

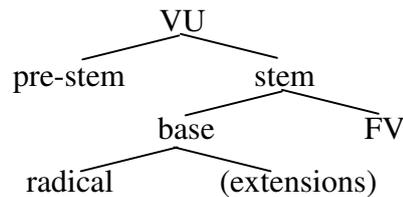
## Reconstructing the Proto-Bantu Verbal Unit: Internal Evidence

Larry M. Hyman

University of California, Berkeley, hyman@berkeley.edu

The question I would like to address in this paper is: What was the nature of the verbal unit (VU) in Proto-Bantu (PB)? Pre-Proto-Bantu? As seen in (1), the stem constituent is universally accepted at the PB level, which consisted of (i) an obligatory verb root or radical, (ii) optional extensions (either derivational suffixes or formal “expansions”), and (iii) an obligatory inflectional final vowel (FV), e.g. the -a ending found in most verb forms.

- (1) Structure of the verbal unit (VU) proposed by Meeussen (1967)



Less clear is the status of the “pre-stem” in Proto-Bantu—or, as we will see, even in present-day Bantu languages. While Meeussen (1967) elaborates the pre-stem as in (2), it is not clear whether the pre-stem is or was a constituent, and whether it formed a word with the stem or was independent.

- (2) Pre-initial + Subject + Negative + Tense + Formative + Object (followed by verb stem)

Excluding present-day proclitics and enclitics from the VU, we must still choose between three hypotheses:

- (3) Hypothesis #1: The VU was fully formed at the PB stage, as reconstructed by Meeussen.  
 Hypothesis #2: The VU did not exist at the PB stage, but rather evolved subsequent to PB.  
 Hypothesis #3: The VU partially existed at the PB stage. That is, some of the proposed inflectional morphemes were prefixes in PB, while others were not.

In attempting to evaluate the evidence, I make the following standard assumptions in (4).

- (4) a. All of the proposed inflectional morphemes in present-day Bantu languages derived originally from words  
 b. The universal pathway was \*word > clitic > prefix, as amply documented in the literature on grammaticalization  
 c. Complex affixal systems may be subject to erosion and loss

The question, therefore, is not whether the proposed markers of subject, negative, tense, object etc. derive historically from full words and clitics, but rather what their status was at the PB level. In this paper I will argue that at least some pre-stem morphemes were prefixes, e.g. the subject marker (SM) and object marker (OM). From this point, Bantu languages diverge largely along geographic lines. As

exemplified in the rather extreme example from Kinande in (5), provided by Philip Ngessimo Mutaka to Nurse & Philippson (2003:9), many Central Bantu languages have elaborated the pre-stem.

- (5) tu-né-mu-ndi-syá-tá-sya-ya-ba- [king-ul-ir-an-is-i-á]<sub>stem</sub> = kyô  
 ‘we will make it possible one more time for them to open it for each other’

While some prefixal systems are limited to one morpheme per Meeussenian “slot”, some of the more elaborated prefixal systems are clearly a secondary development.

Showing quite the opposite trend, large numbers of Northwest Bantu languages have broken down the pre-stem – to such an extent that the verb stem clearly constitutes a word on its own. Part of the Basaá verb paradigm is shown in (6), where /lɔ/ ‘come’ often appears as a separate word (Hyman 2003):

- (6) Some NW Bantu languages have few verb prefixes and look “West African”, e.g. Basaá.

<i>TAM</i>	<i>Affirmative</i>	<i>Negative</i>	<i>Main Uses</i>
P1	a n-lɔ̃	a n-lɔ̃ <sup>↓</sup> βé	today past tense
P2	a bí lɔ	a bí lɔ βé	general past tense, e.g. yesterday or earlier
P3	a lɔ́	a lɔ́ <sup>↓</sup> βé	pluperfect; distant past
Present	a n-lɔ	a n-lɔ βé	present; habitual; near ‘about to’ future
F1	a gá lɔ́	a gá lɔ́ <sup>↓</sup> βé	general future, e.g. tomorrow, some days
F2	aa lɔ	aa lɔ βé	distant or unspecified future
Future Perfect	á lɔ	á lɔ́ <sup>↓</sup> βé	future perfect or consecutive; conditional ‘if’
Subjunctive	á lɔ <sup>↓</sup>	a lɔ βá <sup>↓</sup> ń	subjunctive/hortative; future consecutive
Imperative	lɔ́ (pl. lɔná)	u/ni lɔ βá <sup>↓</sup> ń	commands

Given the very clear demarcation between the pre-stem and a consonant-initial stem in Basaá, a form such as [a bí lɔ] ‘he came’ is subject to at least three interpretations:

- (7) a. Prefixes + stem      b. INFL stem + lex stem      c. Independent stems (words?)
- [a- [ bí- [ lɔ ] ] ]      [[a- bí- ]<sub>infl</sub> [ lɔ ]<sub>lex</sub> ]      [[a ] [ bí ] [ lɔ ]<sub>lex</sub> ]  
 (Meeussen 1967)      (Myers 1987, 1998)

Unlike Central Bantu languages, Basaá has a single series of stops /p, t, k/ which are realized voiceless stem-initially, but voiced stem-internally:

- (8) /p, t, k/ are realized voiced when not stem-initial (→ continuant if post-vocalic and non-final)

<i>Underlying</i>	<i>Orthographic</i>	<i>Phonetic</i>	
/pì-pótól/	bi-pódól	bi-póról	‘arguments’ (class 8)
/tì-kótá/	dí-kódá	di-kórá	‘pipes’ (class 13)
/à pí `lò/	a bí lɔ	a βí lɔ	‘he came’ (P2)
/à ká `lò´/	a gá lɔ́	a γá lɔ́	‘he will come’ (F1)

As a result, when the class 13 prefix /ti-/ occurs before a consonant-initial root, it is pronounced di-, as in (9a).

- (9) a. hi-tám ‘kidney’ pl. di-tám      b. hy-ǎy ‘leaf’ pl. c-ǎy  
       hi-keŋ ‘knife’ pl. di-keŋ        hy-oŋ ‘hair’ pl. c-oŋ

However, as seen in (9b), when /ti-/ occurs before a vowel-initial root, it is incorporated into the stem, where it fails to become voiced. Instead, it first glides to ty-, and is then affricated to c- [tʃ].

It is common for languages to do as Basaá does and mark stem-initials in a special way, particularly when they can occur without prefixes—which was only possible in the singular affirmative imperative in PB. Thus, if the prefixes were not prefixes in PB, we would expect the stem to have word-like properties in the proto language. The consonant distributions in (10) do not support this:

- (10) Consonant distribution by position in PB, based on Meeussen (1969 [1981]) (cf. Teil-Dautrey 2004)

	*p	*t	*c	*k	*b	*d	*j	*g	*m	*n	*ɲ	*mb	*nd	*nj	*ŋg	totals
pref	2	5		9	5	2	4	3	8						1	39
C1	222	281	181	300	205	253	207	172	43	35	11				3	1913
C2	71	116	40	180	93	360	50	80	126	100	12	173	119	31	213	1764
C3	1	22	4	54	10	124	1	5	34	15	1				9	280
suff	1	2	1	3	1	5			1	1					1	16

The only striking skewing in these tabulations, based on 1939 lexical records in Meeussen (1969) and the grammatical morphemes reconstructed by Meeussen (1967), is the restriction of \*NC sequences to the C2 position of the stem, i.e. the second position of \*-CV(V)C- roots.

On the other hand, as indicated in (11), Meeussen’s PB stem is universally assumed to be a locus of *prosodic* activity in Bantu languages:

- (11) a. vowels:            distribution, vowel harmony  
       b. tones:            distribution, Meeussen’s reconstruction of extension tones  
       c. reduplication:    verb reduplication is usually limited to the stem

As seen in (12), the seven PB vowels (\*i, \*ɪ, \*ɛ, \*u, \*ʊ, \*ɔ, \*a) are attested in the first root syllable, and perhaps also on the final vowel (when nouns and other parts of speech are brought into the picture), but not on the intervening extension vowels, which are limited to the vowels \*ɪ, \*ʊ, \*a and (marginally) \*i:

- (12) Distributions by position in the Bantu (verb) stem

	root	extensions	final vowel
All 7 *V’s	+	-	(+)
Both *H & *L	+	-	+

As Meeussen also indicated, the lack of an opposition among the extension vowels set the scene for \*ɪ and \*ʊ to undergo vowel height harmony, from which root vowels and the FV are generally exempt (as are prefix vowels). As also indicated, extension vowels also do not show a tonal contrast. Thus, both vowels and tones suggest an internal “prosodic trough”, to which some Northwest Bantu languages also add consonant contrasts and realizations. Finally, as mentioned in (11c), a third property is that verb reduplication is usually limited to the stem.

While (11) lists three diagnostics for the stem as a locus of prosodic activity, they all “leak” in present-day Bantu. First, extension vowels are supposed to harmonize, but de-adjectival and de-ideophonic verbs often violate vowel height harmony:

- |      |    |                            |                  |                              |
|------|----|----------------------------|------------------|------------------------------|
| (13) |    | <i>Regular</i>             |                  | <i>Irregular</i>             |
|      | a. | Chichewa nyem- <u>e</u> -a | ‘break + appl’   | nyezi- <u>i</u> -a ‘shine’   |
|      | b. | Luganda zib- <u>u</u> -a   | ‘come unstopped’ | zito- <u>w</u> -a ‘be heavy’ |

Of course the reason for this is that the irregular forms are derived from the ideophone *nyezi* ‘shiny’ and the adjective stem *-zito* ‘heavy’.

The second diagnostic also fails in cases where “FV tones” act as if they are enclitic, i.e. not originating in the FV suffix. This is particularly evident in the case of the perfective/imperfective suffixes \*-id-ε and \*-ag-a (? -a-ga), whose segmental contents also sometimes appear to not count as part of the stem, as summarized in (14).

- (14) a. -id- (variant -it-) does not count in computing pre-antepenultimate vowel shortening in Kimatuumbi (Odden 1996)
- b. -id- doesn’t lose its count as a tone-bearing unit where other suffixes do in V-truncation in Kinande (Mutaka 1994)
- c. -id- conspires with causative -i- and passive -u- to cause a H tone “enclitic” to *follow* the verb stem which then ends in -a in Luganda (Hyman and Katamba 1990)
- d. -id- (and -ag-) have tonal effects in Safwa (Voorhoeve 1973) that possibly suggest an infixation later in the derivation (cf. Bastin 1983); also for tonal reasons, -ag-a appears better analyzed as -a =ga in Ciyao (Hyman & Ngunga 1994)
- e. the “prefinal” -(n)ga follows the FV -e in many Bantu languages like a clitic (Sebasoni 1967)

Finally, concerning verb-stem reduplication, it is well-established that reduplicants sometimes include non-stem prefixal material, e.g. Kihehe (Odden & Odden 1985).

One of the criteria for establishing an internal structure of the word concerns the operation of Meeussen Rule (MR), a process by which a H tone becomes L or is deleted when immediately following another H tone. As indicated in (15), MR applies within different domains in different Bantu languages:

- |         |                                       |                      |
|---------|---------------------------------------|----------------------|
| (15) a. | within the stem                       | e.g. Kinande         |
| b.      | within the “macro-stem” (= OM + stem) | e.g. Chichewa        |
| c.      | within the verbal unit                | e.g. Luganda         |
| d.      | across words or word-like units       | e.g. Shona, Ikalanga |

As the example in (16a) shows, MR is said to require a macrostem or clitic boundary in Shona (Myers 1998):

- (16) a. [va-cha-] [tenga] → vá-chá-tenga ‘they will buy’ (ku-téngá ‘to buy’)  
 (-cha- < \*-kí-à-)  
 $\begin{array}{ccc} | & | & \diagdown \\ \text{H} & \text{H} & \underline{\text{H}} \end{array} \quad \begin{array}{cc} | & | \\ \text{H} & \text{H} \end{array}$
- b. [ku] [ri-tenga] → ku-rí-téngá ‘to buy it’ (the class 5 OM  
 ri- belongs to the “macrostem”)  
 $\begin{array}{ccc} | & \diagdown \\ \text{H} & \text{H} \end{array} \quad \begin{array}{cc} | & \diagdown \\ \underline{\text{H}} & \text{H} \end{array}$
- c. [Ø][ti-tenge] → tí-téngé ‘that we buy’ (subjunctive)  
 $\begin{array}{cc} | & | \\ \text{H} & \text{H} \end{array} \quad \begin{array}{cc} | & | \\ \text{H} & \text{H} \end{array}$
- d. [ne] [banga] → né banga ‘with a knife’ (cf. bángá ‘knife’)  
 (proclitic + noun)  
 (<PB\*ì-pángà ‘machete’)  
 $\begin{array}{ccc} | & \diagdown \\ \text{H} & \underline{\text{H}} \end{array} \quad \begin{array}{c} | \\ \text{H} \end{array}$
- e. [mwana] [i] → mwaná i ‘which child’ (cf. munhu í ‘which  
 (noun + enclitic) person’)  
 (< PB \*mù-jánà ‘child’)  
 $\begin{array}{cc} | & | \\ \text{H} & \underline{\text{H}} \end{array} \quad \begin{array}{c} | \\ \text{H} \end{array}$

MR fails to apply in (16b,c), where the two H tones occur within the same macrostem, consisting of the stem preceded by a single OM or SM prefix, respectively. Outside the verb, MR again applies between a proclitic and following word in (16d) and between a word and following enclitic in (16e). While this proposal does seem to work synchronically, it requires Myers to place the SM of the subjunctive within the macrostem in (16c), whereas various TAM markers, which cannot be part of the macrostem, occur between the SM and the verb stem in other parts of the paradigm. If one considers the reconstructions given to the right of each example, an interesting generalization arises: In each case where MR applies, there is a lost tone-bearing unit (TBU) which carried a L tone wedged between two H tones (-à-, ì-, and mù-). In other words, the source of MR in Shona is as indicated in (17).

$$(17) \text{H} + \text{`} + \text{H} > \text{H}^{\downarrow}\text{H} > \text{H-L}$$

What this means is that the explanation for the (non-)application of MR has more to do with the historical tones and shift of the TBU from mora to syllable than it does with the internal morphological structure of the verb.

How, then, can we tell whether a pre-stem + stem sequence constitutes a “word” or not? As Guthrie (1948) originally pointed out, we can cite either morphological or phonological criteria. Hyman & Katamba (2005) in fact cite MR as defining the word in Luganda. As seen in (18a), MR applies throughout the prefix+stem word in Luganda:



While the division between the penultimate East and the stem-initial West is quite robust, it should be noted that the stem-initial boundary is always available. Thus, note the tonal data from Ndebele in (22).

(22) Stem-initial L “depressor” in Ndebele (Sibanda 2004:229-230)

a.	ku-phek-a	b.	<u>ú</u> -kú-phek-a	‘to cook’
	ku-phek-is-a		<u>ú</u> -kú- <sup>↓</sup> phék-is-a	‘to make cook’
	ku-phek-is-el-a		<u>ú</u> -kú- <sup>↓</sup> phék-és-el-a	‘to make cook for’
	ku-phek-is-el-an-a		<u>ú</u> -kú-phek-is-él-an-a	‘to make cook for each other’

As seen in (22a), the verb root *-phek-* ‘cook’ is underlyingly toneless. In (22b) the only underlying H tone originates on the (underlined) augment *ú-*. As seen, this H spreads to the antepenult. However, also seen is that there is a downstep before the stem in the second and third examples, i.e. internal to the H tone span. The last example shows that when the form is long enough, the Hs are delinked from the stem initial syllable up to and including the pre-antepenultimate syllable. The analysis is that the left stem bracket is accompanied by a L boundary tone which has the same effect as a depressor consonant in Ndebele.

While there is plenty of evidence that the pre-stem + stem constitutes a word in Central Bantu, the verb stem is demonstrably more autonomous or isolable than the noun stem. I attribute this to the fact that verbs are more “paradigmatic”, i.e. they have much more highly developed paradigms than nouns, whose prefixes cohere more tightly than the prefixes on verbs. One sign of this is that within the same language, e.g. Kinande in (23), noun reduplication may include the prefix, while verb reduplication does not:

(23) a.	(o-) mu-swi ‘grinder’	(o-) mu-swi-mu-swi	‘a real grinder’
b.	(e-) ri-swa ‘to grind’	(e-) ri-swa-swa-swa	‘to grind here and there’

In addition, in many Bantu languages noun prefixes fuse with the root while verb prefixes do not. Thus, Swahili class 7 *ki-* > *č-* before a vowel in nouns and other form classes in (24a).

(24) a.	ch-uma ‘iron’, ch-eusi ‘black’, ch-angu ‘my’ (cf. ki-atu ‘shoe’ with a ghost consonant)
b.	a-ki-ona ‘he sees it’ (*a-ch-ona)

As seen in (24b), however, the class 7 OM *-ki-* does not palatalize before a vowel-initial verb. Or, as a second example, Kinande /a+i/ is realized differently according to lexical stratum (Mutaka 1994). The /a+i/ sequence fuses as a mid vowel when the vowels occur within the verb stem in (25a) or between a prefix and noun stem in (25b). As seen in (25c), however, the /a/ of an OM deletes before a verb root which begins with /i/. If fusion of /a+i/ is a stratum 1 process, as Mutaka proposes, it would seem that verb prefixes enter at stratum 2. The same is presumably the case in the diminutivization process in (25d).

(25) a.	within verb stem:	/mɔ-tu-a-tá-ir-ε/	→	mɔ-tw-a-té:r-ε	‘we buried’
b.	prefix + noun stem:	/a-ma-ísɔ/	→	a-mé:sɔ	‘eyes’
c.	OM + verb stem:	/ε-rɪ-va-ít-a/	→	e-rí-vî:t-â	‘to kill them’
d.	diminutivized noun:	/a-ka-ísɔ/	→	a-kí:sɔ	‘small eye’
				(~ ?a-ké:sɔ)	



- (28) a. /mǎanà wù mù.bvé/ → [mǎ̀ànà 'wò 'bvē] ‘this beautiful child’  
 child this beautiful  
 b. /báana báá ngò/ → ['bá:ná: 'ngò] ‘children of the panther’  
 children of panther

This is because a prefix combines with a vowel-initial root into the stem; cf. *kyààli* ‘chicken nest’, pl. *bvyààli* (7/8). As Paulian puts it: “Les termes *mǎanà*, *báana*, fonctionnent comme des unités insécables et ce n’est qu’au niveau structurel que l’on peut proposer de les décomposer en : préfixe + nominal.” (p.170). She goes on to point out, however, that this does not happen with verbs, which are always consonant-initial: “Le référent qui apparaît en combinaison avec le verbal... n’est jamais amalgamé au radical du verbal (qui commence d’ailleurs toujours par une consonne) mais à la modalité de temps....” (p.210) So, again, verb stems are more autonomous than noun stems.

The Kukuya facts are particularly important in that they provide evidence that the Northwest Bantu analytic tendency can be innovative. For our purposes, if the historical noun and adjective prefixes can be prosodically “detached” and become autonomous of their stems in Kukuya, then so can verb prefixes. In fact, this detachment can lead to insertion of other elements, ultimately S AUX O V word order. Consistent with this interpretation is Mous’ (2005) account of the SOV properties of Tunen as an innovation.

Prosodic correlates of the above-mentioned drift towards analyticity in Northwest Bantu are particularly robust. I have already alluded to the enhancement of the stem-initial CV, which is sometimes viewed as “accented”. In addition Northwest Bantu languages often impose size constraints on their prosodic stems (Hyman, in press), e.g. maximum of four syllables in Bobangi, three in Koyo and Kukuya, two in Ngemba, also restrictions on which consonants and vowels can appear in which syllables. Because of the size constraints, many verbs will not be able to take causative, applicative and other extensions, since there will be no room within the maximum size template. Periphrastic alternatives will thus be required, which then spread to replace extensions even on shorter derived verbs. This replacement of the synthetic derivational strategy by an analytic periphrasis corresponds with what is seen in the inflectional system.

What can we conclude from the foregoing? First, it is still not clear whether the pre-stem was affixal in PB. The phonological status of “prefixes” varies widely within present-day Bantu, even among those languages that are solidly in the “synthetic” area (cf. the current need for the “macrostem”). We see this, for instance, in the tremendous variation there is in the applicability of MR. What I would like to suggest is that the morphological developments have gone in both directions: build-up and break-down of the VU. In other words, both of the pathways in (29) are natural:

- (29) a. “particles” > prefixes  
 b. prefixes > “particles”

In order to come up with a more definitive account we must look at the *details* of more Bantu languages from this historical perspective. I suggest that the focus should be on potential archaisms such as the following:

- (30) a. the final vowel (Grégoire 1979)  
 b. the tense prefix -a- (Bastin 1994, Goldsmith 1984)  
 c. OMs with an initial vowel: -itu-, -imu- (Polak 1986)  
 d. the Law of Initials and Finals (where the SM and FV have the same tone, especially in relative clauses)  
 e. other tonal quirks, e.g. the tone of causative -i- and passive -u- (Hyman & Katamba 1990)

It is my intuition that the most agglutinative Bantu languages hold the greatest clues to figuring out what was present in PB vs. innovated subsequently.

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