

Should Kordofanian be split up?

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1. Introduction

Kordofanian is conventionally defined as four groups of languages spoken in the Nuba Hills of Kordofan, southwest of Khartoum in the Sudan (Schadeberg 1989). The inclusion of Kordofanian within Niger-Congo (Greenberg 1963:149 ff.) has scarcely been questioned, although Greenberg (1972:190) later said that ‘grammatical’ features had played a great role in this classification. He says, ‘It is not too much to state that in at least one instance, that of Niger-Kordofanian, grammatical resemblances were treated as more decisive than lexical ones’. In modern terms, Greenberg relied more on a typological feature than on, for example, cognate lexicon. The sources of much of Greenberg’s data were the studies of Nuba Hills languages by Stevenson (1956-7, 1962-4). Stevenson included one group of languages *not* generally considered to be Kordofanian today, the Kadu languages [=Tumtum, Kadugli-Krongo].

This is often thought to set the seal on their classification as part of Niger-Congo despite the sceptical view expressed by Schadeberg (1981a:7) who apparently regarded the issue as far from settled. Schadeberg says, ‘Greenberg’s affiliation of Kordofanian with Niger-Congo has ... never been seriously challenged. Such reticence seems wise in view of the paucity of our knowledge about these languages and their relationships’. In the same year as Schadeberg (1981a,b) published two documentary volumes on Heiban and Talodi, Schadeberg (1981c) argued in print that Kadugli-Krongo [now referred to as Kadu] be excised from Niger-Congo and assigned to Nilo-Saharan. Schadeberg (1981d:123), later reprised in Schadeberg (1989), also provided a more comprehensive overview of Kordofanian, in particular setting out a table of correspondences between Kordofanian affixes and those occurring in other branches of Niger-Congo.

The morphological feature of Kordofanian that justifies its assignment to Niger-Congo are its alternating C(V) prefixes and alliterative concord, characteristic of much of Niger-Congo (Williamson 1989; Williamson & Blench 2000). Clearly this is not entirely satisfactory, since the Kaalak-Domurik [=Katla-Tima] and part of the Rashad group lack such affixes. It is usually argued that these must have been lost subsequent to the breakup of proto-Kordofanian, though proof for this assertion is singularly lacking. However, Kadu also has functioning prefixes (which resemble Talodi) is cut loose then the argument becomes considerably weakened. Either the Kadu prefixes (Dafalla 2000; Blench 2006a; Gilley this volume) are borrowings or they are chance resemblances. What seemed to be a genetic argument is now seen to be merely typological.

Related to the question of Niger-Congo affiliation is whether there is good evidence for the unity of Kordofanian; do the four families usually recognised really form a single branch of Niger-Congo and are there actually four families? One of the unproven assumptions in the literature is that Kordofanian, with or without Kadu, forms a coherent group. Schadeberg (n.d.) in an unpublished conference handout, presents a limited dataset, although none of the examples presents a common lexical item covering all four putative branches. This unity does not follow from Greenberg's lists, which show a set of overlapping lexical items including Kadu, rather than a series of distinctive innovations that conjoin all four branches of Kordofanian. To turn Schadeberg's argument around, look-alikes can be found if you search hard, but are these true cognates? Neither Greenberg nor Schadeberg cite a convincing shared innovation that links the four groups and indeed, the extensive borrowing in the Nuba Hills area makes it difficult to find lexical items that are not shared by neighbouring Nilo-Saharan languages such as Kadu, Nubian, Nyimang and Temein. At least three possibilities need to be considered;

- ❖ Kordofanian languages do form a group
- ❖ Kordofanian languages do not form a group, and observed similarities are due to intensive borrowing
- ❖ Some groups are related, other not. For example, Heiban and Talodi may be related, but Kaalak-Domurik might be essentially independent

The links between the nominal affix systems of Heiban and Talodi look credible and for the present, the likelihood that these two families are related is accepted. Schadeberg (n.d.) highlights the similarities between the nominal prefixes in Rashad and the Talodi languages.

An outstanding query concerns the affiliation of the language known as Lafofa or Tegem, which is grouped together with a little-known language spoken at El amira. The affiliation of Tegem-Amira is considered in §4.

2. Excursus on method

Our understanding of the place of the Kordofanian languages within Niger-Congo is intimately linked to our broader models of Niger-Congo. Previously Niger-Congo has been assumed to have small number of subgroups, largely using categories defined by Westermann and Greenberg. More and more these are turning out to be the products of 'lumping', of assuming geographical groupings and discounting the effects of contact. The dismemberment of Atlantic is an obvious consequence, but Ubangian is also clearly a construct with no validity. Individual languages such as Bijogo, Ikann and Fali simply do not fit within previous assumed groupings. It is almost certain that Niger-Congo

presents a much more spiky ‘tree’ than previously assumed. But a tree is still a useful working hypothesis, if mediated by the recognition of extensive language contact and dialect chain diversification. Language phyla exist within history, and migration and diversification are driven by climatic factors, change in resource availability and technological innovation.

Importantly, innovation, lexical, phonological and morphological, marks subgroups and nodes in the evolution of any language phylum. Broadly speaking, there is a relatively small body of features that we can assign to a hypothetical proto-Niger-Congo, because they would have to be attested in every major branch to be credible. If, for example, a variety of Niger-Congo branches do not appear to have noun classes or any trace of their former presence, we cannot reasonably assign noun-classes to the proto-language. A similar argument applies to verbal extensions. These are innovations that define particular nodes partway through the evolution of the phylum. The body of roots that can genuinely be attested in proto-Niger-Congo is quite small, but increases as we consider branches that split away more recently. Hence we can assign more than a thousand roots to proto-Bantu, but many fewer to proto-Benue-Congo. If we want to assess the likelihood that a group of languages split from the main tree at a particular stage, then we need to know what common lexicon it shares with which other branches. This requires the compilation of extensive data tables for the whole phylum. If the claim were, for example, that Kaalak-Domurik shares a special relationship with Benue-Congo, then we would expect phonological and lexical innovations to show this¹. If the only such shared features are also attested elsewhere in Niger-Congo, including in languages which share much less of the common roots that can be identified for Benue-Congo then the hypothesis must be discarded in favour of a weaker claim.

The core of the argument of this paper is contained in a series of data tables in the Appendices, which show cognates between the various branches of Kordofanian considered in this paper and the larger set of Niger-Congo roots. Evidently this is an enormous body of data and only a sample is given here, focusing on body parts. A second Appendix is given showing the particular links of Lafofa with Niger-Congo which illustrate its particular situation. The Kordofanian data depends heavily on the unpublished wordlists of Roland Stevenson, a catalogue of which is given in Blench (1997). The originals of all Stevenson’s materials are lodged with the UCLA library. Sources are given in abbreviated form.

¹ For example, Kaalak and Domurik (Hellwig, Schneider-Blum this volume) have extensive but very different systems of verbal extensions. Until we have a convincing reconstruction of the proto-system, it is difficult to see how they can be compared to a highly disputed Benue-Congo.

3. Kordofanian families

3.1 Rashad-Kalak-Domuril

3.1.1 The Rashad group

The Rashad languages consist of two major clusters, Tagoi and Tegali. One of the Tegali languages, Tumale, was early studied by Karl Tutschek and his materials were published by his brother Lorenz (Tutschek 1848, 1848-1850). Meinhof (1915-1919) also contributed a series of studies of languages in both subgroups and Stevenson (1962-4) an overview. Schadeberg & Elias (1979) compiled a study of Orig from the posthumous notes of Fr. Muratori. The Rashad languages are subdivided into dialects as follows (**Table 1**);

Table 1. The Rashad group

	Dialect name	Common name
Tegali	Gom	Rashad
	Tegali	Tegali
	Umale	Tumale
Tagoi		Kajakja
	Goy	Tagoi
	Orig	Turjok
		Moreib

Schadeberg (1989:70) notes that there may be other lects spoken on adjacent hills. No reports of the status of these languages following the displacements of the Civil War in Sudan exist at present.

Unusually, the two groups are differentiated by the presence and absence of noun-classes (Stevenson 1962-4). Orig has a rich array of alternating prefixes, suffixes of uncertain function and concord (Schadeberg & Elias 1979). Despite this, the Rashad languages have a distinctive common lexicon and are fairly obviously closely related. Stevenson (1962-4:85) proposes some glosses common to the Rashad and Tagoi languages and these are expanded in Table 2;

Table 2. Rashad-Tagoi noun comparisons

Gloss	Rashad		Tagoi	
	sg.	pl.	sg.	pl.
Nouns				
ashes	ɲuri	-ndɛ	ɲiɲɔr	
bird	uɖɛn	-e	w-uɭ	y-uɖ-ɛn
breast	mɪn	-e	ɭ-əmin	ɲ-
drum	ildaɲ	ildaɲ-ɛ	k-ildaɲ	h-aldaɲ-it
egg	yé	-ndɛ	-iyé	ɲ-

eye	giṭ	giḍe	yi-gíṭ	ḡə-
fire	ibé		k-ibe	h-
foot	ékán	-ende	ṭ-ekan	ḡ-
grain-basket	ɔre	-nde	w-ɔre	yɔri-ɔn
hair	aam		k-aam	h-aam
hand	ḡən	-ε	c-ḡín	ḡ-
heart	úre	-nde	y-ur	ḡ-ur-εṭ
leaf	ṭáj	-ε	k-adáj	h-
star	lɛɲ	lɛɲ-ε	t-ɛlɛɲ	ḡ-ɛlɲ-ɔt
tooth	ɲin	-e	ṭ-ɲin	y-
Verbs				
to bite	keyá		keyá	
to die	unieke		kəniəkó	
to go	nde		nde	

Source: Blench extracted from Stevenson mss.

The table focuses on nouns because these are a key element in the analysis of Rashad morphology, but sample verbs are included to underline the lexical closeness of the two groups.

The possible explanations for this situation are discussed in Schadeberg (1989:76). Meinhof (1915-19:71-72) considered that the clusters were unrelated and similarities were thus due to massive borrowing. Both Stevenson (1962-4:86) and Tucker & Bryan (1966:270) considered the class-prefix system must have been borrowed, ‘adopted’ in their term. Alternatively, the nominal classes of Tagoi were the ‘original’ system and Rashad simply lost them as Greenberg (1963) and Schadeberg (1989:77) suppose.

There is something rather unsatisfactory about this explanation for several reasons. The first is that the purported former noun-prefixes of Rashad appeared to have vanished leaving no trace, either tonally or segmentally. Second, many Rashad nouns still have non-productive, non-concordial suffixes, which look like the plural markers of Tagoi. It does look, as Stevenson (1962-4:86) says, that ‘the class prefixes were a later acquisition by the Tagoi subgroup’. Schadeberg (1989:77) argues that ‘such borrowing of a whole noun class system –if it exists at all (cf. Mbugu!) – is extremely rare’. But there is increasing evidence that languages can rebuild noun-class systems under the influence of persistent bilingualism with an outcome that does not closely resemble existing neighbour languages. Two examples with the Niger-Congo domain are Gade (the only language within Nupoid to have a complete nominal affix system) and Usaghade (a similarly exceptional language within Lower Cross (Connell 1994). These languages are neighbours to noun class languages but their actual systems cannot be said to be

borrowed. Rather they have built these systems via contact and persistent bilingualism. Rashad may thus be another example of the same process.

The other aspect of this is that both the prefixes and suffixes of Tagoi (especially Orig where the documentation is more extensive) look suspiciously like Nilo-Saharan number markers and extremely unlike characteristic Niger-Congo nominal affix pairings. Orig, for example, typically has a –Vt- plural suffix (Schadeberg & Elias 1979: 16) found in many branches of East Sudanic (cf. Blench, this volume for Temein). Here is their summary of alternating Orig prefixes (Table 3);

Table 3 . Orig nominal prefixes

Singular	Plural
w ↘	
labial	y
t ↗	
y	ŋ
k	s
ʃ[c]	ɲ

Many of these are common in regional languages, although not organised in this systematic way. Singulatives in t- are frequent in Kadu, Temein (e.g. Gilley this volume) as well as in Talodi-Masakin and Tegem. k- is found as a plural prefix in Kadu but as a singulative marker in Temein cluster languages and Talodi. The ʃ- and s- prefixes resemble those in Masakin (e.g. *s-ame /m-* ‘blood’). A Rashad noun with no prefix corresponds to a Masakin noun with a sV- prefix (Rashad *ndok* ‘neck ~ Masakin *se-ndak*). The y- plural prefix is typical of Domurik (Table 6). Tagoi languages seem to have built up a composite system from the fragmentary morphology of neighbouring languages, presumably through bilingualism with a language which does have an original noun-class system; Masakin is the obvious candidate.

3.1.2 The Kaalak-Domurik (Katla-Tima) group

The Kaalak-Domurik (K-D) [Katla-Tima] languages are spoken some fifty miles southwest of Dilling in the Katla Hills. Table 4 shows the reference and alternate names of these languages.

Table 4. The Kaalak-Domurik languages

Reference Name	Alternate names
Kaalak	Katla
Julud	Katla dialect
Domurik [dò-mùrík]	Tima, Lomorik, Lomuriki, Tamanik, Yibwa

One Tima person is *kò-mùrik* pl. *ì-mùrik*.

The earliest record of these two languages is Meinhof (1917), who presents a morphology sketch and a small lexicon as well as some evidence for grouping them together. Kaalak and Domorik are poorly documented, although research is under way in both of them (Al-Amin, Schneider-Blum, Hellwig this volume). Various aspects of Domurik [Tima] are covered in Dimmendaal (2009, 2010a,b,c). A fascinating aspect of Kaalak is the presence of labial-velars /kp/ and /gb/, which, even without other evidence would suggest a Niger-Congo affiliation. These sounds are extremely rare globally, and confined to Niger-Congo and Central Sudanic. They are thus unlikely to be the result of contact. Some examples from Kaalak are;

leopard	kpajaŋ
chicken	kprek
father	agba

Cognates in Domurik have labialised velars.

Table 5 shows a sample of cognate items in Kaalak and Domurik to support the existence of a group.

Table 5. Kaalak-Domurik cognates

	Kaalak	Domurik
ear	gʊnʊ	kʊnʊ
head	gac	k-ah
mouth	ŋeŋ	kŋe
hair	gagam	k-aam
dog	gu	k-uu
friend	bɔɔŋ	kɛ-bʌʌŋ
eat	olak	yʌluk-
die	bulak	bʊlʊk-

Source: Adapted from Dimmendaal (2010a)

One of the few extended academic works on Tima is Mubarak (2009) which proposes that Tima has a system of five singular prefixes and one plural prefix on nouns. However, it is doubtful whether Tima has noun-classes properly defined, as opposed to a system of number-marking. Despite claims that there is some semantic correlate to the classes, this is very weakly supported. The plural markers are all allomorphs of *i/i/y-* prefixed to the noun, and there are underlyingly just two singular markers, *kV-*, where *V* is an underspecified vowel or zero, and *ʔ-/ʔ-/t-*.

Singulars with no prefix are also recorded. The presence of t/k number markers should ring a bell with regional specialists, since these are typical Nilo-Saharan number markers and in not necessarily indicative of noun classes. Kaalak has a similar system, except that the plural prefix is usually zero, as shown in Table 6;

Table 6. Number marking in Kaalak and Domurik

Gloss	Kaalak		Domurik	
	sg.	pl.	sg.	pl.
dog	g-úú	úú	k-uu	y-uu
ear	g-uno	uno	k-ónó	y-ónó
fish	g-úmûŋ	úmûŋ	k-úmòŋ	í-mòŋ

Mubarak (2009) describes the prefixes on adjectives as ‘agreement’ but in fact these are simply invariant types of number-marking. When the head-noun is singular, the adjective takes an a- prefix, and when plural, the prefix is ɪ- or its allomorphs.

In summary, Kaalak and Domurik initially appear on the surface to have prefix alternation like other Kordofanian languages. However, allomorphy, reduces these to two singular and one plural affix. The two singular affixes are identical to the number markers found widely in neighbouring Nilo-Saharan languages, and it is most likely that these have simply been borrowed. I therefore suggest that Kaalak and Domurik have never had noun classes and that they have adapted morphemes from nearby languages to mark number.

3.1.3 Do they fit together?

Stevenson (1956-57:51) claimed that there were specific lexical resemblances between Rashad and Katla. Table 7 presents examples of such items;

Table 7. Kaalak-Domurik and Rashad common glosses

Gloss	Kaalak	Domurik	Tegali	Rashad	Kajakja	Tagoi	Morieib	Orig
bark tree	kpu	kwáh				k-awár /h-		
blood	iyáá				wiyá			
ear	gu-no/u-	kò-nòò /i-		nu/-n				
foot	kàt <i>pl.</i> a-		ékán					tègàn
go		idj				nde		
head		k-aah /y-					k-ai /s-	
mouth	ɲeɲ	ki-ɲε/ ɿ-		ɲger				
sun	gìne /ààne	kinéè(?) /i-		áne				yàn
tongue		k-iläŋi /-~		áŋa				

A list like this is far from perfect evidence, and there is not enough material to detect regular correspondences. However, it does suggest that the forms without prefixes are primary. For example, Rashad has ‘ear’, ‘sun’ and ‘tongue’ without the affixes present in Kaalak and Domurik for the cognate stems. Many of the external Niger-Congo cognates of ‘ear’ have a velar in the prefix (cf. Appendix Table) and this may have travelled as a frozen form (which is possible, given Dogon *sugunu*) and was then re-interpreted as a number marker. The most economical explanation otherwise is that the original form was more like Rashad; that the form for ‘sun’ had an initial vowel and this was analysed as a plural in Kaalak and Domurik. Only more extensive evidence will clarify this picture.

3.2 Tegem-Amira (Lafofa)

The Lafofa cluster consists of at least two languages, Tegem and Amira. Documentation of Tegem (Lafofa) goes back at least to Brenda Seligman (1911). Stevenson (1962-64) put it in a separate branch of its own but Schadeberg (1981b) treats it as Talodi but it comes out as extremely remote on his lexicostatistic counts. Documentation is far from complete, but we have a reasonably long wordlist by Robin Thelwall in Schadeberg (1981b) plus a variety of other sources. McDiarmid & McDiarmid (1931) published a very short list of Eliri (Lafofa) and language spoken at El Amira which they describe as a ‘dialect’. Stevenson’s unpublished mss. include wordlists of both Lafofa (approximately corresponding to Thelwall’s wordlist and a slightly longer list of Amira dialect).

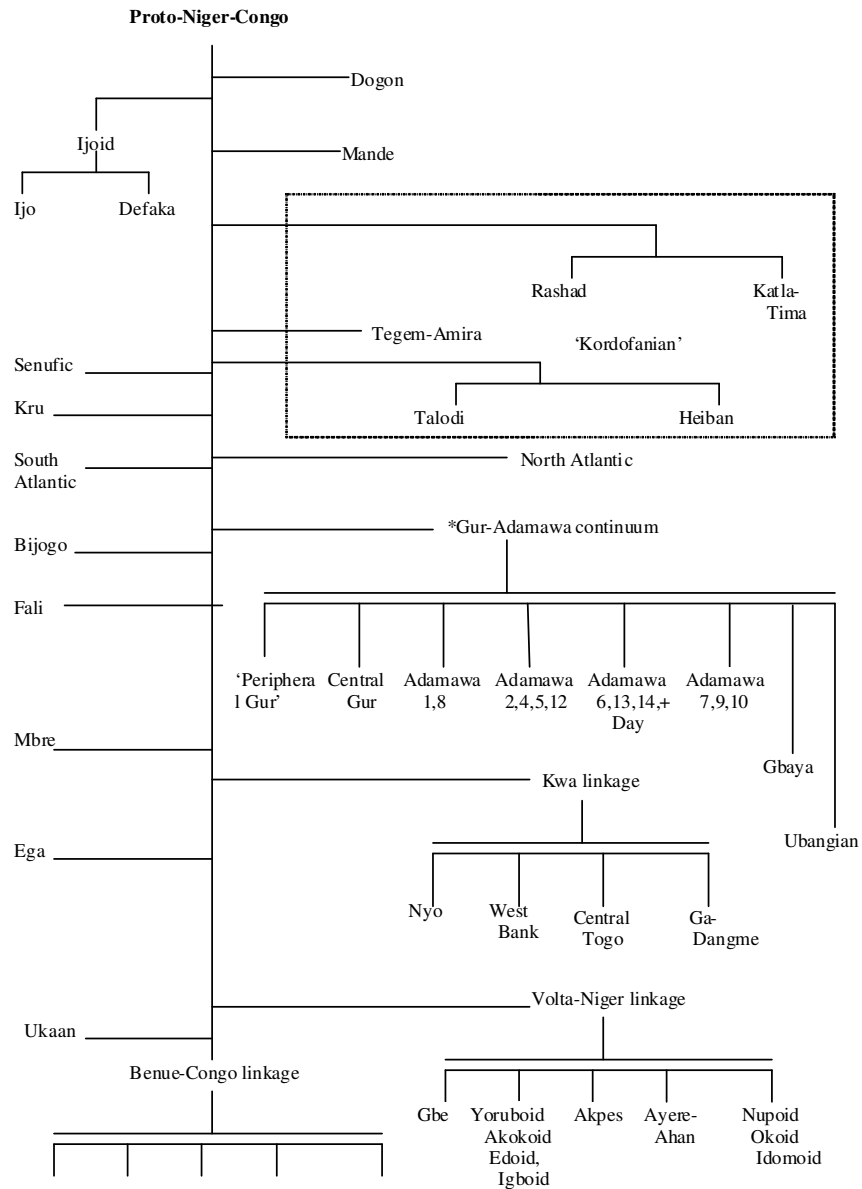
Tegem is a noun-class language and shares some prefix alternations with the Talodi group, although the morphophonology of stems can make it difficult to identify cognates. When Tegem is compared with Niger-Congo, something surprising emerges; shared cognates are often not reflected elsewhere in Kordofanian languages. Even more strikingly, some of these are cognate with Ijoid (e.g. 'moon') which is a rare Niger-Congo secondary gloss. Tegem has words connected with hunting ('bow', 'dog', 'elephant', 'baboon') not attested in other Kordofanian languages (Appendix II). This suggests that Tegem is a separate branch of Niger-Congo and that specific similarities with Talodi may in part be due to contact. The only data on Amira seems to be an unpublished wordlist by Stevenson; however, as the data tables show, Amira sometimes seems to be more conservative than Tegem in retaining matching forms for the Niger-Congo lexicon.

4. The place of Kordofanian within Niger-Congo

It is not possible to prove a negative, but there is no positive evidence for the genetic unity of Kordofanian. The geographical coincidence of these isolated languages is initially persuasive, but an alternative interpretation would suggest that the ancestors of individual groups migrated along a resource corridor and were then pushed in the Nuba Mountains, a refuge zone in a period of climatic degradation. The intensity of interaction with each other and with their Nilo-Saharan neighbours produced the perplexing mosaic of analogous number-marking systems testified in the present.

If it is accepted that Kordofanian is not a genetic unity, then the problem remains as to the placing of individual branches within the broader framework of Niger-Congo. The data tables in the Appendices give a sample of the possible cognates of individual Kordofanian lexemes, and these can be taken as general indications of the likely place of specific branches. Figure 1 presents my most recent version of the Niger-Congo 'tree' with all the usual reservations.

Figure 1. Niger-Congo restructured



Some of the underlying assumptions of the tree are as follows;

- a) That language groups such as Mande, Dogon and Ijo, which have no evidence for noun classes represent the earliest branches of Niger-Congo. This is also supported by the absence of many common lexical roots attested in Atlantic, Benue-Congo and elsewhere.

- b) That the Kaalak-Domurik-Rashad group dates from this period and that the noun classes in Tagoi are locally developed through contact.
- c) That Tegem-Amira is quite distinct from Heiban-Talodi, although migrating eastward at a similar period, after the development of noun-class systems and that similarities between Lafofa and Talodi are due to contact

5. Conclusion

In conclusion, there appear to be issues of method, data and analysis. Historical linguistics has recently been partly hijacked by typologists, geographers and spurious mathematical modelling. But the classic methods have not been falsified, merely bypassed, now that classification is by assertion. We need to re-affirm the importance of not assuming genetic groups without reasonable evidence. This includes;

Not assuming typological features (such as the presence of noun classes) are proof of genetic affiliation

Not assuming a few lexical similarities between languages in contact are evidence for genetic affiliation

Not making a linguistic model of a group of languages which appears to contradict evidence from other disciplines.

Obviously, although the datasets are gradually improving for Kordofanian, the material on many languages remains confined to wordlists. Moreover, contradictions between different transcriptions suggests we have a long way to go in sorting out the phonology of many languages and therefore applying parts of the comparative method remain for the future. Moreover, a lack of analytic understanding of the verbal systems has meant that many attestations seem to have incorporated morphology, so establishing the root which can be compared to external lexemes is still problematic. Nonetheless, the opening up of Kordofan now makes it possible to accelerate the process of analysing one of the most linguistically challenging areas of Africa.

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APPENDICES: DATA TABLES

1. Cognates of Kordofanian with other Niger-Congo branches

1. Family	ear/to hear Subgroup	#-n(y)u[ku][lu] Language	Attestation ear	II hear	Gloss	Source
		PWS		nú-		W
Dogon		*Dogon	sugunu			Ho04
Ijoid		P-Ijọ	—	nãã		KW
Ijoid		Defaka		nãa		Je83
Rashad	Tegali	Rashad	nu/-n		ear	RCS
Rashad	Tagoi	Tagoi		ɲinná		RCS
Kaalak-Domurik		Kaalak	gu-no/u-		ear	RCS
Kaalak-Domurik		Tima	kò-nòɔ /i-		ear	GS
Mande			—			
Kordofanian	Lafofa	Tegem		ɲaʔ	hear	Sch81b
Kordofanian	Proto-Heiban		*g-aani/n-		hear	Sch81a
Kordofanian	Proto-Talodi		*g-eenu/w-		hear	Sch81b
Kordofanian	Talodi	Asheron	ge-nu/we-		hear	No00
Atlantic	North	Fulfulde		nan-	<i>entendre</i>	No89
Atlantic	North	Wolof	nɔpp		ear	Wi07

Family	Subgroup	Language	ear	hear	Gloss	Source
		Bjco	ganu			Sg
Atlantic	South	Bullom	nu-i			W
Atlantic	South	Baga Sitemu		-ne		Sg
Atlantic	South	Gola	ke-nu		<i>öhr</i>	We21
Kru		Grebo	nóá		<i>oreille</i>	ALKrCI
Kru		Dida		nú	<i>entendre</i>	ALKrCI
Senufo		Nafaara	níígé			ALGCI
Gur		Lobiri	nũũ			ALGCI
Gur		Baatonun		nua		W
Bijogo		Bijogo	kɔ-nnɔ /ɲa-		ear	Sg
Kwa		Alladian	núkù			ALKwCI
Kwa	GTML	Animere	gu-ɲũ /a-		ear	Ca
Kwa	GTML	Logba		nu	to hear	W
Kwa		Gonja		nù		Sn89
VN	Igboïd	Igbo		-nɔ		Wi72
EBC	Cross River	Korɔp	lu-nuŋ			St

2.	#deNe	tongue			
Family	Subgroup	Language	Attestation	Gloss	Source
		PWS	-lima	<i>Zunge</i>	W
		PWN	-lélum-, -lúm-	tongue	M
		PWN	-lima, -liami-	tongue	M
Ijoid		Defaka	menduɔ	tongue	KW
Ijoid	Ijo	Oporoma	méí	tongue	KW
Kaalak-Domurik		Domorik	k-iläŋi /-~	tongue	RCS
Rashad	Tegali	Rashad	áŋa	tongue	RCS
Mande		Busa	léná		
Kordofanian	Lafofa	Tegem	læŋi, leŋi	tongue	Sch81b
Kordofanian	Talodi	Talodi	tu-luŋe pl. l-iluŋe	tongue	RCS
Atlantic	North	Fulfulde	démngal	<i>langue</i>	Mo89
Atlantic		Bedik	i-dém /ə-	tongue	Wi07
Atlantic		Baga Fore	lem	tongue	Wi07
Atlantic	South	Temne	ræmer	tongue	Wi07
Kru		Aizi	mrɔ	<i>langue</i>	ALKrCI
Kru		Dewoin	milà	<i>langue</i>	ALKrCI
Gur	Oti-Volta	Bieri	dem-fa /-i	<i>langue</i>	Ma75
Adamawa	Mumuye	Zing	rèè-tè	tongue	Sh83
Adamawa	Jen	Munga	lyêm	tongue	UK
		Doso			
Gbaya		P-Gbaya	*lembe	<i>langue</i>	Mo95
Ubangian		Baka	milí	<i>langue</i>	Br10
Kwa	GTML	Adele	à-limán	<i>langue</i>	Ro
Kwa	GTML	Giseme	gí-déné pl. ì-	tongue	Ro
Kwa	Gbe	Ewe	àdɛ	<i>langue</i>	Ro
Kwa		Ga	lí'léí	tongue	Kr99
VN	Igboïd	Igbo	ílé	tongue	KW
VN	Nupoid	Nupe		tongue	Ba14
EBC	Plateau	Tyap	a-lyám	tongue	RMB
EBC	Plateau	Ganang	di-lem /a-	tongue	RMB
EBC	Jukunoid	Wapan	nénè	tongue	Sh
EBC	Upper Cross	Lokukɔli	rémilê/ rá-	tongue	St
EBC	Lower Cross	Efik	édémè	tongue	Co91
Bantoid	Mambiloid	Wawa	lèèm	<i>langue</i>	Co
Bantoid	Tivoid [?]	Esimbi	o-némə /ɔ-	tongue	SIL
Bantoid	Beboid	Noni	lēmé	<i>langue</i>	PP

2.					
	#deNe	tongue			
Family	Subgroup	Language	Attestation	Gloss	Source
Bantoid	Ekoid	Mbe	le-lém	tongue	Po06
Bantoid	Grassfields	Ambele	-lémá	<i>langue</i>	PP
Bantoid	Grassfields	Ngie	ìnémí	tongue	SIL
Bantoid	Grassfields	Mankon	-lémà	<i>langue</i>	PP
Bantoid	Grassfields	Limbum	r-lee/ m- [M]	tongue	SIL
Bantoid	Ring [?]	Ndemli	l ^w ámli	tongue	NM
Bantu		PB	-deme	tongue	
		CB	-dúmi	tongue	G
3.					
	#kulu	skin, hide			
Family	Subgroup	Language	Attestation	Gloss	Source
		PWS	-ku, -kua (+Nasal)	<i>Haut</i>	W
		PWS	-ge, -gel-	<i>Haut</i>	W
		PWN	-kwuba	skin, bark, husk	M
		PWN	-puk-, - puak-	bark, skin	M
Dogon		Tebul Ure	gudugo		RMB
Ijoid		P-Ijọ	*ɔpaãǎ	bark	KW
Ijoid		Defaka	íkpa	skin	KW
Kaalak-		Kaalak	kpu	bark of tree	Gi
Domurik		Domurik	kwáh	fresh bark	GS
Rashad	Tagoi	Tagoi	k-awár /h-	bark	RCS
Mande		Kpelle	kɔlɔ	<i>peau</i>	Cr81
Kordofanian	Talodi	Ngile	k-íṭi <i>pl.</i> w- úṭi	bark	Sch81b
Atlantic	North	Nalu	ma-kũ/ a-	skin	Wi07
Atlantic	South	Gola	ókɔlɔ	skin	Wi07
Kru		Kuwaa	kũ̀	<i>peau</i>	ALKrCI
Gur		Bieri	kwanu	<i>peau</i>	Ma75
Gur		Dagaari	gbani	<i>peau</i>	Ma75
Adamawa		Mumuye	koo	skin	Sh83
Ubangian	Ngbaka	Mundu	kònò	<i>peau,</i> <i>écorce</i>	Mo95
Ubangian		Baka	kòto	<i>peau</i>	Br10
Kwa	GTM	Siwu	ò-kó /sì-	skin	RMB

3.						
Family	#kulu Subgroup	skin, hide Language	Attestation	Gloss	Source	
VN	Nupoid	Nupe	epà	leather, hide, skin	Ba14	
VN	Idomoid	Idoma	apu	skin	Ab	
EBC	Upper Cross	Hohumono	èkpá / ì-	skin	St	
Bantu		PB	pɔ́	skin, bark, peel	BLR 4790	

2. Tegem-Amira cognates with other Niger-Congo branches

4.						
Ph	Family	belly Subgroup	Language	Attestation	Gloss	Source
AA	Chadic	West	Hausa	tumbi	animal stomach	Ab49
NS	Saharan	West	Kanuri	tùmbí	belly	Cy94
NS	ES	Ama	Ama	tùní	intestines	Ki96
NC			PWN	-tuimb- (-temb-, - tumb-)	belly, abdomen	M
NC	Ijoid		Defaka	itɔ	belly	KW
NC	T-A	Lafofa	Tegem	tuuri, ðuuri	belly	Sch81b
NC	T-A	Lafofa	Amira	tu	belly	RCS
NC	Kru		Wobe	tùū̂	<i>poitrine</i>	ALKrCI
NC	Gur					
NC	Ubangian		Baka	to	<i>poitrine</i>	Br10
NC	Kwa		Nawuri	ò-tò	belly	Sn89
NC	VN		Nupe	tùmbi	stomach of cattle	Ba14
NC	EBC	Kainji	Cicipu	túmó <i>pl.</i> òtúmó	belly	SM
NC	EBC	Upper Cross	Agwaagune	í' tú	stomach	St
NC	Bantoid	Beboid	Kemezung	tô	belly	SIL
NC	Bantu		CB	-tùmbe, tùmbu	- abdomen	G

5. breast						
Ph	Family	Subgroup	Language	Attestation	Gloss	Source
NS	Shabo		Shabo	du	breast	F191
NS	ES	Nilotic	Acholi	tònò	breast	B109
NS	CS	MMT		nqū	breast	B&W96
NS	CS		Baka	úlù	<i>têter</i>	Bo00
NC	Ijoid		P-Ijò	indõũ		KW
NC	Kordofanian	Lafofa	Tegem	d̥ɔi	breast	Sch81b
NC	Kru		Aizi	drɪ	<i>sein</i>	ALKrCI
NC	Atlantic	North	Fulfulde	en ⁿ du	<i>sein</i>	No89
NC	Kwa	GTML	Igo	i-ɖunu /e-		
NC	Bantoid	Tivoid	Oliti	otimba	breast	SIL
NC	Bantu		PB	tómbò	breast	BLR3

6. #-gbo- baboon						
Family	Subgroup	Language	Attestation	Source		
Mande		*PSWM	*n-gbɔŋ	VV		
		Bambara	ngɔ̃n	Ba2000		
Kordofanian	Tegem	Tegem	bɔli	Sch81b		
Senufoid		Supyire	bòŋo	Carlson		
Gur		Dɔgɔse	gbègè-wè /-mè			
Adamawa	Mumuye	Zhing	gbāgbàli	Sh83		
Gbaya		Bodoe	gbàdàwà	Ro08		
VN	Nupoid	Nupe	gbògì	Ba14		
EBC	W. Kainji	Lopa	gbàdàgi			
	Platoid	Izere	àgbòòm	RMB		
		Aten	bagu	RMB		
		Berom	bōgòm	RMB		
		Fyem	gwòm	RMB		
Bantoid	Dakoid	Dɔ̃	gbɔŋ	RMB		
Bantoid	Grassfields	Limbum	mbù	RMB		

7. Family	elephant Subgroup	Language	Attestation	Source
		PWS	-ni-	W
		PWN	-ní-, niang-	- M
Dogon		Mombo	nige	Ho04
Kordofanian		Tegem	yu:ŋi	RCS
Atlantic		Pulaar	nyiiwa (ba)	Sg
		Serer	ɲig	Sg
Ubangian		Mba	ŋjá	Mo95
Ubangian		Ngbaka	yà	Mo95
Kwa		Avatime	ó-nyi /bé-	Heine (1968)
Kwa		Ewe	àtíglínyì	R
VN		Èdo	èń	Ag86
VN		Igbo	enyi	KW72
EBC	Plateau	Mada	ɲi	RMB
EBC	Cross River	Anaang	é-nì:n	Co91
EBC	Cross River	Tẹẹ	ń	NB94
Bantoid	Momo	Ngie	anyifom	SIL
Bantu		CB	-nìangá	G
Bantu		PB	yògù	BLR3 K M N P S

8. dog

Family	Subgroup	Language	Attestation					Comment	Source	
		PWS	-b	ú		á		W		
		PWN	-bh	ú		a		M		
Dogon		Bondum	ŋ	w	ε			Ho04		
Ijoid		Kalabari	o	b	i	r	i	KW		
		Biseni	e	b	i	r	i	KW		
Defaka		Defaka	e	b	e	r	e	Je83		
Mande		Tura		gb	é		ëg			
		Susu		b	a	r	e	na		
		Mende	n	g	i	l	a			
		Boko		gb	é		/-ó			
Kordofanian	Lafofa	Tegem	bɛ	-b	u		i	pl. ɛrui	Sch81b	
Kordofanian	Talodi	Eliri		b	w		a	k	pl. abuk	RCS
Atlantic	North	Serer		ɓ	ɔ			x		Sg
	North	Pepel	ɔ	-b	o	l				Sg
	North	Manjaku		b	u			s		Do75
		Bijogo	e	b	oo	t	i		pl. i-	Sg
Senufic		Nyarafolo		p	ú	n				ALGCI
Kru		Guéré		gb	e					ALKrCI
		Aizi		v	ε					ALKrCI
		Seme		b	u		-o	/-e		ALKrCI
Gur		Moore		b	a	r	a			Ma75

Family	Subgroup	Language	Attestation				Comment	Source
		Gurma	b	u		a	-ga /-mu	Ma75
		Dagare	b	a	r	e		Ma75
		Hanga	b	a	'	a		Ma75
	Gurunsi	Delo	b	a				Ma69
		Waama	b	ú		u	-ka	
		Bariba	gb	o				
Adamawa		Waja	b	a		ɪ		K196
		Yungur	b	w		e		RMB
		Mambei	v	w		a		Eguchi
Ubangian	Sango	Yakoma	m	b	ò			Mo95
		Ngbaka	b	ó	n	ñ		Mo95
		'Dongo-Ko	ɓ	é	l	à		Mo95
		Nzakara	b	a	n	á		Mo95
		Baka	b	ó	l	ó		Br10
Bijogo		Bijogo	e	b	o	o	t	Sg
Kwa		Abbey	ɣ	ó				ALKwCI
		Ebrié	gb			à		ALKwCI
	GTM	Nyangbo	é-	b	ú		/be-	He68
	Adangme		a	v	u			
	Ga		gb	è		é		Kr99
	Gen		à	v	ú	n		ALKwCI
VN	Yoruboid	PY	*a	by		á		KW
	Edoid	Uhami	à	b	ù	à		E89

Family	Subgroup	Language	Attestation				Comment	Source
	Nupoid	Gbari	o	m	u			RMB
EBC	Plateau	Yeskwa	e-	b	u			RMB
	Jukunoid	Kpan	i-	b	u			Sh80
	Cross River	Efik	e-	b	u	a		Co91
Bantoid	Dakoid			v	o	n	a	Boyd
	Mambiloid	Nizaa		ɓ	o	w		En
	Tivoid	Esimbi	ɛ̃	b	ù			SIL
	Beboid	Noni		b	w		ě	
	Menchum	Befang		b	ú			Gu06
	Grassfields	Bafut	m̃	b	ú		è	
	Ring [?]	Ndemli	á	b	ò			Le99
	Momo	Ngie		b	é	w		SIL
Bantu	Ekoid	Mbe		b	o		g	Ba
		Duala	m	b	o			
		PB		*-b	ú	à	(9/10)	BLR3