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The Macro-Sudan Belt and Niger-Congo Reconstruction

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ABSTRACT

Basing himself largely on areal and typological arguments, Güldemann (2010) claims that neither Proto-Niger-Congo nor Proto-Bantu had more than a “moderate” system of derivational verb suffixes (“extensions”), and that both proto languages lacked inflectional verb prefixes. Although drawing largely on the same materials as Hyman (2004, 2007a,b), he arrives at the opposite conclusion that Niger-Congo languages which have such morphology, in particular Bantu and Atlantic, would have had to innovate multiple suffixation and prefixation. However, such hypotheses are weakened by two serious problems: (i) These proto languages, which possibly reach back as far as 10,000-12,000 B.P., have clearly had enough time for their morphosyntax to have cycled more than once. (ii) The areal properties of Güldemann’s Macro-Sudan Belt most likely represent more recent innovations which have diffused after the Niger-Congo break-up. In this paper, I present further evidence that multiple suffixation and prefixation must have existed even in languages which have lost them. The general conclusion is that current areal distributions are largely irrelevant for long-range linguistic reconstruction.

1. Introduction

In a recent paper Güldemann (2010) draws on macro-areal linguistics to resolve two outstanding questions concerning the reconstruction of Proto-Niger-Congo (PNC).¹ The first concerns the nature of derivational verb suffixes (or “extensions”) such as those exemplified from Degema in (1) (Kari 2008:xxxiii-xxxiv):

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|-----|----|------------|---|--------------------------------------|
| (1) | a. | ta-sé | ‘cause to go’ | (causative) |
| | | ʃin-ɛsé | ‘cause to climb’ | |
| | b. | ko-né | ‘bend (itself)’ | (reflexive) |
| | | gim-ené | ‘pin oneself’ | |
| | c. | sa-ɖiríy | ‘kick many times/habitually’ | (iterative, habitual) |
| | | tu-ɖiríy | ‘be burnt many times’ | |
| | d. | duw-ɛjiné | ‘follow each other’ | (reciprocal, benefactive-reciprocal, |
| | | gbom-ɔjiné | ‘bite each other, bite for e.o,
bite itself, oneself many times’ | iterative-reflexive) |

The question is whether such head-marking was present in PNC, and if so, whether multiple suffixes could co-occur as in Ciyao in (2) (Hyman 2004:70, based on Ngunga 2000):

¹ I would like to thank Tom Güldemann for kindly sharing Güldemann (2010) with me as it went to press. In his email he pointed out that his paper was “largely a kind of dialogue between our work” using much of the same material cited in my papers, adding: “hope you still talk to me although I don’t share your central idea :-).” While I am sure that Tom and I will always be on speaking terms, I especially hope that this exchange will further stimulate Africanists and others concerning both areal linguistics and linguistic reconstruction at great time depths. My thanks also to Dmitry Idiatov, Johanna Nichols, and Mark Van de Velde for comments on an earlier draft and to Roger Blench for leads that he suggested I follow up.

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|--------|----------------------------|------------------------------------|--------|-----------------|
| (2) a. | taam- | ‘sit’ | | |
| b. | taam-ik- | ‘seat’ (put in seated position) | -ik- | (impositive) |
| c. | taam-uk-ul- | ‘unseat’ (-ik- → -uk- / __ u) | -ul- | (reversive tr.) |
| d. | taam-uk-ul-igw- | ‘be unseated’ | -igw- | (passive) |
| e. | taam-uk-ul-igw-aasy- | ‘cause to be unseated’ | -aasy- | (causative) |
| f. | taam-uk-ul-igw-aasy-an- | ‘cause each other to be unseated’ | -an- | (reciprocal) |
| g. | taam-uk-ul-igw-aasy-an-il- | ‘cause e.o. to be unseated for/at’ | -il- | (applicative) |

The second question has to do with whether PNC had inflectional verb prefixes, as in Chichewa (3a) and Kinande (3b), the latter provided to Nurse & Philippson (2003:9) by Philippe Nguessimo Mutaka:

- | | | | |
|--------|---|----------------------------|---------------------------------|
| (3) a. | ti-ná-mú-thandiz-a | ‘we helped him’ | (FV = inflectional final vowel) |
| | we-PAST-him-help-FV. | | |
| b. | tu-né-mu-ndi-syá-tá-sya-ya- | ba- [king-ul-ir-an-is-i-á | =ky-ô |
| | we- TENSE/ASPECT COMPLEX- them close-REVERS-APPL-RECIP-CAUS-CAUS-FV it | | |
| | ‘we will make it possible one more time for them to open it for each other’ | | |

The problem is that multiple suffixes and prefixes are missing in some of the Niger-Congo phylum, particularly in languages which have a more analytic syntax, as in the Yoruba examples in (4) (Stahlke 1970:63, 85):

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|--------|---------------------------|-----------------------------|
| (4) a. | mo mú iwé wá fún ẹ | ‘I brought you a book’ |
| | I take book come give you | |
| b. | mo fi àdá gé igi | ‘I cut wood with a machete’ |
| | I take machete cut wood | |

The extremes represented by Ciyao and Kinande in (2) and (3b) vs. Yoruba in (4) are rather striking. Since these languages are related, an explanation of how they came to be so different is certainly in order: Was the proto language “synthetic” with verbs sporting multiple prefixes and suffixes, as in the cited Bantu languages (which also have a rather different syntax), or was it more analytic, with either modest or no affixation?

In his paper Güldemann argues that PNC did not have a multiple suffix system, as in most Bantu languages today (Hyman 2003a, Good 2005), nor did it have inflectional prefixes, as found in Narrow Bantu languages. These issues are taken up in §3 and §4 below, where I will argue that both had to exist at some stage of early Niger-Congo. Let me first, however, cite our areas of agreement: We both agree that PNC had verb extensions (Voeltz 1977, Hyman 2007a). The issue is whether it had multiple suffixation of the sort Hyman (2004, 2007a) cites from Bantu and Atlantic, or whether the system was, in his term, more “moderate”. Concerning the second issue, although I have not taken a position on PNC, I will present evidence in §4 that prefixal verb inflection had to exist at an early stage of Bantoid and Cross-River. In order to evaluate our differences, I list in (5) several conceptual and methodological points which I assume we also share:

- (5)
- a. morphological change is cyclic: languages both build up and break down morphology
 - b. most bound morphemes originate from processes of grammaticalization, following the familiar path: word > clitic > affix > ablaut
 - c. bound morphemes are lost “mostly by way of erosion and loss of phonological and morphological substance” (G, 20)²
 - d. the building up and breaking down of morphology can be internally- or externally-induced, the latter via contact
 - e. specific historical proposals must take into account both genetic and areal considerations

In short, if a language has morphology, we must ask: Where did it come from? On the other hand, given the cyclic nature of morphological change (5a), if a language lacks morphology, we must ask: Where did it go? The time depth of human language, whether 100,000 years or other, is such that we cannot assume that isolating, analytic languages were always such. In many, if not most cases we have reason to suspect morphological loss.³ However, even in the absence of specific evidence, it can be assumed that the ancestors of such languages must also have undergone radical cyclic change over their thousands of years of history. The trick, then, is not only to establish and explain the diachronic processes, but also determine at what stage in a language’s history they occurred. In addressing questions of long-range history, I have, however, often felt more secure reconstructing the phonological or grammatical source of a linguistic property than determining at which proto state that source existed. In the current context the question is which proto-language(s) had sequences of derivational verb suffixes and/or pre-stem verbal inflection.

The remainder of this paper is organized as follows. In §2 I evaluate several of the widespread properties within Güldemann’s (2008) Macro-Sudan Belt which figures centrally in his arguments concerning PNC and Proto-Bantu (PB). This is followed by a discussion of verb extensions in §3 and inflectional prefixes in §4. In §5 I summarize the discussion and present further evidence that cyclic linguistic history of Niger-Congo renders the current areal typology largely irrelevant for long-range historical reconstruction.

2. The Macro-Sudan Belt (MSB)

The introductory discussion in §1 brings us to one final question: What role can areal linguistics play in determining linguistic history? Although areal effects indicate contact between speakers of distinct languages, whether related or not, Güldemann (2010) (henceforth, G) relies heavily on areal arguments to propose the reconstructions which will be discussed in §3 and §4: “From a general perspective, I venture that macro-areal patterns identified for Africa not only CAN but in fact SHOULD inform the historical-comparative reconstruction of Niger-Congo (and other families for that matter)” (G, 24). However, while most historical linguists see this “informing” as external interference that often has to be factored out in doing reconstruction, Güldemann

² However, in §3 I will reiterate my claim that prosodic maximality is a major factor in the loss of verb extensions in NW Bantu (Hyman 2004).

³ Cf. Nichols (1996:63): “Sometimes an isolating group fits into a deeper family that has more morphology and whose relatedness has been established in part on the evidence of that morphology, as Chinese fits into Sino-Tibetan or Vietnamese into Austro-Asiatic, or Kwa into Niger-Congo.”

intends for it to inform the reconstruction in a positive sense: If a property is typologically rare but widespread in an extensive area, it might be reconstructable, e.g. to the PNC stage.

In both Güldemann (2008) and the current paper Güldemann establishes an “east-west oriented belt south of the Sahara-Sahel and north of the Congo Basin” called the Macro-Sudan Belt (MSB) in which the following linguistic properties tend to cluster (references are as cited in G, 5):

(6) <i>Feature</i>	<i>Source(s)</i>
Implosive consonants	Maddieson (2005a)
Labial-velar consonants	Maddieson (2005c)
Three and more level tones	Maddieson (2005d), Clements and Rialland (2008)
ATR vowel harmony	Dimmendaal (2001a), Maddieson (2005b)
Nasalized vowels	Hajek (2005)
“Lax” question prosody	Clements and Rialland (2008)
SBJ-(AUX)-OBJ-V-X	Gensler and Güldemann (2003)
‘(Sur)pass’ comparative	Stassen (2005)
Logophoricity system	Güldemann (2003b)

The language families which “partake” in the MSB are indicated below, where those in (7i) are identified as the “areal core”, and those in (7ii) as the “periphery” (G, 4):

(7)	<i>Family</i>	<i>Stock</i>	<i>Greenberg’s Supergroup</i>
(i)	Mande		Niger-Kordofanian
	Kru	Niger-Congo	Niger-Kordofanian
	Gur	Niger-Congo	Niger-Kordofanian
	Kwa	Niger-Congo	Niger-Kordofanian
	Benue-Congo (except Narrow Bantu)	Niger-Congo	Niger-Kordofanian
	Adamawa	Niger-Congo	Niger-Kordofanian
	Ubangi	Niger-Congo	Niger-Kordofanian
	Bongo-Bagirmi	Central Sudanic	Nilo-Saharan
	Moru-Mangbetu	Central Sudanic	Nilo-Saharan
(ii)	Atlantic	(Niger-Congo)	Niger-Kordofanian
	Dogon		Niger-Kordofanian
	Songhai		Nilo-Saharan
	Chadic	Afroasiatic	
	Ijoid		Niger-Kordofanian
	Narrow Bantu (Benue-Congo)	Niger-Congo	Niger-Kordofanian
	Nilotic	East Sudanic	Nilo-Saharan

In addition, G (4n, 22) identifies Kru, Gur, Kwa, Benue-Congo, Adamawa and Ubangi as “the core of Niger-Congo”, with Mande, Atlantic, Dogon, Ijoid and Kordofanian either being Niger-Kordofanian (a higher-order phylum) or not related to Niger-Congo at all. Crucially, except for certain northerly Bantu languages, the “Narrow Bantu” languages situated further East and South are excluded from the MSB.

As will be further discussed in §3 and §4, Güldemann argues that within the MSB verb extensions are “of moderate morphological complexity” (G, 22) or non-existent, and verb prefixes are rare. Concerning the properties in (6), Güldemann (2008:177) reasons as follows:

“... most of Narrow Bantu, a clear member of Benue-Congo (Narrow Niger-Congo), is located outside the Macro-Sudan belt and does not share most of the above properties to any significant degree, while its relatives in the area regularly have them. There are two different scenarios on how such a situation has come into being. Either Proto-Bantu, which might have been spoken at the southern periphery of the Macro-Sudan belt, possessed a given feature and lost it when expanding outside the area... or Proto-Bantu lacked the feature but its daughter languages in or close to the Macro-Sudan belt acquired it through language contact. A scenario of the latter type is largely applicable to most other families which have an ambiguous behavior vis-à-vis a Macro-Sudan belt feature; especially clear cases are found with the peripheral families Chadic and Nilotic.”

In the above quote Güldemann recognizes that certain Chadic and Nilotic languages have acquired some of the properties in (6) through contact, but argues with respect to verbal morphology that PB used to be an MSB-type language. If correct, Narrow Bantu would have developed its complex extension and prefix systems after wandering outside the belt, rather than representing a retention of older Benue-Congo or Niger-Congo structures which have been lost in the MSB. For this argument to go through one would have to overcome two problems with the methodology.

The first concerns the time scale. Although proposals differ, there seems to be convergence at estimating the date of PNC at 10,000-12,000 B.P. and the Bantu dispersion starting at 4,000-5,000 B.P. (Eggert 2005, cited by Bostoen 2008; for additional discussion re the dating of PNC or PB, see Vansina 1995, Nurse 1997, Ehret 2001, and Blench 2006). Even if we limited ourselves to Güldemann’s core Niger-Congo, we are dealing with many thousands of years, i.e. with a time scale within which the typology of proto languages could have changed several times. According to Nurse (2007:248), “the linguistic and archaeological evidence from English, Latin, Greek, and Germanic indicates that so-called proto-languages might last a thousand years,” by which I assume he means the PROPERTIES of proto languages. Adopting this generous estimate would mean that there could have been four distinct proto-language stages in the history of Bantu and perhaps as many as ten or twelve in the history of Niger-Congo. As a result, it is hard to have confidence that the current typologies and distributions represent anything other than relatively recent history and contact. This leads to the second problem: If one looks at the properties that Güldemann uses to establish the MSB in (6), it is hard to have confidence that any of them go back to a “core” PNC proto stage. Güldemann readily acknowledges that many of the languages within the MSB do not have one or another of these properties. Since this is a “macro” areal study, little attention is paid to subgroups or specific languages which, he would have to claim, inherited but lost these properties. Of course it is not impossible that PNC (or some rather old branch of Niger-Congo) innovated each property, which then spread laterally to other proto languages and their offspring. As I shall now demonstrate, several of the properties in (6) suggest a more recent spread.

2.1. Logophoric pronouns

We first consider logophoric pronouns, which Güldemann (2003b, 2008, 2010) shows to be firmly established within the MSB. Although the Ewe logophoric pronoun *yè* resembles the 3sg.

independent pronoun *ye*, Clements (1975:152) considers deriving it diachronically from the 1sg. pronoun *nye*, which seems to be the case of *máá* (cf. 1sg. *mě*) in Akɔɔse (Hedinger 1984:90), which Güldemann cites. In Igbo and Gokana the logophoric markers are clearly derived from 3sg. pronouns (Hyman & Comrie 1981:34-5). Consider in this context the Western Grassfields Bantu languages which have innovated new 3rd person pronouns from demonstratives. In Aghem the non-subject 3sg. pronoun *wín* ‘him, her’ is exactly identical to the class 1 near-speaker demonstrative *wín* ‘this’: *wé wín* ‘this child’, *wàà wín* ‘his/her child’ (< /wé + à + `wín/ ‘child of this (one)’ (Hyman 1979:49). However, in several of these languages the original pronoun appears in logophoric contexts as seen in the following Oku sentences (from my personal notes):

- (8) a. èb soí ge mɛ ne lâ yen wīn ‘he_i says that I saw him_j/her_j’
 b. èb soí ge mɛ ne lâ yen žī ‘he_i says that I saw him_i’
 s/he say that I PAST see PERF PRO

In (8) the subject pronoun *èb* derives from **ù* (cf. closely related Kom *wù*). Compare the cognate subject pronoun *wvù* in (9a) from Noni, a Bantoid language bordering on Oku:

- (9) a. wvù dòó ɛ wvù bɛ̀ɛ̀ gèn fɔ̀wǎ́y ‘he_i says that he_j went to market’
 b. wvù dòó ɛ wən bɛ̀ɛ̀ gèn fɔ̀wǎ́y ‘he_i says that he_i went to market’
 s/he say that PRO PAST go to.market

As seen, when the regular subject pronoun is used in the reported clause, the result is non-coferentiality between the two subjects. This contrasts with (9b) where the new pronoun *wən* indicates logophoricity. Interestingly, Noni logophoric *wən* looks like Aghem non-logophoric *wín* ‘this, him, her’. In addition, the Western Grassfields languages do not use the demonstrative form in subject position, where Noni *wən* occurs as a logophoric. As I observed when working on Noni:

“It is interesting to note that these pronouns are probably borrowed from Oku, Aghem or another Ring [a subgroup of Western Grassfields] language, where [wón] is the class 1 demonstrative pronoun meaning ‘this (one)’.... While Ring languages use this form for the non-logophoric meaning, Noni seems to have been first sensitized to the logophoric distinctions, and then borrowed the form [wón] with the opposite meaning.” (Hyman 1981:15-16).

Noni thus misidentified the borrowed demonstrative as logophoric, generalized it to subject position, and even created a corresponding contrast in the plural (*bɔ́* ‘they_j’ vs. *bɔ̀wən* ‘they_i’) where logophoricity is not distinguished in the Ring group. Since only some Western Grassfields languages have replaced their 3rd person pronouns, this development must be relatively recent. Güldemann (2008:182) recognizes that “different kinds of explanations must be taken into account,” but concludes:

“The gist of the scenario for logophoricity is that it is likely to have been innovated at least once in some early language state of Narrow Niger-Congo and/or Central Sudanic, that it expanded and consolidated in a geographically far wider area due to divergence processes in these lineages, and that it spread still further to languages of other families by way of contact interference; at the same time, languages with the feature, when moving out of the Macro-Sudan belt, were prone to losing it.”

However, since the logophoric pronouns have divergent, but largely transparent sources, how old can they be? In addition, Güldemann feels he can reconstruct logophoricity far back, but is not sure which language stock was responsible for the innovation. Thus, how much value can this methodology have for long-range linguistic reconstruction?⁴ Rather I would insist even more with Güldemann's (2003b:375) position: "Needless to say, a more conclusive answer to this historical question also depends on whether future research will come up with concrete logophoric proto-forms established by means of historical-comparative reconstruction, at least for some earlier diachronic levels of Niger-Congo and Central Sudanic." I would replace his "also" by "necessarily".⁵

2.2. S-AUX-O-V-X

The same can be said about other features of the MSB, such as the S-AUX-O-V-X structure which Gensler (1994, 1997) reconstructs back to PNC. Again, if this order is so old, why is it so common that we can identify the verbal origin of the "AUX"? One of the languages which G cites is Tikar (Bantoid), where the today and general past imperfective auxiliaries *be* and *bi* require an S-AUX-O-V structure (Stanley 1991:118-122):

- (10) a. à bi nun lesi 'he was scolding him' (some time today)
 he IMPF him scold
 b. à be gwè fyæbbi 'he was harvesting maize' (e.g. yesterday)
 he IMPF maize harvest

Stanley is quite clear on the source of these auxiliaries, which she calls "néo-modalités":⁶

"La néo-modalité *bi* est dérivée du copulatif *be* 'être'... qui serait amalgamé au suffixe *-i* du perfectif passé premier degré... ce qui lui donne le sens de 'était'." (p.119)

"La néo-modalité *be* est dérivée du copulatif *be* 'être'... qui serait amalgamé au suffixe *-e* du perfectif passé premier degré..., ce qui donne le sens de 'était'." (p.120)

She shows both the derivation of *bi* and *be* from *be* 'be' plus the regular perfective endings *-i* and *-e*, and that both markers can occur without another verb in copular constructions:

⁴ I have not done an exhaustive study of logophoric marking, but logically the oldest exemplars would likely be those for which there is no transparent or obvious source, as a result of the system being modified over a long period. However, even such modification may not require a huge time depth.

⁵ While I suspect a younger age and rapid diffusion of logophoric marking, Dimmendaal (2001b:155) goes one step further than Güldemann, claiming that the resemblance among logophoric forms suggests an earlier Niger-Congo/Nilo-Saharan macro-phylum: "Logophoric markers are an archaic discourse feature of the Niger-Congo and Nilo-Saharan language families, most likely going back to their common ancestor." He adds that "formally distinct, though functionally similar, logophoric markers occur in neighboring Afroasiatic languages."

⁶ "On désignera comme modalité vraie, celle qui est suffixée au verbal, et comme néo-modalité, le monème libre qui est antéposé au verbal. Plusieurs des néo-modalités ont un emploi à l'état isolé dans le parler actuel et supportent l'adjonction d'une modalité vraie." (p.90)

- (11) a. à ɓi ndem ‘he was in the field’ (some time today)
 b. à ɓe kwe ‘he was there’ (e.g. yesterday)

I thus conclude that the imperfective S-AUX-O-V order has been introduced relatively recently.⁷

The same conclusion is reached in Nupoid, a totally different area and subgroup of Benue-Congo. As seen in (12), the verbs *lá* and *kú* both occur as a main verb with the meaning ‘take’ in Gwari (Hyman & Magaji 1970:63):

- (12) a. eɓí lá shnamá ‘the child takes a yam’
 eɓí kú àshnamá ‘the child takes yams’
 child take yam(s)

In general, *lá* is used with a singular object, while *kú* is used with plural objects. Now compare the three past tenses in (13), where the same verbs function as completive aspect auxiliaries:⁸

- | | | | |
|------------------|-----------------------------------|------------------------------------|---------------------------|
| (13) | /lá/ + singular | /kú/ + plural | ‘the child bought yam(s)’ |
| P ₁ : | eɓí á shnamá si | eɓí kú àshnamá si | (today) |
| P ₂ : | eɓí lái shnamá si | eɓí kúi àshnamá si | (yesterday) |
| P ₃ : | eɓí ɓei lá shnamá si | eɓí ɓei kú ashnamá si | (before yesterday) |
| | child P ₃ take yam buy | child P ₃ take yams buy | |

In these sentences the object occurs between the auxiliary ‘take’ and the main verb, much as in the Yoruba sentences in (4). However, whereas the sentences in (4) use ‘take’ + NP + VP to express an object (‘take book come’, ‘take machete cut wood’), the function of ‘take’ is clearly aspectual in (13) and might even be translated with ‘get’: ‘the child got the yam(s) bought’. That these verbs mark completive aspect rather than argument structure is also seen from the fact that they are not used when there is a focus on some other element in the sentence (Hyman & Magaji 1970:122-3). In this case the word order is S-(AUX)-V-O:

- | | | | | |
|------|------------------|-------------------------------------|---------------------------|--------------------|
| (14) | P ₁ : | eɓí ɓēī sī (à)shnamá nū | ‘the child bought YAM(S)’ | (today) |
| | P ₂ : | eɓí sii (à)shnamá nū | ” | (yesterday) |
| | P ₃ : | eɓí ɓei si (à)shnamá nū | ” | (before yesterday) |
| | | child P ₃ buy yam(s) FOC | | |

Since *lá* and *kú* fail to appear in the context of an overtly focused NP, marked by *nū*, Hyman & Magaji identified these auxiliaries as inherently focusing on the completive aspect, which Hyman & Watters (1984) refer to as “auxiliary focus”.

As in Tikar, we can clearly identify the pre-grammaticalized source of the completive aspect auxiliaries which produce the S-AUX-O-V word order, which again suggests a relatively

⁷ While Stanley points out that the ‘imperfectif non-passé’ marker *tǎ* cannot occur as a main verb (p.115), given the **ɓɛ-i* and **ɓɛ-e* sources of *ɓi* and *ɓe*, a **tV-a* origin is conceivable, where *-a* is the perfect (“parfait”) suffix.

⁸ In the today past, P₁ /a/ fuses with /lá/ to produce the *á* marker seen in the example. The P₃ marker is *ɓei*, which some speakers add in P₂, whose *-i* suffix must occur on the auxiliary, but also optionally on the main verb (Hyman & Magaji 1970:57).

recent development.⁹ As both Güldemann (2010) and Gensler & Güldemann (2003) note, S-AUX-O-V-X is very widespread in the MSB. However, like the marking of logophoricity, its distribution is spotty, and no argument is given that it must be reconstructed to PNC rather than developing via the natural V > AUX grammaticalization pathway (Williamson 1986). The Tikar and Gwari developments look relatively recent. It is my impression that this is true in many other cases as well. It is significant that the historical development of S-AUX-O-V has been documented outside the MSB as well. Heine & Claudi (2001) discuss the natural grammaticalization paths that give rise to such structures in Ewe (Kwa), Moru (Central Sudanic) and !Xun (Khoisan). Following G's methodology, as applied to Bantu, one would have to consider the possibility that !Xun, currently spoken in southern Africa, used to be spoken in the MSB, where it would have gotten its S-AUX-O-V several thousand years ago. Heine & Claudi (2001) however provide an internal explanation for the development of this structure in all three languages. They specifically warn against an historical link between the three:

“We are dealing with languages each belonging to a different language phylum, hence genetic relationship is unlikely to be a contributing factor. And the same applies to areal relationship: The areas where the three languages are spoken are separated from one another by thousands of miles, and by hundreds of languages that do not exhibiting [sic] comparable similarities. Thus, there is no evidence to suggest that history can be held responsible in any way.” (Heine & Claudi 2001:68)

Ironically, it may be the placement of the object prefix in (non-MSB) Narrow Bantu SVO languages that gives the strongest impression of an old OV structure. Since Givón (1971, 1975), Bantuists have attempted to account for the preverbal realization of object prefixes by assuming an earlier OV structure, much as in the history of Romance. Examples were seen from Chichewa and Ciyao in (3). The fact that some NW Bantu languages, e.g. Tunen, have such structures is certainly impressive, but Mous (2005) proposes that the OV order is innovative in these languages. In Bantu languages which have free-standing object pronouns, these bear little, if any, resemblance to the CV- and N- object prefixes, whether the order is S-AUX-O-V, as in Tunen, or S-AUX-V-O, as in most other cases. Compare in (15) the corresponding personal pronouns in Basaá (Hyman 2003b:269), Ewondo (Redden 1979:55), and Tunen (Mous 2003:302, Dugast 1971:131-2) with the reconstructions of the OMs in PB (Meeussen 1967:98):

⁹ The auxiliary *bei* can also be easily identified as /bé/ ‘come’ plus the past tense suffix *-i*, which is possibly cognate with the **-i* past tense marker reconstructable to Proto-Bantu and other branches of Benue-Congo.

(15)		<i>Basaá</i>	<i>Ewondo</i>	<i>Tunen</i>	PB OMs
	1sg.	mè	mà	mìàṅó	*n-
	2sg.	wè	wà	àṅó	*kɔ-
	class 1	ɲé	ɲé	wéy	*mɔ-
	1pl.	ḃës	biá	b ^w əsú	*tɔ-
	2 pl.	ḃee	mínà	b ^w ənú	*mɔ-
	class 2	ḃó	bó	b ^w əbú	*ba-
	class 3	wó	wó	múit	*gɔ-
	class 4	ṅwó	myá	mít	*gɪ-
	class 5	jó	dó	nét	*dí
	class 6	mó	mó	mát	*ga-
	class 7	yó	dzó	yét	*kɪ-
	class 8	gwó	byá	bét	*bi-
	class 9	yò	dzò	mét	*yɪ-
	class 10	yó	dzó	mít	*yɪ-
	class 13	có		túét	*tɔ-
	class 14			búét	*bɔ-
	class 19	hyó		hít	*pi-

The above pronouns, which are used to mark objects and obliques in Basaá (VO), Ewondo (VO), and Tunen (OV), are clearly a secondary development. The *-ó*, *-á* and *-í* elements observed in the class 2-13 forms indicate an origin of these as independent, perhaps demonstrative pronouns, while the Tunen personal forms are even more substantial than the prefixal PB OMs. What would be much more impressive is if the object pronouns had to immediately precede the verb and looked like incipient pronominal clitics. That is, the “smoking gun” is missing: The NW Bantu languages are not precursors to the Proto-Bantu (PB) of Meeussen (1967), rather they represent various stages of a break-down of the PB system (cf. §4).

2.3. Labial-velar consonants

A third widespread property of the MSB is the presence of one or more of the labial-velar stop series /kp/, /gb/, /ɲm/, as documented by Clements & Rialland (2008:43):

“As far as their geographic distribution is concerned, labial-velar stops are found in over half the languages of the Sudanic belt in our sample, but are extremely infrequent in languages outside this area, whether in Africa or elsewhere.... As an areal feature which cuts across genetic lines, the constitute a primary phonological diagnostic of the Sudanic belt.”

Although occurring in all branches of Niger-Congo except Dogon (Clements & Rialland 2008:43), Güldemann (2008:175) adds: “Most of Narrow Bantu lacks labial-velar consonants, while its closest relatives within and adjacent to the area frequently have them.” Clements and Rialland map languages from zones A, C and D, adding that their list of languages south of the Congo River is “very likely incomplete as information for most languages in the area is sparse” (p.44). The southernmost language in this area thus far is Nzadi (Crane & Hyman 2010), which Maho (2009:24) designates as B.865:

(16)	<i>Nzadi</i>	<i>Proto-Bantu</i>	
	kpá	*kú-a	‘die’
	ò-kpá	*kùá	‘yam’
	ò-kpí	*kòpí	‘lion’
	ò-kpé	*kúpí	‘short’

The development of /kp/ from the PB reconstructions is quite transparent, suggesting a shallow history. Back in the Grassfields area of Cameroon, Noni /kw/ and /gw/ are optionally realized [kp] and [gb]: *kwēn* ~ *kpēn* ‘firewood’, *gwóón* ~ *gbóón* ‘bamboo’, both deriving the labiality from a lost class 3 **u-* prefix (cf. the class 4 plurals *kēn*, *góón*). Aghem, on the other hand, derives [gb] from historical **bw*:

(16)	<i>sg. class 7</i>	<i>pl. class 8</i>	
a.	kì-tèé	ò-twèé	‘cricket (s)’
	kí-náj	ó-nwáj	‘cocoyam(s)’
b.	kí-bé	ó-gbé	‘fufu(s)’
	kí-bá?	ó-gbá?	‘rope(s)’

All of these examples show that the spread of [kp] and [gb] is continuing. As most Grassfields Bantu languages do not have these sounds, we can state with confidence that their arrival has been recent—and areal: Within the Ring subgroup of Western Grassfields, labial-velars appear in the Northwest (Aghem, Bafmeng, Bu, Bum, Chai, Isu, Kumfutu, Weh, Zoa) and East (Lamnso, Babessi), but not in the Central-South (Babanki, Babungo, Kom, Mbizinaku, Oku).¹⁰ Not surprisingly, as one goes further out towards the West, North and East one finds other languages with labial-velars, but as one goes south they are almost totally lacking (e.g. present only in Ngwo in the Momo subgroup of Western Grassfields Bantu, rare in Ngemba and Bamileke within Eastern Grassfields Bantu).

Dimmendaal (2001a:376-7) discusses a similar situation in Eastern Sudanic, where labial-velars first entered (Western Nilotic) Alur and (Eastern Nilotic) Kuku through unadapted loanwords, thereby providing the target for an internal reanalysis of inherited labialized velars as labial-velars: cf. Bari proper *lugwake?*, representative of most Eastern Nilotic, vs. Kuku *lugwake* ~ *logbake* ‘tick’. If [kp] and [gb] can be shown to be spreading at the current moment, not necessarily respecting subgroupings, this must also have been the case over past centuries if not millenia. This fact, as well as the the fact that these sounds are found in only half of the languages of the MSB suggest that the presence or absence of labial-velars will not be very useful for the purpose of reconstructing remote proto languages.¹¹

2.4. Multiple tone heights

The same is true of multiple tone heights. While most languages south of the Sahara have two tone heights, H(igh) and L(ow), some also with downstep phenomena, languages with three, four or five tone heights cluster within the MSB and, distantly from it, within Khoisan. Looking at

¹⁰ The Ring materials were collected in Cameroon by Jean-Marie Hombert, Harriet Jisa and myself.

¹¹ Cf. Dimmendaal (2001b:377): “Although labial-velar stops are widespread in Niger-Congo, their historical status is still problematic.”

Clements & Rialland's (2008:73) map of the distribution of multiple tone height systems one immediately observes that most of the Bantu languages are excluded. Clements and Rialland offer an indirect explanation: Contrastive multiple tone heights derive largely from the loss of tone-bearing units (e.g. vowels), especially as languages approach monosyllabism (Wedekind 1985). Common sources of developing a third tone height from level /H/ and /L/ are indicated in (17).

- (17) a. lowering of H after L, e.g. Kom (Hyman 2005) L-H > L-M > M
 b. raising of L before H, e.g. Ik (Heine 1993) L-H > M-H > M
 c. raising of H before L, e.g. Engenni (Thomas 1978) H-L > ·H-L > ·H

As seen, tone height adjustments can result from the juxtaposition of two opposite tones. As long as both tones are present the effect is allophonic. When the trigger is lost, the third height becomes contrastive, as Heine (1993:18) describes for Ik: "A low tone is realized as mid if followed by a high tone in the same word. The mid tone is retained even when the high tone is deleted due to word-final devoicing." The near-absence of a third tone height in Bantu languages outside the MSB can thus at least in part be attributed to the fact that they generally do not drop TBUs. Where this does occur in NW Bantu and Grassfields Bantu, the result can be quite dramatic, e.g. four tone heights in several Momo languages.

Other sources of M tone include contour simplifications and the "bifurcation" effects of "depressor consonants". Since both are present in non-MSB Bantu, a synchronic typological "clash" may be involved between the highly syntagmatic (agglutinative) morphology vs. a highly paradigmatic multiple tone height system. While I am not aware of any quantitative study of the correlation, I have spoken with several colleagues over the years who agree that multiple tone height systems tend to correlate with shorter words, and shorter words in turn tend to involve less morphology. There thus is no reason to assume that Proto-Niger-Congo (or Proto-Nilo-Saharan) had more than a two-height *H, *L system.¹² This of course does not necessarily apply to all subbranches of Niger-Congo, where the areal effects can largely be attributed to other factors (e.g. loss of TBUs). Finally, it is crucial for our discussion to note that the innovations in this case clearly take place WITHIN the MSB, sometimes quite transparently. While Güldemann often cites Grassfields Bantu languages as having MSB properties, it is clear that Proto-Grassfields Bantu had only *H and *L. Indeed, starting with Voorhoeve (1971), one analysis after another has shown that Grassfields Bantu languages—which have been claimed to have up to five surface-contrasting tone heights, can usually be synchronically analyzed with two underlying tones, /H/ and /L/. In this sense non-MSB Bantu is highly conservative.¹³

¹² Clements & Rialland point out that of the four Khoisan languages in their sample, three have three heights, while one has four. However many families are represented by "Khoisan", the assumption here too is that tone should be reconstructed. On the other hand, Chadicists I have spoken with seem to agree with the following from Schuh (2003:57): "All Chadic languages are tone languages. The family-wide presence of tone distinguishes Chadic from other Afrasian families aside from Omotic, whose Afrasian affiliation is questionable in this writer's view. Since proto-Afrasian was probably not tonal, the most likely source of tone in Chadic is early and continued contact with non-Afrasian tone languages."

¹³ The question remains of whether PB should be reconstructed with *H, *L, as found in the NW, or with a privative *H contrasting with zero (Stevick 1969), as more prevalent outside the MSB. The general assumption is that the /H/ vs. Ø systems are innovative.

2.5. ATR vowel harmony and nasalization

In this last subsection I would like to briefly mention two further properties of vowels, ATR harmony and nasalization, which also cluster within the MSB. Both of these have been reconstructed by Stewart (1983, 2000) either for Niger-Congo or for some relatively distant sub-branch thereof. In the case of ATR, rather than reconstructing it for PNC, I agree completely with Dimmendaal (2001a:369): “From the variation within these reasonably well-defined subgroups, one could equally well conclude that languages may easily develop ATR-harmony through areal diffusion, in particular... if one takes into account the geographic distribution of such harmony systems (which includes certain Central Sudanic, Nilotic and Surmic languages within Nilo-Saharan, as well as a few Chadic languages within Afro-Asiatic).” Although Stewart & van Leynseele (1979) had proposed ATR vowel harmony in PB, based on its presence in Tunen, Stewart (2000/2001) reverted back to the more traditional seven-vowel reconstruction **i, *I, *ε, *u, *U, *ɔ, *a*, where **I, *U* undergo height harmony to [ε] and [ɔ], respectively (cf. Hyman 1999 for a survey of vowel harmony within Bantu). Thus, rather than non-MSB Bantu having lost ATR, the ATR systems found in NW Bantu languages and zone D Bantu languages in contact with Central Sudanic are clearly innovative.

The issue of nasalization is less clear. Based on comparisons between Poutou-Tano (e.g. Akan, Ebrie) and Bantu languages, Stewart (1998) reconstructs nasalized vowels at his Proto-Bantu-Poutou-Tano (pBPT) level. He argues that the nasalized vowels and continuant consonants of Umbundu documented by Schadeberg (1987) are retentions from this remote proto stage. At least one aspect of Umbundu must be innovative: the fact that when nasalization spreads onto a /k/, it becomes nasalized [h̃]. Although the fact that within Bantu contrastive nasalized continuants are found only in Umbundu is suspicious, an alternative interpretation would require close examination of all of the arguments, stages in Stewart’s reconstructions, and more. Suffice it to say that if almost all of Bantu lost the putatively inherited nasalized continuant consonants, it is not alone—most other Niger-Congo languages would have had to do likewise.

2.6. Summary

In the preceding subsections we have surveyed two grammatical and two phonological properties which cluster within Güldemann’s MSB: logophoric markers, S-AUX-O-V, labial-velars, and multiple tone heights. I also included a few comments on ATR vowel harmony and nasalization. All of these properties occur within the MSB, but as Güldemann himself acknowledges, any historical interpretation of their distribution requires a careful balancing of different hypotheses. It is thus worth considering how he characterizes logophoric marking below:

"It goes without saying that reconstructing the presence of logophoricity for an early chronolect of a lineage does not exclude the possibility that some younger varieties lost the feature, and that some re-acquired it yet later. For this reason, not every member language or sub-group of Central Sudanic and Niger-Congo is expected to possess logophoric marking synchronically. Also, I do not commit myself to any claim regarding the reconstruction of logophoricity presence in the proto-language of any subbranch of these two groups. This holds particularly for Proto-Bantu, which involves an ambiguous synchronic picture that is open to alternative interpretations. That is, the non-West African languages may have lost the feature or those in West Africa may have re-acquired it. Leaving this question open is even more justified by the fact that the precise relation between

lack of evidence for multiple suffixation. The problem, as so nicely put by Roger Blench (pers. comm. May 31, 2010), is that “verbs with strings of extensions are all over Niger-Congo.” Putting aside the Atlantic case, the occurrence of Bantu-cognate strings of extensions within the different branches of “core” Niger-Congo should be sufficient to disprove Güldemann’s position. In fact, it is not difficult to find such examples.

As was exemplified in (1) above, Degema (Edoid) has at least four frequently occurring verb extensions, with the allomorph variations in parentheses (cf. Kari 1995):¹⁴

(19)	<i>root</i>	<i>UR</i>	gbom	‘bite’
	<i>causative</i>	/-EsE/	gbom-ose	‘cause to bite’
	<i>reflexive</i>	/-EnE/	gbom-one	‘bite oneself, itself’
	<i>reciprocal</i> ¹⁵	/-(v)EŋinE/	gbom-oŋine	‘bite each other’
	<i>iterative</i>	/-(vIr)-Iy/	gbom-oy	‘bite many times’

As seen in the examples, the archiphonemes /E/ and /I/ of the extensions assimilate to a preceding (non-high) vowel, here the /o/ of /gbom/ ‘bite’ (further examples below also show ATR harmony). The causative suffix /-EsE/ is clearly cognate to PB *-*ɪc-i-*, whose consonant is most frequently realized with /s/ in present-day Bantu languages. Degema reflexive /-EnE/ appears to be cognate with PB reciprocal *-*an-*, while reciprocal /-Eŋine/ (variant /-Ekine/) bears striking resemblance to the plural + reciprocal sequence *-*ang-an-* found in many Bantu languages, sometimes simply marking reciprocal, as in Haya.¹⁶ Given the final /E/ of the -VCV suffixes, one is tempted to identify them as bimorphemic, in which case reflexive /-En-E/ would especially resemble NW Bantu, e.g. the Mokpe reciprocal *-an-E* (Henson 2001). Such a reflexive/reciprocal relationship is not surprising. Kari (2008:xxxiii) indicates that the reciprocal can also have an “iterative-reflexive” meaning (‘bite oneself several times’). If we hypothesize that /-EŋinE/ derives from earlier -Eŋ-En-E, this would make sense: -Eŋ- (variant -Ek-) has the plural (‘iterative’) meaning like PB *-*ang-*, and -En- (> -in-) its original reciprocal meaning (cf. PB *-*an-*). This leaves iterative-habitual /-Iy-/, the most productive extension in Degema, and the hardest to relate to PB.

While the suggested correspondences are admittedly speculative, the extensions in (19) are very Niger-Congo looking. More importantly, they can be combined into sequences of two or three suffixes, the latter necessarily involving /-Iy-/. Examples are given in (20).

¹⁴ Of the 713 distinct verb-root shapes which I manually extracted from Kari (2008), the following number had a corresponding derived entry: causative (316), reflexive (164), reciprocal (175), iterative (434). I conflated and counted identical verb roots together as one, as many of his individual entries were clearly related, e.g. *deny*¹ ‘fall’, *deny*² ‘fail’; *mur*¹ ‘begin to grow (of shaved hair)’, *mur*² ‘drizzle (of rain)’.

¹⁵ Kari (2008:xxxiii) attributes a number of meanings including reciprocal (‘bite each other’), benefactive-reciprocal (‘bite for each other’), and iterative-reflexive (‘bite oneself several times’). The iterative suffix is also said to mark the habitual, hence ‘bite many times, bite always’. These suffixes have the longer allomorphs *-veŋine* and *-viriy* after CV (and a few CVCV) verbs.

¹⁶ Luganda has two allomorphs, *-aŋŋan-* (from *-*ang-an-* via Meinhof’s Rule) and *-agan-*, without the nasal, while languages in the NW have *-ak-an-* sequences, often with a detransitivizing effect, e.g. Yaka *saandz-a* ‘scatter (tr.)’, *sandz-akan-a* ‘scatter (intr.)’. Motingea (2005:367-8) sets up *-Vng-* as a “collectif” in zone C whose meaning “reste encore difficile à préciser d’autant plus qu’il s’accompagne souvent de l’associatif *-an-* et parfois du pluriatif *-ij-*”, this latter form also interestingly involving a nasal.

- (20) a. causative + reflexive + iterative
- | | | |
|--------------|-----------------------------------|-----------------|
| gbom-os-ne-y | ‘cause to bite itself many times’ | (gbom ‘bite’) |
| bi-es-ne-y | ‘blacken oneself many times’ | (bi ‘be black’) |
| kūwā-s-ne-y | ‘make oneself dry always’ | (kūwā ‘be dry’) |
- b. causative + reciprocal + iterative
- | | | |
|--------------|----------------------------------|---------------|
| dē-s-ēñiñe-y | ‘sell to each other many times’ | (dēy ‘sell’) |
| kọ-s-ēñiñe | ‘cause to remain for each other’ | (kọ ‘remain’) |
- c. reflexive + causative + iterative
- | | | |
|-----------------|------------------------------------|-----------------------------|
| sele-ne-se-y | ‘cause to be put right many times’ | (sele ‘put sth. right’) |
| kpo-ne-se-y | ‘cause to be narrow many times’ | (kpo ‘make narrow’) |
| gbìgbì-ēn-ēṣe-y | ‘cause to be chopped always’ | (gbìgbì ‘chop for cooking’) |
- d. reciprocal + causative + iterative
- | | | |
|-----------------|--|-------------------|
| gbom-oñine-se-y | ‘cause to bite each other many times’ | (gbom ‘bite’) |
| ḅav-añiñe-se-y | ‘cause to stick to each other many times’ | (ḅav ‘stick to’) |
| pl-eñine-se-y | ‘cause to pass over each other many times’ | (pel ‘pass over’) |

The following summary table of attested suffix combinations is based on a manual examination of Kari (2008):¹⁷

(21)

	<i>causative</i>	<i>reflexive</i>	<i>recip</i>	<i>iterative</i>
<i>causative</i>		+	(+)	+
<i>reflexive</i>	+			+
<i>reciprocal</i>	+			+
<i>iterative</i>	-	-	-	

The shaded cells indicate that a suffix cannot follow itself, nor can the reflexive and reciprocal suffixes co-occur (presumably because both decrease the valence of the verb). As seen, the combination causative+reciprocal occurs only rarely in the dictionary, while the iterative suffix must occur last.¹⁸

It is true that Degema has less going on than most Bantu languages, although more than some of those in zone A (Achaw 2002). The question is whether the above system looks like as far as it got or, as I believe, is a simplification of a much more extensive system. In support of the latter interpretation, Degema has some quite long unanalyzeable verbs, which look like they are carrying old (Niger-Congo looking) suffixes:

¹⁷ Kari (1995:165-6) restricts some of the above combinations which are however found in his 2008 dictionary. One reason was that he was looking only at the distribution of the long iterative form, which shows up as -y in the above examples.

¹⁸ My search of Kari (2008) revealed only one case where the iterative is followed by another suffix: *giya* ‘shine bright’, *giya-viriya* ‘shine bright always’, *giya-viriya-se* ‘cause to shine bright many times/always’.

(22) a.	-ile	:	bɛngilɛ	‘(of fish) turn in water in a way that reveals the underpart’
			kɛngilɛ	‘be tilted backwards’
			kɔngilɛ	‘wobble’
			nɛngilɛ	‘be slender’
			pɛkilɛ	‘jump and roll in the air’
b.	-any	:	bilany	‘be broken’
			bomiyany	‘be depressed as a result of ill health or suffering’
			bɔriyany	‘be lazy’
			diviyany	‘be deep’
			disany	‘sneeze’
			ɖumany	‘produce a sonorous sound from within’
			hihiyany	‘rotate’
			horiyany	‘be hollow (of bank of a river, face etc.)’
			jzikany	‘be dull (of weather, because of inadequate sunlight)’
			kaşany	‘cough’
			kuɓany	‘belch’
			kpalany	‘remain in abundance’
			kpatany	‘hit one’s toe accidentally on something’
			loriyany	‘hurt severely (of a wounded part of the body)’
			nunwany	‘be resilient, bend easily (of tree, stick etc.)’
			puyiyany	‘brood over eggs (of birds)’
			roviyany	‘be submerged in liquid, wealth, crime etc.’
			tabany	‘to go to one’s house’
			tuwany	‘to stoop’
			vakany	‘lose balance (of a person)’
			voriyany	‘decrease (of quantity)’
			vumany	‘capsize’
			vuriyany	‘be twisted’

As seen from the glosses, all of the above verbs are intransitive, hence *-ile* and *-any* appear to be valence-related.¹⁹ Perhaps not surprising, then, is the fact that Kari (2008) indicates a corresponding causative for almost all of them: *bɛngile-se*, *kɛngile-se*, *bilany-se*, *bomiyany-se* etc. In short, the length of Degema verbs, the recurrent endings, and the fact that three of the extensions end in /-E/ are quite reminiscent of Bantu. Whether all of these properties derive from the same proto language or not, one has to accept that the typology of the Degema derived verb stem is the same as that in Bantu.

Since Degema is spoken in Eastern Nigeria, not that far away from Bantu, it may be instructive to consider another MSB example from further afield. A case I discussed in Hyman (2007a) comes from Moore, a Gur language of Burkina Fasso, which has the following verb suffixes (Canu 1976) and PB correspondences:

¹⁹ Of the 27 *-any* examples I have so far extracted from Kari (2008), only the following four are transitive (the first two of which involve a reduplicated initial CV): *guguwany* ‘to sanctify’, *gbagbany* ‘absolve, exonerate’, *kpurany* ‘spread, display’, *tuwɛny* ‘pull’.

- (23) a. -b *be in a state* cf. PB *-ib-u- *passive*
 -b *intensive*
 -d *produce by putting into a state* cf. PB *-ud- *reversive transitive (?)*
 -d *locative* cf. PB *-id- *applicative*
 -g *put into a state* cf. PB *-ik- *impositive*
 -g *repeated action, intensive* cf. PB *-a(n)g- *plural, durative*
 -g *inversive* cf. PB *-uk- *reversive intransitive*
 -l *amplitude, certitude* cf. PB *-idid- *completive, intensive*
 -m *positional* cf. PB *-am- *stative (positional)*
 -s *causative* cf. PB *-ic- *causative*
 -s *discontinuous (fréquentative?)*

Again we see the causative *-s* of Niger-Congo, but also some other interesting probable cognates. More importantly, Canu's (1976:184) table in (24), also reproduced in Hyman (2007a), shows the combinatorics:

(24)

	-b	-d	-g	-l	-m	-s
-b			x	x		x
-d			x			x
-g				x	x	x
-l			x		x	x
-m						x
-s			x			

While some of these combinations have non-compositional meanings, this only adds to the likelihood that multiple suffixation is an old process in the history of Moore.²⁰ As seen in (24), the causative suffix *-s* occurs late (followed only by *-g*) as opposed to its early positioning in the following Bantu "CARP" template from Hyman (2003a):²¹

(25)

CARP:	<i>Causative</i>	<i>Applicative</i>	<i>Reciprocal</i>	<i>Passive</i>
PB:	*-ic-	*-id-	*-an-	*-u-
Ndebele:	-is-	-el-	-an-	-w-

Since cognate reflexes are found in other branches as well, several of the extensions in (23) are likely to trace back to PNC (Voeltz 1977). The question is why not also two or more proto extensions in sequence?

As seen in (25), I have operated under the generally shared assumption that PB did in fact have multiple suffixation. Speaking of PB, Meeussen (1967:92) writes: "A verbal base can have more than one suffix, but such suffix sequences are difficult to illustrate with reconstructed bases, since these forms are productive and highly unstable." Determining which and how many

²⁰ Except for *-s-g-*, the order of suffixes can be summarized as *b/d - {g, l} - m - s*, where *-b* and *-d* do not combine and *-g* and *-l* occur in both orders.

²¹ In PB the morph **-ic-* necessarily cooccurred with a second causative morph **-i-* which was positioned just before the passive extension. See the extensive discussion in Bastin (1986), also concerning the different vowel height realizations, e.g. between causative *-is-* and applicative *-el-* in languages such as Ndebele.

extensions could cooccur is also complicated by the presence of unproductive “expansions” which themselves must once have been productive extensions. In addition, even the productive extensions in (25) can become lexicalized with special meanings, and, if followed by another extension, may potentially violate the CARP order.²² In Hyman (2004) I showed that a number of NW Bantu and, ultimately, non-Bantu languages place a maximum sized on their extended verb stems:

- (26) a. four - syllable maximum: Yaka (Hyman 1998), Bobangi (Whitehead 1899)
Punu (Fontaney 1980, Blanchon 1995)
b. three (~four) - syllable maximum: Koyo (Hyman 2008)
c. three-syllable maximum: Tiene (Ellington 1977), Basaá (Lemb & Degastines 1973,
Hyman 2003b), Kukuya (Paulian 1975)
d. two (~three) syllable maximum: Mankon [Grassfields Bantu] (Leroy 1982)
e. one (~two) syllable maximum: Ewe [Kwa] (Westermann 1930)

As such languages impose a maximum length on verb stems, I suggested, the possibilities for adding extensions decrease, thereby reinforcing the “drift” from morphological head-marking to analytic syntactic alternatives (serial verbs, prepositional phrase, etc.). Specifically, I argued against final phonetic “erosion” as the main trigger for losing verb suffixes. Rather, prosodic constraints such as in (26) play a key role, particularly in NW Bantu.

Concerning the above hypothesis, G (14) writes:

“While Hyman argues with detailed and convincing data that the different degrees of verb-stem complexity across Bantoid should be interpreted in terms of a historical cline, he fails to make a conclusive case for his assumed exclusive directionality from extreme complexity—as in canonical Bantu—to ever greater simplicity in northwestern Bantu (and almost everywhere else in Niger-Congo). Thus, the possibility must also be considered that the highly productive MULTIPLE stacking of suffixes in most but not all of Bantu is the result of LOSING different degrees of prosodic stem restrictions observed in its northwestern sphere and the adjacent zone in the Macro-Sudan belt, thereby building up extreme verb-stem complexity from an earlier moderate one.”

However, there is considerable phonological evidence that my interpretation is the correct one. In the above-cited languages (and others), it is not only size constraints which have been imposed, but a whole series of innovative foot-like conditions placed on the verb stem. Among the most interesting of these are the conditions on the “prosodic stem” in Tiene (Hyman 2010:152-3):

- (27) a. Five shapes: CV, CVV, CVCV, CVVCV, CVCVCV
b. In the case of $C_1VC_2V_2C_3V_3$:
i. C_2 must be coronal
ii. C_3 must be non-coronal
iii. C_2 and C_3 must agree in nasality
iv. V_2 is predictable (with few exceptions)

²² For example, do PB **jingid-* ‘enter’ and **càngan-* ‘meet’ consist of a root plus frozen applicative or reciprocal extension? If so, adding causative **-ic-* to either would violate CARP.

As seen, in Tiene the maximum size of the verb stem (root + suffixes) in (27a) is three syllables. In addition, the conditions in (27b) clearly indicate innovations, as none of them is true of PB or of “more canonical” Bantu languages. More importantly, the size constraint severely limits the possibilities for suffixation. Consider, for example, the Tiene forms in (28) which illustrate the definitive aspect (cf. PB **-IdId-* > *-elēl-* ‘completive’).²³

(28) a.	ka-a	‘fasten’	kalal-a	‘fasten permanently’
	nó-ǝ	‘look at’	nólǝl-ǝ	‘fix gaze on’
	bε-ε	‘become ripe’	bēlēl-ε	‘ripen once and for all’
	sí-a	‘hate’	sílēl-ε	‘hate definitively’
	tw-a	‘crush’	túlēl-ε	‘crush definitively’
b.	yǝb-ǝ	‘bathe’	yǝbǝb-ǝ	‘bathe thoroughly’
	mat-a	‘go away’	matat-a	‘go away once and for all’
	yak-a	‘believe’	yakak-a	‘believe once and for all’
	kén-a	‘dance’	kénen-a	‘dance once and for all’
	lǝŋ-ǝ	‘load’	lǝŋǝŋ-ǝ	‘load once and for all’

As seen in (28a), when the verb root is /CV-/, the definitive is marked by a *-lVl-* sequence. In (28b), where the root is /CVC-/, the definitive consists of a *-VC-* extension whose consonant must be identical to the C_2 of the root. In both cases, the root+definitive+FV sequences fills out the trisyllabic maximum of the prosodic stem. The question then is what happens if there is no room for the definitive. As Ellington (1977:93) writes: “...verbs having the canonical shape *-CVCVC-* (including extended radicals)... do not accept the Definitive Aspect Morpheme. For such verbs, this aspect must be rendered by adding the expression *nkó mǝte* to the conjugated verb in the Neutral Aspect.” The morphological definitive is blocked just in case the condition $C_2 = C_3$ cannot be met without either truncating part of the base or exceeding the maximum trisyllabic size constraint on stems. The reduplicative nature of the forms in (28b) is clearly innovative, nothing like what is found in Bantu languages lacking a stem maximum condition.

Further evidence that the trisyllabic maximum is innovative in Tiene is seen from the following four C(V)- roots which occur with traces of the reciprocal extension *-neŋ-* inherited from the Proto-Bantu plural+reciprocal sequence **-a(n)g-an-*:

(29) a.	le	‘eat’	b.	lé-neŋa	‘eat with each other’
	nwa	‘drink’		nú-neŋa	‘drink each other’
	pa	‘give’		pé-neŋa	‘give each other’
	ta	‘throw, strike’		té-neŋa	‘injure each other’

Since most verbs have a CVC- root, they will not be able to take the reciprocal extension, which hence has fallen out of usage (apart from the four verbs in (29)). In the face of such data as in Tiene (Yaka, Koyo, Kukuya, Basaá etc.), it is hard to consider Güldemann’s suggestion that the maximum size constraints were original and longer verb forms innovative. Concerning the facts in (29), he would have to argue that the reciprocal was allowed only on CV verbs, and was later

²³ The identity condition $C_2 = C_3$ of the definitive aspect overrides the coronal/non-coronal distributions in (26b.i,ii).

expanded to longer verbs, which would be very odd, given that cognates are found outside Bantu, as we saw in Degema. It is hard not to interpret the forms in (29b) as relics, especially as ‘eat with each other’ and ‘drink each other’ (which exists in ‘drink each other’s blood’) have rather specific meanings. The historical direction has clearly been to restrict and ultimately eliminate extensions from Tiene and similar languages. As this happens, the relics take on a lexicalized character, typically restricted to shorter verbs where the consonant(s) of the historical extensions may ultimately become reanalyzed as part of the root.

The inescapable conclusion is that PB did not likely impose a size constraint on the verb stem, nor is there any evidence for a single “morphological slot” for at most one extension. Güldemann hints at this when he cites the Khoi family, but mentions no Niger-Congo examples. As indicated in (26d) above, Hyman (2004) cited Mankon which, like most Eastern Grassfields Bantu restricts the verb to one extension. In any case, recall that the size constraints of Tiene (Koyo, Kukuya, Basaá etc.) are in effect even if the prosodic stem consists of an unanalyzeable CVCVC- plus FV. Since these exist in non-MSB Bantu languages which have no maximum size constraint, for Güldemann’s single-slot alternative to go through, he would have to say that there was a stage where stems with a frozen suffix could not take an extension at all. The evidence overwhelmingly goes in the opposite direction: PB allowed (considerable) multiple suffixation.

What about the rest of Niger-Congo? PNC? Because of the time depth it is much harder to say. G (15) cites the following from Voeltz (1977:70) as evidence of the rarity of multiple suffixation: “A brief mention should be made regarding the cooccurrence [sic] possibilities of the verb extensions here reconstructed. Outside of Bantu, little to no evidence exists [in Niger-Congo].” However, a lot more material has become available since the time Voeltz wrote his dissertation. To this we must add that shorter descriptions often do not address the question of suffix combinations—even in Narrow Bantu languages! The facts I have cited from Degema (Edoid) and Moore (Gur) suggest the same kind of evolution (cf. Cicipu in §5).²⁴ Of course many, if not most Niger-Congo subgroups have simpler extension systems than Bantu, Atlantic, or Kordofanian (the latter two, again, outside Güldemann’s “core”). In many cases we know that there has been significant simplification and loss. Since G’s terms “complex” and “moderate”, used to refer to extension systems, are a bit vague, it is hard to take a position: Some of the complexities in current Bantu languages may very well be innovative (e.g. the extreme of Ciyao in (2), including the unusual shape of the *-aas-i-* causative). That PB had considerable ability to combine extensions, however, seems clear, especially as I have accounted for the developments in NW Bantu. The problem is the cyclicity I referred to in §2: As we go back 10,000 or more years to PNC there has been plenty of time for the morphosyntax to recycle. The frozen expansions found in Narrow Bantu may very well represent an earlier stage when there were more, not fewer extensions. In Hyman (2007a:158) I speculated that an early offshoot of PB may have lost the difference between benefactive, instrumental and locative extensions, merging them into one macro-applicative suffix **-id-*. On the other hand, deriving the associative *-an-* from the preposition **na* ‘with’, as many have proposed, may account for its polsemy: comitative,

²⁴ In Hyman (2007a) additional evidence was cited from languages whose extensions are aspectual. As Gerhardt (1988:5) observes in a number of Plateau languages: “...those [verbal extensions] with syntactic functions have been lost, while aspect-like VEs are still present.” Since their shapes look like the corresponding valence suffixes in other languages, the likelihood is that these latter evolved aspectual functions, e.g. pluractionality, which then diffused. Since frozen *-ang-* and *-ijn-* suggest plurality in Narrow Bantu as well (cf. note 16), I would argue again for cyclicity: there has been plenty of time for Niger-Congo languages to have acquired, lost, and re-acquired aspectual marking of this sort.

reciprocal (> reflexive), and, particularly in NW Bantu, instrumental.²⁵ With all of this going on, it is absolutely essential that we dig both deeper and wider into the details from the different subgroups to determine who had what and when. The same point will be made in the next section dealing with inflectional prefixes.

4. Inflectional verb prefixes

The second issue which G takes up concerns the question of whether there were inflectional prefixes in PNC—or even in PB. Derek Nurse and I had attempted to take up this issue at the Oregon ACAL conference (Hyman 2007b, Nurse 2007), and although we came down on different sides concerning PB, we both recognized the difficulties involved in drawing firm conclusions. One of the problems concerns the considerable variation in the formal marking of inflectional categories, even in closely related Bantu languages:

Across Bantu, structures, categories, morphology, and morphemes have all changed since Proto-Bantu. They are constantly changing, so when discussing the difference between Bantu dialects, much less languages, linguists have to include features at the verbal level (Nurse 2008:25)

As an example, consider the following differences in marking tense-aspect in two dialects of Totela, where SM = ‘subject marker’ and R = ‘root’ (Crane, chapter 2, in preparation):

(30)		<i>Namibian Totela</i>	<i>Zambian Totela</i>
a.	<i>Prehodiernal past</i>	<i>Perfective</i>	na-SM-a-R-a
		<i>Imperfective</i>	ka-SM-R-a
b.	<i>Hodiernal past</i>	<i>Perfective</i>	SM-a-R-a
		<i>Imperfective</i>	SM-la-R-i
c.	<i>Hodiernal</i>	<i>Future</i>	mo-SM-R-e
d.	<i>Posthodiernal</i>	<i>Future</i>	ka-SM-R-e
			na-SM-la-R-a

As seen, of the six past and future tense contrasts, four differ in the use of different prefixes, the placement of these prefixes (e.g. whether before or after the SM), and the occurrence of different FVs. The first observation to make is that there is nothing comparable to such differences on other form classes (e.g. nouns) or the verbal extension system (causative, applicative etc.). The second is that if mutually intelligible dialects can be so different, just imagine how these differences can be amplified in languages which are more distantly related. The remoteness of PB and especially PNC, allows sufficient time for the build-up, modification and/or break-down of inflectional prefixes, perhaps more than once. We should thus not be surprised to find major differences in how Niger-Congo languages mark tense, aspect, mood (TAM) and negation.

The study of inflectional marking on verbs is also complicated by its relation to syntax: As discussed in §2.2, the fact that object pronouns are reconstructed as prefixes in PB is supposed to be evidence that the earlier word order was OV (Givón 1975), more specifically S-AUX-O-V (Williamson 1986, Gensler 1994, 1997, Gensler & Güldemann 2003). However, again, there is a question of how old S-AUX-O-V is. Rather than being a property of PNC, it is just as likely an

²⁵ The innovation of new extensions in Igbo (Onuwene 1999) looks quite recent (Williamson & Blench 2000:31).

innovation which has spread areally within the MSB. Coming back to Bantu, Mous (2005) has argued that S-AUX-O-V is an innovation in Tunen and the few other zone A languages which have this order. Claudi (1993) provides further discussion of how SVO languages can become SOV or S-AUX-O-V. In this connection I would cite the case of Leggbó (Cross-River) which has SVO order in the affirmative vs. SOV order in the negative. Both Good (2003) and Hyman (2003c) argue that the SOV order is innovative. One argument concerns serial verb constructions such as the following involving the grammaticalized verb *kaa* ‘carry’ (Hyman 2003c:38):

- (31) a. *ba kaa izððm (b)à vili ètèèn* ‘they cut meat with a knife’
 3pl carry knife 3pl cut meat
- b. *izððm bè àà kaa (b)à vili ètèèn* ‘they didn’t cut meat with a knife’
 knife 3pl NEG carry 3pl cut meat (**kaa izððm*)
- c. *ètèèn izððm bè àà kaa (b)à vili* ‘they didn’t cut meat with a knife’
 meat knife 3pl NEG carry 3pl cut (**izððm ètèèn*)

(31a) shows the SVO structure, where the object follows each verb. In (31b) we see that ‘knife’, the object of *kaa* ‘carry’, must precede the verb.²⁶ The interesting sentence is (31c) where the object of the second verb *vili* ‘cut’ has also been fronted, something which is not possible in the affirmative. Our interpretation is that Leggbó is in the process of innovating new OV structures in the negative (see Good 2003 and Hyman 2003c for more discussion).

Turning to the question of whether PB or PNC had inflectional prefixes, we first note that the likely source of all such marking is from the aforementioned grammaticalization path: word > clitic > affix > ablaut (§1). This is where syntax comes in: If PB or PNC were S-AUX-O-V, with AUX representing TAM and negative morphemes that have undergone grammaticalization, they should show less evidence of becoming prefixes, as they do not (always) occur right before the verb. On the other hand, if the original order were S-AUX-V-O, we would expect more inflectional prefixation to develop. In my view it is likely that the Niger-Congo languages have gone through lots of word order changes in their 10,000-12,000 year history. However, as I have indicated in §2 (e.g. with respect to Tikar and Gwari), at least some of the S-AUX-O-V orders are recent. Again basing himself on the MSB, G assumes PNC *S-AUX-O-V, also the same for PB, at least when the object was a pronoun. However, Mous’ (2005) scenario for the recent development of S-AUX-O-V in Tunen should create a lot of doubt. One clear indication that Tunen has hugely modified the PB situation is that there is no subject-verb agreement (Mous 2003:291). It would be hard to maintain that this is a pre-grammaticalization retention. On the other hand, the loss of subject-verb agreement is consistent with the innovation of S-AUX-O-V.

With this established we can now address G’s major point, which is that there would have been no inflectional prefixes on the verb in either PNC or in PB, where the status of the pre-verbal markers is somewhat fluid. G’s claim is that PB had an analytic structure such as Basaá, where the pre-verbal inflectional elements are written with spaces between them:

“Although Hyman (2007b:209) cautiously admits that ‘it is still not clear whether the pre-stem was affixal in P[roto-]B[antu]’, all his arguments want to suggest that the compact agglutinative structure does represent the conservative stage. In Güldemann (2003a: 183-7) I have argued for the

²⁶ While (31b) shows the subject pronoun following the object noun, it may optionally precede or both precede and follow it: *bè izððm àà kaa (b)à vili ètèèn*, *bè izððm bè àà kaa (b)à vili ètèèn*

opposite historical directionality, namely that structures of the above Basaa type are original and that the morphological verb template given in §2.1. would only have to be reconstructed for a later Bantu stage.” (G 16)

It is not just within Bantu or Niger-Congo that we face the notorious problem of determining what is a prefix vs. proclitic vs. separate word.²⁷ As Creissels, Dimmendaal, Frajzinger & König (2008:103) observe:

“Languages really devoid of verbal inflection are very rare in Africa, but the available documentation on African languages may be misleading, since in many descriptions of West African languages... verb prefixes are wrongly identified as free morphemes, with the result that languages with an entirely prefixal verb inflection (which is a fairly common situation among West African languages) are wrongly presented as languages devoid of verbal inflection.”

Let us first consider the Bantu case, then Niger-Congo.

As I pointed out in Hyman (2007b), even Bantu languages which appear to adhere to a template of inflectional prefixes treat these quite differently in their phonology. In all cases, the prefixes are more loosely connected to the stem than the suffixes. Even in languages such as Luganda, where Meeussen’s Rule shows that the prefixes must be included within the word constituent, the bracketing has to be [[prefixes [root - suffixes]]] or (P-(R-S)). As I pointed out also in the discussion with Nurse (2008), there has been plenty of time for PB (and even more time for PNC) to cycle back and forth, grammaticalizing full words as inflectional proclitics and prefixes, losing them, and creating them once more. The issue thus is not one of “diachronic typology”, to use G’s term, but of dating. This may not be easy to do, given the cyclicity. We all seem to agree that PB came from an earlier analytic stage—the question, however, is whether Basaa, Tunen etc. represent that unchanged stage, or whether they are completing the cycle: analytic > agglutinative > analytic. I maintain that the latter is the case.

Perhaps G and I do have one potential disagreement concerning diachronic typology:

“I fail to see irrefutable evidence that the historical directionality of changes can only be interpreted as ‘detaching verb prefixes’ (p.209) and the like. That one would indeed have to assume the dismantling of a word into its morphological components is clear from the fact that some affixes, particularly the cross-reference markers, are clearly cognate with independent pronouns in related Benue-Congo languages and beyond. In claiming (p.209) that the changes “particles > prefixes” and “prefixes > particles” are both “natural”, [Hyman] misses the cross-linguistically based generalization of grammaticalization research that the change away from analyticity towards agglutination due to phonological fusion is the default.” (G, 20)

I certainly agree that clitic > affix is a much more common phenomenon than the reverse. G does not comment on the evidence I presented of the reverse affix > clitic development in Kukuya (Paulian 1975), where noun class prefixes are phonologically enclitic on the stem of the preceding word. From this fact I extrapolated to say that if noun prefixes can change from prefix to clitic, then so can verb prefixes. In fact, Mous (2005:422) proposes exactly the same process concerning the infinitive prefix in Tunen and Gunu:

²⁷ When the pre-verbal marker has the shape CV or longer, one feels more comfortable writing it separately. This may also apply to a V marker, but what about a homorganic nasal, such as in the hodiernal past tense in Basaa? While I write it separately, e.g. *a n jé* ‘he ate’, I am unaware of any arguments for this interpretation—or against writing *a njé*, *an jé* or even *anjé*.

“The verb in the complement is the infinitive containing the typical noun class prefix. For both Nen (A44) and Gunu (A62a), this ‘prefix’ is in fact separated from the verb; in Gunu (A62a) it does not need to undergo vowel harmony, whereas affixes do.”

The question which we need to address here is: What happens when an agglutinative language takes a turn towards analyticity, either through contact or via internal change? As I pointed out in §3, the crucial driving force may very well be prosodic: These languages enhance the stem-initial at the expense of their prefixes. As the stem-initial acquires greater prominence, the prefixes necessarily become less tightly bound to their stem, ultimately functioning as syntactic proclitics (and possibly phonological enclitics, as in Kukuya).

Interestingly, the Gunu vowel harmony argument is replicated in Nzadi (B.865). In this language the noun class prefix /e-/ harmonizes to [ɛ] before /ɛ/, and the prefix /o-/ harmonizes to [ɔ] before /ɔ/ (Crane & Hyman 2010:31-2):

(32)		<i>harmony</i>		<i>no harmony</i>
	/e-/ :	ɛkɛ́ɛ ‘leaf’		ekɔɔ ‘bee’
		ɛsyɛn ‘thorns’		ekwɔ̂m ‘broom’
		ɛbyɛ́m ‘mosquito’		etɔk ‘pipes’
	/o-/ :	ɔsɔɔ ‘flamingo’		osyɛn ‘thorn’
		ɔtsó ‘head’		okɛɛr ‘belly’
		ɔtɔk ‘pipe’		oseɛ ‘pain’

Crucially, the infinitive prefix /o-/ does not harmonize. This produces minimal pairs such as *ɔ-tɔk* ‘pipe’ (< cl.3 **mU-*) vs. *o-tɔk* ‘to boil’ (< cl.15 **kU-*). In fact, there is no harmony between the verb stem and the inflectional markers which we write separately: *mi ó tɔ̂* ‘I gathered’, *mi é bɛ́l* ‘I am suffering’. Although spoken deep in the forest on the Kasai River, Nzadi has undergone a dramatic simplification, which could give us a window into how what was once a canonical agglutinative Bantu language has broken down the inherited system. Pronouns are independent words and have the same shape, whether used as subject, object, or possessive. As seen in (33a), the human plural pronouns have fused the PB class 2 prefix **ba-*, while the non-human 3rd person pronouns have fused PB class 5 **dɪ-* (sg.) and class 6 **ma-* (pl.) with an original determiner morpheme /-ɔ̂/:

(33)		a.	<i>pronouns</i>		b.	<i>agreement</i>
			<i>singular plural</i>			<i>singular plural</i>
	<i>1st person</i>		mĩ̀ bĩ		N	e
	<i>2nd person</i>		yǎ̀ byě̀n		e	e
	<i>3rd person [+human]</i>		̀ndé bǔ		o	e
	<i>3rd person [-human]</i>		nǔ mǔ		Ø	Ø

While the forms in (33a) appear as object pronouns after the verb, the markers in (33b) represent optional pre-verbal agreement with human object pronouns (Hyman & Crane 2010:132-3):

- (34) *no agreement* *with agreement*
- a. *b̀̀ â táŋ* ‘they have counted’
 b̀̀ â táŋ mwàân ‘they have counted a child’
- b. *b̀̀ â táŋ mĩ̀* *b̀̀ ân táŋ mĩ̀* ‘they have counted me’
 b̀̀ â táŋ yǎ̀ *b̀̀ ê táŋ yǎ̀* ‘they have counted you sg.’
 b̀̀ â táŋ ñdé *b̀̀ ô táŋ ñdé* ‘they have counted him/her’
 b̀̀ â táŋ bĩ *b̀̀ ê táŋ bĩ* ‘they have counted us’
 b̀̀ â táŋ byě̀n *b̀̀ ê táŋ byě̀n* ‘they have counted you pl.’
 b̀̀ â táŋ b̂ *b̀̀ ê táŋ b̂* ‘they have counted them’
- c. *b̀̀ â táŋ n̂* ‘they have counted it’
 b̀̀ â táŋ m̂ ‘they have counted them’

In (34a) we see that the perfect marker is /â/ when there is no object, or when the object is a noun. In (34b) we see that /â/ can always be used, but optionally, an agreement marker fuses with /â/: a homorganic nasal when the object is *mĩ̀* ‘me’, /o/ when the object is *ndé* ‘him/her’, and /é/ when it is any of the four remaining human pronouns. (33c) shows that the inanimate pronouns, which derive from PB 5/6, do not condition agreement. In all of the forms in (34) I have written the AUX markers *â*, *ân*, *ê* or *ô* as a separate word, just as I have done with the subject and object pronouns. While the source of the /e/ marker is not clear, we definitely can derive the homorganic nasal from the PB object marker (OM) **ñ-* and the /o/ from the class 1 OM **-mù-*.²⁸ This shows that Nzadi once had OMs, but is now losing them. Since neither /e/ nor /o/ harmonizes to a following /ɛ/ or /ɔ/, respectively, we are comfortable identifying the AUX either as a proclitic or a separate word. However, the nasal poses a problem. This is seen in the following future forms:

- (35) *no agreement* *with agreement*
- a. *b̀̀ â zwîzwé* ‘they will bath’
 b̀̀ â zwîzwé mwàân ‘they will bath a child’
- b. *b̀̀ â zwîzwé mĩ̀* *b̀̀ â ndzwîndzwé mĩ̀* ‘they will bath me’
 b̀̀ â zwîzwé yǎ̀ *b̀̀ ê zwîzwé yǎ̀* ‘they will bath you sg.’
 b̀̀ â zwîzwé ñdé *b̀̀ ô zwîzwé ñdé* ‘they will bath him/her’
 b̀̀ â zwîzwé bĩ *b̀̀ ê zwîzwé bĩ* ‘they will bath us’
 b̀̀ â zwîzwé byě̀n *b̀̀ ê zwîzwé byě̀n* ‘they will bath you pl.’
 b̀̀ â zwîzwé b̂ *b̀̀ ê zwîzwé b̂* ‘they will bath them’
- c. *b̀̀ â zwîzwé n̂* ‘they will bath it’
 b̀̀ â zwîzwé m̂ ‘they will bath them’

As seen, the future is marked by /â/ + a *Ci* reduplication of the verb (cf. *b̀̀ â títáŋ* ‘they will count’). Again, object pronoun agreement is optional. What is interesting is the 1sg form with agreement: Not only does the nasal modify /zw/ to [dzw], but it is itself reduplicated. What this would normally mean is that the nasal forms a constituent with the verb stem, which is inputted into the *Ci-* reduplication process. Obviously this is not consistent with treating the nasal as separate from the verb. Although the object prefix has a special status in a number of Eastern

²⁸ There are other morphemes which clearly show that PB **mU* is realized /o/ in Nzadi, e.g. the historical class 1 and 3 noun prefixes: *ò-kààr* ‘woman, wife’, pl. *à-kààr*; *ò-té* ‘tree’, pl. *è-té*.

Bantu languages, joining the verb stem to form a “macro-stem”, we are quite far away from that area. Rather, it would seem that although the prefixal material has broken off when it comes to the two object agreement markers /e/ and /o/, the nasal is still clinging to its original prefixal status, thus modifying the following consonant and also undergoing reduplication with the stem. Both these facts as well as the infinitive /o-/ suggest that prefixes can become proclitics.

It might be objected that it is only the OMs which provide evidence for prefixation in PB. Interestingly in quite a number of Bantu languages OMs other than the 1sg nasal *N-* often require that the FV imperative be *-e* instead of *-a*.²⁹ Other effects of OMs, e.g. on the stem tones, do not as forcibly argue for prefix status as TAM markers which affect the root-initial tone. One case attested in a number of Narrow Bantu languages concerns the TAM marker *-a-*, which has a curious effect on what follows (cf. Goldsmith 1985). Thus consider the following Luganda data from the P₂ (far past) tense:

(36)	(i)	→	(ii)	→	(iii)	(iv)	
a.	/e-a-sib-a/		e-a-sib-a		e-a-sib-a	[y-à-síb-à]	‘s/he tied’
	H H		H H		H L		
b.	/e-a-ki-sib-a/		e-a-ki-sib-a		e-a- <u>ki-sib-a</u>	[y-à-kí-síb-â]	‘s/he tied it’
	H H		H H		H (L)		
c.	/tu-a-sib-a/		tu-a-sib-a		tu-a-sib-a	[tw-áá-síb-à]	‘we tied’
	H H H		H H H		H L L		
d.	/tu-a-ki-sib-a/		tu-a-ki-sib-a		tu-a- <u>ki-sib-a</u>	[tw-áá-kí-síb-â]	‘we tied it’
	H H H		H H H		H (L)		

In the input form in (36a.i) the subject marker (SM) /e-/ and verb root /-sib-/ are toneless, while the TA /-á-/ and the FV /-á/ both have an underlying /H/. In (36a.ii) the H of /-á-/ shifts to the verb root. In (36a.iii) the resulting adjacent H-H sequence becomes H-L by Meeussen’s Rule (MR), i.e. H-H → H-L. In (36b.i) the toneless class 7 OM /-ki-/ has been added. In (36b.ii) the H of /-á-/ again shifts to the verb root. This time the two Hs are not adjacent. Instead of MR, the two Hs plateau and fuse into one H, affecting the underlined moras in (36b.iii). (The L in parentheses is inserted to provide an obligatory pitch drop.) The forms in (36c,d) differ only in that the SM /tú-/ has /H/ tone. As seen in (36c.i.) both its H and the H of /-á-/ shift one mora to the right in (36c.ii). MR applies twice in (36c.iii). Finally, the input in (36d) adds the toneless OM /-ki-/. When the Hs of the SM and /-á-/ shift to the right in (36d.ii), the effects MR applying to -kí- are not seen, as there is again a plateauing and fusion of Hs affecting the underlined moras in (36d.iii). Now, what is significant is that the rather odd shifting triggered by the TAM marker /-á-/ affects the whole word: SM, TAM, OM, root. From these examples we get another piece of evidence that these all form a single word constituent in Luganda.

Crucially, this left-to-right effect is atypical of current Luganda tonology, where H tones do not spread to the right, but rather are anticipated (see Hyman & Katamba 2010 for a recent general overview of the Luganda tone system). It is important to note that the above does not only apply to Luganda. While the full extent of tone shifting is yet to be determined, Goldsmith (1985) reports similar effects in Tonga, Ruri, and Rundi. Since the tonal properties of /-á-/

²⁹ In some languages *N-* may even be considered to form a “modified stem”, since it functions as if not present (Schlindwein 1986). Marlo (2010) proposes that *N-* fuses with the stem, which he also extends to the reflexive prefix *i-*, which however does not have the same properties with respect to the FV.

represent a morphological idiosyncrasy, they are particularly important for tracing the historical properties of the Bantu verb complex, specifically whether the TAM markers were prefixes or not.

The Luganda examples show us what we should be looking for as we turn to a higher level: Did PNC have inflectional prefixes? As G rightly points out, many West African languages do not have a word-level “slot-filler” type inflectional system as Luganda and most Narrow Bantu languages do. However, the question is whether they never had TAM and negative prefixes, or whether they had, but lost them. I will now demonstrate that even languages which have few or no prefixes often exhibit tonal evidence of once having had them. That is, languages from different branches of Niger-Congo have tonal prefixes marking TAM.

Consider first Day, an Adamawa language of Chad which has three surface tones H, M and L (Nougayrol 1979:67). While verb roots have only an underlying binary tone contrast, when combined with aspect, they are realized with three tone heights on the surface:

(37)		<u>/yuu/ ‘put on, wear’</u>	<u>/yuu/ ‘drink’</u>
	completive	yúú	yūu
	incompletive	yūū	yùù

As seen, the two tone classes of verb roots are realized H vs. M in the completive aspect and M vs. L in the incompletive aspect. One is tempted to posit two tonal contrasts, one for the verb roots and one for aspect, but how is the tonal effect of the latter assigned? The table in (38) shows that the aspectual tone must be prefixal:

(38)		σ			$\sigma-\sigma$			$\sigma-\sigma-\sigma$	
	completive	M	H	HL	H-M	H-L	M-M	M-L	H-H-L
	incompletive	L	M	ML	M-M	M-L	L-M	L-ML	M-M-L

As seen in the HL vs. ML contrast as well as in the bi- and trisyllabic forms, the difference in tone is coming in from the left—not from the right. A reasonable synchronic analysis is to set up verb roots with /H/ vs. /M/ as their first tone, with the incompletive aspect being a /L-/ prefix. When this L combines with H, the result is M. When it combines with M the result is L. In the case of M-L → L-ML, the L prefix has pushed the M to the following syllable.

Although Day has relatively little verbal morphology, and has tended towards the analyticity of the MSB, the above evidence suggests an earlier prefix system. This is true in Gokana (Lower Cross, Cross-River) as well, which has no prefixes, but has tonal alternations very similar to those in Day, this time involving tense (Hyman 1985:108):

(39)		CV		CVV		CVCV		CVVCV	
	aorist/future	H	M	HM	MM	H-H	M-L	HH-H	ML-L
	past	H	L	MM	MM	M-H	L-L	MM-H	LL-L

As in Day, one class of verbs contrasts initial H vs. M, while the other contrasts M vs. L.³⁰ The schemas in (39) confirm that the tonal effect definitely affects only the first tone, hence is coming in from the left, an historical prefix representing the last stage of the grammaticalization, affix > ablaut, in this case tonal ablaut.

Another type of alternation comes from Leggbó, a language of the Upper Cross branch of Cross-River (Hyman, Narrog, Paster and Udoh 2002):

(40)

	<i>MCA/OR A</i>		<i>SRA</i>		<i>NEG</i>	
<i>Root tone:</i>	/L/	/M/	/L/	/M/	/L/	/M/
<i>Perf./Prog.</i>	H-M	M-M	L-M	M-M	H-M	M-M
<i>Habitual</i>	L-L	M-L	L-L	M-L	H-M	M-M
<i>Irrealis</i>	L-L	M-L	L-L	M-L	L-L	M-L

(MCA: main clause affirmative; SRA, ORA: subject/object relative clause affirmative)

In this case I have identified the root-initial tones as /L/ vs. /M/. As seen, the /L/ tone alternates between H and L while the /M/ tone stays M. The second, suffixal tone is not affected. Again, there is clear evidence of an earlier prefix, something I also proposed for Bamileke-Fe'fe' which has the same alternating L~H vs. stable M (Hyman 1976).

It is important to note that none of the above languages (Day, Gokana, Leggbó, Bamileke-Fe'fe') has left-to-right tone spreading across words. Thus, unless we reconstruct earlier tone-spreading rules which have subsequently been lost, the initial tonal effects are not likely to be relics of earlier tone-spreading of this sort, rather the effects of prefixes that have been lost. Although evidence of this sort is rampant in Niger-Congo, there is particularly compelling evidence in Grassfields Bantu. Thus, Hyman & Tadadjeu (1976:103) proposed the following underlying representations for the yesterday past conditional in Bamileke-Dschang:

- (41) a. /à + kè + ' + tón + '/ → [à kè tón] 'if he called'
 b. /à + kè + ' + kòñ + '/ → [à kè 'kòñ] 'if he liked'

As seen, the yesterday past tense is marked by /kè/ as well as a floating H tone, which I claim to be a prefix on the verb.³¹ Like the H of /-á-/ in Luganda, this floating tone has to shift onto the verb stem, producing intermediate *kóñ*. By the tone rules of Bamileke-Dschang, when L-HL is followed by H (or pause), it becomes L-H, as indicated. Finally, note that the input tones would have come out differently if the floating H had been a non-prefix such as in the genitive construction. Thus compare the following with (41a,b):

- (42) a. /àpà + ' + séñ/ → [àpà séñ] 'bag of the bird'
 b. /àpà + ' + kàñ / → [àpà kàñ°] 'bag of the squirrel'

³⁰ In the past tense the higher class of CV verbs is realized L before pause, otherwise H (vs. the M that is expected).

³¹ I have cited conditional forms in (41) for simplicity, since the corresponding indicative forms have additional floating tones after the verb (Hyman & Tadadjeu 1976:102-3). There is no question that the floating H prefix is associated with the yesterday past tense.

While (42a) has an identical output to (41a), (42b) is significantly different: The H tonal morpheme does not go onto the noun /kàŋ/ ‘squirrel’, which is instead realized as a level L tone (L°). There seems to be no escaping the fact that the pre-verbal H in (41b) is more tightly bound to the verb than the genitive H is to the following noun. In other words, the H is a prefix in (41a,b) vs. a clitic in (42a,b). (Cf. Van de Velde 2009 for a further evidence that tonal morphemes can show the same variations in bonding strength as segmental morphemes.)

What this means is that some Niger-Congo languages had tightly bound inflectional prefixes, but lost them.³² This is consistent with my view that the history has been cyclic over the past thousands of years. Whether these widespread traces of prefixes go back to PNC, to some earlier subbranch of PNC, or are much more recent is of course difficult to say. In any case, we are justified in rejecting the superficial impressions one gets by looking only at the segmental morphology. Within Niger-Congo, the less accessible tonal morphology may be quite revealing of the history of the inflectional morphology of a language.

To conclude this section, let me respond to the following argument against Meeussen’s (1967:108-111) PB inflectional slot-filler template (SM-TAM-OM-stem):

“Finally, Hyman’s assumed great age of complex inflection before the verb stem in Bantu is also incompatible with its synchronic morphological transparency. The very fact of a uniform template of segmentable slots across the family suggests a more recent emergence and not the inheritance of an original stage in Proto-Niger-Congo. Given the age of this higher-order genealogical unit modern reflexes of such an old feature should display a far greater degree of assimilation and fusion between morphemes, if not even advanced erosion. The possible counterargument that individual morphemes may have been renovated while keeping the segmentable template intact is also implausible in view of the fact that some of the bound morphemes in Bantu are cognate with free forms far outside Bantoid.”

There seem to be two issues here: The first has to do with the uniformity of the template. The second with the status of these morphemes as prefixes. With respect to the first, Güldemann does not discuss works such as Bybee (1985) which attempts to explain recurrent (perhaps stable) morpheme orders from the semantics, e.g. her notion of “relevance”, with which the PB order SM-negative-tense-aspect-root is consistent. No comment is made about whether the same facts hold for languages where the corresponding markers are free morphemes (but see Schachter 1983 and Foley & Van Valin 1984:225ff for an attempt to predict auxiliary ordering in English partially on semantic grounds).³³ Clearly more evidence and argumentation would be needed to draw a firm diachronic conclusions from the relative stability of the Bantu inflectional template—which, however, CAN be “renovated while keeping the segmentable template intact”, as was shown from the two dialects of Totela in (30). Finally, if we were to compare the Bantu template with Indo-European conjugation paradigms, also several thousand years old, would we not conclude that the latter templates have in some families or daughter languages remained globally intact, while in others they have been significantly modified—or lost? This is what the situation is in Bantu.

³² Cf. also Tiv (Bantoid), where Pulleyblank (1985) posits both H and L tonal tense prefixes.

³³ G doesn’t give any examples of the allegedly cognate free forms “far outside Bantoid”, so I cannot comment, except to caution that “grammatical morphemes tend to be small so that similar forms recur even in unrelated phyla” (Bender 2000:63). However, recall the yesterday past tense proclitic *kè* from Bamileke-Dschang in (39) (cf. Bamileke-Fe’fe’ *kà*) which may be cognate with one or another of the *ka*-prefixes in Narrow Bantu.

5. Summary and conclusion

In the previous sections we have carefully considered some of the issues raised by Güldemann's (2010) application of macro-areal linguistics to the historical reconstruction of PNC and PB. As was stated in §1, the establishment of the MSB has been a major accomplishment, and has stimulated new thinking concerning the interpretation of the areal distribution of features within this and other parts of Africa. Its relevance to history and historical reconstruction is exactly what comparativists should be discussing concerning the different linguistic families, subgroupings, and their interactions. However, extreme care must be taken not to overly attribute the current distribution of linguistic properties to proto languages which existed many thousands of years ago.

Care must also be taken in the way that grammaticalization and diachronic typology are applied. Although we know that words develop into affixes, we must consider the time frame and the cyclic issue: Although the bound morphology of Bantu must have come from free-standing morphemes (words), this does not mean that we can automatically identify the analytic syntax of certain MSB languages, including some Bantu and Bantoid, with the archaic language that predated PB. As I have argued, NW Bantu and Bantoid have been long undergoing a process of breaking down what must have been a more complex morphology, something which can be observed in other subbranches of Niger-Congo as well.

In making his argument, G (22) suggests that there is an asymmetry in the reflexes of noun classes, which are universally accepted at the PNC level, vs. the reflexes of possible PNC verb affixes:

“It should also be taken into account that Hyman's opposite scenario of presumably losing most affixes (especially multiple suffixes) in the verb domain across a compact zone of Niger-Congo groups in the Macro-Sudan belt, in some completely so, is not matched by a similar picture regarding the reduction of a morphological paradigm which is certainly inherited, namely the gender system. Surely, there is wide-spread areally mediated erosion of the commonly assumed proto-system. However, some Niger-Congo lineages deep in the Macro-Sudan belt display clear traces of it or even kept it intact; a good example are the Ghana-Togo mountain languages which are surrounded by more isolating languages. After all, this feature was and is the best non-lexical diagnostic for genealogical classification in the Niger-Congo domain since Westermann (1935). I cannot think of an explanation why the drift towards morphological reduction across Niger-Congo in the relevant area would not also have left similar if sporadic traces in the assumed verb-affix domain.”

We have already established that verb morphology has been subject to more variation and is less stable than noun morphology in Niger-Congo. Despite this, in light of the data cited in the above sections, I hope that I have satisfactorily demonstrated that “similar if sporadic traces in the assumed verb-affix domain” are found throughout Niger-Congo. In case there is any doubt, Roger Blench and Stuart McGill have informed me in personal communications of the Bantu-like verb structure found in Kainji (Central Nigerian) languages, e.g. Cicipu:

“Although Cicipu is spoken in the north-west of Nigeria, it is typologically very similar to the Bantu languages of southern and eastern Africa. This similarity manifests itself in two very obvious ways. First, in the robustness and regularity of its noun class system, as set out in Part III, and secondly in the structure of the verbal word. Cicipu is highly agglutinative; not only is there a large

number of verbal affixes, many of them can occur simultaneously, resulting in verbal words consisting of up to ten concurrent morphemes (including the verb root and the object enclitic)” (McGill 2009:208)

McGill (2009:209) sets up the verb template in (43a) and provides the example in (43b).³⁴

(43) a. SM- {FUT/HAB}- [root] -PL-CAUS-ANTICAUS-APPL- {PERF/PL.IMP}-VENTIVE=OM

b, zzá nnà ù- tób -il -is -is -u -wò -wò -nò =mu sháyì
 person REL 3SG-cool-PL-CAUS-CAUS-V-ANTICAUS-APPL-PERF =1SG. tea
 ‘the person who has caused tea to become cooled down in a forceful
 and iterative fashion for me’

“While such monsters are vanishingly rare in everyday speech, it is common to find three or more segmental affixes on a verb, in addition to the ubiquitous tone pattern which expresses the grammatical mood.” (p.208)

While not every affix can be shown to be cognate with Bantu, causative *-is-* is unmistakable and pluractional *-il-* looks very suggestive. In any case, one has to acknowledge that real Bantu-like poly-agglutinative structure is extensively attested in “core” Niger-Congo. While we can relate structures such as in (43) to those found in Narrow Bantu, it is again important to emphasize that this does not provide a knock-out argument for agglutinative structure in PNC. Again, there will have been plenty of time for the morphology to cycle and recycle. What Cicipu and other such languages show is that there are pockets of agglutinative verb morphology within Niger-Congo which, together with the fossil evidence from floating tonal prefixes, establishes the likelihood that complex verbal morphology has been around in the family for a number of millennia.

In my discussion I have repeatedly invoked the time-depth problem in Güldemann’s application of macro-areal linguistics and diachronic typology to PNC and PB. Although most of the areal properties have clearly spread over large parts of the MSB, we have no idea how long this diffusion has taken, at what proto stage(s) it began, and in some cases, in what family it began. It is for this reason that I have insisted that the huge time scale involved would have been quite sufficient for the morphosyntax to have (re-)cycled from PNC and PB to the present time. Although G is aware of such complications (which he mentions in various publications), his rejection of the simplifying directionality in NW Bantu seems puzzling, as it clearly is a recent phenomenon. As I have shown above and in other works, the prosodic stem is responsible not only for stem-size maximality, but also for determining distributional constraints such as those in Tiene in (27b). The strengthening of the stem-initial CV has certainly weakened the bond of historical prefixes (e.g. noun class prefixes) to their stems. While we agree that clitic > affix is a more common pathway than affix > clitic, Mous (2005) and I agree on the essential facts of NW Bantu, where a serious case can be made for the second development, most recently referred to in the anti- or de-grammaticalization literature as “antimorphologization” (Idiatov 2008:159-160) or “debonding” (Norde 2009:186). G cites phonetic erosion as the major force breaking down

³⁴ I have changed some of McGill’s abbreviations to match Bantu, e.g. SM, OM; other abbreviations include PL (pluractional), ANTICAUS (anti-causative), APPL (applicative). In Cicipu the final stem vowel, glossed as V, is lexical, making both the pluractional and causative morphemes real infixes. As seen, in 43b), it also is not verb-final.

morphology, as recognized in grammaticalization theory, e.g. Heine, Claudi & Hünnemeyer (1991:213):

“The opposite historical directionality towards analyticity proceeds mostly by way of EROSION and LOSS of phonological and morphological substance, as conceded by Hyman (2007b: 201) himself.” (G, 20)

However, to restrict oneself to phonetic erosion is to miss the effects of a key player, the foot-like prosodic stem which is innovated in NW Bantu and non-Bantu languages to the West.³⁵ While NW Bantu languages impose a stem-maxima, non-NW Bantu languages are known for establishing bisyllabic MINIMUM size constraints, typically two-syllables, on reduplicants, specific word classes, or words in general (see Downing 2005 and references cited therein). I would argue that both the stem-maxima of NW Bantu and the word-minima of non-NW Bantu are innovations representing very different approaches to morphology: In languages like Chichewa, which has a bisyllabic word minimum, there is no longest word (or stem)—hence, multiple suffixation is in principle unlimited and inflectional prefixation is no problem. In languages like Tiene, which has a trisyllabic stem-maximum, suffixation is immediately limited, and since it is the stem that has become the central prosodic constituent, prefixes are deprosodified, gradually becoming more like proclitics. If Mous’ (2005) account of Tunen is correct, this can even lead to interposing material between an erstwhile prefix and its former stem. This is the logical endpoint of the reverse bonding scale of grammaticalization, affix >> clitic >> word, which a number of recent works have documented (Lass 2000, Campbell 2001, Janda 2001, Haspelmath 2004, Idiatov 2008, and Norde 2009, among others). As the back cover of Norde (2009) aptly puts it:

“In this book Professor Norde shows that change is reversible on all levels: semantic, morphological, syntactic, and phonological. As a consequence, the alleged unidirectionality of grammaticalization is not a reliable reconstruction tool, even if degrammaticalization is a rare phenomenon.”

What then to say about the MSB? In a number of places in his work, Güldemann recognizes that areal distributions cannot be in themselves used for genetic reconstruction:

“The mere presence of a structural feature (logophorics, labial-velars, ATR vowel harmony, etc.) clearly does not invoke an NKNS [Niger-Kordofanian Nilo-Saharan] unit; such typological properties, however rare crosslinguistically, can develop independently or be acquired via language contact, so that they do not identify an individual proto-language. (cf. Nichols 1996:48-56).” (Güldemann 2008:174)

Even if rare, an areally widespread property does not argue for reconstruction to the highest node of a genetic grouping, only for monogenesis plus spread. While G cites several features to make this point, he relies heavily on the MSB to reconstruct S-AUX-O-V word order and a “moderate” verb extension system for PNC and/or PB. In my review of the arguments and facts, I suggest that this is not warranted. In order for the areal argument to be used for reconstruction purposes, it would be necessary to demonstrate that a macro-area such as the MSB is likely to insulate and

³⁵ Compare, for example, the role of the trochaic foot in Ibibio (Lower-Cross, Cross-River) (Akinlabi & Urua 2003, Harris 2004).

thereby preserve ancient properties. These in turn would either survive intact or undergo renewal as the areal effect remains intact. While areal cohesion can produce properties which survive long periods in even unrelated languages, verb morphology is equally likely to cycle and recycle, producing related languages which are quite different from each other. This is the case of Niger-Congo.

References

- Achaw, Taboko Elizabeth. 2002. *The verbal extensions in zone A. languages (case study: Mokpwe, Mbo, and Bafaw)*. Masters Thesis in Linguistics, Faculty of Arts, Department of English, University of Buea, Cameroon.
- Akinlabi, Akinbiyi. and Eno E. Urua (2003). Foot Structure in the Ibibio Verb. *Journal of African Languages and Linguistics* 24.119-160.
- Arnott, D.W. 1970. *The nominal and verbal systems of Fula*. London: Oxford University Press.
- Bastin, Y. 1986. Les suffixes causatifs dans les langues bantoues. In *Africana Linguistica X*, 55-145. Annales du Musée Royale de l'Afrique Centrale. Série IN-8, Sciences Humaines. N. 121. Tervuren.
- Bender, Lionel M. 2000. Nilo-Saharan. In Heine & Nurse, 43-73.
- Blanchon, Jean 1995. Punu lexical database in Filemaker Pro™.
- Blench, Roger. 2006. *Archaeology, language, and the African past*. Lanham, MD: AltaMira Press.
- Bostoen, Koen. 2008. Lexical Reconstruction and Early African History: Insights from Bantu crafts vocabulary and plant names). Powerpoint presentation.
www.ddl.ish-lyon.cnrs.fr/colloques/NDHL2008/Powerpoint/8-Bostoen.pps
- Bostoen, Koen and Jacky Maniacky (eds.), *Studies in African Comparative Linguistics with Special Focus on Bantu and Mande: Essays in Honour of Y. Bastin and C. Grégoire*. Köln: Rüdiger Köppe Verlag.
- Bybee, Joan L. 1985. *Morphology: A study of the relation between meaning and form*. Amsterdam: John Benjamins Publishing Company.
- Campbell, Lyle. 2001. What's wrong with grammaticalization? *Language Sciences* 23.113-161.
- Canu, Gaston. 1976. *La langue mò:rè*. Paris: Société d'Etudes Linguistiques et Anthropologiques de France.
- Claudi, Ulrike. 1993. *Die Stellung von Verb und Objekt in Niger-Kongo-Sprachen: Ein Beitrag zur Rekonstruktion historischer Syntax*. Köln: Institut für Afrikanistik, Universität zu Köln.
- Clements, G. N. 1975. The logophoric pronoun in Ewe: its role in discourse. *Journal of West African Languages* 10.141-177.
- Clements, Nick and Annie Rialland. 2008. Africa as a phonological area. In Heine and Nurse (eds), 36-87.
- Crane, Thera M. In preparation. *Beyond Time: the nature of tense and aspect categories in Totela, a Bantu language of Zambia*. Doctoral dissertation, University of California, Berkeley.
- Crane, Thera M. & Larry M. Hyman. 2010. *A grammar of Nzadi*. Ms. University of California, Berkeley.
- Creissels, Denis, Gerrit J. Dimmendaal, Zygmunt Frajzyngier, & Christa König. 2008. Africa as a morphosyntactic area. In Heine & Nurse, 86-150.
- Dimmendaal, Gerrit J. 2001a. Areal diffusion versus genetic inheritance: an African perspective. In Aikhenvald, Alexandra Y. & Robert M. W. Dixon (eds), *Areal diffusion and genetic*

- inheritance: problems in comparative linguistics*, 358-392. Oxford: Oxford University Press.
- Dimmendaal, Gerrit J. 2001b. Logophoric marking and represented speech in African languages as evidential hedging strategies. *Australian Journal of Linguistics* 21.131-157.
- Downing, Laura J. 2005. Morphology conditions minimality in Bantu languages. In Bostoen & Maniacky, 259-280.
- Dugast, I. 1971. *Grammaire du Tunen*. Paris: Klincksieck.
- Eggert, M. K. H. 2005. The Bantu problem and African archaeology. In A. B. Stahl (ed.), *African Archaeology: A Critical Introduction*, 301-326. Blackwell Studies in Global Archaeology 3. Malden, MA, Oxford, Carlton: Blackwell.
- Ehret, Christopher. 2001. Bantu Expansions: Re-Envisioning a Central Problem of Early African History. *The International Journal of African Studies* 34.5-41.
- Ellington, John 1977. *Aspects of the Tiene language*. PhD dissertation, University of Wisconsin, Madison.
- Foley, William A. & Robert D. Van Valin, Jr. 2004. *Functional syntax and universal grammar*. Cambridge & New York: Cambridge University Press.
- Fontaney, Louise 1980. Le verbe. In F. Nуска-Nkutsi (ed.), *Eléments de description du punu*, 51-114. CRLS, Université Lyon2.
- Gensler, Orin D. 1994. On reconstructing the syntagm S-AUX-O-V-Other to Proto-Niger Congo. Berkeley Linguistic Society (Special Session) 20.1-20.
- Gensler, Orin D. 1997. Grammaticalization, typology, and Niger-Congo word order: progress on a still unsolved problem. *Journal of African Languages and Linguistics* 18.57-93.
- Gensler, Orin D. and Tom Güldemann. 2003. S-Aux-O-V-Other in Africa: typological and areal perspective. Paper presented at the 4th World Congress of African Linguistics, Workshop "Distributed predicative syntax (S P O V X)", Rutgers University, June 21, 2003.
- Gerhardt, Ludwig. 1988. Note on verbal extensions in Jarawan Bantu. *Journal of West African Languages* 18.3-8.
- Givón, Talmy. 1971. Historical syntax and synchronic morphology: an archaeologist's field trip. *Chicago Linguistic Society* 7.394-415.
- Givón, Talmy. 1975. Serial verbs and syntactic change: Niger-Congo. In Charles N. Li (ed.), *Word order and word order change*, 47-112. Austin & London: University of Texas Press.
- Goldsmith, John. 1985. Bantu -a-: The Far Past in the Far Past. In Russell G. Schuh (ed.), *Précis from the Annual Conference on African Linguistics*, 123-127. *Studies in African Linguistics*, Supplement 9.
- Good, Jeff. 2003. When arguments become adjuncts: Split configurationality in Leggbó. *Proceedings from the Annual Meeting of the Chicago Linguistic Society* 39.110-129.
- Good, Jeff. 2005. Reconstructing morpheme order in Bantu: the case of causativization and applicativization. *Diachronica* 22.3-57.
- Güldemann, Tom. 2003a. Grammaticalization. In Nurse and Philippson, 182-194.
- Güldemann, Tom 2003b. Logophoricity in Africa: an attempt to explain and evaluate the significance of its modern distribution. *Sprachtypologie und Universalienforschung* 56.366-387.
- Güldemann, Tom. 2008. The Macro-Sudan belt: towards identifying a linguistic area in northern sub-Saharan Africa. In Bernd Heine & Derek Nurse (eds), 151-185.
- Güldemann, Tom. 2010. Proto-Bantu and Proto-Niger-Congo: Macro-areal typology and linguistic reconstruction. To appear in Christa König & Osamu Hieda (eds), *International*

- Symposium of the Center of Corpus-Based Linguistics and Language Education (CbLLE)*. Amsterdam & Philadelphia: John Benjamins.
- Hajak, John. 2005. Vowel nasalization. In Haspelmath et al. (eds), 46-49.
- Harris, John (2004). Release the captive coda: the foot as a domain of phonetic interpretation. In J. Local, R. Ogden & R. Temple (eds), *Phonetic interpretation: Papers in Laboratory Phonology 6*, 103-129. Cambridge University Press.
- Haspelmath, Martin. On directionality in language change with particular reference to grammaticalization. In Olga Fischer, Muriel Norde & Harry Perridon (eds), *Up and down the cline: The nature of grammaticalization*, 17-44. Amsterdam: John Benjamins.
- Haspelmath, Martin, Matthew Dryer, David Gil and Bernard Comrie (eds). 2005. *The world atlas of language structures*. Oxford: Oxford University Press.
- Hedinger, Robert. 1984. Reported speech in Akɔɔse. *Journal of West African Languages* 14.81-102.
- Heine, Bernd. 1993. *Ik dictionary*. Köln: Rüdiger Köppe Verlag.
- Heine, Bernd & Ulrike Claudi. 2001. On split word order: Explaining syntactic variation. *General Linguistics* 38.41.74.
- Heine, Bernd, Ulrike Claudi, & Friederike Hünemeyer. 1991. *Grammaticalization: a conceptual framework*. U. of Chicago Press.
- Heine, Bernd & Derek Nurse. 2000. *African languages: an introduction*. Cambridge University Press.
- Heine, Bernd & Derek Nurse. 2008 *A linguistic geography of Africa*. Cambridge: Cambridge University Press.
- Henson, Bonnie. 2001. The *-an-* extension and diachronic language change in Mòkpè. Paper presented at the Workshop on Comparative Benue-Congo, 32nd Annual Conference on African Linguistics, Berkeley, CA, March 26-27, 2001.
- Hyman, Larry M. 1976. D'òu vient le ton haut du bamileke-fe'fe'? In Larry M. Hyman, Leon C. Jacobson and Russell G. Schuh (eds.), *Papers in African linguistics in Honor of Wm. E. Welmers*, 123-134. *Studies in African Linguistics*, Supplement 6. Los Angeles: University of California, Los Angeles.
- Hyman, Larry M. 1979. Phonology and noun structure. In Larry M. Hyman (ed.), *Aghem grammatical structure*, 1-72. *Southern California Occasional Papers in Linguistics* 7. Los Angeles: Department of Linguistics, University of Southern California.
- Hyman, Larry M. 1981. *Noni grammatical structure*. Southern California Occasional Papers in Linguistics 9. Los Angeles: Department of Linguistics, University of Southern California.
- Hyman, Larry M. 1985. *A theory of phonological weight*. Dordrecht: Foris. Reprinted (2003), Stanford: CSLI.
- Hyman, Larry M. (1998). Positional prominence and the "prosodic trough" in Yaka. *Phonology* 15.41-75.
- Hyman, Larry M. 1999. The historical interpretation of vowel harmony. In Jean-Marie Hombert and Larry M. Hyman (eds.), *Bantu historical linguistics: theoretical and empirical perspectives*, 235-295. Stanford: Center for the Study of Language and Information.
- Hyman, Larry M. 2003a. Suffix ordering in Bantu: a morphocentric approach. *Yearbook of Morphology* 2002, 245-281.
- Hyman, Larry M. 2003b. Basaá A.43. In Nurse & Philippson, 257-282.
- Hyman, Larry M. 2003c. Why describe African languages? In A. Akinlabi & O. Adesola (eds.) *Proceedings of the 4th World Congress of African Linguistics*, New Brunswick 2003,

- 21-42. Cologne: Ruediger Köppe Verlag.
- Hyman, Larry M. 2004. How to become a “Kwa” verb. *Journal of West African Languages* 30.69-88.
- Hyman, Larry M. 2005. Initial vowel and prefix tone in Kom: Related to the Bantu Augment? In Bostoen & Maniacky, 313-341.
- Hyman, Larry M. 2007a. Niger-Congo verb extensions: overview and discussion. In Payne, Doris L. and Jaime Peña (eds.), *Selected Proceedings of the 37th Annual Conference on African Linguistics*. Somerville, MA: Cascadilla Proceedings Project, 149-163.
- Hyman, Larry M. 2007b. Reconstructing the Proto-Bantu verbal unit: internal evidence. In Nancy C. Kula and Lutz Marten (eds.), *Bantu in Bloomsbury: Special issue on Bantu linguistics*, 201-211. *SOAS Working Papers in Linguistics* 15. London: Department of Linguistics, School of Oriental and African Studies.
- Hyman, Larry M. 2008. Directional asymmetries in the morphology and phonology of words, with special reference to Bantu. *Linguistics* 46.309–350.
- Hyman, Larry M. 2010. Affixation by place of articulation: The case of Tiene. In Michael Cysouw & Jan Wohlgemuth (eds), *Rara & Rarissima. Collecting and interpreting unusual characteristics of human languages*, 145-184. Berlin/New York: Mouton de Gruyter, 2009.
- Hyman, Larry M. & Bernard Comrie. 1981. Logophoric reference in Gokana. *Journal of African Languages and Linguistics* 3.19-37.
- Hyman, Larry M. & Francis X. Katamba. 2010. Tone, syntax and prosodic domains in Luganda. Paper presented at the Workshop on Bantu Syntax-Phonology, Paris, January 8-9, 2010. To appear in *ZAS Papers in Linguistics*, Berlin.
- Hyman, Larry M. & Daniel J. Magaji. 1970. *Essentials of Gwari grammar*. Ibadan, Nigeria: University of Ibadan Press.
- Hyman, Larry M., Heiko Narrog, Mary Paster, and Imelda Udoh. 2002. Leggbó verb inflection: A semantic and phonological particle analysis. *Proceedings of the 28th Annual Berkeley Linguistic Society Meeting*, 399-410.
- Hyman, Larry M. and Maurice Tadadjeu. 1976. Floating tones in Mbam-Nkam. In Larry M. Hyman (ed.), *Studies in Bantu Tonology*, 57-111. Southern California Occasional Papers in Linguistics 3. Los Angeles: University of Southern California.
- Hyman, Larry M. & John R. Watters. 1984. Auxiliary focus. *Studies in African Linguistics* 15.233-273.
- Hyman, Larry M. & John R. Watters. 1984. Auxiliary focus. *Studies in African Linguistics* 15.233-273.
- Idiatov, Dmitry. 2008. Antigrammaticalization, antimorphologization and the case of Tura. In Elena Seoane, María José López-Couso & Teresa Fanego (eds), *Theoretical and empirical issues in grammaticalization*, 151-169. Amsterdam: John Benjamins.
- Janda, Richard D. 2001. Beyond “pathways” and “unidirectionality”: On the discontinuity of language transmission and the counterability of grammaticalization. *Language Sciences* 23.265-340.
- Kari, Ethelbert. 1995. Extensional suffixes in Degema. *Afrikanistische Arbeitspapiere* 44.149-168.
- Kari, Ethelbert Emmanuel. 2008. *Degema-English dictionary with English index*. Tokyo: Research Institute for Languages and Cultures of Asia and Africa (ILCAA), Tokyo University of Foreign Studies.

- Lass, Roger. 2000. Remarks on (uni)directionality. In Olga Fischer, Annette Rosenbach & Dieter Stein (eds). *Pathways of change: Grammaticalization in English*, 207-227. Amsterdam: John Benjamins.
- Lemb, Pierre & François de Gastines. 1973. *Dictionnaire basaa-français*. Douala: Collège Libermann.
- Leroy, Jacqueline. 1982. Extensions en mankon. In Gladys Guarisma, et al (eds), *Le verbe bantou*, 125-138. Paris: LACITO and Leiden.
- Maddieson, Ian. 2005a. Glottalized consonants. In Haspelmath et al. (eds.), 34-37.
- Maddieson, Ian. 2005b. Vowel quality inventories. In Haspelmath et al. (eds.), 14-17.
- Maddieson, Ian. 2005c. Presence of uncommon consonants. In Haspelmath et al. (eds.), 82-85.
- Maddieson, Ian. 2005d. Tone. In Haspelmath et al. (eds.), 58-61.
- Maho, Jouni Filip. 2009. NUGL Online. The online version of the New Updated Guthrie List, a referential classification of the Bantu languages. goto.glocalnet.net/mahopapers/nuglonline.pdf
- Marlo, Michael R. 2010. Prefix-stem fusion in Bantu. Ms. Indiana University.
- McGill, Stuart John. 2009. *Gender and person agreement in Cicipu discourse*. Doctoral dissertation, School of Oriental and African Studies, University of London.
- Meeussen, A. E. 1967. Bantu grammatical reconstructions. *Africana Linguistica* 3.79-121. Tervuren: Musée Royal de l'Afrique Centrale.
- Motingea Magulu, André. Extensions formelles et suffixes dérivatifs en bantou du groupe C30. In Bostoen & Maniacky, 361-373.
- Mous, Maarten. 2003. Nen (A44). In Nurse & Philippson, 283-306.
- Mous, Maarten. 2005. The innovative character of object-verb word order in Nen (Bantu A44, Cameroon). In Bostoen & Maniacky, 411-424.
- Ngunga, Armindo. 2000. *Phonology and morphology of the Ciyao verb*. Stanford: Center for the Study of Language and Information.
- Nichols, Johanna. 1996. The comparative method as heuristic. In Mark Durie & Malcolm Ross (eds), *The comparative method reviewed*, 39-71. New York & Oxford: Oxford University Press.
- Norde, Muriel. 2009. *Degrammaticalization*. Oxford: Oxford University Press.
- Nougayrol, Pierre. 1979. Le day de bouna (Tschad). I. *Eléments de Description Linguistique*. Paris: SELAF.
- Nurse, Derek. 1997. The contributions of linguistics to the study of history in Africa. *Journal of African History* 38.359-391.
- Nurse, Derek. 2007. Did the Proto-Bantu verb have a synthetic or an analytic structure? In Nancy C. Kula and Lutz Marten (eds.), *Bantu in Bloomsbury: Special issue on Bantu linguistics*, 239-256. *SOAS Working Papers in Linguistics* 15. London: Department of Linguistics, School of Oriental and African Studies.
- Nurse, Derek. 2008. *Tense and aspect in Bantu*. Oxford & New York: Oxford University Press.
- Nurse, Derek & Gérard Philippson. 2003. Introduction. In Derek Nurse & Gérard Philippson (eds), *The Bantu languages*, 1-12. London: Routledge.
- Onukawa, M.C. 1999. The order of extensional suffixes in Igbo. *Afrikanistische Arbeitspapiere* 59.109-129.
- Paulian, Christiane (1975). *Le kukuya: langue teke du Congo*. Paris: SELAF.
- Pulleyblank, Doug. 1985. A lexical treatment of tone in Tiv. In Didier L. Goyvaerts (ed.), *African linguistics: Essays in memory of M.W.K. Semikenke*, 421-476. Amsterdam & Philadelphia: John Benjamins Publishing Company.

- Redden, James E. 1979. *A descriptive grammar of Ewondo*. Occasional Papers on Linguistics 4. Carbondale, Illinois: Department of Linguistics, Southern Illinois University.
- Schachter, Paul. 1983. Explaining auxiliary order. In Frank Heny & Barry Richards (eds), *Auxiliaries and related puzzles*, vol. 2, 145-204. Dordrecht: Reidel.
- Schadeberg, Thilo C. 1987. Nasalization in Umbundu. *Journal of African Languages and Linguistics* 4.109-132.
- Schlindwein, Deborah. 1986. On the invisibility of the first person singular object marker in KiRimi. Paper presented at 17th Annual Conference on African Linguistics, Indiana University, Bloomington, IN.
- Stahlke, Herbert. 1970. Serial verbs. *Studies in African Linguistics* 1.60-99.
- Stanley, Carol. 1991. *Description morpho-syntaxique de la langue tikar (parlée au Cameroun)*. Epinay sur Seine: Société Internationale de Linguistique.
- Stassen, Leon. 2005. Comparative constructions. In Haspelmath et al. (eds.), 490-93.
- Stevick, Earl W. 1969a. Tone in Bantu. *International Journal of American Linguistics* 35.330-341.
- Stewart, John M. 1983. The high unadvanced vowels of Proto-Tano-Congo. *Journal of West African Languages* 13.19-36.
- Stewart, John M. 1998. Nasal vowel creation without nasal consonant deletion and the eventual loss of nasal vowels thus created: The pre-Bantu case. In Jean-Marie Hombert & Larry M. Hyman (eds), *Bantu historical linguistics: theoretical and empirical perspectives*, 207-233.
- Stewart, John M. 2000. An explanation of Bantu vowel height harmony in terms of a Pre-Bantu nasalized vowel lowering. *Journal of African Languages and Linguistics* 21.161-178.
- Stewart, John M. 2000/2001. Symmetric versus asymmetric vowel height harmony and e,o versus i,u in Proto-Bantu and Proto-Savanna-Bantu. *Journal of West African Languages* 28.45-58.
- Stewart, John M. & Hélène van Leynseele. 1979. Underlying cross-height vowel harmony in Nen (Bantu A.44). *Journal of African Languages and Linguistics* 1.31-54.
- Thomas, Elaine. 1978. *A Grammatical Description of the Engenni Language*. University of Texas at Arlington: Summer Institute of Linguistics.
- Van de Velde, Mark L. O. 2009. Eton tonology and morphosyntax: A holistic typological approach. In Patience Epps & Alexandre Arkhipov (eds), *New challenges in typology: Transcending the borders and redefining the distinctions*, 35-62. Berlin & New York: Mouton de Gruyter.
- Vansina, J. 1995. New linguistic evidence and "the Bantu expansion". *Journal of African History* 36.173-195.
- Voeltz, Erhard. 1977. *Proto Niger-Congo extensions*. PhD dissertation, University of California, Los Angeles.
- Voorhoeve, Jan. 1971. Tonology of the Bamileke noun. *Journal of African Languages* 10.44-53.
- Wedekind, Klaus. 1985. Thoughts when drawing the tone map of Africa. *Afrikanistische Arbeitspapiere* 1.105-124. Institut für Afrikanistik, Universität zu Köln.
- Westermann, Dietrich. 1930. *A study of the Ewe language*. London: Oxford University Press.
- Westermann, Dietrich. 1935. Nominalklassen in westafrikanischen Klassensprachen und in Bantusprachen. *Mitteilungen des Seminars für Orientalische Sprachen zu Berlin*, 3. Abteilung: Afrikanische Studien 38.1-53.
- Whitehead, John. 1899. *Grammar and dictionary of the Bobangi language*. London: Kegan P. & Trench.

- Williamson, Kay. 1986. Niger-Congo: SVO or SOV. *Journal of West African Languages* 16.5-14.
- Williamson, Kay & Roger Blench. 2000. Niger-Congo. In Heine & Nurse, 11-42.