

Supposing we have been completely wrong about the shape of early Niger-Congo roots?

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TABLE OF CONTENTS

1. INTRODUCTION..... 1
2. THE MEMBERSHIP OF NIGER-CONGO..... 1
 2.1 The internal structure of Niger-Congo..... 1
 2.2 The exclusion of some branches 3
3. TRISYLLABIC ROOTS? 3
4. EVIDENCE TABLES 4
 4.1 General..... 4
 4.2 Verbs..... 4
 4.3 Nouns..... 9
 4.4 Others 13
5. CONCLUSION..... 14
REFERENCES..... 15

FIGURES

Figure 1. Niger-Congo restructured

2

ABSTRACT

A common assumption about the shape of Proto-Niger-Congo roots is that stems were disyllabic. This is supported by a vision of Bantu-like roots for nouns with the canonical shape (C)V-CVCV. Even where noun-classes have been lost, stems are often disyllabic synchronically. Reconstructed roots (such as they are) in Westermann (1927) and Mukarovsky (1976-1977) are frequently one or two syllables. There are problems with this interpretation, connected with additional syllables which appear in citation forms, especially in languages without any traces of noun classes, such as Dogon and Ijoid. If roots in these languages are cognate, then the additional syllables must be analysed as affixes or old compounds. If a cognate segment also shows up in a noun-class branch of Niger-Congo, then it is hard to know why it should not be reconstructed.

Another problematic issue in Niger-Congo reconstruction is vowel alternation between branches. In common roots like ‘head’ the basic form looks like #tV, but the vowel sometimes surfaces as a high back vowel and sometimes a high front vowel. Hence reconstructed proto-forms are given the shape *tui, *twi and similar. This is hard to account for by some regular process of sound correspondence, but explicable if both are descendants of a long form which included both front and back vowels.

This paper puts forward a radical alternative, that many early Niger-Congo roots were trisyllabic, CVCVCV, and that surface forms across the phylum can be accounted for by a variety of erosional pathways. The inspiration for this comes from the Ijoid and Dogon branches of Niger-Congo and in particular a paper by Kay Williamson (1979), where she touches on this idea for Ijɔ but never completely accepts it. Williamson (1992) also sets out cognates for some triconsonantal roots, although it does not discuss their implications for reconstruction. Observing that a significant number of proto-Ijoid forms have to be reconstructed with a CVCVCV formula, she suggests that the medial consonants can be found elsewhere in Niger-Congo in segments otherwise discarded in proposed reconstructions. This is relevant to Bantu, which often appears to be particularly conservative.

Keywords; Niger-Congo; root shape; historical reconstruction

1. Introduction

A common assumption about the shape of Proto-Niger-Congo roots is that stems were disyllabic. This is supported by a vision of Bantu-like roots for nouns with the canonical shape (C)V-CVCV. Even where noun-classes have been lost, stems are often disyllabic synchronically. Reconstructed roots (such as they are) in Westermann (1927) and Mukarovsky (1976-1977) are frequently one or two syllables. There are problems with this interpretation, connected with additional syllables which appear in citation forms, especially in languages without any traces of noun classes such as Dogon and Ijoid. If roots in these languages are cognate, then the additional syllables must be analysed as affixes or old compounds. If a cognate segment also shows up in a noun-class branch of Niger-Congo, then it is hard to know why it should not be reconstructed.

Another problematic issue in Niger-Congo reconstruction is vowel alternation between branches. In common roots like ‘head’ the basic form looks like #tV, but the vowel sometimes surfaces as a high back vowel and sometimes a high front vowel. Hence reconstructed proto-forms are given the shape *tui, *twi and similar. This is hard to account for by some regular process of sound correspondence, but explicable if both are descendants of a long form which included both front and back vowels.

This paper puts forward a radical alternative, that many early Niger-Congo roots were trisyllabic, CVCVCV, and that surface forms across the phylum can be accounted for by a variety of erosional pathways. The inspiration for this comes from the Ijoid and Dogon branches of Niger-Congo and in particular a paper by Kay Williamson (1979), where she touches on this idea for Ijò but never completely accepts it. Williamson (1992) also sets out cognates for some triconsonantal roots although it does not discuss the implications for reconstruction. Observing that a significant number of proto-Ijoid forms have to be reconstructed with a CVCVCV formula, she suggests that the medial consonants can be found elsewhere in Niger-Congo in segments otherwise discarded in proposed reconstructions. This is relevant to Bantu, which often appears to be particularly conservative. Mukarovsky’s (1976-1977) ‘Proto-Western Nigrific’ forms purport to be Africa wide, but all too often reflects the segmental material in proto-Bantu, lacking evidence from languages further west. Mukarovsky did not admit Ijoid or Dogon into his canon, thereby overlooking crucial evidence.

Finally, is this ‘proto-form-stuffing’, to use a term adopted by Blust for Austronesian? Is this an attempt to account for all surface forms by simply positing long reconstructions? I would argue not, as these long forms are attested synchronically with cognate segments in at least two Niger-Congo branches. However, they inevitably make us think quite differently about the canonic forms of early Niger-Congo.

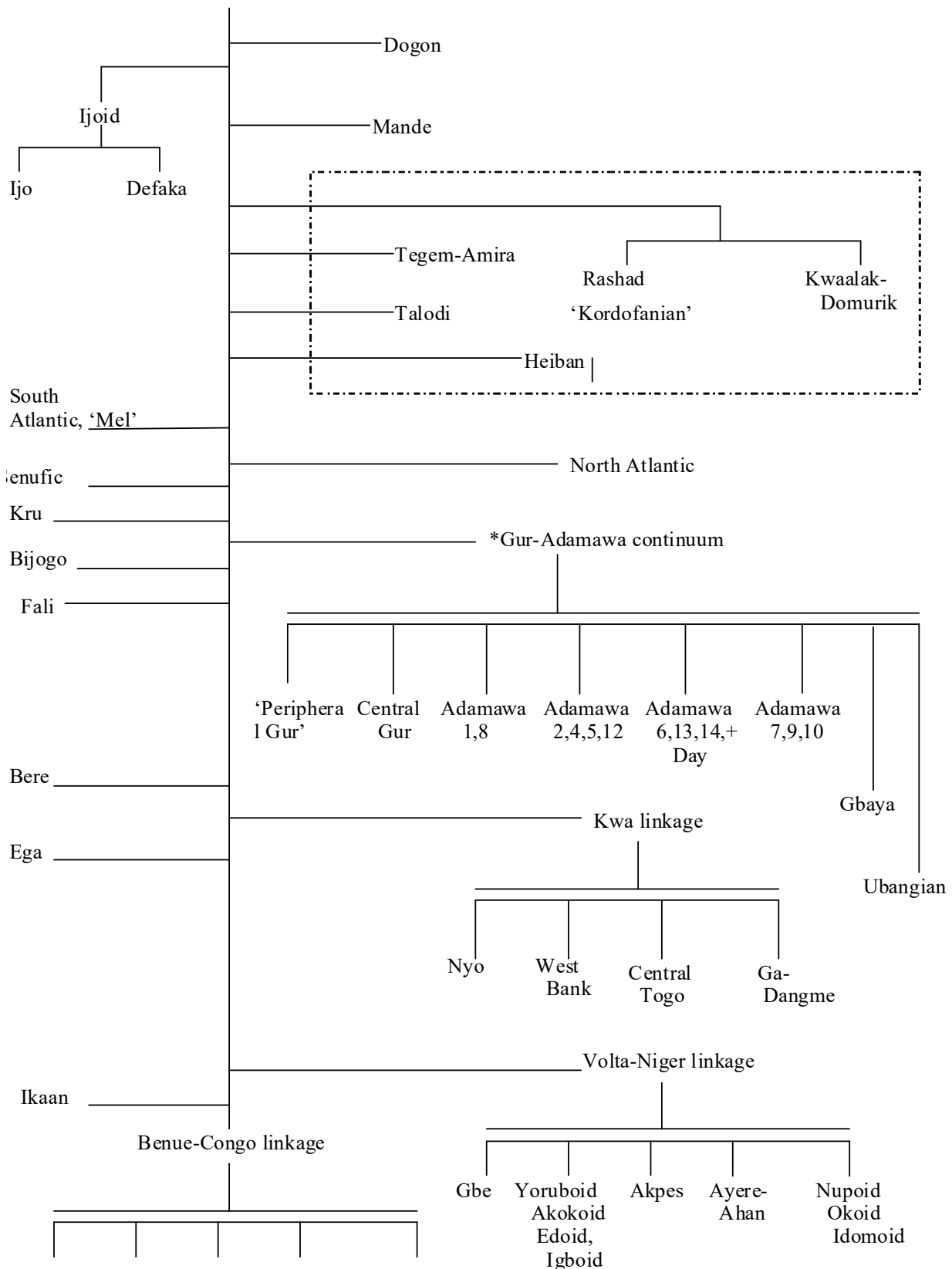
2. The membership of Niger-Congo

2.1 The internal structure of Niger-Congo

A lacuna in much of the discussion of the reconstruction of proto-Niger-Congo is the internal classification of the phylum. By glossing over this, it is possible to reconstruct noun-classes, verbal extensions and similar morphological features, even though these are not attested in a number of branches. If it were the case that the branches where these do not occur are the earliest splits in the ‘tree’, then clearly they cannot be attributed to the proto-language.

Making a tree of Niger-Congo is not a simple task; Niger-Congo is the largest (by number of languages) phylum in the world and is far more internally diverse than Austronesian, its nearest counterpart. Formerly accepted groups such as Kordofanian, Kwa and Atlantic have been split into a number of branches, which may be independent. There are also clearly isolates, which have no place with established families. We have virtually no branches of Niger-Congo with a set of generally accepted reconstructions, with even Bantu under attack. Under these circumstances, any tree is likely to be controversial. Nonetheless, it is essential to understanding early Niger-Congo that we have a model of its internal structure, and with suitable caveats, this is presented in Figure 1.

Figure 1. Niger-Congo restructured
Proto-Niger-Congo



There are two principles upon which this tree is reconstructed, are that the languages which retain fewest Niger-Congo roots are likely to be the earliest to diverge from the tree and that languages lacking common

Niger-Congo features, such as noun-classes, verbal extensions and ATR vowels, are also likely to be the oldest splits. In other words, all the features typically assigned to Niger-Congo are in fact characteristic of a meso-language.

2.2 The exclusion of some branches

One of the more puzzling features of Niger-Congo scholarship and African historical linguistics in recent years are the authors willing to exclude various branches formerly ascribed to it without providing any evidence. Güldemann (2008: 176) says, ‘present concept of the stock-level unit Niger-Congo is conceived of narrowly in that the families Kordofanian, Mande, Atlantic, Dogon, and Ijoid are not recognized as established members’. Dimmendaal (2011: 321) presents a map of Niger-Congo which excludes Mande, Dogon, Ijò and Ubangian, while representing Kordofanian as a unity. Neither of these authors present any discussion as to their reasons for these truncated versions of Niger-Congo and certainly do not argue against authors such as David Dwyer or Kay Williamson who presented arguments for the inclusion of their specialism, in this case Mande and Ijò. Another significant web resource, the Glottolog¹, takes an even more extreme position, rejecting the same branches as Dimmendaal, and also treating all branches of Kordofanian as independent ‘top-level’ families. To do historical linguistics by assertion, without evaluating the evidence is a worrying trend and surely contrary to usual scholarly practice.

A secondary argument emerging from the evidence presented in this paper is that the language branches conventionally ascribed to Niger-Congo do indeed form part of it. The tables suggest that in all branches cognates for common lexical items can be found, but that more erosion has taken place in the non-noun class branches, because ‘Narrow Niger-Congo’ (to use Güldemann’s term) is simply a mesolect with more familiar features. If the argument of this paper is accepted, then far from excluding these branches, they provide crucial evidence for the reconstruction of early Niger-Congo.

3. Trisyllabic roots?

The proposal advanced here is that in early Niger-Congo, triconsonantal roots were far more common than in most languages today, and that this reflected a language where tone had a low functional load, and semantic classes were not marked morphologically. This is the case synchronically in Dogon and Ijoid where longer roots are maintained. These languages conserve some of these roots in a shape close to their original form, and most other Niger-Congo branches have eroded the segments according to a variety of pathways, sometimes finally becoming monosyllabic. An exactly similar route is characteristic of Sino-Tibetan, where the long forms characteristic of Nepalese languages such as the Kiranti group transform into pervasive monosyllabism in Sinitic and other East Asian branches. A second element of the hypothesis is that these triconsonantal roots usually included a mix of high front and back vowels, and that as erosion occurred, either one could be retained as the stem vowel. Alternatively, erosion could give rise to labial-velars, and front rounded vowels.

An additional feature of the triconsonantal roots reconstructed here is that the third syllable in Dogon and Ijoid was often r/IV- (where V was usually a back vowel) and this becomes first NV- and then a nasalised vowel. Furthermore, typical eroded forms of CVCV shape took on a life of their own and were then transmitted in parallel, creating forms which retained traces of the three original consonants. This partly accounts for the multiple versions of the same root proposed by Guthrie for Common Bantu. Harmony processes are pervasive in Niger-Congo and were certainly present from the period when Ijoid evolved, which accounts for vowel copying and assimilation in cognates in many languages. The interpretation of what looks like an old affix in both Dogon and Ijoid is uncertain, but it is possibly a definiteness marker.

The Ijoid languages are those which best preserve trisyllabic roots and these can be reconstructed to proto-Ijò. Table 1 presents a sample of Ijò unsegmentable trisyllabic roots where C₃ is a flap or a lateral, with one example, ‘bee’ where C₃ has disappeared. V₃ seems generally to have been an underspecified vowel, taking its quality from the stem vowels. Note that in every case C₃ is a resonant, except for ‘bee’ where the nasalised vowel may result from assimilation.

¹ <http://glottolog.org/>

Table 1. Proto-Ijò unsegmentable trisyllabic roots (sample)

agree (to, with)	bíbírĩ
answer, reply	pákara
back	obibirí
bedroom	zuyuru
bee	akamãí
to board boat	ɓɔgɔló
boil (n.)	ɔpɔpólí
change	beyɛlí
civet cat	ɔlɛghele
co-wife	yáfáǎ
rub	sikiri
sitatunga	tóbara

The prevalence of Ijò words with a nasalised diphthong following C₂ argues strongly that the disappearance of a continuant in this position created its characteristic nasalised vowels. However, it is striking how many typical Niger-Congo quasi-reconstructions have r/l + front vowel in C₂ position. This suggests that when a trisyllable eroded, C₂V₂ were often lost, leading to CVRV structures. Ijò also shows a feature characteristic of the remainder of Niger-Congo, that restrictions on C₂ were quite extensive, with only velars and bilabials permitted.

Dogon has fewer remaining trisyllabic roots, but ‘cut’, for example, has a Defaka cognate;

Dogon	Ana	kedele	cut
Ijoid	Defaka	kée	cut

Three consonants are not preserved elsewhere in Niger-Congo, but the long vowel in Defaka is suggestive of reduction of a longer root.

4. Evidence Tables

4.1 General

The following tables have been compiled from my database of Niger-Congo roots, with the syllables I posit as cognate aligned beneath one another. So far these are summary and before publication the sources need to be correctly identified and the glosses completed. A blank in the gloss column implies that the meaning is as in the table header. The starred forms at the head of each table are merely suggestions, not fully worked out forms. I am still seeking further cognates in the other branches of Niger-Congo;

4.2 Verbs

*kederi to split , cut, break							
Family	Subgroup	Language				Comment	Source
Dogon		Ana	ke	dè	le	cut	RMB
Ijoid		P-Ijò	kã		ã	tear	KW
Ijoid		Defaka	ké	é		cut	
Mande		Bambara	ká		rí	cut	Ba
Kordofanian	Talodi	Nding	kɛ	é	[gi]	cut	Sch81b
Atlantic	North	Wolof	xa		r	tear, cut	Di
Atlantic	South	Bullom	ke	th-		<i>couper</i>	GS
Atlantic	South	Kisi	kɛ		l	cut	Ch00
Bijogo		Bijogo	-kɛ		n(ki)	<i>couper, tailler</i>	Sg
Kru		Nyabwa	ʃɛ		i	cut	ALKrCI
Adamawa		Galke	kə		ŋ	<i>couper</i>	B
Adamawa		Mumuye	ka			break	Sh83
Adamawa		Mumuye	ko			cut in two	Sh83

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Family	Subgroup	Language			Comment	Source
Gbaya		Ndunga-le	-kè	lé-	<i>couper</i>	Mo95
Kwa		Igo	k	lô	break pot	Ro
Kwa		Ga	kpó		break off	Kr99
VN		Nupe	ke		be split, be cut	Ba14
EBC	Jukunoid	Wap ^h a	kè	m		St
Bantoid	Furu	Bikyak	kpà		<i>erbrechen</i>	RK
Bantoid	Mambiloid	Mambila	ke	r ³		PM
Bantoid	Dakoid	Nnakenyare	ké	(k)		B
Bantoid	Ekoid	Nkim	kê	m		C
Bantoid	Ekoid	Mbe	kpé	t~ɾ		BA
Bantoid	Tikar	Tikar	ke	ti		J
Bantoid	Ring	Oku	kâ	(k)	cut loose	R
Bantoid	Eastern	PEG	*kE	(k)		EVL
Bantu		CB	-kè	d		G
Bantu		CB	ʃé	(ʃ-)		G
Bantu		PB, CB	-kè	(k-)		
Bantu		PB	ká	d	<i>tear, cut</i>	BLR
Bantu	Manenguba	Akɔɔse	-kw	èl		He632

Commentary: This is a remarkable root, if the Ana form is indeed a reflection of early Niger-Congo. The medial -d- is conserved and reflected in PB. However, at the stage of Dakoid, a final -k is added to a root which was by then of kV- shape and this is retained as an alternate in PB/CB. It is not certain that the roots with a labial-velar in C₁ position form part of the same set; often there are doublets in a given language, so this may be distinct.

Refs: W. 227+243; Ar64. 43; M. 75+202+203+256+22; G. 280+304+1029+1033+1045; Gr:80; G:97,135,154; B:122, 133; Boyd (1994:106)

*sunguri	to wash v.t.	Attestations					Gloss	Source
Family	Group	Language						
PNC			*sú	ngú	ri		wash s.t.	
Dogon		Walo	sú	kó			wash cloth	JH
Dogon		ToroTegu	sú	ngó	ró		rub hands together	JH
Ijoid		Proto-Ijò	sɔ	ɣɔ	ri		wash	KW
Ijoid		Defaka	su	ku			wash s.t.	Je83
Mande		Guro	fó		lí		wash	VV
Atlantic	South	Sua	su	gbu	ni		<i>laver (corps)</i>	GS
Kru		Bakwe	-fù		tò		<i>se laver</i>	Ye09
Adamawa		Mambay	fwǎ		ˈnà		<i>laver</i>	EA
Adamawa		Mundang	cù	ù			wash	SE
Adamawa		Samba Leko	sū	g			<i>laver</i>	Fa
Adamawa		Pere	sò	g	do		<i>laver</i>	Ra83
Adamawa	Mumuye	Zing	sò	kè			wash	Sh83
Gbaya		P-Gbaya	*fɔ		r		<i>laver</i>	Mo95
Kwa		Ga	fó				wash	Kr99
Kwa	GTML	Ikpana	fò				wash	Do08
VN	Yoruboid	Yoruba	fò				wash	Ab58
VN	Edoid	Urhobo	fò		rò		wash	E189
VN	Edoid	Ghotuɔ		kɔ			wash body	E189
VN	Igboid	Owere		kwa			wash s.t.	KW
VN	Ayere-Ahan	Ahan	fɔ				wash s.t.	
VN	Akpes	Ikaramu	fu				wash s.t.	
VN	Nupoid	Nupe	fù				wash s.t.	Ba14
VN	Nupoid	Nupe			ná		wash s.t.	Ba14
EBC	Plateau	Izere		ku(su)			wash s.t.	RMB
EBC	Plateau	Berom		kū(f)			wash s.t.	RMB
EBC	Cross River	Baan	fǎǎ		nǎ		wash, clean	Na92
Bantoid	Mambiloid	Gembu		kù	lá		wash	Co
Bantoid	Dakoid	Nnakenyare		kók			wash	Bo
Bantoid	Tikar	Tikar		kpo'			rub	J
Bantoid	West Momo	Atong	su					SIL
Bantoid	Tivoid	Manta	sòò				wash	AA02
Bantoid	Ekoid	Ejagham	sù					Wa
Bantoid	EG	PEG	*-fù	g-			wash	ELV
Bantu	A	P-Manenguba	*-sù	g-			wash s.t.	He87
Bantu		PB	cɔ	kɔ	d		wash, cleanse	BLR
Bantu		CB	*-fò	ku	di		wash	G
Bantu		CB		kó(f)-			wash, rub	G

Commentary: The assumption is that the Plateau forms have undergone metathesis, and that the second CB form is an independent descendant from this innovation. This sort of model may well help us understand the apparent co-existence of multiple forms in PB. The correspondence between the nasality in Adamawa and Cross River is quite surprising and a loan might be suspected. However, these languages are very remote geographically. It is suggested that the final continuants became nasal as in Atlantic, which then resulted in word-level nasalisation. The s~f correspondence is attested elsewhere as in Nupe. Nupe has two words to 'to wash' tr. and perhaps both of them are cognate with different elements of the #fǎnǎ type roots.

Ref: M. 85; G. 410+435+136; Ohiri-Aniche (1991,II:271-29); W. 239; M. 246+272; G. 303+1099+1186+1199+1277; Boyd (1994:110); Williamson (1979: 83)

#tokori	chew						
Family	Subgroup	Language				Gloss	Source
Dogon		Toro-Tegu	tò	gú	Rú	chew	JH
Ijoid		Proto-Ijò	*to	ko	ri	chew	KW
Ijoid		Defaka	tà	kù	rù	chew	Co
Mande		Odienne Jula	dò	gò	nì	eating	VV
Atlantic	North	Diola	to	ko	ɲ	?	M
Atlantic	North	Basari	dy	ak		<i>dévoré, croquer</i>	Fe
Bijogo			-de		ɲ		GS
Kru		Grebo	tá			eat, chew	
Kru		Bete	tá		lè	<i>mâcher</i>	ALKrCI
Gur		Moore	tá	kə	m-	<i>mâchonner</i>	Ni98
Adamawa		Samba Leko	tè		m	<i>avalé</i>	Fa04
Kwa		Ega	tà				He83
Kwa		Avatime	tà				ALKwCI
Kwa		Ga	tà			chew, gnaw	Kr99
VN	Igboïd	Igbo	-ta				KW72
VN	Nupoid	Nupe	ta			chew	Ba14
EBC	Kainji	Kambari	tàà		mâ	chew	DC
EBC	Plateau	PP2	*ta				Ge
EBC	Plateau	Eggon	tá		ɲ	bite	RMB
EBC	Upper Cross	Ubaghara	tà			bite	JS
EBC	Lower Cross	KoHumono	taa ⁺				Co
Bantoid	Mambiloid	Vute	tà		ɲ	eat	P
Bantoid	Dakoid	Daka	taà		n	eat, chew	Bd94
Bantoid	Nyang	Denya	cwà			chew	Mb
Bantoid	Tivoid	Tiv	tâ		m		Ab
Bantu		PB	tá	kú	n		BLR3
Bantu		CB	ta	kú	n-	chew	G

Commentary: Ijò, Mande, and Dogon all conserve a trisyllabic stem with back vowels. The Diola form may also be a reflection of this, but it is isolated within Atlantic could also simply be borrowing. Trisyllabic roots have eroded in a number of ways; C_1V_1 could have been interpreted as a nominal prefix and the remainder of the word analysed as the stem. Alternatively, C_3V_3 would have been lost completely, or C_3 would have been eliminated, leaving a final diphthong. This latter process is extremely current within Ijoid. This root is a good example of a former triconsonantal root that has been eroded in different patterns in different Niger-Congo subgroups, but is still conserved in its essential form in some Bantu languages, as well as Dogon and Ijò. Boyd (1994:70) points out that this root undergoes a semantic shift to ‘swallow’ in much of Adamawa. The citations which have a bilabial in C_3 position appear to be directly cognate with the alveolar nasal, although such a shift is not usually accepted as common in historical linguistics.

Refs: W. 285; M. 489; G. 1651; BCCW, I:44; Bd94:70; P. 42; Skinner (1996:255)

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*singuri	rub, smear						
Family	Subgroup	Language				Gloss	Source
Dogon		Toro Tegu	sú	ɲú	ró	rub	JH
Ijoid		P-Ijò	si	ki	ri	rub	KW
Katla-Tima		Domorik	ʃi	ni	ni	rub (it)	GS13
Kwa		Twi	ʃ ^{wi}	w		rub	Ch34
VN	Igboid	Ohūhū	ʃ	^h	i	smear, rub	Ig99
EBC	Cross River	Oduai	si	ɣə		rub oil on body	Wo69
Bantoid	Tivoid	Tiv	ʃi	ɣè		anoint, smear	Ab40
Bantoid	Tivoid	Esimbi	si	(ɲ)gi		wipe, clean, rub	JMH
Bantu		CB	ʃi	ɲ		rub, smear	BLR3
Bantu		CB (B-S)		ki	d-	rub, wipe	BLR3
Bantu	A	P-Manenguba	*-si	ɲ-V		wipe	He87

Commentary: This word is often not attested in standard wordlists, so cognates are sparser than for other items. The back vowels in Dogon seem to be realised as front vowels in Ijò and all other subsequent related forms.

Refs: M. 509+546; G. 1745; Williamson (1992:390);

*dumigbi	bury, dig,	grave, plant					
Family	Subgroup	Language				Comment	Source
PNC			*d	i	mgbi		
Ijoid		Proto-Ijò	*d	i	bi	bury, plant	KW
Ijoid		Defaka	l	i	bi	bury	Co15
Atlantic N		Wolof	to		bbi	<i>creuser des trous</i>	Di
Gur		Kusaal	d		bi	<i>creuser</i>	Ma75
Senufic		Jimini	le			<i>enterrer</i>	ALGCI
Adamawa		Mambay	t	ĩ		dig	An12
Ubangian	Gbaya	Sere	du			<i>creuser</i>	Mo95
Kwa	GTML	Igo	d	i		<i>enfonce</i>	
VN	Gbe	Ewe	d	i		<i>enterrer</i>	Ro
VN	Yoruboid	Yoruba	r	ĩ		bury	Ab58
VN	Edoid	Èdo	id	ĩ		grave	Ag86
VN	Igboid	P-Igboid	dĩ			bury	KW
VN	Nupoid	Nupe	dzu			bury, inter	Ba14
EBC	Plateau	Horom	l	i		bury	RMB
EBC	Tarokoid	Tarok	də		p	bury	L&B
EBC	Jukunoid	PJ	*nd	i	P	bury	Sh
EBC	Lower Cross	*PLC	ù-l	i		grave	Co91
EBC	Upper Cross	Doko	d	i		bury	St
EBC	Ogonic	Baan	l	i		bury	Na92
EBC	Central Delta	Agholo	d	í	y	bury	Ga80
Bantoid	Dakoid	Sama Mum	d	ò	k	plant	BS10
Bantoid	Ekoid	Abanyom	ò-là		m	grave	Crabb
Bantoid	Yemne-Kimbi	Bu	ji			bury	Hamm (p.c.)
Bantoid	E Beoid	Nooni	dw	e	y	bury	Schaub
Bantu		PB	d	i	mb	plant	BLR3
Bantu	A	Proto-Manenguba	*-d	i	m	corpse	He87

Commentary: Williamson (1992:392) later noted the links with Proto-Ijò and compiled cognates with the Benue-Congo languages as well as pointing out that a second bilabial consonant could be reconstructed. If the present argument is correct, then the underlying source is a verb meaning ‘to bury’, glossed in French sources as *enterrer* and *enfoncer*. This is frequently nominalised as ‘grave’. However, it seems that in some languages the two forms have taken on a separate life, as in Mada, where the term for ‘grave’ is an old metathesis of the more usual #*dibi* root. This metathesis is more common in Mande and Kru, but surfaces in isolated citations in many languages. The semantic shift to ‘corpse’, attested in Manenguba, is logical but unusual. The polysemy of ‘bury’ with ‘plant’, cited for proto-Bantu is attested in a number of dictionaries and is probably related to the notion of burying tubers in the ground. The Sama Mum form with a back vowel is highly aberrant, but presumably must be cognate with the Bantu reconstruction.

4.3 Nouns

head Family	#tígborí Subgroup	Language					Gloss	Source	
PNC				#tí	gbó	rí			
Dogon		Beni	kù-	tó	gó	rò	<i>tête</i>	JH	
Ijoid		Proto-Ijò		*tí	ḅ	í	head	KW	
Ijoid		Defaka		tó	ḅò		head	Co15	
Kordofanian	Lafofa	Amira		te			head	RCS	
Kordofanian	Koalib	Fungor		t	-we		head	RCS	
Kru		Dewoin		d	ú	lú	<i>tête</i>	ALKrCI	
Kru		Guere		d		rú	<i>tête</i>	ALKrCI	
Atlantic	South	Gola	é-	dí			head	Wi07	
Adamawa	6	Karang		t	ú	l	head	UI	
Gbaya		Gbeya		t	à	n	<i>tête</i>	Mo95	
Ubangian		Kpatiri		dà		lè	<i>tête</i>	Mo88	
Ubangian	Zande	Geme				lī	<i>tête</i>	Mo88	
Kwa		Agni		tì		lé	<i>tête</i>	ALKwCI	
Kwa	GTML	Siwu	í-	tí			head	?	
VN	Yoruboid	Yoruba				o	rí	head	Ab58
VN	Nupoid	Nupe	e	tí			head	Ba14	
EBC	Upper Cross	Ikun	è	t	ò		head	St	
Bantoid	Tivoid	Otanga	e	t	o		head	SIL	
Bantoid	Tivoid	Iyive	ki	t	o	k	head	SIL	
Bantoid	Grassfields	Limbum		t	ù		head	SIL	
Bantoid	Grassfields	Ngie	à	t	é	w	head	SIL	
Bantu		PB		t	ó	è		BLR3	

Commentary: Evidence for a lateral in C₃ position is quite widespread. If the -ḅ- in C₂ position in Ijoid corresponds to the -g- in Dogon, then -gb- must be reconstructed. This root illustrates a process common in Kordofanian, the loss of C₂ of the stem and assimilation of the V- of the prefix, reducing an old CVCV(CV) root to a simple CV, as Lafofa suggests. Hence forms with alternating C prefixes in Kordofanian can be seen as the source of CV(CV) Niger-Congo roots. The alternation between front and back vowels is quite perplexing, but from East Benue-Congo on to Bantu, the back vowels dominate.

#gbukuru Family	tortoise, Language	turtle	Attestation			Gloss	Source
Dogon	Tebul Ure	aŋgu ŋ	gu	ru		tortoise	RMB
Ijoid	Furupagha	ɔbu	kɔ	rɔ		turtle	KW
Ijoid	Nembe	obo	ŋgo	ro		turtle	KW
Mande	Yaure		kú	lú		tortoise	VV
Senufo	Nabaj		xu	ru		tortoise	ALGCI
Kru	Bete G		kó	lɔ		<i>tortue</i>	ALKrCI
Kordofanian	Masakan		(k)ə	rə		tortoise	RCS
Atlantic	Sereer		xɔ		m	<i>tortue</i>	GS
Isolate	Mbre		k	ru	wɛ	tortoise	Creissels (p.c.)
Adamawa	Mumuye		ku	ru		tortoise	Sh83
Ubangian	Geme		kú	lō		<i>tortue</i>	Mo88
Kwa	Mbatto	ómó	k	rō	ɛ̃	tortoise	ALKCI
Kwa	Ewe		k	lo		tortoise	Ro
VN	Işekiri	ólu	kú	rú	mè	tortoise	
VN	Nupe	dù	kú			tortoise	Ba14
EBC	Doka	a-	ku	l		tortoise	BCCW
Beboïd	Kemezung	kì	ku	lə		tortoise	SIL
Bantu	P-Manenguba		kú	l'		tortoise	He87
Bantu	CB	-	kú	dù		tortoise	G

Commentary: A labial-velar is reconstructed in C₁ position, if Ijoid *b corresponds to Dogon *g. If these form a cognate set, then the *gbu- prefix is lost after Ijoid diverged. The Nupe form is treated as a metathesis of the -ru second syllable elsewhere. The bilabial /m/ suffix which appears in scattered forms, may be responsible for the prefix in Mbatto.

#gongboro Family	chest Subgroup	Language	Attestation			Gloss	Source
Dogon		Jamsay	gò	ŋó		chest	JH
Dogon		Nanga	gò	mbó	rô	chest	JH
Ijoid		Nembe	ku	ɓu		chest	KW
Ijoid		Nkoroo	kú	ýú		chest	KW
Ijoid		Defaka	kú	ò		chest	Co15
Katla-Tima		Kaalak	ko	ŋgə	r	chest	Gi
Kru		Bete Daloa	kɛ	k	li	<i>poitrine</i>	ALKrCI
Ubangian		Baka	kà			<i>sein</i>	Br10
Kwa		Ga	ŋmkpò	kù	á	breast	Kr99
Kwa		Dangme	gú	gú	e	chest	MK
VN		Nupe	kpá		dà	chest of animal	Ba14
EBC	Plateau	Kulu	ikwò	k			Mo
EBC	Plateau	Sur	nkwak				RMB
EBC	Plateau	Tarok	ikó	k	sók		RMB
EBC	Jukunoid	Kuteb	kì-ko	k		pl. à-	Sh
Bantoid	Mambiloid	Tep	kà	ŋ			Co
Bantoid	Dakoid	Sama Mum	gà	ngà		chest	BS10
Bantoid	Ekoid	Ejagham	ngà	ŋ		chest	Wa
Bantoid	Nkambe	Limbum	ŋgù	ŋ			SIL
Bantoid	Momo	Ngie	igú	wò		chest	SIL
Bantu		PB	*kú	bà		chest	BLR

Commentary: This root only works if we assume there was a prenasalised labial-velar in medial position, and the nasalisation was sometimes lost while the labial-velar disappeared elsewhere. The PB form is quite

problematic, since it only occurs in Zones D-S and is replaced by another root *-tódò in the northwest. The PB form would have to be *kúngbà for this to be true reflex of the Niger-Congo roots.

leg, foot #kpagara

Family	Subgroup	Language	Attestation			Gloss	Source	
Dogon		Togo Kan	pà	gá ²		leg	JH	
Ijoid		Defaka	pá		ra	leg	Je83	
Katla-Tima		Kaalak		kà	t	foot	RCS	
Rashad	Tegali	Tegali	ε	ká	n	foot	RCS	
Rashad	Tagoi	Orig	tè	gà	n	foot	S&E	
Kordofanian	Koalib	Koalib	ka	ga		foot	RCS	
Kordofanian	Talodi	Asheron	zε-	ge	k	leg	No00	
Mande		Vai		kè	ŋ	foot	K	
Mande		Guro		gǎ̃	ŋǎ̃	<i>jambe</i>	ALMSCI	
Atlantic	North	Fulfulde		koy	nga	l	leg	Sg
Atlantic	South	Gola	ke	kpa		a	foot, leg	Wi07
Kru		Bakwe		bē		í	<i>pied</i>	Ye09
Gur		Lorhon		kpa		ra ya	<i>jambe</i>	ALGCI
Gur	Oti-Volta	Wama		kwe		d-i	<i>cuisse</i>	Ma75
							<i>(jambe, pied)</i>	
Adamawa		Mono		ḡà		l	<i>pied</i>	E
Adamawa		Mambay		ḡà̃	ʃ	ná	<i>pied, jambe, roue</i>	EA
Ubangian	Sango	Kpatiri		ga		la	<i>pied</i>	Mo95
Ubangian	Mba	'Dongo ko		kà		ŋà	<i>pied</i>	Mo95
Kwa	GTML	Animere	dì	kpa		rì	foot	Ring
VN	Igboid	Proto-Igboid	ó-	kpa		(á)	leg	KW
EBC	Kainji	Reshe	ú-		ká	nà	leg	RMB
EBC	Cross River	Obolo	ú-		kó	t	leg, foot	Co91
EBC	Upper Cross	Olulumo	kè		ká	t̄	leg	St
Bantoid	East Beoid	Noni	é		kâ	lē	foot	Lu
Bantoid	Grassfields	Bafut	à-		kò	rò	leg	BCCW
Bantoid	Ring	Wushi			kwó		leg	Hy
Bantoid	Ekoid	Bendeghe	è-		ká	d	leg	Cr65
Bantu		PB			kó	nò	E-S	BLR3
Bantu	A	P-Manenguba			*kò	ò	leg	He87

Commentary: The Lorhon form may well be the key to understanding this root. If the root was originally trisyllabic and reduced in different ways it would produce the Dogon and Defaka forms. Defaka, as so often, retains the older root and Ijò innovates. However, the pára root survives in compounds in other Ijo languages, as Kolokuma *bóó pálá* 'top of foot'. The introduction of initial kp- was probably characteristic of Atlantic and the development of noun-class languages, as it is not attested in Dogon, Ijoid etc. The switch to a back vowel in the stem, already attested in Cross River, becomes dominant in Bantu proper. Discussed in Williamson (2000:64) but with a largely different set of cognates. Mukarovsky (1976:119) reconstructs a form #-gwùl for 'shin' which conflates various roots.

References: W. 239; M. 119; Williamson (2000:64)

² 'thigh' in most other Dogon languages

#ku(n)duŋo knee

Family	Subgroup	Language	Attestation			Gloss	Source
Dogon		Tebul Ure	kú	ndú	gó	knee	RMB
Dogon		Tiranige	kú	ndzú	gó	knee	JH
Ijoid		Biseni	íkó	ní	ée	knee	KW
Mande		Soninke	xu	ru	ŋi/o	<i>genou</i>	VV
Katla-Tima		Domurik	ku	ru	ŋoo	knee	GS
Kordofanian	Talodi	Masakin	ku	ŋ	gu	knee	RCS
Atlantic	North	Bedik	ε-	də	kə la	knee	Wi07
Atlantic	South	Gola	ké		gò lo	foot, leg	We21
Bijogo		Caravela	ku	nu		<i>genou</i>	Sg
Kru		Jrewe	kù	rù		<i>genou</i>	ALKrCI
Kru		Bakwe	kɔ	tɔ		<i>genou</i>	Ye09
Gur	Oti-Volta	Kɔnni		dú	ŋ	knee	Cahill
Adamawa		Leko of Mapeo		du	n	leg	Bo94
Ubangian		Yakoma	li-kũ	rũ		<i>genou</i>	Mo95
Kwa	Guang	Chumburung	kù		ŋú rí?	knee	Sn89
Kwa	GTML	Igo	i-			if metathesis	
			lùkù				
VN	Gbe	Ewe	kò	lí		<i>genou</i>	Ro95
VN	Edoid	Emai	úgú	'ò	è	knee [òè = leg]	SE07
VN	Igboïd	Igbo of Udi	ìkpè	rè		knee	KW
EBC	Plateau	Hyam	kpu	rú		knee	RMB
EBC	Plateau	Yanjkam		rú	ŋ	knee	RMB
EBC	Lower Cross	PLC	*é-	ló	ŋ	knee	RMB
EBC	Upper Cross	Ubaghara	ì	rù	ŋ	knee	Co91
Bantoid	Dakoid	Nnakenyare (M)		lùù		knee	Bo94
Bantoid	Buru	Buru	e-	nú		knee	Ko
Bantoid	Bendi	Bekwara	ìrì	nù	ŋ	knee	St
Bantoid	Tivoid	Batu Afi		nú	n	knee	K
Bantoid	Ring	Isu	íŋ	ú		knee	R
Bantoid	Ekoid	Ejagham	ê	ré	ŋ	knee	Wa
Bantu		Zones A-S		dú	í	knee	BLR3
Bantu		Zones K-L		nú	í	knee	BLR3

Commentary: Biseni is isolated within Ijoid and may thus be a loan from a neighbouring language. BLR3 says the alternation between *dúú/núú* ‘*est à étudier*’, but if this reconstruction is correct, the two are simply different erosional results of an original –nd-. The cognates of Bullom ‘knee’ in South Atlantic show a wide semantic range, for example, Temne ‘leg’ (*a-ləŋk*) and ‘arm’ *a-loŋk*, Baga Koba *a-raŋk* ‘thigh’. This is widespread in West Chadic and the #-rum element may have been loaned into Plateau and its prefix re-analysed. A rather different form, *BU(N)KA is proposed as a ‘world etymology’ in Bengtson & Ruhlen (1994).

Refs: W. 252; M 109; G.722+729; G.:101,123, G. 884; M. 163+304; B:133; B81.:261, Gr.:82,84,

#-bugbulu Family	hole Subgroup	Language	Attestation				Gloss	Source
		PWS		-bù		ò	<i>Loch</i>	W
		PWN			-kho	lo-	hole, hollow	M
Dogon		Togo Kan	tó		gó	ró	<i>trou</i>	JH
Dogon		Nanga		bò		ró	<i>trou</i>	JH
Ijoid		Proto-Ijo	*	pó	kó	ló	hole, deep	KW
			ó					
Kordofanian	Rashad	Orig	li-	bu	gu	l	hole	SE
Mande		Tura			gù	lù	hole	VV
Kru		Bakwe		bú		tò	hole	Ye09
Gur		Proto-Central		*bo		n	<i>trou</i>	Ma79
Gur		Birifor		bɔ	ɔ		hole	Kuch
Gur		Dagbane		bo	ɣ	li	hole	RMB
Ubangian	Banda	Linda	ō		gō	rō	<i>trou</i>	Mo88
Kwa		Ega	ì	gb		ó	<i>trou</i>	He83
Kwa		Eotile	à	bò			<i>trou</i>	ALKCI
Kwa		Krachi	ó	bó			hole	Sn89
Kwa		Ga		fó		l ò	hole	Kr99
VN	Nupoid	Nupe		gbò		r ò	hole	Ba14
EBC	Kainji	Shuba	ru	bu	u	r u	hole	RMB
EBC	Platoid	Iten		bo		ŋ	hole	RMB
Bantoid	Mambiloid	Mambila		bɔ	ŋ ²		hole	PM
Bantoid	Ekoid	Ejagham		fú	g		hole	W
Bantoid	Nyang	Kenyang	m	bo	k		hole	M
Bantoid	Grassfields	Ngyembɔɔn			ɣò	ó	hole	Lo15
Bantu	A	P-Manenguba		*-pò	n	d ó	hole	He87

Commentary:

Refs: W. 213; M. 264; G. 122,140; G. 84;

4.4 Others

1.	#kVnV Ph Family	one I Subgroup	Language	Aff	Attestation			Aff	Source
NC	Ijoid		P-Ijo		*ka	ŋã	nĩ		KW
NC	Mande		Bambara		ké	lé	n		Ba
NC	Mande		Manding		ke	ŋe	le		
NC	Atlantic		Diola-Fogny	yɛ	ko	n			C&R93
NC	Gur		Deg		kp	è	è		ALGCI
NC	Gur	Isolate	Tiefɔ		k		lò		Ha13
NC	Adamawa		Mumuye		go		ró		Sh83
NC	Ubangian	Zande	Nzakara		kì		lí		Mo95
NC	Kwa		Gonja	kò-	kò		lè		Sn89
NC	Kwa		Twi	è	kɔ́	()			Chr
NC	Kwa		Ga		kò			mé	Kr99
NC	Kwa		Adele	è	kí				Ro
NC	EBC		Fyem		kè	ŋ			RMB
NC	EBC		*PLC		check				
NC	EBC		Gaa	a	ki	na			RMB

Commentary: Proposed in Armstrong (1964:52) and expanded in Williamson (1989b:255) for Benue-Congo. Not attested in Kru.

Ref: Ar64. 52; Williamson (1989b:255);

*tunuru	five					
Family	Subgroup	Language				Source
Dogon		Togo Kan		nú	néé	JH
Ijoid		Proto-Ijò	*tɔ	ŋõ	řõ	KW
Ijoid		Izɔn	só	ón	rǔ	KW
Ijoid		Defaka	tú	ú	nò	Co15
Mande		Mandinka		lúu	lu	VV
Mande		Guro	sò		lù	VV
Atlantic	North	Kobiana		ɲu	n	Sg
Atlantic	South	Nalu	tɛɛ		du(ŋ)	Wi07
Atlantic	South	Temne	ta	ma	th	Wi07
Gur		Lorhon	tɔ'			ALGCI
Gur		Tayari		nu	n	Ma75
Adamawa		Pere		nóó	no	Bo89
Adamawa		Kpasham		nú	ŋ	K&Y
Kwa		Avatime	ò-tsú			Sc
Kwa		Abron	ɲ	nú	m	ALKCI
Kwa	Guang	Gonja	à-	nú	?	Sn89
Kwa	GTML	Sɛkpele		ɲ	nɔ	RMB
Kwa		Ga	é	nù	mò	Kr99
VN	Edoid	Degema	isw	ón		E86
Ukaan		PU	tʃò	n(-)		Ab
Ayere		Ahan	(in)tu			RMB
EBC		Idun	e-tó	n		BCCW
EBC	Jukunoid	PJ	*i-ton			Sh80
EBC	Lower Cross	PLC	*i-tí	òn		Co91
Bantoid	Furu	Bikyak	ətò	ŋ		RK
Bantoid	Ekoid	Ejagham	ɲdô	n		Wa
Bantoid		PG	ítà	n		RK
Bantoid	Grassfields	Meta'	tá	ɲ		BCCW
Bantu		PB	táà	nò		BLR 2768
Bantu		PB	tʃáà	nò		BLR 448
Bantu	A	P-Manenguba	táà	n-		He87

Commentary: Williamson (2000:59) discusses some of the Niger-Congo evidence for this root. Apparently completely replaced in Kru, Ubangian. Within Ijoid, Defaka preserves the older root, *túúnǔ*. Both Ijoid and Mande show t→s, also attested elsewhere, e.g. ‘bow’. Kru appears to have no cognates with either root, unless the bilabial nasals in Kru, e.g. Wobe *m̩m̩* are cognate with the nasals in other Niger-Congo branches. This is possible, as in both Dogon and Oti-Volta languages the N₂ sometimes undergoes the change n→m, for example Tayari *nun*, but Bieri *num*. There do not appear to be any clear attestations of the #*nuni* form in Western or Eastern Benue-Congo, where the #*turu* root predominates.

Ref: W. 271; M. 562; 275+276+1662;

5. Conclusion

The underlying suggestion in this paper is that indeed we have completely misinterpreted the original morphology of Niger-Congo. Far from being a CVCV structure with an segmentable prefix, a body of words

of all major classes were CVCVCV. This is most visibly retained in Dogon and Ijoid, but the underlying consonantal template can be traced in many other branches, eroded along a variety of pathways. It is indeed possible that the characteristic forms of the Niger-Congo languages with noun-class prefixes were the result of the unlicensed segmentation of original trisyllabic roots³.

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³ Just as ‘cheeseburger’ is formed from ‘hamburger’.