would work as follows:

$$17a. \begin{bmatrix} ku \\ \Lambda \\ HL \end{bmatrix} \rightarrow b. \begin{bmatrix} ke \\ \Lambda \\ HL \end{bmatrix} \begin{bmatrix} ku \\ \Lambda \\ HL \end{bmatrix} \rightarrow c. \begin{bmatrix} \epsilon \\ \Lambda \\ HL \end{bmatrix} \begin{bmatrix} ke \\ \Lambda \\ HL \end{bmatrix} \begin{bmatrix} ku \\ \Lambda \\ HL \end{bmatrix}$$

Initially in 17a. the root tones associate with the root tone bearing unit. Then, in 17b, the copied HL associates with ke by general association rules for Ejagham. Finally, in 17c. a particular rule applies which reassociates the H of a HL sequence associated with the same tone bearing unit to a preceding tone bearing unit, if that unit is not associated with another tone. Since the prefix ϵ - is unspecified for tone, the H tone associated with the reduplicated syllable is reassociated with the prefix.

This second hypothesis accounts straightforwardly for the forms in 14a, b, as follows:

$$18a. \begin{bmatrix} bi \\ | \\ L \end{bmatrix} \rightarrow \begin{bmatrix} bi & bi \\ | & | \\ L & L \end{bmatrix} \rightarrow \begin{bmatrix} \epsilon & bi & bi \\ | & | & | \\ L & L & L \end{bmatrix}$$

$$b. \begin{bmatrix} ti \\ | \\ H \end{bmatrix} \rightarrow \begin{bmatrix} ti & ti \\ | & | \\ H & L \end{bmatrix} \rightarrow \begin{bmatrix} \epsilon & ti & ti \\ | & | & | \\ L & H & H \end{bmatrix}$$

The low tone on the prefix ϵ in 18a. and 18b. is the default low assigned after no other tone was associated with the prefix.

A potential difficulty with this hypothesis arises, however, in the case of forms like 14c. which have the LH as the root tone. As shown in 19, the difficulty is averted by two common processes in Ejagham.

$$19a. \begin{bmatrix} tem \\ \Lambda \\ LH \end{bmatrix} > b. \begin{bmatrix} te & tem \\ \Lambda & \Lambda \\ LH & LH \end{bmatrix} > c. \begin{bmatrix} te & tem \\ \Lambda & \Lambda \\ LH & LH \end{bmatrix} > d. \begin{bmatrix} te & tem \\ \Lambda & \Lambda \\ LH & LH \end{bmatrix} > e. \begin{bmatrix} \epsilon & te & tem \\ | & | & | \\ L & LH & LH \end{bmatrix}$$

The first process is shown in 19c. The H of a LH sequence associated with the same tone bearing unit simplifies by reassociating the H tone with the following tone bearing unit. The second process occurs in 19d. in which any sequence HLH or H'H cannot surface in EE. Instead, it simplifies to H. Thus, the second hypothesis of a complete tonal copying accounts for the reduplication process. It also means that the segmental and tonal tiers are treated differently in the process.

2) Simplification

The second hypothesis suggested in 1) above, with its assumption of a noun prefix which is tonally unspecified, also accounts for the simplification process and the resultant high tone prefixes. The simplification process consisted of two steps. First, there was the complete loss of the reduplicated segments. Secondly, the reduplicated tone became fossilized, with the root tone being associated with the root vowel at a pre-lexical level, and the originally reduplicated tone free to be associated with the tonally

lexical level, and the originally reduplicated tone free to be associated with the tonally unspecified noun prefix. This process is shown in 20. for the forms in 9-12, for both EE and WE. However, the WE forms show in addition the simplification process.

- 20a. EE *èbìbì* 'mongoose'
- $$\begin{bmatrix} \text{bì} \\ | \\ \text{L} \end{bmatrix} > \begin{bmatrix} \text{bì} & \text{bì} \\ | & | \\ \text{L} & \text{L} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{bì} & \text{bì} \\ | & | & | \\ \text{L} & \text{L} & \text{L} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{bì} & \text{bì} \\ | & | & | \\ \text{L} & \text{L} & \text{L} \end{bmatrix}$$
- WE *èbì* 'mongoose'
- $$\begin{bmatrix} \text{bì} \\ | \\ \text{L} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{bì} \\ \diagdown & | \\ \text{L} & \text{L} \end{bmatrix}$$
- b. EE *ètítí* 'tree'
- $$\begin{bmatrix} \text{tí} \\ | \\ \text{H} \end{bmatrix} > \begin{bmatrix} \text{tí} & \text{tí} \\ | & | \\ \text{H} & \text{H} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{tí} & \text{tí} \\ | & | & | \\ \text{H} & \text{H} & \text{H} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{tí} & \text{tí} \\ | & | & | \\ \text{L} & \text{L} & \text{H} \end{bmatrix}$$
- WE *ètí* 'tree'
- $$\begin{bmatrix} \text{tí} \\ | \\ \text{H} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{tí} \\ \diagdown & | \\ \text{H} & \text{H} \end{bmatrix}$$
- c. EE *ètètém* 'countryside'
- $$\begin{bmatrix} \text{tém} \\ \wedge \\ \text{LH} \end{bmatrix} > \begin{bmatrix} \text{te} & \text{tém} \\ \wedge & \wedge \\ \text{LH} & \text{LH} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{te} & \text{tém} \\ \wedge & \wedge & \wedge \\ \text{LH} & \text{LH} & \text{LH} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{te} & \text{tém} \\ | & / & \wedge \\ \text{L} & \text{LH} & \text{LH} \end{bmatrix}$$
- WE *ètəm* 'countryside'
- $$\begin{bmatrix} \text{təm} \\ | \\ \text{L} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{təm} \\ \diagdown & | \\ \text{L} & \text{H} \end{bmatrix}$$
- d. EE *ékèkú* 'owl'
- $$\begin{bmatrix} \text{kú} \\ \wedge \\ \text{HL} \end{bmatrix} > \begin{bmatrix} \text{ke} & \text{kú} \\ \wedge & \wedge \\ \text{HL} & \text{HL} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{ke} & \text{kú} \\ \wedge & \wedge & \wedge \\ \text{HL} & \text{HL} & \text{HL} \end{bmatrix}$$
- WE *ékú* 'owl'
- $$\begin{bmatrix} \text{kú} \\ \wedge \\ \text{HL} \end{bmatrix} > \begin{bmatrix} \text{e} & \text{kú} \\ \diagdown & \wedge \\ \text{HL} & \text{HL} \end{bmatrix}$$

Synchronically, it is not necessary to maintain 20a. or 20c. in WE, since the low tone prefix will be assigned by default. However, the pre-lexical forms in 20b. and 20d. crucially account for the presence of the non-low tones on the noun prefixes with these roots.

Finally, even though the resultant form in 20c. is common, there is evidence that in WE the pre-lexically associated tone of the underlying form is under pressure to become delinked and follow normal synchronic association processes. This is shown by the contrasting derivations in 21b, c. and 22b, c. In 21b. and 22b, the fossilized pre-lexical link is maintained, while in 21c. and 22c. it is not.

21a. EE ñ-jèjwí 'sun'

| | |
L L H

b. WE fossilized ñ-júí 'sun'

$$\left[\begin{array}{c} \text{júí} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] > \left[\begin{array}{c} \text{n} \left[\begin{array}{c} \text{júí} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] \end{array} \right]$$

c. WE regularized ñ-jùí 'sun'

$$\left[\begin{array}{c} \text{júí} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] > \left[\begin{array}{c} \text{n} \left[\begin{array}{c} \text{júí} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] \end{array} \right] > \left[\begin{array}{c} \text{n} \left[\begin{array}{c} \text{júí} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] \end{array} \right]$$

22a. EE è-kèkóg 'harmattan'

| | |
L L H

b. WE fossilized è-kóg 'harmattan'

$$\left[\begin{array}{c} \text{kóg} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] > \left[\begin{array}{c} \text{e} \left[\begin{array}{c} \text{kóg} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] \end{array} \right]$$

c. WE regularized è-kóg 'harmattan'

$$\left[\begin{array}{c} \text{kóg} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] > \left[\begin{array}{c} \text{e} \left[\begin{array}{c} \text{kóg} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] \end{array} \right] > \left[\begin{array}{c} \text{e} \left[\begin{array}{c} \text{kóg} \\ \vee \\ \text{L} \quad \text{H} \end{array} \right] \end{array} \right]$$

Thus, once those noun roots with high tone noun prefixes deriving from concord prefixes (4.2.1), noun derivation (4.2.2) and borrowing (4.2.3) are factored out, the remaining nouns with non-low tone noun prefixes in WE, as shown in 20b. and 20d, appear to derive from an historical process involving reduplication and subsequent simplification of the reduplicated form. The result suggests that historically these high tone noun prefixes actually derive from low tone noun prefixes.

3) Exceptions

Given the possibility of assigning a significant historical depth to the processes discussed in 1) and 2) above, probably originating from PBC, it is not surprising to find a number of exceptions that need to be addressed. These exceptions probably have their origins in earlier borrowings that are no longer identifiable, or to variations in the reduplication and simplification processes that no longer hold. There are five known sets of exceptional forms.

The first set is exemplified in 23.

	EE	WE	
a.	Ñ-čičid	Ñ-čid	'garden egg'
b.	Ñ-čiči	Ñ-čé	'spindle snail'
c.	Ñ-yégóg	Ñ-yóg	'wild spice'

In 23, the forms for EE should have low tone noun prefixes. Instead they have high tone just like the forms in WE. Appeal cannot be made to a phonetic explanation since the nasal prefixes should have a depressing effect on the tones. Given that EE and WE both have high tone noun prefixes with these roots, it would suggest that historically the pre-Ejagham noun prefix tone was also high. If this was the case, the first hypothesis as to

its source would be that these were borrowed forms. However, another explanation could be that these nouns were recycled. The simplification process which has been pervasive in WE also operates in EE, but not so pervasively. In WE the word for 'father' is N-sé, so we might expect EE to have *N-sésé. Instead EE has exactly the same form as WE. Seeing that EE has both reduplication and simplification as processes, we might suggest the following for the EE forms in 23: reduplication, simplification, and then reintroduction of reduplication. 24. below demonstrates this process:

24.	Pre-Ejagham *N-číd	>	*N-čídčíd	>	WE N-číd	>	EE N-čídčíd
	(original form)		(redupli- cation)		(simplifi- cation)		(new redup- lication)

The result is a reduplicated form with a high tone noun prefix.

The second set of exceptions has only one member:

25.	EE N-čécò	WE N-čò	'sweat bee'
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In this case, the expected EE form would be *N-čècò. Instead it appears that the HL tone sequence associated with the root has not been reduplicated. It has simply been spread over the two syllables of the EE root.

The third set of exceptions has three members:

26.	EE é-sésèê	WE é-sìní	'cricket'
	N-sísibê	N-sèbê	'hot wild pepper'
	N-sésòŋô	é-sòŋô	'worm'

In this set, the original roots were disyllabic, like those in WE. The original tone pattern on the root was probably HL. In the reduplication process in EE, the HL tone pattern is clearly copied, but the distribution of the H-L-H-L tone sequence is not expected. In EE we would expect *é-sèsèê, *N-sísibê and *N-sèsòŋô, but none of these is attested. If the distribution of tone in EE can be accounted for, its distribution in WE would be straightforward.

One possible explanation is that the original tonal pattern underwent change by analogy to the monosyllabic roots with HL tone patterns. Compare the derivations suggested for é-kèkù 'owl' and é-sésèê 'cricket' in 27.

27.	Stage I *è-kù	>	Stage II é-kèkù	>	Stage III -----	é-kèkù	'owl'
	L HL		HL HL				
	*è-sénè	>	*é-sèsénè	>	*é-sésènè	é-sésèê	'cricket'
	L H L		HL H L		HL HL		

At Stage II the expected distribution of tone is found. In both cases, the original HL root tone pattern has been completely copied, producing the sequence H-L-H-L. However, in the case of the original disyllabic roots such as *-sénè 'cricket', analogical pressure from the monosyllabic roots like *-kù 'owl' led to the rightward shifting of tones. This shift made the final two syllables of the two forms identical: *...sènè and -kèkù. High tone was already associated with the prefixes of these roots by the time of Stage III, and

so was maintained. The high tone was also the only tone available to associate with the reduplicated syllable. In this way, the forms in 26. may have been derived.

The fourth set of exceptions has only one known member:

28	EE	WE	
	ŋ-bébéblé	ɛ-bébè	'tears'

In this case, the expected WE form would be *ŋ-báblé. However, it appears that the WE form has been lost and replaced by a different form. Thus, even though the roots are cognate across the dialects, the WE form is not built on the EE form.

The fifth and final set of exceptions has at least five members:

29.	é-fɛ́/m-fɛ́	'cloth'
	é-dí/bí-dí	'food'
	ɛ́-sɛ́	'sky, heaven'
	é-rɔ́b/bí-rɔ́b	'spear'
	ɛ́-jɛ́	'tomorrow'

The root -dí 'food' clearly comes from the verb root -dí 'to eat', but the other roots do not necessarily derive from verb roots. Given the tone pattern on the root, we would expect a falling tone on the prefix as with é-ká 'owl'. We would also expect that there might be a reduplicated form in EE, but there is no evidence for such forms ever existing in EE. At the present, the origin of the high tone prefix on these forms remains a mystery.

5. CONCLUSION

Reduplication as a productive process may date back to Proto-Benue-Congo (PBC). Various sub-groups of Benue-Congo display at least residual forms of the process. It is possible that the reduplicated forms indicated a distributive sense in PBC as they do today in the Plateau languages.

The inheritance of these reduplicated roots in Ejagham provided the phonological context needed to derive high tone noun prefixes in WE. The process of simplifying the reduplicated syllable through the loss of the CV segments coupled with the persistence of the copied root tone accounts for the presence of high tone noun prefixes in Ejagham today. This process of simplification or reduction of the reduplicative process could account for non-low tone prefixes found on nouns in other Ekoid languages and other sub-groups of Southern Bantoid, Bantoid and Benue-Congo.

The entire scenario of deriving high tone noun prefixes from reduplicated forms suggests that the low tone prefixes on the reduplicated nouns may even derive from PBC. This would suggest that the reconstructed high tones in PBC for certain noun classes would have been exceptional. However, the hypothesis that low tone prefixes are easier to derive from high tone through a loss of stem stress would seem to contradict the above conclusion. How do we explain the Momo and Ring languages that have a predominance of non-low tone noun prefixes?

At this point in time, the case is still open. The question extends to what should be reconstructed for Benue-Congo, Bantoid, Southern Bantoid and the various sub-groups of Southern Bantoid. Yet for Ejagham and Ekoid it seems fairly clear that they derive from a language which originally had low tone noun prefixes. But as to whether low tone noun prefixes provide a valid isogloss for grouping Ekoid with Narrow Bantu remains an open question, for the presence of low tone prefixes may be much older than either of

these two proto languages. In addition, the possibility of independent innovation of either non-low or low tone prefixes in the various sub-groups of Southern Bantoid remains.

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