

Thilo C. Schadeberg

The Classification of the Kadugli Language Group

1. INTRODUCTION

The KADUGLI language group (here spelled with capital letters to distinguish it from the language and the town, and the same convention is applied to the (other) Kordofanian language groups) consists of a number of closely related languages and dialects spoken in the hill villages along the southern edge of the Nuba mountains. Stevenson (1956-57) identifies nine languages (names are villages), and he divided them into three branches:

- | | |
|----------|---------------------|
| Western: | 1. Tulishi, Kamdang |
| | 2. Keiga |
| | 3. Kanga |
| Central: | 4. Miri |
| | 5. Kadugli |
| | 6. Katcha, Tuna |
| | 7. Tumma |
| Eastern: | 8. Krongo (Tabanya) |
| | 9. Tumtum, Talasa |

In this paper, all tone-marked Kordofanian data are taken from my own field notes, and the reconstructions for the various branches of Kordofanian are also mine.

2. RESEARCH HISTORY

In the very first volume of the *Zeitschrift für Kolonialsprachen* issued in 1910/11 an article appeared by Brenda Z. Seligman on the languages of Southern Kordofan. It contained some eighty words of Tumtum and is the first publication of data from a KADUGLI language. Soon after, Carl Meinhof published more data collected partly by himself together with August Klingenheben and partly by police inspector Nicholls of El Obeid. The first proper survey was carried out by the missionary couple MacDiarmid; their report as published in *Sudan Notes and Records* (1931) contained a small portion only of their materials. The latest and most complete coverage is found in Roland C. Stevenson's survey published in

Afrika und Übersee (1956-57).

The relative linguistic isolation of KADUGLI was already apparent in Seligman's material, as was remarked upon by Bork (1912/13). Meinhof's classification of the Nuba Mountain languages into prefix languages and Sudanic languages is not very helpful in today's perspective. However, he did point out the lexical resemblances between Tumtum, Miri, Kadugli, Krongo, and Keiga, though he classified Tumtum as a prefix language and the others as Sudanic. The MacDiarmids stressed the internal unity of the group without speculating about external relationships. Stevenson's position is more complex. On the one hand he isolates KADUGLI from the other two sets of languages spoken exclusively in the Nuba mountains which are the "bantoid" class languages (i.e. the HEIBAN, TALODI, and RASHAD language groups) and the classless languages (i.e. the NYIMANG, TEMEIN, and KATLA language groups). On the other hand, in his chapter on the noun-class system Stevenson equates specific noun classes of HEIBAN, TALODI, and RASHAD with the so-called noun classes of KADUGLI; whereas the equations between HEIBAN, TALODI, and RASHAD are based on sound *and* meaning resemblances, the KADUGLI comparisons are added on the basis of meaning only. ("Meaning", here, refers to the vague semantic contents of the classes.) Stevenson does not commit himself to any historical interpretation of his comparisons.

The only serious external classification of KADUGLI comes from Joseph H. Greenberg. In 1950, he posited a Kordofanian language family consisting of five coordinate branches:

1. HEIBAN ("Kawalib")
2. RASHAD ("Tagele")
3. TALODI
4. KADUGLI ("Tumtum")
5. KATLA

Greenberg states that the genetic relationship between these five language groups has been deduced from "a fair measure of fundamental vocabulary resemblance" as well as from "considerable resemblance among the groups in personal pronouns and in the paired noun class prefixes" (p. 390). As for KADUGLI, three examples are given for these resemblances:

	2nd person	noun class	noun class
HEIBAN	ŋa	-	-
RASHAD	ŋo	f/y	-
TALODI	ŋo	b/y	-/k

	2nd person	noun class	noun class
KADUGLI	oo	b/y	-/k
KATLA	-	b/-	-

In his revised classification of African languages (1963, 1966), Greenberg added considerably more evidence for his Kordofanian language family, but he also concludes that KADUGLI "shows considerable divergence from the remainder" (p. 148). Below I shall examine the validity of his evidence for including KADUGLI in Kordofanian.

3. THE LEXICAL EVIDENCE

This section is a critical evaluation of the place of Kadugli in Greenberg's "Niger-Kordofanian Comparative Word List" (1966:153-160). The aim of this wordlist is two-fold: (1) to prove a genetic relationship between the various branches of Kordofanian, and (2) to prove genetic relation between Kordofanian and Niger-Congo. Before examining specific suggested cognates I would like to comment on a particular misuse of "mass comparison".

It is true (as is stated e.g. in Greenberg 1966:3) that the number of chance resemblances becomes infinitesimal when an increasing number of languages is compared. The formula is: c^{n-1} , i.e. the probability of finding sound-meaning chance resemblances between a set of n languages is equal to the chance c for a single language raised to the $(n-1)$ th power. What is often forgotten is that this formula applies only when a fixed, predetermined set of languages is used, and when these languages are all genetically equidistant or unrelated. The latter constraint is necessary in order to eliminate the effect of chance resemblances (and borrowings) between proto-languages. The necessity of the former constraint can best be illustrated with an example (item nr. 23 'large' in the above-mentioned list):

KADUGLI:	Tumtum	fifi	(plural stem)	
Kordofanian:				
HEIBAN:	Heiban	ipa		
TALODI:	Liri	o:pi		
Niger-Congo:				
Atlantic:	Dyola	faf	Limba	boi
Mande:	Vai	ba	Kpelle	bayi
Gur:	Dagomba	bi	Senufo	pei

Kwa:	Santrokofi	opē	Proto-Ijo	*opu
Adamawa-Ubangi:	Juman	bo	Kam	boli

The fact that the entries in this list come from carefully selected languages has considerably increased the chance of finding resemblances. For KADUGLI, a choice could be made between eight unrelated roots:

1. Kamdang	-ikki/kadurú	(1, 2)
2. Keiga	ablúǵó	(3)
3. Kufa	aabukké/gúúǵú?ǵe	(4, 5)
4. Miri	adabbu	(6)
5. Kadugli	aadabbó	(6)
6. Tuna	aṭáǵbu	(6)
7. Tumma	máábukwá	(4)
8. Krongo	íiji/ǵǵíifi	(7, 8)
9. Talasa	íígi/kíífi	(7, 8)

The (other) branches of Kordofanian offer a similar opportunity to choose:

HEIBAN:	7 roots
RASHAD:	1 root
TALODI:	5 roots
KATLA:	2 roots

Within each branch of Niger-Congo, the choice is probably even wider. Thus, without entering any probability calculations it can safely be assumed that this kind of hunting resemblances has almost no chance of failing. It is therefore no suitable instrument for proving genetic relationship. (In any particular case, however, it is still possible that the uncovered resemblances are due to common origin, and indeed Westermann did reconstruct a Sudanic root *bà 'big' - and also two homophonous roots meaning 'mat' and 'two', two roots *bá meaning 'large lizard' and 'father', and the tonally unmarked roots *ba meaning 'something, someone', 'to be somewhere', 'they', 'barn', and 'salt'.)

Greenberg lists twelve possible cognates between KADUGLI and (the rest of) Kordofanian. Four of these look convincing:

'rope'	*rug	PH	*-ar
		PT	*-aarug
		Katla	g-árág
'tail'	*iiǵi	PT	*-iǵig

'tooth'	*-ini	PH	*-ɲaɖ ?
		PR	*-ɲin
		PT	*-ini

'vein'	Tuleshi	b-ar	H: Heiban d-iri
	Katcha	b-arere	R: Tagoi ka-ri
	Krongo	b-ari	

Special mention is made by Greenberg (1966:152-3) of the similarity between the words for 'rope' and 'root/vein'. He suggests that the former is derived from the latter by a suffix -k, and he cites some Niger-Congo parallels.

The next four comparisons are less convincing; they depend on high probability similarities or on low probability sound correspondences.

'belly'	*aaɖi	PH	*-aare
		PT	*-arag

At first sight this looks a good possible cognate, but a correspondence d : r is unlikely between languages having similar consonant systems including dental as well as several alveolar phonemes (cf. r : r in 'rope', 'vein' and ɖ : ɖ in 'tail').

'large' (see above)

'mouth'	*niino	PH	*-uuɲu
		PT	*-oɲ
			Katla ɲééɲ; Tima k-íɲe?

These items have only a nasal in common.

'white'	Krongo ofiro	PWCH	*-biiɖo
		R: Gom	abóré
		PT	*-ibbug
		Katla	apfók

These items have only a labial in common.

The last four items I find rather dubious; there seems to be hardly any resemblance at all.

'mouse'	Krongo ni-fa	T: Líri	powi
	Karondi ni-fi	Lafofa	poi

The initial p in the TALODI languages is a noun class prefix.

'speak'	Miri t-oma	H: Heiban jaŋa
	Krongo ajama	T: Masakin səmo
	The KADUGLI forms are probably derived from *eema.	
'steal'	Krongo moppɪ	R: Tumale dyl-mroŋ 'thief'
		T: Masakin ca-mali 'thief'
'tortoise'	Keiga koŋ	T: Masakin k-ərə

Likewise, there seems to be no reason to equate KADUGLI *ʔoʔo 'you (sg.)' with HEIBAN *ŋa, RASHAD, TALODI *ŋo, and KATLA/TIMA *ŋaŋ.

Greenberg's list contains nineteen comparisons between KADUGLI and Niger-Congo (including the twelve items above). Of these I shall consider only those for which it has been assumed independently that they can be traced back to "Sudanic" (Westermann 1927), "Niger-Congo" (Greenberg 1966:13-24), or "Western Nigritic" (Mukarovsky 1976-77). Thus, for reasons stated above I shall not consider the suggested etymologies for 'belly', 'mouse', 'rope', 'speak', 'steal', 'tail', 'tortoise', and 'urine'.

'cut'	KADUGLI *d̥ɛg
	Kordofanian: -
	S *tè (+ Nasal); NC; WN *tin (ten)
'head'	KADUGLI *vyɖu
	Kordofanian: -
	S *-ti; WN *-túɪ
'know'	Kadugli (Western K. only): Krongo oni
	Kordofanian: -
	S *ní-, nía- (+ Nasal)
'large'	KADUGLI (Western K. only): Tumtum fifi (plural stem)
	Kordofanian: H: Heiban ipa; T: Liri o:pi
	S *-bà-
'mouth'	KADUGLI *niino
	Kordofanian: PH *-uupu; PT *-oŋ;
	K: Katla ŋéɛŋ, Tima k-íneʔ
	S *-nu, -nua (-ni, -nia); NC; WN *-níana, -níuna (-núa)
'oil'	KADUGLI *ooba
	Kordofanian: -
	S *-kú, -kuá-; WN *-kwúa (-kwút-)

- 'skin' KADUGLI *ḡo (Krongo koṭo 'bark')
 Kordofanian: -
 NC: At: Gola koro; Ma: Mende kolo;
 Kw: Idoma okpa; BC: Bute kwa;
 AU: Gbanziri koto
- 'tooth' KADUGLI *ini
 Kordofanian: PH *-ṇaḡ; PR *-nin; PT *-ini
 S *-ní, -nín-; NC; WN *-nín- (-nighin-)
- 'vein/root' KADUGLI *-arre
 Kordofanian: H: Heiban ḡ-iri 'vein';
 R: Tagoi ka-ri 'vein'
 S *-li-; WN *-líl- (-líul-) 'root'
- 'white' KADUGLI: Krongo ofiro
 Kordofanian: R: Gom abóré; PT *-ibbug;
 K/T: Katla apfók
 S *pù-; NC (some reflexes show r/l as a second consonant)
- 'wish' KADUGLI: Krongo tuna 'to seek'
 Kordofanian: -
 S *túná; NC

An inspection of these eleven comparisons leaves us with seven good resemblances, i.e. 'head', 'know', 'mouth', 'oil', 'tooth', 'vein/root', and 'white'. Four of these, i.e. 'mouth', 'tooth', 'vein/root', and 'white' include comparisons with (other) Kordofanian languages.

However, a case of equal strength can be made for the inclusion of KADUGLI within Nilo-Saharan. I shall demonstrate this by comparing KADUGLI items to Greenberg's suggested sets of cognates for Nilo-Saharan (1966:133-148), Chari-Nile (1966:117-127), and Eastern Sudanic (1966:95-108). As for KADUGLI, I shall restrict myself to items that are reconstructable for Proto-Kadugli, but I shall list examples from the real languages which are as similar as possible in shape to the proto-language items.

- 'ashes' 4 (= Miri, v.s.) fúḏo
 NS/CN/ES, e.g. Nubian obur(ti)
- 'day(light) 5 uuru
 NS/CN/ES 'sun', e.g. Moru ud'u

'drink'	2 wé NS, e.g. Fur aba
'fall'	8 adínggo NS/CN/ES, e.g. Kunama dunga
'fire'	6 issi NS/CN/ES, e.g. Meidob ussi
'give'	9 ná NS, e.g. Didinga nya
'green'	7 agíírí NS, e.g. Zaghawa girri
'left'	9 gúúle NS, e.g. Bagirmi geli
'man'	6 m-iíde CN/ES, e.g. Berta ide
'moon'	9 t̄árê CN/ES, e.g. Kunama tera
'name'	2 ere NS/CN/ES, e.g. Nubian eri
'person'	kó NS/CN/ES, e.g. Kanuri kwa
'two'	3 éérá NS/CN/ES, e.g. Madi eri
'white'	9 afiírá NS/ES, e.g. Runga farr

If we allow for shortening and lengthening many more items may be compared.

'back'	4 d̄ugaare NS/CN/ES, e.g. Luo agur
'blood'	4 ariīgu NS/CN/ES, e.g. Madi (k)ari
'brother'	5 ré NS, e.g. Songhai bere

'fear'	4 aribá NS/CN/EG, e.g. Kanuri ri
'dance'	3 -bálá NS/CN, e.g. Koma ba
'rope'	2 ɣ-árik NS/CN, e.g. Berta tsera
'tongue'	3 ŋ-ɔɔɔ NS/CN/ES, e.g. Mamvu kedru, Kunama ŋeila:
'tooth'	1 ɣíŋ-íni ES, e.g. Nubian nid
'water'	2 biigi CN/ES, e.g. Luo pi

No definite conclusion emerges from an inspection of the lexical evidence, except that KADUGLI is one of those numerous linguistic groupings in the Sahel region that appear to be relatively isolated.

4. THE GRAMMATICAL EVIDENCE

In this section I shall discuss the question whether the various ways in which number is marked in KADUGLI nouns can be regarded as a reflex of the Niger-Kordofanian noun class system. Greenberg (1966:150) lists the following similarities (his numbers):

KADUGLI	HEIBAN	RASHAD	TALODI	KATLA
1. b-/y-	-	f-/y-	b-/y-	b-/∅
2. t-/n-	-	t-/ŋ-	t-/n-	-
6. ∅/gi-	-	-	w-/k-	-
8. s-/any-	t-/ny-	c-/ny-	j-/ny-	-
13. t-/k-	ð-/g-	-	t-/k-	-

As for the noun class systems found in HEIBAN, RASHAD, and TALODI, they are certainly cognate with each other (and with Niger-Congo). The KATLA system has been reduced to the point where it becomes difficult to use it for the reconstruction of Proto-Kordofanian. However, the similarities as they are listed above - excluding, for the moment, KADUGLI - are only partly cognates, and do not comprise the best established Kordofanian (and Niger-Kordofanian) correspondences.

ad (1):

The TALODI gender *b-/y- is cognate with RASHAD *w-/y- and - at least in the singular - with HEIBAN *gu-/lɪ- (cf. no. 5 in Greenberg's list). This is the "personal" gender but contains some other nouns besides human beings. KATLA b-/ø is attested only in Kalak, and only for the items bi/i 'cow' and bwan/wan 'sheep'. These words belong to gender *w-/g- in TALODI (cf. no. 6), and to the "labial" gender in RASHAD, cf. Orig f-arāŋ/y-arāŋ 'cow', Goy m̄-bet/yí-bet 'goat'. It is not clear to me at present what the historical connection between these items (domestic animals) might be.

ad (2):

I am also uncertain about the relationship between the singular classes t- in RASHAD and t̄-, t- in TALODI. The plural classes are not cognate; RASHAD *ŋ- corresponds to TALODI *m-.

ad(6):

Three items can be reconstructed for the TALODI gender *w-/g-, i.e. 'cow', 'goat', and 'meat'. The correspondences of this gender in the other branches of Kordofanian are not known.

ad (8):

The RASHAD gender *j-/ŋ- is probably cognate with TALODI *ts-/ŋ- and with the plural of HEIBAN *ŋ-/ŋ-. One language ("Koalib") in the latter group has a gender t-/ŋ- instead. There is some evidence that this gender serves inter alia for deriving diminutives in all three language groups.

ad (13):

I have no evidence of a gender ð-/ø- with concord ð-/g- in Tiro or in any other language of the HEIBAN group. As for TALODI, the Tegem ("Lafofa") gender t-/k- (t̄-/k- ?) appears to be cognate with gender *j-/g-. (Also, the "Masakin" items 'belly', 'eye', 'neck', and 'tooth' that were described by Stevenson (1956-57) as belonging to a gender ð-/k- I have all recorded with the prefixes ts-/k- < *j-/g-.)

As for KADUGLI, there are a number of reasons to doubt whether certain number-distinguishing prefixes are indeed cognate with (Niger-)Kordofanian noun classes.

In the NK system, a noun consists of a stem preceded by a class prefix, and there are a number of prefix pairs (genders) of which one member indicates Singular and the other one Plural, such that number distinctions are signalled by

prefix alternations. In KADUGLI, there are some nouns that conform to this description, but these are only one of three types. The other two types occur basically without any prefix, and either the singular or the plural is derived by the addition of a prefix (examples from Krongo/Tabanya):

	SINGULATIVE	INHERENT SINGULAR OR INHERENT PLURAL	PLURITIVE
'stone'	m-isi	-	k-isi
'egg'	ɬu-suli	suli	-
'river'	-	re	na-re

It might be suggested that all prefix-less forms are really forms with zero prefixes; such things are not uncommon in real noun-class languages. However, such an analysis appears to be strained in the case of KADUGLI, especially since systems as the one sketched above have numerous parallels in Nilo-Saharan, for instance in Nilotic.

In the NK system, there is noun-class agreement; this is absent in KADUGLI. It is true that many NK languages have lost this agreement, or even both agreement and noun class prefixes. But the situation in KADUGLI is not at all similar to those broken-down noun class systems because in KADUGLI there does exist an elaborate but altogether different system of agreement. This system is based on sex/gender and on number and there is no relation with the number-distinguishing prefixes. The data on agreement are scanty, but from present research on Krongo¹ the following picture emerges:

Four forms of concord have to be distinguished: masculine, feminine, neuter, and plural. These labels are justified by the fact that male and female beings demand the masculine and feminine concord, respectively, in the singular, and that all derived plurals demand the plural concord. As for other nouns, derived singulars seem to occur in all non-plural genders, and the underived forms may belong to any of the four genders. (There are other complications which I shall not discuss here.)

In nouns, the commonest number-indicating affixes are the prefixes ɬV- for the singulative and kV- and nV- as well as the suffix -ni for the pluritive. This accounts for three of the five genders listed above.

ad (2):

There is no simple alternation ɬV-/nV- (not t-/n-!), but there are some prefix-less collectives from which both a singulative (prefix ɬV-) and a pluritive (prefix nV-) may be derived, e.g. "Katcha" (from Stevenson 1957:127):

ɬi-miɖena/miɖena/na-miɖena 'red millet'. More commonly, one finds the alternations ɬV-/∅ and ∅/nV- (examples from Krongo):

ɬi-meɖiɟi/mediji 'star'
 ɔɔɔɔɔ/ní-ɟɔɔɔɔ 'tongue'

ad (6):

The prefix kV- is used in the Western and Central branches to derive plurals from inherent singulars (example from "Kamdang"):

hiini/ki-hiini 'road'

In the Eastern-branch languages, in such words kV- is either replaced (?) or preceded by nV- (examples from Krongo):

fúuni/naa-fúuni 'road'
 tofi/ni-go-dofi 'cock'

ad (13):

Commonly, nouns referring to male persons are marked by the prefixes ɬa-/ka-. Many of these are agentive nouns derived from verbs. In the singular, corresponding feminines can be derived by pre-prefixing ma- (examples from "Kamdang"):

ɬa-gúsi/ka-gúsi '(male) thief'
 ma-ɖa-gúsi/ka-gúsi '(female) thief'
 cf. uusi 'steal!'

I can see no way of linking the KADUGLI prefixes ɬV-, kV-, and nV- to the Kordofanian noun classes - neither as a system nor in the specific way that has been suggested. On the other hand, these affixes have long been recognized by Greenberg himself as outstanding characteristics of Eastern Sudanic, Chari-Nile, and Nilo-Saharan (1966:113-116, 131-132):

- 23. Abstract and singular suffix in t.
- 25. Plurals in k.
- 27. Plurals in n.

(See also items 32, 33, 35, and 36 in the same list.)

The speciality of KADUGLI lies in the use of these affixes as prefixes rather than as suffixes. Note, however, that Fur has also prefix alternations Singular d-/Plural k-, and KADUGLI also has a plural suffix -ni, e.g. Krongo ɬo/o-ɖo-ni 'skin'. And, of course, NC noun class markers too occur both as prefixes and as suffixes.

No Nilo-Saharan parallels are readily available for the KADUGLI prefix alternations b-/∅ (not b-/y-) and s-/any- listed above (nos. 1 and 8). To these we might add a few more, notably m-/k-, b-/k-, and n-/∅. With one exception, all these prefix alternations can be assumed to be ancient within Kadugi: first, because they occur with basic nouns, and second, because they are often preceded by the more productive prefixes discussed above (examples from "Tumma"):

β-ɔŋgɔrɔ/nɔ-g-ɔŋgɔrɔ	'nose'
m-ɪfi/k-ɪfi ~ náá-g-ífi	'stone'
n-dáárú/táárú	'leaf'
ɣi-n-ííqú/ííqú	'horn'

The exception concerns the alternation s-/any-, for which the only examples (see Stevenson 1957:136) are 'broom', 'knife', and various types of pots and baskets. Also, I have no examples of these prefixes preceded by others.

These latter types of prefix alternations are typologically much more similar to the (Niger-)Kordofanian noun classes than the ɣV-, kV-, and nV- prefixes discussed earlier. However, while the number of lexical cognates that have been established between the various branches of Kordofanian (excl. KADUGLI) is so far admittedly small, there are many striking resemblances in form and meaning of the paired noun classes of these languages. (The meaning of a noun class is defined occasionally as a semantic feature, e.g. [human], [liquid], but more often simply as the set of meanings of some basic nouns frequently occurring in it.) These similarities do not extend to KADUGLI.

The word for 'pig' cited by Greenberg (1966:152) as representing a NK noun class for large animals is no convincing counter-example. It is as far as I can see the only large animal in KADUGLI with b-/k-prefix alternation, and similar words are found in many languages outside NK. Compare the following items (outside the Nuba Mountains, the meaning is always given as 'wild pig' or 'wart-hog'):

"Kamdang"	β-áquruk/k-áquruk
Talodi	p-uqurru/k-iqurru
Orig	k-adirú/s-adirú
Sudan-Arabia	kadruk
"Gule"	kuturu
Mahas Nubian	kaderok
Kreish	boqǫ
Ciita	gutar

Ik	borok
Didinga	kiborok
Teso	eputir
Markweta	pútyêr

5. CONCLUSION

An investigation of the more readily available lexical and grammatical evidence has led me to conclude that it is presently not possible to assume a genetic relationship between KADUGLI and (Niger-)Kordofanian. In particular, the noun-class system that has played such a prominent and convincing role in the constitution of the Niger-Kordofanian language family is absent in KADUGLI, and its absence cannot easily be explained as a loss. There are a few superficial similarities with Niger-Kordofanian noun classes, but these do not appear to be traces of it.

In a cursory way, I have followed up the suspicion that KADUGLI might belong to the Afroasiatic language family. Except for item **ṭare* 'moon' which seems to be a root widespread in both Afroasiatic and Nilo-Saharan, this has brought to light no striking lexical similarities. Similarities can be found in the gender system but the differences are much greater, in particular, the AA markers k/t/n for masculine/feminine/plural are totally dissimilar to the markers found in KADUGLI, e.g. Krongo ŋ/m/n/ŋg for masculine/feminine/neuter/plural, respectively.

On the other hand, the lexical and grammatical similarities linking KADUGLI with Nilo-Saharan are in no way inferior to those that have been adduced for a number of other language groups. It is for these reasons that I recommend that KADUGLI may be included in the search for substantial Nilo-Saharan comparisons.

NOTE

1. This is carried out by Mechthild Reh, University of Cologne. I have profitably discussed this section with her, and I wish to thank her for her comments. We do not agree on all points of interpretation, and I have to take responsibility for the conclusions as presented here.

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