

FURTHER EVIDENCE
FOR
NIGER-SAHARAN
AND THE
PROBLEM OF PAN-AFRICAN ROOTS

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ABSTRACT

In a previous paper: *Is Niger-Congo simply a branch of Nilo-Saharan? pp. 83-130 in *Proceedings of the Fifth Nilo-Saharan Linguistics Colloquium*. R. Nicolai and F. Rottland (eds). Köln: Köppe Verlag.* I proposed that Niger-Congo and Nilo-Saharan formed a single macrophylum and adduced lexical, phonological and morphological evidence for this hypothesis. This paper presents further lexical evidence for this hypothesis and discusses the methods for establishing convincing cognates in the light of some recent misguided publications. However, it has also become clear in the interim that a number of the proposed common lexical items are shared with Afroasiatic and even Khoisan and therefore cannot be used as evidence for a genetic connection. This suggests that proposals for large-scale language classification in Africa may be flawed by a failure to consider the transphylic distribution of many roots. The paper gives some examples of such lexical items and argues for a more precise methodology of language classification in the light of this.

Acronyms and Terminology

I have adopted the convention for reconstructions used in the Niger-Congo volume edited by Bender-Samuel (1989), distinguishing those established by regular sound-correspondences from those derived by quick inspection of cognates. By this criterion, most major reconstructions are 'quasi-reconstructions' (inevitably). The effect of this is to translate the starred forms of various writers to hache '#'.

* Reconstruction established from complete analysis of sound-change

'Pseudo-reconstruction' established from quick inspection of cognates

Acronym	Expansion or source	Reference or language treated
A49	Abrahams (1949)	Hausa
A58	Abrahams (1958)	Yoruba
Ag	Agheyisi (1986)	Èdo
ALGCI	Mensah & Tchagbale (1983)	Gur
ALKCI	Hérault (1983)	Kwa
ALKrCI	Marchese (1983)	Kru
ALMCI	Halaoui, Tera and Trabi (1983)	Mande
B	Bender (1996)	Nilo-Saharan
B79	Bender (1979)	Gumuz
Ba	Bailleul (1996)	Bambara
Ban	Banfield (1914)	Nupe
BC	Benue-Congo	
BCCW	Williamson & Shimizu (1968) & Williamson (1973)	Benue-Congo
Be	Bertho (1953)	Dogon
Bo	Boyeldieu (1987)	Fer & Yulu
Bo93	Boyeldieu (1993)	Sara-Bongo-Bagirmi
BWK	Bernard & White-Kaba (1994)	Zarma
C	Consonant	
CB	Common Bantu	Guthrie 1967-71
Chr	Christaller (1933)	Twi
Cy	Cyffer (1994)	Kanuri
D	Dimmendaal (1988)	Proto-Nilotic
DC	Ducroz & Charles (1978)	Songhay Kaado
E	Edgar (1991)	Maba group
ES	Eastern Sudanic	
G	Greenberg (1963)	African languages
Gr	Gregersen (1972)	Kongo-Saharan

Acronym	Expansion or source	Reference or language treated
Gt	Guthrie (1967-1971)	Bantu
Jl	Jungrathmayr & Ibrizimow (1995)	Chadic
KW	Kay Williamson (p.c.)	Ijoid
LS	Lamberti & Sottile (1997)	Cushitic and Omotic
M	Mukarovsky (1976/7)	Proto-Western Nigritic [=Proto-Atlantic-Congo]
Man	Manessy (1975)	Oti-Volta
Me	Meeussen (1980)	Proto-Bantu
Mo	Moñino (1988)	Ubangian
N	Nasal	
NC	Niger-Congo	
NS	Nilo-Saharan	
P	Prost (1953)	South Mande
PB	Proto-Bantu	
PD	Proto-Daju	Thelwall, 1989
PI	Proto-Ijò	Williamson, in prep.
PM	Perrin & Mouh (1995)	Mambila
PN	Proto-Nilotic	
PNC	Proto-Niger-Congo	
PNS	Proto-Nilo-Saharan	
PWN	Proto-Western Nigritic	Mukarovsky, 1976/77
PWS	Proto-West Sudanic	Westermann, 1927
RCS	Roland Stevenson mss.	Nilo-Saharan, Kordofanian
RMB	Author's fieldwork	Benue-Congo
Sch81a	Schadeberg (1981a)	Kadu
Sch81b	Schadeberg (1981b)	Heiban Kordofanian
Sch94	Schadeberg (1994)	Kadu
V	Vowel	
Vo82	Voßen (1982)	Eastern Nilotic
Vo88	Voßen (1988)	Maa
Vo97	Voßen (1997)	Khoisan
W	Westermann (1927)	Western Sudanic [proto-Mande-Congo]

...at the time of his compilation...the desire to astonish the World by the number and variety of Languages, and to supply materials to the builders of Philological Castles in the air, based upon words, brought together, and their fancied resemblance: with this object the compiler collected words from every part of Africa, not only of Languages,, but of Dialectal Varieties of Languages, quotations from published works, or from manuscripts..

Cust (1883:27)

1. Introduction

In a previous paper ‘Is Niger-Congo simply a branch of Nilo-Saharan?’ (Blench 1995) I proposed that Niger-Congo and Nilo-Saharan formed a single macrophylum and adduced lexical, phonological and morphological evidence for this hypothesis. The present paper¹ explores two issues; additional evidence for the Niger-Saharan hypothesis and the implications for genetic classification of pan-African (or sometimes worldwide) roots. New research outside the Nilo-Saharan field has made possible more precise and wide-ranging transphylic comparison. One result of this has been the finding that a number of the proposed Niger-Saharan glosses are shared with Afroasiatic and even Khoisan and therefore cannot be used as evidence for a genetic connection. This suggests that proposals for large-scale language classification in Africa may be flawed by a failure to consider the transphylic distribution of many roots. The paper gives some examples of such lexical items and argues for a more precise methodology of language classification in the light of this.

This paper presents further lexical evidence for the Niger-Saharan hypothesis. Since the publication of the 1995 paper there have been two publications that consider the Niger-Saharan hypothesis (Bender 1996; Boyd 1997)² as well as an important unpublished study Mikkola *ined.*). The unusual assumptions underlying some of the arguments of these authors suggest that it is also essential to review how evidence is presented if this type of hypothesis is to have any credibility.

2. Setting out the evidence

2.1 Citing sources

Large-scale transphylic comparisons require large data tables, and inevitably draw on a wide range of materials. Earlier scholars, such as Westermann and Greenberg, did not cite a reference for specific lexical items and were in some cases cavalier about even giving a complete bibliography of sources. This is a long, tedious task, takes up considerable space and may have seemed unnecessary. Moreover, those who pioneer in a field need not heed the scholarly conventions of a less trustful age. But science is nothing if not about repeatability; we should be able to check the claims of historical linguists just as much as those of laboratory scientists. Language citations should therefore provide sources, and proto-languages, marked by starred forms, should be carefully evaluated. Where I have been unable to confirm other authors’ cited attestations in the data tables below these are silently omitted. A recent volume on the reconstruction of the Nostratic macrophylum provides starred forms for the various phyla proposed as members of Nostratic (Bomhard 1994). These reconstructions are, however, those of the author and their justification is nowhere published although their similarities are essential to the Nostratic hypothesis being promoted.

¹ I am grateful to the participants at the VIIth Nilo-Saharan Conference in Vienna for helpful comments on an early version of this paper. Kay Williamson was kind enough to read it before submission and suggested many helpful emendations. Lionel Bender, Bruce Connell, Didier Demolin, Chris Ehret, Mikkola Pertti, Robert Koops, Ann Storch, Anbessa Teferra, Robin Thelwall and Kay Williamson have all made available unpublished data which is incorporated into the text of the paper.

² Blench (1995) is referenced in these two sources but since neither author apparently read the paper in question their comments are of limited value and are not considered further here.

2.2 Data selectivity

A serious accusation that can be lodged against this type of exercise is that of data selectivity. There are perhaps ninety languages within Nilo-Saharan and as many as 1600 in Niger-Congo. Critics can justifiably object that it would be surprising if lexical similarities could not be found across so wide a field especially if the latitude of semantic shifts is not constrained. This is particularly the case where borrowing may be a significant factor in lexical similarities. Cloarec-Heiss (1995) has demonstrated the intensive interchange between Central Sudanic and Ubangian languages and a similar pattern occurs in NE Zaire, where Central Sudanic and Bantu are common in bilingual situations. Kordofanian and Kadu languages have interacted over a long period, while Songhay and Mande have clearly undergone significant periods of overlap (Creissels 1981), and there may well be other cases in the past now obscured by population movement.

The consequence of this is that for a root to be arguably part of the common lexical fund of Nilo-Saharan and Niger-Congo it must be demonstrated;

- a) to be at least representative of the family it is representing
- b) to be widespread across families, especially in Niger-Congo and especially in families geographically remote from Nilo-Saharan

A common but problematic practice in this area is the citation of starred forms to represent families or even phyla. If such forms are based on the intensive reconstruction of a small group of well-studied languages this may have some validity, but generally these forms are quasi-reconstructions based on rapid inspection of purported cognates, and often the source is frankly mysterious. Thus Ehret (1998) cites starred forms for proto-Central Sudanic, the source of which is unclear. Only one reconstruction of Central Sudanic has been published (Bender 1992) but Ehret does not cite this and his forms do not agree with it. Bender (1996: 131 ff.) has a section titled 'items linking N-S and N-C' where he cites a number of forms for *N-C. These eschew the two major published sources (Westermann 1927; Mukarovsky 1976-77) and list forms not recognisable to scholars of Niger-Congo. Starred forms must therefore be treated with a considerable degree of scepticism unless their pedigree is well-established³.

2.3 Semantic credibility

Nilo-Saharan is probably the most fragmented language phylum in the world whose existence is generally accepted (Blench & Spriggs 1999). Beyond this lie only geographical (Australian, Papuan) and phonological groupings (Khoisan). A consequence of this is those who attempt reconstructions have few signposts as to credible semantic shifts, and the temptation to accept their own judgements is correspondingly greater. The consequence of this is that a high order of subjectivity creeps into cognacy judgements. Some examples of frankly mysterious semantics may be seen in Bender (1996) and Ehret (1998).

Bender

77 belly, inside, liver, outside, intestines, heart

79 follow, enter, exit, hunt, chase, dance, return, rise, turn

137 earth, country, land, ashes, down, dust, mud, sand, charcoal

Ehret

583 to drip, blood, sap, cold, cataract, tear, river, dew

551 to descend, to deflate, to be asleep, to trim lamp

550 husk, shell, fur, to slide under, to shovel up, hair pulled out in
fright, tweezers, hair, feather, to remove

A persistent theme of Bender's recent work on Nilo-Saharan classification has been the contrast with Ehret (e.g. Bender 1996) but to outsiders their approach to semantics seems quite similar. With semantic spreads of this order it is easy to imagine that large numbers of proto-forms can be reconstructed. Niger-Congo scholars have historically been much more conservative, allowing very limited semantic variability and this would appear to be a formula for creating reconstructions of more than ephemeral significance. It is useful to

³ Another common problem is that the 'Common Bantu' reconstructions of Guthrie (1967-1971) are frequently cited as Proto-Bantu. Guthrie did not intend this to be the case and many of these forms are demonstrably *not* Proto-Bantu.

note, for example, that the coherence of almost none of the Niger-Congo sets established by Westermann (1927) have been questioned, although new evidence has suggested alterations to the reconstruction. This paper will maintain the practice of extreme conservatism in permitted semantic changes.

2.4 Reconstructions upon reconstructions: houses of cards

The problematic nature of starred forms cited in phylum-level reconstructions is noted in §2.2. This is compounded when such reconstructions are in turn built upon to produce an apical reconstruction. This is the case in Bomhard (1994) already noted, in Ehret (1995) and in Ehret (1998). Bender (1996) mixes individual language attestations, unsourced starred forms and morphologically analysed forms that seem to represent a common form rather than a reconstruction. This is of course acceptable if it based on published datasets; but these are missing in so many cases and we are asked to take the cited forms on trust. Without casting aspersions on individual linguists, the level of disagreement between researchers in both Afroasiatic and Nilo-Saharan reconstruction suggests that ensuring the quality of supporting evidence is paramount.

2.5 ‘Rules of engagement’

Niger-Congo is the largest and most complex language phylum on earth and satisfactory proposals both for its internal and external relationships depend on a secure grasp of the present state of its proposed subgrouping and the value of particular data sources. A feature of it that is perhaps perplexing to outside scholars is that no reliable (or indeed unreliable) list of proto-Niger-Congo reconstructions exists. Austronesianists, dealing with a phylum of nearly similar magnitude, can refer to Dempwolff (1938) or the massive electronic database maintained at Hawai’i by Robert Blust as well as databases for particular subgroups such as Polynesian, Micronesian or Oceanic. Although the details of Austronesian reconstruction remain the subject of scholarly debate, their outlines are sufficiently clear for them to be the focus of a consensus debate. But no such material exists for Niger-Congo, which presents a forest of data among which the unwary can pick and choose. It therefore seems useful to present some ‘rules of engagement’ as Benedict (1990) put it in the context of another phylum, Daic.

1. Since there are no published, justified reconstructions of Niger-Congo, any form cited should be treated with extreme scepticism. At best, such a form should be marked with # to mark ‘quasi-reconstruction’ and the * should be eschewed.
2. Most scholars consider Kordofanian to be the primary branching of Niger-Congo, but data on Kordofanian is exiguous at best and often old and/or unreliable. It is therefore unlikely that a credible Proto-Niger-Congo will appear in the near future.
3. Niger-Congo is extremely widespread and borders on all other African language phyla in a variety of socio-linguistic situations. Local cases of extreme bilingualism and hence borrowing in both directions should be treated as a likely scenario.

3. New proposals for Niger-Saharan roots

3.1 Nature of the evidence

Trawling an immense number of languages for evidence of common roots, and often building on the suggestions of previous scholars, produces datasets that are essentially lookalikes. Critics of the type of datasets presented here (or indeed in similar enterprises) often misunderstand their function. The function of listing these is to suggest that the root is worthy of further investigation, not to claim that this is a historical reconstruction of a proto-form. For a start, no researcher compiling data for so many languages can be aware of all the potential loanwords that may obscure the picture. Similarly, it is easy to establish a principle that a form should be representative of its group; but where the lexemes are diverse, the credibility of an individual citation is still an individual judgement. Schadeberg (1981a:294) in discussing Greenberg's assignment of the Kadu languages to Niger-Congo notes the problem of lexical diversity in even quite coherent linguistic groups in relation to the search for cognates.

3.2 Niger-Saharan

The following data tables represent suggestions for further investigation for possible Niger-Saharan common forms. The # forms should be treated as no more than speculative hypotheses, subject to rapid alteration.

1. #bi	child	[give birth]			
Phylum	Group	Language	Attestation	Comment	Source
NS	Kunama	Kunama	bi ⁴	beget	Gr
NS	ES	Daju Shatt	biei	small	RCS
NS	Saharan	Zaghawa	bùnù	seed	RCS
NS	Songhay	Zarma	búúnó	small	BWK
NS	Kadu	Talasa	ǂílǂa	child	Sch94
NC	Mande	Guro	bi	child	P
NC	Atlantic	Serer	bi	child	W
NC	Gur	Mǂǂore	bíí-gá /-si	child	Man
NC	Ubangian	Ndunga-le	bíá-	child	Mo
NC	Kwa	Gonja	ébí	child	Rytz (n.d.)
NC	EBC	Reshe	ú-bì/ bá-	child	BCCW
NC	WBC	Ẹḍọ	òvì	child	Ag
NC	Bantu	CB	bíad-	give birth	G

Commentary: Although these semantic shifts are widely attested in Nilo-Saharan and Niger-Congo this root remains uncertain. No trace of this root has yet been uncovered in East-Benue-Congo with the single exception of Reshe (see commentary in BCCW, I). Since the Bantu form is apparently cognate, some further distributional work is clearly required. The Mande citation for Guro is exceptional, but –bi is commonly found in Mande for ‘small’.

Ref: Gr:81; M:20a; W:207.

⁴ Not in Bender (ms.)

2. #biŋ to dance, sing, play

Phylum	Group	Language	Attestation	Comment	Source
NS	Gumuz	Sese	ḃeŋ	to dance	B79
NS	Kunama	Kunama	b ⁻⁵	to dance	Ehret (ms.)
NS	ES	Lotuxo	bal-a	to play	RCS
NS	ES	Dese	bílá	to play, dance	RCS
NS	CS	Mangbetu	nò-ḃè	pl. kù-. dance	Demolin (p.c.)
NS	Saharan	Teda	abi	pl. abea. dance	Le Cœur (1950)
NS	Kadu	Talasa	aḃála	dance	Sch94
NC	Mande	Ngain	bèō	dance	ALMCI
NC	Atlantic	Bedik	ḃulú	song	Ferry (1991)
NC	Kru	Neyo	ḃlī	sing	ALKrCI
NC	Senufo	Nabaj	vele	dance	ALGCI
NC	Ubangian	‘Dongo-ko	ḃè-	dance	Mo
NC	Kwa	Baule	âblê	dance	ALKCI
NC	West Benue-Congo	Degema	ḃene	dance, play	Elugbe (1989)
NC	East Benue-Congo	Mambila	bene	dance	PMo
NC	Bantu	PB	#ḃín	dance	Me

Commentary: #ḃin was originally proposed as an innovation by Bennett & Sterk (1977) to distinguish the non-Mambiloid Bantu languages. However, Williamson (1989b:258) noted a series of forms suggesting that it was probably BC. In both phyla this can often be the same word as ‘play’. Bender (1996:95) proposes a reconstruction #bUUŋ- that unites glosses for ‘run, go, jump, dance, descend’ but this is not adopted here.

Ref: Bennett & Sterk (1977); Ehret (ms. 279); Williamson (1989b:258); Bender (1996:95)

3. #ḃwoN come

Phylum	Group	Language	Attestation	Comment	Source
NS	ES	proto-Daju	*ḃoN		RCS
NS	ES	proto-Nilotic	*ḃun	pl. *pɔ	D
NS	ES	Nuer	ben		RCS
NS	ES	Padang Dinka	ḃo		RCS
NS	ES	Mabaan	beed		RCS
NS	Fur	Fur	bo-	reach	Jakobi (1990)
NC	Mande	Guro	ḃo ⁺		ALMCI
NC	Atlantic	Serer	bya		W
NC	Ijọ	Proto-Ijọ	*ḃó		KW
NC	Dogon	Ireli	ve		Be
NC	Gur	Deg	bà		ALGCI
NC	Adamawa	Waja	ba-		Kleinewillinghöfer (1991)
NC	Kwa	Twi	bà		Chr
NC	WBC	Igbo	-bia		Williamson (1972)
NC	EBC	Tarok	ḃá		RMB
NC	EBC	Pe	bén		RMB

Commentary: Westermann (p. 209) noted that this word frequently shows up as a future auxiliary in Niger-Congo languages. Dimmendaal (1988:35) notes that the irregular plural *pɔ must be reconstructed to PN and forms with initial p- do appear elsewhere, hinting at a still greater time-depth. Palatalisation is scattered throughout Niger-Congo but nowhere forms a consistent pattern. Also in Chadic: Yiwom **bèl**, Kulere **bo**, Tsagu **bàà**, Tera **ḃa**.

⁵ Not in Bender (ms.)

Ref: Ehret (1998) 283; W:209

4. #deŋ- to cut, split

Phylum	Group	Language	Attestation	Comment	Source
NS	ES	Maasai	a-dúŋ		RCS
NS	ES	Nuer	daäk	split	RCS
NS	CS	Sara Ngambay	táⁿ	spit	Bo93
NS	Maban	Aiki	dèm	cut	E
NS	Kadu	#PK	#deŋ		Sch94
NS	Saharan	Kanuri	ré-	split	Cy
NC	PWS		#tèN		W
NC	Kru	Koyo	dè		ALKrCI
NC	Gur	Deg	téŋó	cut	ALGCI
NC	Ubangian	Ngbaka	dē	with axe	Mo
NC	Benue-Congo	Cara	tēm	cut down	RMB

5. #-fil- rat/mouse

Phylum	Group	Language	Attestation	Source
NS	Kunama	Kunama	fii'lá	Bender (ms.)
NS	ES	Nera	fe	RCS
NS	Kadu	Krongo	ní-fi	Reh (1985)
NC	Kru	Tepo	plē	ALKrCI
NC	WBC	Edo	ò-fé	Ag
NC	WBC	Igbo Etit	ó-pà	Williamson (p.c.)
NC	EBC	Buru	è-fyìn /e-fyín	Koops (p.c.)

Commentary: Discussed by Greenberg (1963:156) under 'mouse'.

Ref: G:156

6. #kVnV one

Phylum	Group	Language	Attestation	Source
NS	Kuliak	Ik	kən	Heine (1975)
NS	Berta	Berta	kìllíŋ	Bender (1989)
NS	CS	Fer	kàl	Bo
NS	CS	Mangbetu	kànà	Demolin (p.c.)
NS	ES	Temein	kíḍoŋ	RCS
NS	ES	Tama	kwur	RCS
NS	ES	Maiak	kèl	RCS
NS	Saharan	Zaghawa	lakò	RCS
NS	Kadu	Mudo	kóttək ?C	Sch94
NC	Mande	Bambara	kélén	Ba
NC	Atlantic	Diola-Fogny	yekon	Carlton & Rand (1993)
NC	Ijò	P-Ijoid	*kàní	KW
NC	Ubangian	Nzakara	kìlí	Mo
NC	Kwa	Twi	èkɔ	Chr
NC	BC	Fyem	kèŋ	Nettle (1998)
NC	BC	Gaa	akina	RMB

Commentary: Not identified by Westermann, but proposed in Armstrong (1964:52) and expanded in Williamson (1989b:255) for Benue-Congo.

Ref: Armstrong (1964:52); Williamson (1989b:255);

7. #kui die, kill

Phylum	Group	Language	Attestation	Comment	Source
NS	CS	Fer	kùr	death	Bo
NS	CS	Sara Ngambay	kui	die	RCS
NS	Fur	Fur	kusa	die	Beaton (1968)
NC	Mande	Ligbi	kpã	kill	W
NC	Kru	Dida	kú	die	Ma
NC	Senúfo	Fodonon	kpóo	kill	ALGCI
NC	Senúfo	Palaka	ku	kill/die	ALGCI
NC	Ubangian	Sango	kúi	die	Mo
NC	Kwa	Ewe	kú	die	Ro
NC	BC	Yoruba	kú	death	A58
NC	BC	PB	kú	death	Me

Commentary: Alternations between velar and labial-velar occur in Mande, Gur and Ubangian (see W:236). See also commentary under 13. #wu. Williamson (p.c.) expresses a doubt as to whether these two roots are really distinct as it is conceivable that the velar regularly weakens to w- independently.

Ref: Armstrong (1964:55); Gr:84; M:325; Mikkola (ined.); W:237

8. #la buy, sell

Phylum	Group	Language	Attestation	Comment	Source
NS	Kunama	Kunama	-taa	buy	RCS
NS	Maban	Maba	rak-	buy	RCS
NS	ES	Nera	tol, dol	buy, sell	RCS
NS	ES	Murle	taal/a	buy	RCS
NS	ES	Nyimang	ɬàɬi	buy	RCS
NS	CS	Bagirmi	ndug ^w o	buy	RCS
NS	Fur	Fur	-la	buy, sell	Beaton (1968)
NS	Saharan	Zaghawa	là	buy	RCS
NS	Songhay	Kaado	dêi	buy	DC
NC	Kordofanian	Katla	la	buy	RCS
NC	Mande	Mwa	lo	sell	P
NC	Ijoid	PI	*dèrri	sell	KW
NC	Kru	Guéré	dē	buy	ALKrCI
NC	Gur	Mõõre	dà	buy	Man
NC	Kwa	Avatime	dà	sell	ALKCI
NC	EBC	Yoruba	rà	buy	A58
NC	BC	CB	#dand-	buy	Gt

Commentary: There are clear traces of nasalisation or a nasal in C₂ position at the level of Benue-Kwa. Mande forms have back vowels throughout but otherwise show the same alternations between l/d that characterise other branches of Niger-Congo.

References: Gr:81; M:91; W:248

9. #nyiN-		to give				
Phylum	Group	Language	Attestation	Comment	Source	
NS	Maban	Maba	nyo-k	gift	E	
NS	Fur	Fur	aní	give!	RCS	
NS	ES	Nera	nin		RCS	
NS	ES	Didinga	nya		RCS	
NS	Saharan	Teda	nin-		Le Coeur (1950)	
NS	Songhay	Zarma	nó		DC	
NS	Kadu	Talasa	ná		Sch94	
NC	Mande	Mwan	nāā		ALMCI	
NC	Atlantic	Balanta	nyaha		M	
NC	Kru	Wobe	ɲé		ALKrCI	
NC	Kwa	Ewe	na		Ro	
NC	BC	Igbo	-nyé		Williamson (1972)	
NC	BC	Buji	nyaka		BCCW	
NC	BC	Okoyong	ɲaŋ		BCCW	

Commentary: Many scattered forms also with initial n- and ɲ-, especially in Benue-Congo.

Refs: B:96; BCCW,I:45; G:139; Gr:81; PWN:398; PWS:259

10. #paɲa		moon				
Phylum	Group	Language	Attestation	Attestation	Comment	Source
NS	Koman	Uduk	ape		àppéé (Ehret)	Bender (1983)
NS	Maban	Masalit		áyè	? C	E
NS	ES	Kakwa	yápà			Vo82
NS	ES	Maasai	ol-ápà			Vo88
NS	ES	Mabaan	paan			RCS
NS	CS	Baka	pɛ⁺			Brisson (1975)
NS	CS	Yulu		ɲɛɛp		Bo
NS	Songhay	Kaado	hàndù		?C	DC
NC	Kordofanian	Moro	u-βwa /n-		?C	Sch81b
NC	Atlantic	Bullom	i-pan			W
NC	Kru	Bete		nape		ALKrCI
NC	Gur	Kulango	ɲɲɔ			ALGCI
NC	Ubangian	Mbanza		ɲéɲi		Mo
NC	Kwa	Ebrie	pè			ALKCI
NC	WBC	Kupa	ɛpa			RMB
NC	EBC	Horom	u-fel			RMB

Commentary: Westermann (276) reconstructs this for PWS (proto-Atlantic-Congo on his evidence) as #**pian-**. In both Nilo-Saharan and Niger-Congo forms corresponding to #**ɲVpV-** recur; these are listed in second column. Either these represent independent inversions of the syllables or else they represent an old variant derived through compounding. The Eastern Nilotic forms strongly suggest a reconstruction with initial l-; Voßen (1982:395) proposes ***-lʷapatʷ-**, but this may arise through the incorporation of the determiner into the stem (see cognate Maasai form). Although common in East Benue-Congo there appears to be no corresponding PB form.

Ref: Ehret (1998) 444; Gr:85; W:276

11. #-shishi	sand				
Phylum	Group	Language	Attestation		Source
NS	Kunama	Kunama	ʃɪŋʃa		RCS
NS	Koman	Uduk	asib		RCS
NS	Berta	Undu	ʃééʔè		RCS
NS	ES	Birgid	ʃeeʃi		RCS
NS	ES	Gaam	sasáá	Bender and Ayre (1980)	
NS	ES	Bari	sese		RCS
NS	CS	Fer	wísā		Bo
NS	CS	Kenga	késé		RCS
NS	Kadu	Yegang	sések		Sch94
NS	Saharan	Teda	aneʃe	Le Coeur (1950)	
NC	Ubangian	Mbanza	záŋ		Mo
NC	Kwa	Ga	ʃía	Kropp-Dakubu (1973)	
NC	EBC	Horom	ʃiʃal		RMB
NC	EBC	Tarok	ashíshirí		RMB
NC	EBC	Pe	aʃiʃei		RMB
NC	EBC	Gaa	aʃemʃemta		RMB

Commentary: The absence of a Bantu form is somewhat surprising. The similarity of forms may include a phonaesthetic component.

Ref: B:93

12. #soN-	snake	(generic)			
Phylum	Group	Language	Attestation		Source
NS	Koman	Koma Ciita	zo		RCS
NS	CS	Lendu	su		RCS
NS	ES	Nyimang	sòm		RCS
NS	ES	Nera	woso		RCS
NC	Mande	Bambara	să		Ba
NC	Atlantic	Wolof	jaan	Munro & Gaye (1991)	
NC	Ijoid	Nkoro	ásákí		KW
NC	Kru	Dewoin	sewe		ALKrCI
NC	Adamawa	Mumuye	sókɔ	Shimizu (1983)	
NC	WBC	Nupe	etsù		Ban
NC	EBC	Kambari	ʒ̀'úsò	Hoffmann (1965)	
NC	EBC	Abinsi	bu-su		BCCW
NC	EBC	Yamba	sòŋ		BCCW

13. #wu(Ru)		kill, die				
Phylum	Group	Language	Attestation	Comment	Source	
NS	Koman	Uduk	wu	kill	Beam & Cridland	
NS	ES	Debri Nubian	wur-	kill	RCS	
NS	Fur	Fur	wi	wi	B	
NS	Songhay	Kaado	wí	kill	DC	
NC	Atlantic	Bullom	wu	die	W	
NC	Dogon	Humbebe	wɔ	kill	Be	
NC	Kru	Oubi	wɔlo	kill	Ma	
NC	Ubangian	Langbasi	wo	kill	Mo	
NC	Kwa	Ewe	wù	kill	Ro	
NC	BC	Nupe	wu⁺	die	Ban	
NC	BC	Takum Jukun	wu⁺	die	Welmers	

Commentary: See also 7. 'kill'. Gregersen (1972:84) puts together a number of Nilo-Saharan roots that seem to be unconnected with #wu(Ru). The vowel shift u~i seen in Songhay is also attested in Niger-Congo e.g. Bullom **wu** against Kissi **wi**. Westermann collates #wu- roots separately from #ku roots but puts them under a reconstructed #gu-. It seems that more likely that #wu- is a distinct root and that forms with g- are simply part of the larger set #ku-. However, independent weakenings are also possible (see comment under 7.). No convincing Proto-Bantu reconstruction has been proposed linked to #wu-.

Refs: Armstrong (1964:55); B:156, 185; Gr. 84; M. 325; W. 225

4. Pan-African roots

Some of the lexical items presented in Blench (1995) as evidence for Niger-Saharan turn out to have a still wider distribution in Africa. Examples are #kulu 'skin, hide', #kulu 'knee', #kuru 'tortoise, turtle'. Blench (1997) argued that the similarity in form of these widespread roots was no accident but rather a result of as yet only partly understood phonaesthetic processes. Whatever the explanation, the consequence is that such roots do not constitute evidence for the existence of a macrophylum and should only be used in lexical reconstruction in tightly controlled circumstances.

It is important to emphasise that not all words with a transphylic distribution in Africa belong to a marked conceptual set or have an evident phonaesthetic element. The tables presented in this section represent some preliminary datasets intended to identify common forms encountered in the search for Niger-Saharan roots.

14. #keri to split, cut, break

Phylum	Group	Language	Attestation	Comment	Source
NS	Kuliak	Ik	ṅûr	break, cut (?C)	Heine (1975)
NS	Koman	Uduk	kwal	split	Bender (1983)
NS	Berta	Undu	‘kíírà	split hard substance	RCS
NS	ES	Dongola Nubian	gor	cut grass	RCS
NS	ES	Nyimang	kír	cut	RCS
NS	Fur	Fur	karr-	split	Jakobi (1990)
NS	Saharan	Daza	kør	cut	Le Coeur (1950)
NS	Songhay	Gao	körtù-	tear, split	BKW
NC	Mande	Bambara	kárí	cut	Ba
NC	Kru	Nyabwa	cei	cut	ALKrCI
NC	Ubangian	Ndunga-le	-kèlé-	cut	Mo
NC	WBC	Yoruba	ǰá	slash	A58
NC	WBC	Ọ̀ṣiṣa Igbo	-cà	cut	Williamson (1972)
NC	WBC	Nupe	sá	cut	Ban
NC	EBC	Tarok	ca ⁺	break, cut	RMB
NC	EBC	Hone	káp	break (stick)	Storch (p.c.)
AA	Agaw	Bilin	kør	break	LS
AA	South Cushitic	Dahalo	k’eer-	chop	LS
AA	Central Cushitic	Arbore	k’uur-	cut	LS
AA	Chadic	Ngas	can	but	JI
KS	Central	Proto-East Khoe	*kade	cut flesh in strips	Vo97

Commentary: This word has almost certainly been loaned very widely in Africa. The occurrence in Chadic is almost certainly a very localised loan, but in Cushitic and Omotic these forms are very widespread (see examples under **k’er** ‘split’ and **kaal-ta** ‘axe’ in Lamberti & Sottile 1997:411, 435).

Ref: B: 133; Gr:80; G:97, 135, 154

15.#kulu ‘skin, hide’

Phylum	Family	Language	Attestation	Comment	Source
NS	Kunama	Kunama	agala		RCS
NS	ES	Nuer	kul		RCS
NS	ES	Murle	kween		RCS
NS	Saharan	Teda	koro-ta	Le Coeur (1950)	
NS	Songhay	Songhay	kúurú		DC
NC	Mande	Kpelle	kòlò	Creissels (1981)	
NC	Atlantic	Gola	koro		W
NC	Kru	Kuwaa	kū̀	ALKrCI	
NC	Ubangian	Mundu	kòndò		Mo
AA	Chadic	Tala	kuur		JI
KS	Central	Naro	khò		Vo97

Commentary: Greenberg (1963:21) initially identified this root for Niger-Congo. He later (p. 157) quotes Krongo, but his form does not correspond to that in Reh (1985) which is not evidently cognate. Creissels (1981:316) points out the Songhay cognate adds further citations for Niger-Congo. Blench (1997) represents a preliminary compilation of this gloss for Africa.

Refs: (C.:316,G.:21,Gr.:84, N.:93)

16.#kulu	knee					
Phylum	Family	Language	Attestation	Comment	Source	
NS	Shabo	Shabo	hutu/kutti		Teferra (p.c.)	
NS	Kuliak	Ik	kutuŋ		Heine (1975)	
NS	Koman	Kwama	dugol		RCS	
NS	Berta	Berta	guʃuŋ		RCS	
NS	Kunama	Kunama	tùgà	?C	Bender (ms.)	
NS	Maba	Mesalit	kàdǐjó		E	
NS	Fur	Fur	kùrù		Jakobi (1990)	
NS	ES	Kenzi	kur(ti)		RCS	
NS	CS	Mangbetu	nè-káátì	pl. è-	Demolin (p.c.)	
NS	Saharan	Beria	kurru		G	
NS	Kadugli	Katcha	kúúgé	pl. nu-gúúgi	Sch94	
NC	Kordofanian	Tima	kuruŋa		RCS	
NC	Ubangian	Yakoma	li-kǔrǔ		Mo	
NC	Kwa	Ewe	kòlí		Ro	
NC	Bantu	*PB	-kónò	leg	Me	
AA	Omotitic	Wolaytta	gulba-ta		LS	
AA	Cushitic	*PC	*gulb-/*gwilb-		Ehret (1987:24)	
AA	South Cushitic	Dahalo	gilli		LS	
AA	Agaw	Bilin	gərəb		LS	
AA	Chadic	Sukur	kırım		JI	
AA	Chadic	Tera	xulukti		JI	
KS	Southern	!Xóǒ	g xúǔ		Traill (1994)	
KS	Central	Kxoe- / Anda	kúdù		Vo97	
KS	Central	Shua-Cara	(kú)kúdù		Vo97	
KS	Northern	Jul'hoan	g!xòà		Dickens (1994)	

Commentary: A preliminary version of this dataset appears in Blench (1997). Gregersen (1972) treats these as two distinct sets for 'leg' and 'knee' but they are probably to be put together and the more doubtful cognates discarded. Bender (1996:133) pursues linkages that includes a purported PNC root ***k^hon** for 'knee' and brings in Mende **kon** 'head' because the 'knee as head of the leg'. This analysis is not used here.

Refs: (B:133; B81:261, Gr.:82,84, G.:101,123, M.:II:223)

17.#kuru	Tortoise, turtle		Attestation		Gloss	Source		
Phylum	Family	Language						
—	Sandawe	Sandawe	kʰú	rú	tortoise	Sands p.c.		
—	Hadza	Hadza	k'õ	ló	tortoise	Sands p.c.		
—	Hadza	Hadza	k'ú:		turtle	Sands p.c.		
—	Laal	Laal	kú		<i>petite tortue</i>	Boyeldieu ms.		
NS	Koman	Kwama	k'	u	kif	RCS		
NS	Songhay	Songhay	ń	kúú	á	small tortoise	BWK	
NS	Saharan	Kanuri	kó	ro	wú	tortoise	Cy	
NS	Maba	Maba	fa	k	ruu	n	tortoise	E
NS	Surmic	Didinga	bo-	ko	l		tortoise	RCS
NS	ES	Dinka	le-	ku	r		tortoise	RCS
NS	CS	Asua	ùn	gú	lú		tortoise	Demolin (p.c.)
NS	CS	Ma'di	o	kù			tortoise	RCS
NS	Kadu	Krongo	-kó	ò	ŋ (ní-)		tortoise	Reh (1985)
NC	Kordofanian	Masakin	(k)ə	rə			tortoise	RCS
NC	Mande	Yaure	kú	lú			tortoise	ALMCI
NC	*PWN		-	lu			tortoise	M
			kwú					
NC	?	Pre	k	ru	wɛ		tortoise	Creissels (p.c.)
NC	Senufo	Nabaj	xu	ru			tortoise	ALGCI
NC	Ubangian	Geme	kú	lō			turtle	Mo
NC	Kwa	Mbatto	ómó	k	rō	ɛ̃	tortoise	ALKCI
NC	Kwa	Ewe		k	lo		tortoise	Ro
NC	WBC	Işekiri	ólu	kú	rú	mè	tortoise	BCCW
NC	EBC	Doka	a-	ku	l		tortoise	BCCW
NC	Bantu	CB		kú	dù		tortoise	Gt
AA	Cushitic	Burji		ko		c'áa	tortoise, turtle	Sasse (1982)
AA	Beja	Beja	se	ku	ur		tortoise	Hudson (n.d.)
AA	W. Chadic	Hausa	kùŋ	ku	ruu		tortoise	A49
AA	W. Chadic	Mwaghavul		kú	r		tortoise	JI
AA	C. Chadic	Huba	kwà	kú	rù	m	tortoise	Kraft (1981)
AA	Masa	Lame		gù	rè	i	tortoise sp.	Sachnine (1982)
AA	E. Chadic	Toram	kùn	gù	rù		turtle	Jungraihtmayr (p.c.)
AA	Berber	Kabyle	tafe	k	ru	rt	tortoise	Dallet (1982)
KS	North	Auen		!gu	ru		tortoise-shell	Bleek (1956)
KS	Central	Naro		_go	e		tortoise	Traill (1986)
KS	Central	Mohissa		cu	ru		tortoise	Bleek (1956)

Commentary: The diversity of the forms attested may reflect the fact that different species may have compound names (see the Kanuri and Aiki forms).

Refs: (C.:321, Gr.:88, G.:159)

18.#kala	crab	Phylum	Family	Language	Witness	Source
—			Hadza	Hadza	goma:	Sands (p.c.)
NS			C. Sudanic	Mbay	kó-bàr	Keegan (1997)
NC			Mande-Congo	PWS	-ka(l)-	W
NC			Unclassified	Pre	kamu	Creissels (p.c.)
NC			Atlantic	Temne	a-kara	W
NC			Ijoid	Nembe	à-kàngà	Kaliai (1964)
NC			Gur	Mõõre	gará-ga	Canu (1976)
NC			Kwa	Ewe	à-gálà	Ro
NC			WBC	Nupe	kara⁺	Ban
NC			Mambiloid	Mambila	kaab²¹	PM
AA			W. Chadic	Hausa	ƙáágwáá	A49
AA			C. Chadic	Mafa	tsakaɓam	Barreteau & Le Bleis (1990)

Commentary: Westermann (1927:230) considered ‘crab’ to be Proto-West Sudanic and proposes a root of the form -ka(l)-. Mukarovsky (1976:144) adds further Niger-Congo cognates. The Niger-Congo roots are discussed in Williamson & Shimizu (1968:92).

Refs: M:144; W:230

The interest of ‘crab’ is that it appears to have truly worldwide cognates (Blench 1997). The table below sets out some attestations and reconstructions that have been proposed for ‘crab’ in Old World language phyla.

Phylum	Family	Language	Witness	Source
Japonic		Modern Japanese	kani	
Altaic		Modern Korean	ke	
Austroasiatic	Proto-Mon-Khmer		*kə(n)taam	Diffloth (1994)
	Proto-North Bahnaric		*katam	Smith (1972)
Austronesian	Proto-Austronesian		*kaRang	Mahdi (p.c.)
	Proto-Nuclear		*karika	Marck (p.c.)
	Micronesian			
Andamanese	Great Andaman	Aka Biada	kátta-da	Portman (1887:22)
	Little Andaman	Onge	tekandue	Dasgupta & Sharma (1982)
Sino-Tibetan	Proto-Tibeto-Burman		*d-ka'y	Benedict (1972:25)
Dravidian	Common Dravidian		kup(p)i	Burrow & Emeneau (1984:158)
Indo-European		Greek	karkinos	
Basque		Basque	karramorro	Trask (p.c.)

5. Conclusions

Evidence presented here further increases the likelihood of the Niger-Saharan hypothesis reflecting some facet of historical reality. Nonetheless, it also underlines a pervasive problem in historical linguistics, the impossibility of searching all external languages for cognates and the interpretation of such cognates if discovered. It is clear that some roots occur widely across the world’s language phyla and that these either have a phonaesthetic source or reflect some deep historical relations as yet little suspected. There appear also to be Pan-African roots, scattered across African language phyla, whose sources are difficult to discern and which cannot therefore be used in the identification and classification of individual phyla. Some of these lexical items have been commonly cited in classificatory studies, and this therefore casts doubt on the volume of evidence supporting any given hypothesis.

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