

Notes on the Classification of Kordofanian  
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## 1 The Kordofanian Languages

The present paper reviews the classification of the Kordofanian languages of the Nuba mountains of Sudan. Table 1 lists the ca 25 languages subsumed under the label Kordofanian<sup>1</sup> in a conventional subclassification and language/dialect division (Lewis 2009). Table 1 gives names, one or two common alternative names, ISO-639-3 codes for the languages in question. It should, however, be noted that a multitude of alternative names, dialect

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<sup>1</sup>Also the Kadu = Kadugli-Krongo = Tumtum group (ca 9 closely related languages also in the Nuba mountains) were originally included in Kordofanian by Greenberg (1966:149-160). However, since Schadeberg (1981b,a), who affirmed the distinctness of the Kadu group in plain terms, they are usually not subsumed under “Kordofanian”. Since this decision is well-founded – the gender system and lexicon of the Kadu group do not show genetic links to the other Kordofanian languages – it has been followed here. The status of the Kadu group will not be discussed in this paper.

names, prefix/non-prefix variants and spelling variants occur as well, and that most of the names listed below are in fact (originally) place names rather than glossonyms (for details, see Dabitz 1985; Stevenson 1957; Lewis 2009).

Lewis (2009) cites speaker numbers for all languages but it is not clear from what the sources are and how recent the data is. Speaker numbers from older surveys can be found in (Stevenson 1957; Jernudd 1979; N/A 1978b,a, 1979; Patriarchi and Rottland 1996), and for some languages, more recent survey data, as well as analysis, is given by (Mugaddam 2006, 2008, 2002). All Kordofanian languages are under pressure from Colloquial Sudanese Arabic but none, except possibly Warnang (see below), is down to the last few speakers. English is popularly taught in the former SPLA controlled areas and is increasing as a third language (Mugaddam 2008). The full sociolinguistic status for each language is largely irrelevant for the purposes of the present study and in many cases up-to-date information is lacking. As civil war in the past decades involved the Nuba mountains, drastic changes in the sociolinguistic situation may have occurred.

The first wordlists from Kordofanian languages to appear in a European publication were of Schabun of the Heiban group and Takele of the Rashad group (Rüppell 1829), and a century later short wordlists and some very rudimentary grammar notes were available for several languages from each Kordofanian subgroup. Yet the Kordofanian languages are still relatively understudied, in the sense that there is no detailed reference grammar of any Kordofanian language, let alone one from each subgroup. For a comprehensive listing of all documentation up to the early 1980s see Dabitz (1985).

The Heiban group is the most well-studied, for which there are missionary monograph grammars written on Moro (Black and Black 1971) and Heiban (MacDiarmid 1928)<sup>2</sup>. There is an on-going extensive field-based description of Rere (a Koalib variety) by Nicholas Quint (CNRS, Paris) from which a phonology (Quint and Kokko 2006) has appeared so far. A 30-month project (BCS-0745973) to describe Moro is ongoing at UCSD with a refugee speaker from Thetogovela. Further, Stevenson (1957) and the derivative Tucker and

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<sup>2</sup>This work on Heiban, which was in fact adjudicated by none other than Diedrich Westermann, was known to Stevenson (1957:83) and a (partial?) copy turns up in his Nachlass (Blench 1997). Otherwise, no other researcher seems to have seen this work. The present author has made several unsuccessful attempts to locate a copy through contacts with researchers with access to Stevenson's nachlass, Phoebe Macdiarmid's grandson and the national library of New Zealand.

Table 1: The (sub-)classification of Kordofanian as standardly presented since Schadeberg (1981b) with summary notes on descriptive status. There are [old] published wordlists, preliminary phonology, pronouns, basic typological data for all languages except Julud. Further, *S* = Published grammar sketch ( $\approx 50$  pp.), *MSG* = Manuscript full grammar ( $\approx 300$  pp.), *OS* = Published (old-ish) grammar sketch, *NT* = New Testament translation, *D* = A full-ish field-based description is well under way as of 2010, (*N*) = The series of numerals is cognate within this group.

<b>HEIBAN</b> (10)	<b>TALODI</b> (9)
Eastern (2)	Talodi Proper (8) (N)
<b>Ko</b> (Fungor/Kau/Nyaro) [fuj]	<b>Talodi</b> (Jomang) [tlo] <i>OS</i>
<b>Warnang</b> (Werni) [wrn]	<b>Nding</b> (Eliri) [eli] <i>OS</i>
West-Central (8)	Ngile-Dengebu (2)
Central (5)	<b>Dagik</b> (Masakin) [dec] <i>D</i>
<b>Heiban</b> (Ebang) [hbn] <i>NT S MSS</i>	<b>Ngile</b> (Daloki) [jle] <i>MSS</i>
<b>Laro</b> (Laru) [lro]	Tocho (4)
<b>Logol</b> (Lukha) [lof]	<b>Acheron</b> [acz]
<b>Utoro</b> (Kawama) [otr] <i>NT S MSG</i>	<b>Lumun</b> [lmd] <i>D</i>
<b>Koalib</b> (Rere) [kib] <i>NT MSS D</i>	<b>Tocho</b> (Tacho) [taz]
<b>Shwai</b> (Shirumba/Schabun) [shw]	<b>Torona</b> [tqr]
Western (2)	<b>Tegem</b> (Lafofa) [laf] <i>OS MSS (N)</i>
<b>Moro</b> [mor] <i>NT S D</i>	
<b>Tira</b> (Kanderma) [tic] <i>MSS</i>	
<b>RASHAD</b> (2) (N)	<b>KATLA-TIMA</b> (3) (N)
<b>Tegali</b> (Gom/Tingal) [ras] <i>MSS</i>	Katla (2)
<b>Tagoi</b> (Orig/Tumale) [tag] <i>OS MSS S</i>	<b>Katla</b> [kcr] <i>OS D</i>
	<b>Julud</b> [—] <i>D</i>
	<b>Tima</b> [tms] <i>D</i>

Bryan (1966) contain elements of a comparative grammar. Stevenson also wrote up two grammars, of Tira (150pp) and Utoro (273pp), which are so far unpublished<sup>3</sup>. No less than four new testaments have been published which can serve as raw data for morphosyntactic descriptions. Indeed, Meinhof (1944) wrote a sketch of Heiban based on gospel texts and there is currently work at Leiden University based on digitized versions of the New Testament texts (Stebbins and Ali 1966). Perhaps the most important comparative source is the collection of tentative phonologies, 200-word lists, noun class system basics for all Heiban languages (Schadeberg 1981d). This work (Schadeberg 1981d:18-19) is also the only one to contain data on Warnang from Werni, an outlier village in the southeast. This data, collected from two transient schoolboys, indicates that Warnang is too different to be a dialect of the the Fungor/Ko complex as had been previously assumed (Stevenson 1957:100-101), and, indeed, the fragment we know of its noun class system is quite aberrant from all the better known Heiban languages. Warnang is also the only Kordofanian language so far to exhibit infixes for noun plurals. It would thus be very interesting to see further data from Werni, but despite inquiries, no information is forthcoming, and the village itself may well have been dispersed in the wake of the civil war (p.c. Thilo Schadeberg 2007).

For the Talodi group, we have two old sketches (Meinhof 1916c, 1917b) and the beginnings of a comparative grammar (Stevenson 1957; Tucker and Bryan 1966). Heleen Smits (Leiden University) is writing a PhD thesis on Lumun and John van der Elst (Cologne University) is writing a PhD thesis on Dagik. Apparently, Stevenson (1957:84) collected enough data for a sketch of Masakin (a Ngile variety), but the whereabouts of these data is not known to the present author. Again, the most important comparative source is the collection of tentative phonologies, 200-word lists, noun class system basics for all Talodi languages (Schadeberg 1981e), which includes a wordlist of Tegem collected by Robin Thelwall.

For the Rashad group, there are grammar notes (Stevenson 1957; Tucker and Bryan 1966) and three incomplete sketches of Tagoi varieties (Tutschek 1850; Schadeberg and Elias 1979; Meinhof 1916b)<sup>4</sup>. Lewis (2009) and earlier

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<sup>3</sup>They are currently being edited for publication by Thilo Schadeberg and will be published by Rüdiger Köppe Verlag (p.c. Thilo Schadeberg 2008).

<sup>4</sup>Quint and Kokko (2006:226) cites Thilo C. Schadeberg *The Rashad Group*, 59pp., tapuscrit non publié but Thilo Schadeberg (p.c. June 2007) disacknowledges the existence of such a typescript by him. Also, in the late 19th century, Werner Munzinger had collected enough data for a Tegali grammar that was subsequently lost (Schadeberg 1987:213).

editions mention Tingal [tie] as a separate language. This division stems from a conservative interpretation of Tucker and Bryan (1966:70)'s rendering of information provided by Stevenson. Stevenson had no first-hand data from Tingal and therefore did not assert that Tingal was either a separate language or a dialect of Tegali or of Tagoi Stevenson (1957:103). When an early version of the *Ethnologue* was compiled, such cases were rendered as separate languages, and while some others, such as Tukum and Turum, were weeded out later, Tingal remained (p.c. Andrew Persson 2009). In July 2009 in Kadugli, I was able to find a speaker who had grown up in Tingal and had excellent command of the language. While I only had the opportunity to spend an hour or so with him, his speech was nearly identical to the Rashad and Tegali materials in Stevenson (1957:46-52) and his own listing of villages whose speech was intelligible versus unintelligible to him matched the Tagoi/Tegali speaking villages listed by Stevenson perfectly. Based on this information, we regard Tingal as a Tegali dialect<sup>5</sup>.

The Katla-Tima group too, is subject to grammar notes (Stevenson 1957; Tucker and Bryan 1966) and an old sketch for Katla (Meinhof 1917a) (and even transcribed songs in Heinitz 1917). A team lead by by Gerrit Dimmendaal, University of Cologne) is documenting Tima, from which a substantial amount of data has already appeared (Alamin Mubarak 2009; Dimmendaal 2009b). Recent fieldwork on Katla has revealed that Katla and Julud are not mutually intelligible wherefore they should be regarded as separate languages (p.c. Birgit Hellwig 2006). Modern descriptive grammars are in progress for Katla & Julud (by Birgit Hellwig, LaTrobe University, Melbourne).

It should be remembered that the Kordofanian languages are not the only languages at home in the Nuba mountains – quite the opposite – there are upwards 20 more languages spoken there with considerable genealogical diversity<sup>6</sup>. Indigenous also to the Nuba mountains are the three Temeinian languages (Blench 2007), the two Nyimang (Stevenson et al. 1992) languages and the nine or so Kadu languages (Dafalla 2006). Further, incursions of two languages of the Daju family (Thelwall 1981; Boyeldieu 2010; Stevenson 1962) and some five languages of the Nubian family (Jakobi and Kümmerle 1993) are represented since long in the Nubas, and, of course, since recently, Col-

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<sup>5</sup>A motion to adjust the corresponding iso-639-3 entries accordingly is underway by Andrew Persson (p.c. August 2009).

<sup>6</sup>All five families Temeinian, Nyimang, Kadu, Daju and Nubian are often held to be genetically related at a deep level in various constellations of “Nilo-Saharan”. The validity of this hypotheses is, however, beyond the scope of this paper.

loquial Sudanese Arabic is spoken natively (Thelwall and Schadeberg 1984).

It is capricious to give a fair overview of typological features when the amount and quality of data varies so much. Nevertheless, the following broad outlines may be of some benefit to the reader.

Phonologically, like all historically adjacent languages, Kordofanian languages typically have 2-3 tonemes, perhaps 4 in Tegem, though the functional load of tone need not be high. Typically one finds one retroflex stop and perhaps a retroflex flap, but not a whole contrasting series of retroflexes. Basic constituent order has been claimed to be SVO for virtually all Heiban and Talodi languages for which we have data, except Tegem which is clearly verb-final. However, one may be betrayed here by elicited example sentences, because, on closer inspection, Tira and Utoro (Heiban group) as well as Dagik (Talodi group) also show VSO alternation with SVO. Both Tagele and Tagoi (Rashad group) are SOV. Further, while both Katla and Tima have been cited as SVO previously, following new field data Tima is analysed not as SVO, but as a pragmatically conditioned free word order language (Dimmendaal 2008, 2009b). Most, if not all, Kordofanian languages prefer head-modifier order and use prepositions. Suffixes are common for case-marking. At least Moro in the Heiban group is known to have a minimal-augmented pronoun system (Kossmann 2004:17-25, Black and Black 1971:Chapter 4:8-9), and attested 1p pl inclusive/exclusive forms, variation in attested forms, as well as admitted pronoun elicitation difficulties, make the suspicion likely that at least the Heiban and Talodi languages have minimal-augmented systems.

Perhaps the most intriguing feature of the Kordofanian languages is the presence of noun-class systems, and their implications for the genealogical history of the Kordofanian languages and beyond. That is, reminiscent of the more well-known Bantu languages, each noun typically takes one specific prefix in the singular and another prefix specific in the plural and concordial prefixes appear (in varying degrees) on adjectives, demonstratives and verbs. All the Heiban and Talodi group languages have the noun classes whereas the situation is mixed in the Rashad group. The Tagoi cluster has noun classes while the Tegali cluster we find little trace of them. Crucially, the Tegali and Tagoi languages are clearly related in the basic lexicon, so the Rashad group is indubitably coherent (Stevenson 1957:46, MacDiarmid and MacDiarmid 1931:153). Investigations of Katla and Tima has failed to reveal any noun classes, i.e., synchronically, there are no noun classes that are differentiated through agreement. Nonetheless, different prefixing plural strategies, and the

hypothesis that Katla-Tima are related to the other Kordofanian languages – which do have noun classes as defined by agreement – has led to the speculation that Tima once had a noun class system (Dimmendaal 2010, 2009a). At present, however, the hypothesis that Katla-Tima and the other Kordofanian languages are genetically related has not been substantiated by evidence, and there is nothing internally in the plural formation strategies in Tima that suggests noun class origins. The noun class systems will be considered in more detail below, where we especially discuss the question of cognacy between the different branches.

## 2 The Classification of the Kordofanian Languages

### 2.1 History

A full history of the classification of Kordofanian can be found in Dabitz (1985) and Stevenson (1957) and need not be repeated here. We will merely recall the milestones relevant to the present discussion with some critical remarks.

1. Probably the first attempt to place (some) Kordofanian languages in a wider context is Latham (1848:197-202) who places both Tegali-Tumale (Rashad group) and Schabun (Heiban group) in his “Nubian class of languages” which encompassed a variety of languages of present-day Sudan<sup>7</sup>. Linguistic evidence for a genetic family of this Nubian class of languages is not provided.
2. Early in the century, the well-known Africanist Carl Meinhof made a research trip to Kordofan *province* where he was able to gather and publish data on no less than 40 varieties from the Nuba mountains area (for a listing, see Dabitz 1985). In this series of articles, all Nuba mountain languages were classified either as Nubian, Prefix or Sudanic. Thus, the Kordofanian languages with noun classes (“prefixes”), i.e., various Heiban and Talodi varieties, Tagoi from the Rashad group as well as

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<sup>7</sup>In modern terminology and divisions, these are Fur, various Nubian and Hill Nubian varieties, Dinka and Schilluk of West Nilotic and Rüppell’s Dar Fertit (= Kara of Central Sudanic).

the Kadu languages, were classed together in one group and it was surmised that this group must have links to Bantu and Fulani because of the noun classes. On the other hand, Katla, Tima and Tagele from the Rashad group were classified as “Sudanic”, i.e., along with a large number of other classless languages in the Sahel area (Meinhof 1916a). This kind of classification was meant by Meinhof to be a genealogical one, although also cultural and racial factors weighed in heavily. In modern terms, however, if anything, it amounts to a typological classification, with little genealogical validity.

3. In 1930-31 the Sudan Government commissioned the New Zealand missionary couple Phoebe and Donald MacDiarmid, at the time working at Heiban, to undertake a survey of the the whole Nuba area for three months in 1930-31. Out of this survey, a classification including minuscule wordlists from the main languages was published (MacDiarmid and MacDiarmid 1931)<sup>8</sup>. This is the first classification on purely linguistic grounds and recognizes no less than 10 distinct families, corresponding to Kordofanian groups Heiban, Talodi Proper, Tegem, Rashad, Katla-Tima and (precisely) to the above mentioned non-Kordofanian Daju, Nubian, Temeinian, Nyimang and Kadu.
4. Greenberg (1950:389-390) asserted the Kordofanian unity (including Heiban, Talodi Proper & Tegem, Rashad, Katla-Tima and Kadu) on the grounds of “a fair measure of fundamental vocabulary resemblance among the groups” and “agreement in certain specific morphologic features” but cites only resemblant 1st & 2nd person pronouns and seven singular-plural prefix pairs arbitrarily selected from the five branches. As for the Niger-Congo connection, Greenberg (1950:393) merely notes that “The very fact of the existence of noun of classes for singular and plural in Niger-Congo and Kordofanian is indicative of possible further connections, since such formations are rare elsewhere in the world”.
5. On the contrary, (Stevenson 1957:97, Stevenson 1964:128-129, 79-88, 98-102, Stevenson 1975) who had gathered data himself on nearly all Nuba mountains languages (Jakobi 1995; Blench 1997) recognized

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<sup>8</sup>A longer manuscript with the full wordlists and sentences was deposited in the library at the University of Khartoum (Stevenson 1971:18). Since the library was not open during my brief visit to Khartoum in July 2009 I was unable to verify the existence of these materials.



only the low-level groups as of the MacDiarmids. While he meticulously noted all lexical and grammatical similarities, including the parallel with Bantu noun classes, any wider genetic groupings were left unasserted. Tucker and Bryan (1956:146-148) using Stevenson's data and just as aware of Greenberg's ideas, did essentially the same.

6. Greenberg (1966:149-160) is a much more aggressive version of Greenberg (1950:389-390), where the cited evidence for the internal coherence of Kordofanian (including Heiban, Talodi Proper & Tegem, Rashad, Katla-Tima and Kadu) is extended to include also a 3rd pronoun and thirteen, instead of seven, singular-plural prefix pairs. Furthermore, miscellaneous resemblances in plural morphology, noun classes and 52 lexical items between Kordofanian and Niger-Congo, are used to conclude that Kordofanian is related to Niger-Congo.<sup>9</sup>
7. Finally, Schadeberg took up after Greenberg and, having surveyed the Kordofanian languages himself, developed a much more serious case for the classification of Kordofanian (Schadeberg 1981b). Greenberg's four groups Heiban, Talodi (including Lafofa), Rashad and Katla-Tima were kept, but Kadu was taken out. Suggested proto-forms for noun class prefixes of Heiban, Talodi (including Lafofa) and Rashad were laid out together with suggested semantics for the noun classes, in order both to show the unity of Kordofanian and its genetic relation to Niger-Congo. Lexical evidence played a minor, if any, role at all<sup>10</sup>.

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<sup>9</sup>It should be noted that Greenberg was convinced already by 1948 that Kordofanian and Niger-Congo were related, as per the following quote Greenberg (1948:25): "Yet the conclusion is inescapable that the class prefixes and suffixes found in such impressive, but discontinuous distribution from Senegal to Kordofan, and which are clearly related to Bantu, must be part of the general Sudanic inheritance and cannot be a result of borrowing." Nevertheless, many of the resemblances, e.g., Lafofa t-/k-, adduced in the 1963 version is from data that appeared after 1948! Just like many aspects of Greenberg's Amerind classification, the classification of Kordofanian was (partly?) pre-conceived, and the data filled in later (Campbell and Poser 2008:267-268).

<sup>10</sup>Cf., e.g., the following wording:

Data from wordlists and short grammatical descriptions make it clear that at least the first three [of four – HH] branches of Kordofanian have a noun class system (marked by prefixes), which may be taken as evidence for genetic relationship (i.e., common origin) with the large Niger-Congo language family. Lexical evidence for this relationship remained very limited in the early 1990s (Schadeberg 2006:233-234).

The same ideas, albeit in more abbreviated and cautious words, were kept in later publications (Thelwall and Schadeberg 1984; Schadeberg 1989, 1994, 2006). Although Schadeberg does not explicitly trace his inspiration to Stevenson, Stevenson (1964:82-83) had already stressed the non-conformity of the Kadu group and its gender-prefix system and tabulated the essential noun class form-meaning pairs among the Heiban, Talodi, Lafofa and Rashad groups.

Subsequent writers have followed Schadeberg's classification albeit with some reservations (Möhlig 1983; Bendor-Samuel 1994, 1986; Bendor-Samuel and Williamson 2003; Olson 2004; Williamson and Blench 2000).

## 2.2 The Present Perspective

We will re-examine the case both for the Kordofanian unity and the relation to Niger-Congo, starting from its most refined form in Schadeberg (1981b) and taking into account data that has appeared in the meantime. It is instructive to first review the non-controversial groups and their status.

**Heiban:** Internally, the Heiban branch is above 40% related lexicostatistically, and a fair amount of lexical proto-forms, and noun-class prefix pairs can be linked by regular sound correspondences (Schadeberg 1981d). Though there is a question mark here and there, these are generally convincing, even for Warnang, which appears to lack many of the proto-classes<sup>11</sup>.

**Narrow Talodi:** Internally, the Narrow Talodi branch is clearly related with lexicostatistical figures in the range 44-47%. A fair amount of lexical proto-forms, and noun-class prefix pairs can be linked by regular sound correspondences (Schadeberg 1981e). Though there is a question mark here and there, these are generally convincing.

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<sup>11</sup>A special case is Laro, which is 90% lexicostatistically cognate with Heiban but shares no noun-class pairing with Heiban or the rest of the languages at all (Schadeberg 1981d:147-149)! The Laro story is that this was done deliberately to confuse their neighbours (Schadeberg 1981c). There appears to be no convincing alternative to this story.

**Lafofa:** Lafofa is a single language with a little dialectal diversification (Stevenson 1957:102, 43-46, Schadeberg 1981e:15). Noun classes are present.

**Rashad:** The Rashad group comprises two dialect clusters which are clearly related in their lexicon, including, e.g., numerals (Latham 1848:199, MacDiarmid and MacDiarmid 1931:153, Stevenson 1957:46). The curious fact is that the Tagoi dialect cluster has a full-fledged alliterative concord noun-class system while the Tegali cluster has no trace of a noun class system. The question is thus if there was an original noun-class system common to both that was subsequently lost in the Tegali cluster, or, if originally there was none and the Tagoi cluster acquired them later (presumably under influence from neighbouring Heiban group noun class languages). Stevenson (1957:40, 102) favoured the theory that the Tagoi cluster acquired them, since, in addition to the prefix class-markers in Tagoi, both clusters share a plural marking suffix *-Vn*. Schadeberg (1981b:121) on the other hand, deemed the acquisition of a noun-class system much less probable than the loss of it, and objected to the lack of an identified donor language. No new perspectives or descriptive data has appeared to resolve the question.

**Katla-Tima:** As observed above, the Katla branch consists of two very closely related languages, which, in turn, are related to the single language Tima. The two branches are fairly diverse<sup>12</sup>, exhibiting, e.g., different sets of numeral roots, but the case for the two being related is convincing (Stevenson 1957:190-191). One theory is that the divergence of Tima is partly the result of a deliberate manipulation (Dimmendaal 2009b). There are no noun classes (Meinhof 1917a; Alamin Mubarak 2009).

Perhaps the most intriguing aspect of Schadeberg's contribution is the refined case for a Kordofanian unity as well as its relation to Niger-Congo, via form-meaning correspondences in noun class prefixes. We will now go on to discuss the (parts of) this hypothesis in detail.

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<sup>12</sup>According to Schadeberg (1989:71) they share as much as 50% of their basic vocabulary.

### 2.3 The Position of Katla-Tima

Since no noun classes are attested in the Katla-Tima group, all that has been adduced in support of a genetic relation with the other Kordofanian languages is the lexical evidence remaining from Greenberg (1966:149-160). The evidence presented by Greenberg for Katla-Tima is extremely slight: in the 1950 version only the prefix-pairs Katla *b/-* and Tima *g/-* are cited, while in the 1963 version no prefix-pairs are cited, though instead a 2nd person pronoun Katla-Tima *ɲaŋ*<sup>13</sup> and a Katla 3rd person pronouns *ɲu* is cited. Among the 52 Kordofanian-Niger-Congo lexical parallels cited in the 1963 version, only 9 involve Katla or Tima (or both). Needless to say, 2 pronoun forms and 9 lexical items do not stand a chance of passing tests of random resemblances, and, in any case, similar amounts of lookalikes can be found with languages outside Kordofanian (Stevenson 1964:100, Blench 2006b,a). Therefore, there is no convincing case for a Katla-Tima grouping neither with Kordofanian nor with Niger-Congo. Likewise, Dimmendaal (2009a)'s new attempt at finding parallels directly with Niger-Congo, is unconvincing in that chance resemblances are not ruled out.

### 2.4 The Lafofa-Talodi Relationship

Schadeberg (1981e), following Greenberg (1950:390), further argued that Lafofa is (most closely) related to the Narrow Talodi group citing noun class parallels and lexical evidence (lexicostatistical figures in the range of 13-25% between Lafofa and various Narrow Talodi languages are cited (Schadeberg 1981e:87)). However, he is well aware that the noun-class and lexical parallels involving Lafofa are much less secure than those in Narrow Talodi, cf. the following quote:

The relatively isolated position of Tegem (Lafofa) has been obvious at all stages of comparison. It must be pointed out here that this has certainly given our reconstructions a Narrow TALODI bias. The difference between Tegem and NT is also striking in areas that fell outside the present study, most notably syntax (cf. Tucker and Bryan 1966:287). A primary split between Tegem and NT seems to be a well-founded hypothesis. Indeed, we may ask on

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<sup>13</sup>Newer data shows the correct Tima form to have a long a: *ɲaaŋ* (Alamin Mubarak 2009:148).

what grounds Tegem should be classified with the other TALODI languages. I have adopted this hypothesis from Greenberg (1950) who finds these two units "quite close" (p. 189, n.4). Most earlier authors have seen "Lafofa" as occupying an isolated position. For instance, Stevenson (1956-57;41:45) regards lexical resemblances with NT as borrowings and treats them on a par with loanwords from Shilluk. Tucker and Bryan (1966:270) regard Lafofa as a Single unit and classify it together with HEIBAN and Narrow TALODI as one Larger Unit. Although a comprehensive subclassification of Kordofanian is outside the scope of the present study I am convinced that Greenberg's position is the correct one, i.e. Tegem (Lafofa) is closer to (Narrow) TALODI than to any other group or branch of Kordofanian. This is not only supported by lexical resemblances but also by, e.g., their sharing labial consonants as prefixes for classes 1 (\*b-) and 6 (\*m-). (Schadeberg 1981e:158)

The evidence from noun classes for relating Lafofa and Narrow Talodi noun classes is laid out in a detailed comparison, with many comments and reservations in Schadeberg (1981e:112-129). An important concern is that, at the time, not even one Talodi language was known well enough for us to know what, if anything, is the semantic content of a certain prefix-paired class. The semantics of a noun class was therefore gauged by Schadeberg (1981e:112-129) on the basis of which words from a 200-word list belonged to the respective class. This has the effect that, since relatively few words serve to delineate the noun-class semantics, significant chance and uncertainty effects enter into the equation. As one scrutinizes the reported comparisons involving Lafofa, it will be seen that far from all noun classes posited for Proto-Talodi have unambiguous support in Lafofa, as summarized in Tables 2 and 3.

As for the lexical evidence, Schadeberg (1981e:130-154) reconstructs some 158 cognate sets for proto-Talodi, 68 of which involve a Lafofa form. Of the 68 Lafofa cognates, 18 are regarded by Schadeberg as doubtful, and thus the remaining 50 as secure. These lexical cognate sets are reproduced in Tables 4 and 5.

Of the 50 cognates regarded as non-doubtful, some 12 are one-vowel (or diphthong) only matches (cow, egg, eye, fat, fire, guts, root, thorn, warm,

Proto-Gender	Semantics	Status
*b-/(y-)	“personal”	Not found in Lafofa
*b-/g-	“tree”	No semantically matching word(s) in Lafofa
*w-/g-	cow, goat, meat	OK
*j-/g-	belly, breast, eye, neck, tooth	Requires irregular correspondence NT <i>j-</i> ~ Lafofa <i>ṭ-/t-</i>
*j-/m-	bone, egg, head	Requires irregular correspondence NT <i>j-/∅</i> ~ Lafofa <i>ṭ-/t-</i>
*ḍ-/r-	horn, root, thorn	Requires slightly irregular correspondence NT <i>ḍ</i> ~ Lafofa <i>ṭ-/d-</i> and an arbitrary choice in the NT gender of root
*ḍ-/n-	hole, leaf, tongue	Not clearly attested
*d-/n-	hair, louse	Not clearly attested in Lafofa
*g-/n-	knee, road	Not attested in Lafofa
*g-/w-	ear, moon	Phonologically corresponding gender <i>k-/l-</i> exists in Lafofa but without matching semantics.
*ts-/ɲ-	hand, leg	Not found in Lafofa
*ŋ-/ɲ-	bird, fish	Not found in Lafofa

Table 2: Assessments by the author on paired noun classes assigned to proto-Talodi on the basis of Narrow Talodi (NT) and Lafofa evidence as of Schadeberg (1981e:112-129).

water, wind, year), some 19 are one-consonant matches<sup>14</sup> (bone, die, dog, eat, fear, flower, fly, bark, dirt, meat, say, tongue, tooth, goat, hand, name, pull, rain), and in 12 other the match is not entirely convincing formally or semantically (branch, gazelle, give, fog, many, heart, scratch, suck, clean, nail, smooth, head). The remaining seven (left(side), road, who, count, snake, squeeze) are good multi-consonant matches, but may, of course, include loans. Without many secure cognate sets, it is difficult to find regular correspondences. However, a good candidate is the loss of final *-k* in Lafofa, with up to six witnesses (dog, year, goat, guts, fat, fire). In addition, this correspondence

<sup>14</sup>Some different words, see especially those involving *r*, do not have consistent correspondences.

Proto-Gender	Semantics	Status
*b-	earth, sand, fog, cloud, sun	Only potential Lafofa matches are cloud = mist and sun with irregular <i>p/b</i> alternation
*j-	fog, salt, sun	Only potential Lafofa matches are fog = smoke
*d <sub>ɹ</sub> -	fire	OK
*n-	night	Not found in Lafofa
*g-	bark, name, wind	Requires irregular correspondence NT <i>g</i> ~ Lafofa <i>ç</i> -/ <i>k</i> -
*ŋ	blood, dirt, fat, water, ...	OK, but some Lafofa items have an irregular correspondence NT <i>ŋ</i> - ~ Lafofa <i>ŋ</i> -/ <i>p</i> -

Table 3: Assessments by the author on singleton noun classes assigned to proto-Talodi on the basis of Narrow Talodi (NT) and Lafofa evidence as of Schadeberg (1981e:112-129).

is attractive since Lafofa appears to be more tonal (Schadeberg 1981e:76-84) the other Kordofanian languages. This suspicion cannot, at present, be followed up with more and carefully tone-analysed data.

gloss	proto-form	Jomang	Nding	Dengebu	Ngile	Tocho	Tegem
bark n. bone	-idi, g-/? -amma(ŋaŋ), j-/m-	g-éák j-ímá/m- úmá	l-ijŋi; k-/m- c-umme/m- m <sup>w</sup> e; ú máyŋ/m- máŋŋ	kəŋi ts-ámme/m-	k-íŋi/w-úŋi s-úmme/m-	k-ánjak/n- ci-/məŋaŋ	c-íŋi t-úám- i/múám
branch	-ig, ɖ-/r-	g-ɔpik/l-	ɖ-ik/t-	-	ŋ-éérú/n- 'root'	ɖ-ééréŋ/l-;k- úúréŋ/(w)-	t-i/r-i-igɔ
clean	-ili	= Ar.	-aatti, t- 'good'	=	-ólíŋli, y- k- [i~ ɪ] = 'smooth'	ɔd̥iiri, g-	b-íli-li = 'good'
count	-daŋaand	= Ar.	t áŋáán du! [u~ wa]	-	táŋáandu!	ɔd̥áaand̥e!	n d̥á-nd̥á- d̥aŋ!
cow die	-ai, w-/g -iŋ(ŋ)ɔ	w-eŋ/k-e íŋɔ	póy/cé p-íŋɔ	w-a/örriŋu ba- íŋɔ~ báŋŋɔ	wá/cé ŋɔ-ŋnɔ	- p-iŋŋɔk	ai/k-ai ŋuŋwi
dirt	-ari, ŋ-	= Ar.	-aanu-ŋiri, t-	-	-əteccá~ a'deeleccá, ŋ-	ɔŋɔruk, g-	ŋ-aŋéŋ
dog	ɖ-/r-	ɖ-úk/r-	pɔak/aabuk; p(ɸ)ók/ááβók	ŋ-ááú <sup>ŋ</sup> /ŋ-	ɖ-ékeelú/l-	ɖ-á(w)uk/l-	b-éepú/éerú
eat	-ragu	rágú!	logó!	rágú!	lagu!	ɔorugi; βáá- rúgɔ	rí(k)!
egg	-u(w)íŋ, j-/m-	jíŋ/m-	c-wúŋŋ/m-; c-ɔep/mw-	ts-úúwi/m-	sí/m-wí	c-íŋ/m-	ɖ-úúwe- y/m-úúwe-y
eye	-iig, j-/g-	ŋ-a(a)jiiŋ/m-	c-íik/k-; c- f/k	ɖ-s-íigí/k-	sígi/x-íigí; s- ígi/h-íigí	c-íŋ/k-	ɖ-í-i/c-
fat fear	-aag, ŋ- -Ciiraŋ	ŋ-áak βó-lasar	ŋ-áak; ŋŋák p-an- deeráŋ	ŋ-á -	ŋ-ŋá hókɔ-néere	ŋ-áak βóó-nijaŋ	ŋ-éé-éy ... d̥wíiriŋ

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fire	-ig, d-	ḡ-ik/r-	t-ik	t-i	t-i	t-ik	t-i-i
flower	-ulo, j-/m-	= Ar.	c-ulo/m-	-	t-uug/l- 'fruit'	-	t-úŋ~ úú-l-/m- 'seed'
fly v.	-biiru ?	baa-bířu = 'bird'	g-uúru = 'bird'	ŋ-bířú = 'bird'	púllú!; kú- bullu [k~h]	β-illo	... břiaŋ
fog	-uuri, j-	j-ářřřř 'cloud'	c-úúli	-	pəsulle	k-úrúbe <sup>0</sup> = 'cloud, dust'	c-uur-i = 'smoke'; buuluŋ = 'cloud'
gazelle	-obog	-óŋégaḡe, j-	-aβúya, y-	oḡóβařřř	tábářřř, yaa- ḡabářřř	úβbaaḡe [ḡ~ ḡ]	(káa) ndéy
give	-j- or -ts-	(i)nḡi(ŋřř)! 'give me (water)'	ŋjé! = 'give me'	ŋgé! = 'give me'	aḡi [ḡ~ḡ]	oyéḡi = 'give me'	kélé; ... jen
goat	-emig, w-/g-	umik/gəmik	éémfk/kímik	mwe/kəmi	wúúmi/kími	ŋumi/lijok	eemi/kemi
guts	-utsug, ḡ-/n-	g-úúúú/l-, w-/m-	t-uúúú/n- [j~c]	-	núu; ḡ-ú-ŋ- ú	n-ekkúḡ	t-u/r-u
hand	tS-/ŋ	s-úúúúřř/ŋ-	c-ibíŋ/ŋ-; k- /ámáŋ = 'arm'	ts-úúúú/ŋ- = 'arm'	ŋ-gwřř/ŋ- úg(w)řř [i~i]	c-águŋ~ c- úguŋ/náguŋ~ ŋúguŋ	kúúú- i/úúú- i
head	-ats, j-/m	j-ás/m-	c-a/m-aaga; c-á/m-	ts-áái/m-	s-á/m-	c-áḡ/m-	d-róó+ y/m-óóó+ m-a- y
heart	igi, j-/m- or g-	j-i/m-	c-igřř/m-	ts-řřřř/m-	'd-áága/n-	c-igřř/máḡik	d-róó+ y/m-óóó+ m-a- y
left(side)	-gule	-ugule, s-	-agúle, c-	-	kúúlé	kúre	kúli
many	-ummiŋ?	-immaŋ, y-	-iccó, y-	-óóó, b-, y-, n;	-úmmu, y-, w-	-oḡúúúú, g-, m-	dřřř; řřřř
meat	-abats, w-/g-	ábás, g-	áábá/kábá	w-áábí/k- ábí	w-áábí/k-ibí	k-/iinak	k-wéé-l- [l~ ŋ~ŋ]
nail	-awřř, g-/w-	g-áárřř/l-	k-/áááá; k- /áááá	g-áááá/w-	x-éŋje/w-	k-áwŋ-/w-	k-uú+g-a- y/uú+w-a- y
name	-ariŋa, g-	g-ářiŋá	k-alaŋa(ŋ)	k-arnŋa/w-	k-alaŋa/w-	k-árŋa/w-	g-urwaŋ
pull	-bi ... (?)	ááḡu!	pitya	-	aaḡu!	uḡřřř!	mbii!
rain n.	-anir, b-	béřřř = 'snake'	pene = 'snake'	p-ónne	p-inule = 'snake'	p-ané	k-álló-y = 'sky'
road	-aḡḡir, g-/n-	ḡ-aa/řř-ba	k-/ááářř	k-ááářř/k-n-	k-atřřřř/w-	k-áářřř/n-	t-íáářř/m-
root	-agats, ḡ-/r	ḡásas/r-	k-ááářř	k-ááářř/k-n-	k-atřřřř/w-	k-áářřř/n-	t-a-aga/r-a- y
say	-r-?	ířřř!	uuga!	ḡááru!	səmmu! = 'speak'	oḡmmi! = 'speak'	řřřř!
scratch	-guwar-(?)	ḡááβu!	tuyúúú~ tuy <sup>wa</sup> !	-	kxřřáḡu!; hóxřřá	oḡerááḡ!	... ŋwar
smooth	-liili?	-eeré	-apŋik/y-	-	-óřřř = 'clean'	-óřřřř, p-	p-řřřř řřř,
snake	-anir	bóŋéřř/áá- = 'rain'	pene/aane = 'rain'	-	pə-/nũlə = 'rain'	teeřř/n-	w-é(é)l-i/k- [l~ŋ]
squeeze	-rugg-	řřřřku!	koóŋ <sup>wa</sup> !	-	kořřennu!; hó- ŋuḡoóó	ur(u)ki!	řřřřřř!
suck	-mu(gg)	= Ar.	ŋaayu!	ts-řřřř	s-řřřř	c-řřřř	p-úuwřř
thorn	-a(g)i, ḡ-/r-	-	-	třřřř	túḡi/lúḡi	-	dai/rai
tongue	-(V)řřřř, ḡ-/n-	ḡuluŋe/lááŋe	t-úúúúé/nááŋé; t-úúúúé/r-; t-úúúúé/t- c-ééřřř/k-řřřř [c~k <sup>2</sup> ]	t-úúúúé/r- ts-řřřř/k-	t-úúúúé/l- s-řřřř/k-	t-úúúúé/l-; ŋ-úúúú/ŋ-	l-íáŋ-i
tooth	-řřř, j-/g-	j-řřřř/g-	c-ééřřř/k-řřřř [c~k <sup>2</sup> ]	ts-řřřř/k-	s-řřřř/k-	c-řřřř/k-	t-ayŋ/k-; t- ééŋ-i/k-
warm	-uttsu	-úúúú, ŋ-	-úccó, ŋ-	-řřřř, ŋ-	-óóó, ŋ-, y-	-úyyu, ŋ-	b-úú-l- ŋḡóŋwřř-taŋ!
wash	-gojgi ?	ḡóccí!	eém <sup>wa</sup> !	-	kóžgeeró	oḡuuyřř!	ŋ-řřř
water	-ir, ŋ-	ŋ-řř	ŋ-řř; ŋ-řř	ŋ-ééřř(əḡ)	ŋ-ééé	ŋ-řř	ŋ-řř
what?	-nde	-yřř	ŋemmřř ... éřř	yóoka	yaaḡá	ŋřřř	ňđé
who?	ambi	ámbi	aap <sup>h</sup> i .. mřř; eēbřř	áŋŋó	oobi	ořřřř	ámbuté
wind	-u(w)i, g-	g-ána	k-anáŋ g-ánaŋ	-	k-wřř	k-řřřř	k-úwé-l-i
year	-iigV, j-?	ḡ-áβúú/k-r-	c-iřřř/m-	-	t-oobo/l-	t-uβúú/k-l-	j-řřř (pl.)

Table 4: The 50 non-doubtful proto-Talodi cognate sets involving Lafofa adapted from Schadeberg (1981e).



gloss	proto-form	Jomang	Nding	Dengebu	Ngile	Tocho	Tegem
arm	-ammaŋ, g-/n-	<b>g-ámanŋ/l-</b>	<b>k-/ummu;</b> <b>k-/ám(m)áŋ</b> <b>= 'hand'</b>	ts-uuwi/n- = 'hand'	ŋgwi/púgî = 'hand'	<b>k-ámmanŋ/n-</b> <b>= 'wing'</b>	<b>t-šwáa-áy/r-</b> <b>šódy</b>

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belly	-arag, j-/g-	j-ááruək/g-áruək	c-áárik/m-; c-áárák/k-árák	ts-aaruak/k-	s-əw <sup>h</sup> /m-; sórú/m-	c-áárák/k-árák	t-úur-i/k-ú(ú)r-ú-ga
bird	-VdVbi, η-/p-	búúrí/árβi	p-, úúβe/naá- riβe	η- η-umandí/η-	η- érébi/árébi; J η-əwəβi/n-	p-úúβe/w-	p-luyε-y/á- liiyε-y
black	-upí	-úpi, d-	-éndí, t-; índíη, t-	- -sáβəβə, w- /k-; -únní, k- = 'blue'	- -úp(n)i, k-, w-	-úp, k-	b-ii-li
blood blow	-ittsug, η- -gwo	η-íisuk úβú!	η-írúk eeru	η-ééú -	η-ééru kuuði! [k~ h]	η-iccək səgə!	p-í-i lúúy!; lúí
clothing	-aaǰia, ?/n-	d-ééǰa/l- [ǰ~ ǰ]	t-aaǰia/n-; t-aaǰea/n-	k-ááǰia/w-	k-aaǰa/w-	k-aaǰia/n-	luaari~ láár
drink	-yagu	yígu!	eegu!~ iéégu! = 'eat (except meat)'	íígu!	águ!	ikkí; β-ikkú	cuu!
fish	η-/n and b-/(y)	η-ááβe/n-	k-/ááβe	η-ááβe/η-	η-aabe/n-; η-ááβé/n-	p- iááβe/yááβe scci, g-	p-aan/aan-i
green	-ojji	-ís, d- = 'blue'	-aayi(k), d- = 'blue'; 'new?'	-sátsi, k- = 'yellow'	-sáí, k~ x-, w-		b-íǰili-lli
horn	-ibig, ǰ-/r-	ǰ-úβík/r- əβík	t-úúβík/n-; t-éβík/η-	t-úúβérik/r- [k~ η~ ɔ]	t-úúβi/l-ibi [b~ β]	t-úúβe/l-əβe	t-ú-i/r-
leg/foot	-agag, ts-/n-	s-áǰák/n- = 'leg'	c-íǰák/n-; c- áǰək/m- = 'leg'	ts-éǰé <sup>0</sup> /n- éǰá <sup>0</sup> = 'leg'	ǰ-gə/n-əǰá; ǰ- /n-	k-íǰú gə+ǰgak/n- íǰú nə+ǰgak k-/íin ak	l-ε-y~ l-ia- ga = 'leg'
moon	-aanug, g-/w-	g-ááǰək/l-	k-/áánu(k)	k-íina/w-	k-sónə/w-		k-wéél-i [l~ η~ n]
mouth	-oŋ, ǰ-/r-	ǰ-ə(ŋ)/r-	t-əŋ/n-; t- /n áá-r	t- ú(ú)gúǰə/r-	t-ə/l- [ɔ~ u~ e]	t-əŋ/l-	k-ééŋ-i/ééŋ- i; k-an/ɛŋ
new	-ajje	-áasse, d-	-ááyé = 'green'	-attse~ aatse, t-	-ááε, k-	-aají~ aají, g-, n-	p-ééli-li
river	-aabats, ǰ-/r-	ǰ-ááβas/r-	k-/úúruk	-	t-aabo/l- = 'riverbed'	k-éélu/l-	t-uwaa-yt/r- əwaa-yt
tail	-idig, ǰ-/r-	ǰúú-ǰík/rə	t-úú-ǰík/níí-; t-úúǰí/m-	ts-ándúle/m-	s-ííttí/m- elíttí	k-úǰik/l- əǰik	t-w-ii/r-
white	-VbbVg	-iiβúk, d-	-éββí, d-	-səbβu, g-	-abácca, k-	-p-pək, k- [pp~ bb]	b-uu-li

Table 5: The 18 doubtful proto-Talodi cognate sets involving Lafofa adapted from Schadeberg (1981e).

## 2.5 The Unity of Kordofanian

Three lines of argument, going back to Greenberg (1950) and subsequently sifted by Stevenson (1964)<sup>15</sup> and Schadeberg (1981d,e), have been put forward for the unity of Kordofanian, namely, the noun class systems, the pronouns and the lexicon.

As noted already, the lexical evidence is not impressive. The relatively small number of lookalikes so far published (Greenberg 1966:149-160) are not proto-forms from the respective branches but arbitrarily selected from different branches. Already, Stevenson (1964:100) (cf. Latham 1848:199's parallels between Rashad and Cushitic) showed that similar amounts of such lexical resemblances can also be found with neighbouring non-Kordofanian

<sup>15</sup>And various unpublished comparative materials (Blench 1997), especially concerning lexicon.

languages. Similarly, Blench (2006b,a) re-evaluates the internal lexical evidence with similar conclusions.

The argument for a genetic relation on basis of form-meaning correspondences in noun-classes culminates in Schadeberg (1981b). See the discussion below on the strengths and weaknesses of noun-class comparison also involving Niger-Congo.

## 2.6 Kordofanian and Niger-Congo

The argument for relating Kordofanian and Niger-Congo hinges on parallels in the noun class systems. The lexical evidence was never impressive and is weakened to near-nothing when the Kadu group is taken out Blench (2006b,a). Another diagnostic frequently used to define the Niger-Congo family is verb-extensions Williamson and Blench (2000), but a recent survey including Kordofanian failed to produce clear such parallels in Kordofanian Hyman (2007).

As noted, the Lafofa, Talodi, Heiban and (one branch of) Rashad lineages have noun class systems. All of these undoubtedly have a similar typology in the following ways:

- The noun-classes are marked by overt (predominantly single-consonant) prefixes
- The noun-classes are defined by (predominantly alliterative) concord in the noun phrase and sometimes also as subject prefixes on the verb
- There are a dozen or more noun-classes that come in singular-plural pairs (but the same prefix frequently occurs as the plural of one class and as the singular of another and vice versa)
- There are a dozen or more noun-classes come in singleton form (i.e., not in singular/plural pairs)
- Many noun classes seem to have some correlation with semantic fields
- Many nouns, sometimes also nouns which take noun class prefixes, also take a suffix in the plural

Some of these features are similar to Niger-Congo noun classes, i.e., the singular-plural pairing, alliterative concord and possibly some aspects of the

	1	3	4	5	6	6a
*HEIBAN	gu- Frau, Mann, Mensch	gu- Baum	j- Pl. zu 3	li- Ei, Kopf	ŋu- Pl. zu 5	ŋ- Blut, Fett, Wasser
*TALODI	b- Frau, Mann, Mensch	b- Baum	g- Pl. zu 3	j- Ei, Kopf	m- Pl. zu 5	ŋ- Blut, Fett, Wasser
Orig (RASHAD)	w- (Menschen)	w- (Baumnamen)	y- Pl. zu 3	y- Ei	ŋ- Pl. zu 5	ŋ- Blut, Fett, Wasser
*Westatlantisch (Doneux 1975)	gu- (Menschen)	gu- (Holz, Gewächse)	Ci- Pl. zu 3	de- Kopf, Name	ga- Pl. zu 5	ma- Blut, Fett, Wasser
*Oti-Volta (Manessy 1975)	-u ~ -a Frau, Mann, Mensch	-bu ~ be Baum	-(y)i ~ -ki ~ -ŋi Pl. zu 3	ɖ Ei, Kopf	-a Pl. zu 5	-ma Blut, Fett, Wasser
*Togorest (Heine 1968)	o- Frau, Mensch	o- (Brennholz)	i- Pl. zu 3	li- Ei, Kopf, Name	N- Pl. zu 5	Blut, Fett, Wasser
*Benue-Kongo (De Wolf 1971)	ù- Frau, Mann, Mensch	ù	(t)i- Pl. zu 3; Bäume	li- Ei, Kopf, Name	a- Pl. zu 5	Blut, Fett, Wasser
*Bantu (Meeussen 1967)	mù- PP: jù Frau, Mann, Mensch	mù- PP: gù Baum	mì- PP: gí `ì- PP: dí Pl. zu 3	mà- PP: gá Ei, Name	Pl. zu 5	Blut, Fett, Wasser
Mba (Ubangi) (Carrington 1949)	-V NUM:g- Mann	-V NUM:w-	-e NUM: ∅ Pl. zu 3	-e NUM:l- Name	(-se) (Pl. zu 5)	-me Blut, Wasser

Table 6: The table of Kordofanian versus Niger-Congo form-meaning correspondences suggest by Schadeberg (1981b:123).

semantics. The differences with Niger-Congo are the large number of singleton classes, the presence of additional plural-marking suffixes, and the extent to which one prefix can serve as singular or plural depending on the gender Kihore (1978).

From the very beginning, the question has been whether the similarities are merely typological – and if so, whether a merely typological similarity has some diagnostic value for genealogical relationship – or, if there are also form-meaning correspondences which are an even better indicator of genealogical relationship (Stevenson 1975, Greenberg 1972:190, Tucker and Bryan 1956:147), cf. the following quote:

“... nirgens auf der Welt ein ähnliches System belegt ist. Die kaukasischen und australischen Nominalklassensysteme stellen völlig andere Typen dar. Auch ist es höchst unwahrscheinlich daß die Übereinstimmung auf Entlehnung zurückzuführen ist. (Das Mbugu in Tansania ist m.E. kein vollwertiges gegenbeispiel, ja nicht einmal die berühmte Ausnahme, die die Regel bestätigt.) In diesem Licht besehen gewinnt die typologische Übereinstimmung genügend an Gewicht, um als Argument für die genetische Verwandtschaft zu dienen. Die Übereinstimmung ist jedoch nicht ausschließlich typologisch ...” (Schadeberg 1981b:124)

The form-meaning correspondences were spelled out by Schadeberg (1981b:123), reproduced in Table 6, and the widely read simplified version of Schadeberg (1989:72) is reproduced in Table 7. The tabulated correspondences, at face value, are certainly impressive.

	1	3	4 pl of 3	5	6 pl of 5	6a
Kordofanian	gu- people	gu- tree	j-	li- egg	ŋu-	ŋ- liquids
Atlantic (Doneux 1975)	gv- people	gu- tree names	Ci-	de- head, name	ga-	ma- liquids
Oti-Volta (Manessy 1975)	v- people	bv- tree	-Ci	d <sub>1</sub> egg, head	-a	-ma liquids
Togo Remnant (Heine 1968)	o- people	o- firewood	i-	li- egg, head, name	a-	N- liquids
Benue-Congo (De Wolf 1971)	u- people	u- tree	(t)i-	li- egg, head, name	a-	ma- liquids
Bantu (Meeussen 1967)	NP mu- PP ju- people	mu- gu- tree	mi- gi-	j <sub>3</sub> - li- egg, name	ma- ga-	ma- ga- liquids
Mba (Ubangi) (Carrington 1949)	-V Num g- man	-V w-	-e Ø- name	-le l-		-me liquids

Table 7: The simplified table of Kordofanian versus Niger-Congo form-meaning correspondences suggest by Schadeberg (1989:72).

However, the abbreviated tables hide a number of complicating circumstances. For example, for the Heiban forms, the characteristic nouns for the *\*gu-/li-* gender are fish, neck, woman and worm rather than people (Schadeberg 1981d:138), and where we have better data than 200-word lists (Faris 1978:103), there are at least three genders (1, 4, 6) which include people. More detailed analysis of Moro Gibbard et al. (2009) shows that the labial element in *gu-* is better analysed as not part of the prefix, just like in the southeastern branch where the labial element is clearly absent Faris (1978), so reconstructing the labial element is probably not justified. Similarly, the tree-gender is based on simply the word for 'tree', but a tree-word with a *gu-/j-* noun class is restricted to Central Heiban (Schadeberg 1981d:138) and, e.g., in extensive data from the southeastern branch there at least three noun classes which include trees none of which matches both singular *gu-* and plural *j-* (Faris 1978:103). The *\*li-/ŋu-* noun class does include egg, but the inclusion of head is restricted to the west-central branch.

Thus the view that the noun class form-meanings pairs are the result of genetic inheritance is not without its problems. On the other hand, one may ask, if they are not the result of genetic inheritance, where do they come from? Logically, the possible alternatives are contact, chance or universal tendencies (or some combination of those).

If they are the result of contact, what would be the exact borrowing mechanism for borrowing noun classes? One fairly well-attested scenario for morphological borrowing – referred to as compartmentalization – is where one language borrows a lot of lexical material containing the morphology of the source language, and this material is subsequently re-segmented in the target language and spreads to non-borrowed material. This scenario does not fit the (internal) Kordofanian situation at all since, lexically, the branches are quite distinct, lacking massive lexical borrowing in any direction. However, there is another attested scenario that suggests contact-induced spread of noun classes is possible without massive lexical borrowing.

Table 8 shows examples of article incorporation in Mauritian Creole. Article incorporation means that (what used to be) an article in French becomes unsegmentable and fonologically part of its host word. The article loses whatever meaning it had, and other means of expressing them are developed, as shown in Table 9. While most often the definite article *la* incorporates, there are examples of indefinite articles and articles in combination with the partitive *de*, and even the possessive pronoun *ma* incorporating. The stems may include borrowings, e.g., *laskul*, but curiously no Bantu stem is attested with

lisu	le chou	'cabbage'
leker	le cœur	'heart'
lakaz	lacase	'house'
dile	du lait	'milk'
dilo/delo	de l'eau	'water'
lete	l'été	'summer'
zanimu	les animaux	'animal'
nam	un âme	'soul'
mamer	ma mère	'mother superior'
laskul	English: school	'Royal College'
matak	Swahili: ma-tako	'buttock'
	Makonde: ma-tako	'buttock'
lasas	la chasse	'verb: to hunt'
latrãp	la trempe	'adjective: drunk'

Table 8: Examples of article incorporation in Mauritian Creole from (Strandqvist 2003:1, 15-17, 24)

lipye	'pied'	foot
en lipye	'un pied'	a foot
lipye-la	'le pied'	the foot
ban lipye	'des pieds'	feet
ban lipye-la	'les pieds'	the feet

Table 9: Expressing plurality and definiteness in Mauritian Creole without the inherited French articles (Strandqvist 2003:2).

article incorporation, as Bantu loans are typically loaned with their Bantu prefix attached. While the resulting article+stem compound is usually a noun, there are also cases where the resulting form is an adjective or a verb. With many such cases, it is easy to see how alliterative concord may emerge. There is convincing evidence that Mauritian Creole article incorporation is the result of Bantu contact. In Mauritian Creole over a 1000 cases of article incorporation are attested, Louisiana Creole has 252 and Haitian Creole has 112 cases, and in Reunionais there are only 12. This corresponds exactly to the sociohistorically attested amount of Bantu influence of the respective creoles (Strandqvist 2003:27-114).

The contact-induced acquisition of noun class systems scenario is especially attractive for Lafofa and the Tagoi cluster as this would explain the vast divergence in typology, lexicon and noun-class forms of these two versus the Heiban and Talodi groups,

Looking now at chance resemblances, consider the following scenario. Given two (unrelated) languages with noun class systems, how many form-meaning correspondences should one expect just by chance? This depends on the number of noun classes and the number of consonants participating in the marking of them. In at least Heiban and Talodi, one can easily count over 20 classes and beyond (depending on how many words need to inhabit a certain pairing for one to call it a 'class') and “Practically all PT [proto-Talodi – HH] consonants did function as noun class prefixes (Schadeberg 1981e:129)”. As a simplistic example, we may consider the following configuration. There are  $n$  places of articulation and  $k$  possible semantic classes (trees, liquids, animates, etc.). Two languages pick  $m$  form-meaning pairs each. The probability of at least  $x$  form-meaning matches is then:

$$P(x) = \frac{\sum_{x \leq i \leq m} \binom{m}{i} \binom{kn-m}{m-i}}{\binom{kn}{m}}$$

To put the six-fold correspondences of Tables 6 and 7 in perspective, we are interested in the probability than one gets six form-meaning correspondences (or more). Counting four places of articulation and same place of articulation being sufficient for a match, also appears to be in harmony with the six-fold correspondence table.

With  $n = 4$ ,  $k = 13$ ,  $m = 20$ , we get  $P(x \geq 6) = 0.901$

With  $n = 4$ ,  $k = 26$ ,  $m = 20$ , we get  $P(x \geq 6) = 0.148$

With  $n = 4$ ,  $k = 26$ ,  $m = 10$ , we get  $P(x \geq 6) < 0.000$



This is to be interpreted as follows. If the two languages have 20 classes each, if there are relatively few possible semantic classes (here 13), then one almost certainly should expect (at least) six matches. If, on the other hand, the number of semantic classes is larger (here 26), it is much less likely, but still not significantly unlikely. On the other hand, if the two languages only have 10 classes each, the probability of getting six or more matches is infinitesimally small.

Calculations like the above involve a number of simplifying assumptions. Another way of gauging the chance similarity is to take an unrelated noun-class language from somewhere else in the world and look for six matches. The best described non-African noun class language with alliterative concord and a similar number of noun classes is Yimas of the Lower Sepik-Ramu family in Papua New Guinea Foley (1991). It has 10x(Sg, Du, Pl) classes and has agreement on nominal modifiers and subject in verbs. With a little leeway, just as in the Kordofanian comparisons, six correspondences are easy to find

- Class I (male humans) has *-kn* so matches Kordofanian class 1
- Class X (containing e.g. *kawŋ* 'bark of sago palm', *aympanuŋ* 'heavy piece of wood for pounding grass') has *-uk* in the sg. and *ya-* in the plural so it matches Kordofanian 3, 4
- Class V contains 50% of the Yimas words, incl. egg, head, name and some liquids. It matches 5 and 6, 6a because it includes *-l* in the sg, *na-* (on verbs) in the sg., and a *-ra*, *-ya* in the plural

Related to the above question is exactly how rare are noun class languages across the world. If by "noun classes" we mean a gender system as defined by agreement which has more than 3 genders (regardless of how they are marked), then ca 5% of the world's language families exhibit them (not counting Kordofanian) <sup>16</sup> which make, e.g., phonemic clicks and object initial word order rarer. Further languages are developing a noun class system

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<sup>16</sup>Arapesh, Yimas (Lower Sepik-Ramu), Gunwinyguan, Ju|Hoan, South Khoisan, Jalaa, North East Caucasian, Maung (Iwaidjan), Nunggubuyu, Anindilyakwa, Mixtec (Otomanguean), Urninggank, Nasioi (South Bougainville), Mali (Bainingan), Kol (Bainingan), Marind, Walio (Leonhard Schulze), Duranmin, Saliba-Piaroa, Andoke, Kiowa, Buna, Yuchi, Äiwoo (Austronesian), Sare (Sepik Hill), Baniwa, Weri (Trans New Guinea), Chamacoco.

with alliterative concord via classifiers. Though it is perhaps unexpected, at least Munduruku, Saliba-Piaroa, Miraña and Nasioi do get singular-plural alternation in this path as well. If the Kordofanian noun class systems come from independent grammaticalization of classifiers, this has the advantage of explaining (some of) the dearth of classifier systems on the African continent as compared to other continents.

### 3 Conclusion

It is clear that the basis for including Katla-Tima is very weak. The case for a genetic Kordofanian unity is not without its problems, and a competing scenario is contact-induced acquisition of noun class systems especially by Lafofa and the Tagoi cluster, as this would explain the vast divergence of these two versus the Heiban and Talodi groups. Likewise, a competing scenario for a genetic relation of (parts of) Kordofanian with Niger-Congo is simply that the observed form-meaning correspondences are chance resemblances to be expected of languages with the typological feature of noun class systems.

### References

- Alamin Mubarak, S. (2009). *Tima Word Structure (Noun and Verb)*. PhD thesis, University of Khartoum.
- Bendor-Samuel, J. (1986). Niger-congo today. In Elson, B. F., editor, *Language in a Global Perspective: Papers in Honor of the 50th Anniversary of the Summer Institute of Linguistics 1935-1985*, pages 587–599. Dallas, Texas: Summer Institute of Linguistics.
- Bendor-Samuel, J. (1994). Niger-congo languages. In Asher, R. E., editor, *Encyclopedia of Language and linguistics*, pages 2800–2803. Oxford: Pergamon Press.
- Bendor-Samuel, J. and Williamson, K. (2003). Niger-congo languages. In Frawley, W. J., editor, *International Encyclopedia of Linguistics*, volume 3, pages 152–160. Oxford University Press, 2 edition.

- Black, K. and Black, B. (1971). *The Moro Language: Grammar and Dictionary*, volume 6 of *Linguistics Monograph Series*. Sudan Research Unit, University of Khartoum. States authors as "Mr. and Mrs. K. Black". However, the authors' full first names are Keith and Betty.
- Blench, R. (1997). The papers of roland stevenson: A composite catalogue. *Nilo-Saharan Newsletter, N.S.*, 1:3–16.
- Blench, R. (2007). The temeini languages. Paper presented at the 10th Nilo-Saharan Colloquium, Paris, August 22-24th 2007.
- Blench, R. M. (2006a). Kordofanian and niger-congo: An evaluation of the evidence. Draft Manuscript.
- Blench, R. M. (2006b). Kordofanian and niger-congo: New and revised lexical evidence. Draft Manuscript.
- Boyeldieu, P. (2010). The modified form of shatt damam nouns and its daju cognates. *Afrika und Übersee*, 91:0–0.
- Campbell, L. and Poser, W. J. (2008). *Language Classification: History and Method*. Cambridge University Press.
- Dabitz, G. (1985). *Geschichte der Erforschung der Nuba-Berge*, volume 17 of *Arbeiten aus dem Seminar für Völkerkunde der Johann Wolfgang Goethe-Universität Frankfurt am Main*. Wiesbaden: Franz Steiner.
- Dafalla, R. Y. (2006). A phonological comparison in the katcha-kadugli language group of the nuba mountains. In Abu-Manga, A.-A., Gilley, L., and Storch, A., editors, *Insights into Nilo-Saharan Language, History and Culture: Proceedings of the 9th Nilo-Saharan Linguistic Colloquium, Institute of African and Asian Studies, University of Khartoum, 16-19 February 2004*, volume 23 of *Nilo-Saharan*, pages 153–172. Köln: Rüdiger Köppe.
- Dimmendaal, G. J. (2008). Language ecology and linguistic diversity on the african continent. *Language and Linguistics Compass*, 2(5):840–858.
- Dimmendaal, G. J. (2009a). The genetic position of tima. Paper presented at the 6th World Congress of African Linguistics, 17-21 August 2009, Cologne.

- Dimmendaal, G. J. (2009b). Tima. In Dimmendaal, G. J., editor, *Coding Participant Marking: Construction Types in Twelve African Languages*, volume 110 of *Studies in Language Companion Series*, pages 331–353. Amsterdam: John Benjamins.
- Dimmendaal, G. J. (2010). Esoterogeny and localist strategies in a nuba mountain community. *Sprache und Geschichte in Africa*, 20:0–0.
- Faris, J. C. (1978). Nominal classes of the southeastern nuba: Implications for linguistic science. In Thelwall, R., editor, *Aspects of Language in the Sudan*, volume 5 of *Occasional Papers in Linguistics and Language Learning*, pages 97–113. Ulster: The New University of Ulster.
- Foley, W. (1991). *The Yimas Language of New Guinea*. Stanford: Stanford University Press.
- Gibbard, G., Rohde, H., and Rose, S. (2009). Moro noun class morphology. In Matondo, M., McLaughlin, F., and Potsdam, E., editors, *Selected proceedings of the 38th annual conference on African linguistics: linguistic theory and African language documentation*, pages 106–117. Somerville MA: Cascadilla Proceedings Project.
- Greenberg, J. H. (1948). The classification of african languages. *American Anthropologist, N.S.*, 50(2):24–30.
- Greenberg, J. H. (1950). Studies in african linguistic classification vii: Smaller families. *Southwestern Journal of Anthropology*, 6(4):388–398.
- Greenberg, J. H. (1966). *The Languages of Africa*. Mouton de Gruyter, 2 edition.
- Greenberg, J. H. (1972). Linguistic evidence regarding bantu origins. *Journal of African History*, 13(2):189–216.
- Heinitz, W. (1917). *Phonographische Sprachaufnahmen aus dem Egyptischen Sudan*, volume XXXVIII of *Abhandlungen des Hamburgischen Kolonialinstituts*. Hamburg: L. Friederichsen. Reihe B: Völkerkunde, Kulturgeschichte und Sprachen 21.
- Hyman, L. M. (2007). Niger-congo verb extensions: Overview and discussion. In Payne, D. L. and Peña, J., editors, *Selected Proceedings of the 37th*

- Annual Conference on African Linguistics*, pages 149–163. MA: Cascadilla Proceedings Project, Somerville.
- Jakobi, A. (1995). Roland c. stevenson (1915-1991): Sein beitrag zur sprachforschung im sudan. In Wauschkuhn, M. and Wohlmuth, K., editors, *Die Sudanforschung in der Bundesrepublik Deutschland: Ergebnisse der Bremer Tagung 1993*, volume 2 of *Institut für Weltwirtschaft und Internationales Management*, pages 187–200. Münster: LIT.
- Jakobi, A. and Kümmerle, T. (1993). *The Nubian Languages: An Annotated Bibliography*, volume 5 of *African Linguistic Bibliographies*. Köln: Rüdiger Köppe.
- Jernudd, B. (1979). *The Linguistic Survey of Sudan*. PhD thesis, Umeå University.
- Kihore, Y. M. (1978). *A comparative study of the noun class systems of Heiban and Kiswahili*. PhD thesis, University of Khartoum.
- Kossmann, M. (2004). Some moro. Ms.
- Latham, R. G. (1848). On the present state and recent progress of ethnographical philology, pt. 1: Africa. *Report of the meeting of the British Association for the Advancement of Science, held at Oxford in June 1847*, 17:154–229.
- Lewis, P. M., editor (2009). *Ethnologue: Languages of the World*. Dallas: SIL International, 16 edition.
- MacDiarmid, P. (1928). *The grammar of the Nubas of the Heiban region of Nuba mountains province, Anglo-Egyptian Sudan*. PhD thesis, New Zealand: University of Dunedin.
- MacDiarmid, P. A. and MacDiarmid, D. N. (1931). The languages of the nuba mountains. *Sudan Notes and Records*, XIV(II):149–162.
- Meinhof, C. (1915-1916b). Sprachstudien im egyptischen sudan 1: Tagoy. *Zeitschrift für Kolonialsprachen*, VI:164–181.
- Meinhof, C. (1915-1916c). Sprachstudien im egyptischen sudan 3: Talodi. *Zeitschrift für Kolonialsprachen*, VI:264–284.

- Meinhof, C. (1916a). *Eine Studienfahrt nach Kordofan*, volume XXXV of *Abhandlungen des Hamburgischen Kolonialinstituts*. Hamburg: L. Friederichsen. Reihe B: Völkerkunde, Kulturgeschichte und Sprachen 20.
- Meinhof, C. (1916-1917a). Sprachstudien im egyptischen sudan 14: Katla. *Zeitschrift für Kolonialsprachen*, VII:212–235.
- Meinhof, C. (1916-1917b). Sprachstudien im egyptischen sudan 4: Eliri. *Zeitschrift für Kolonialsprachen*, VII:36–50.
- Meinhof, C. (1943-1944). Das heiban in kordofan. *Zeitschrift für Eingeborenen-sprachen*, XXXIV:94–130.
- Möhlig, W. J. G. (1983). Niger-kordofanisch. In Jungraithmayr, H. and Möhlig, W. J. G., editors, *Lexikon der Afrikanistik: afrikanische Sprachen und ihre Erforschung*, pages 175–176. Berlin: Dietrich Reimer.
- Mugaddam, A. H. (2002). *Language maintenance and shift in Sudan: The case of ethnic minority groups in Khartoum*. PhD thesis, University of Khartoum.
- Mugaddam, A. R. (2008). Linguistic situation of the tima language in the nuba mountains, sudan. Seminar Delivered at the Dept. of African Languages, Gothenburg University, 23 Sep 2008.
- Mugaddam, A. R. H. (2006). Language status and use in dilling city, the nuba mountains. *Journal of Multilingual and Multicultural Development*, 27(4):290–305.
- N/A (1978a). *Sample of Locality: Southern Kordofan: the Nuba Mountains: Eliri*. Language Survey of the Sudan. Institute of African and Asian Studies, University of Khartoum.
- N/A (1978b). *Sample of Locality: Southern Kordofan: the Nuba Mountains: Masakin*. Language Survey of the Sudan. Institute of African and Asian Studies, University of Khartoum.
- N/A (1979). *Sample of Locality: Southern Kordofan: the Nuba Mountains: Delami, Abri*. Language Survey of the Sudan. Institute of African and Asian Studies, University of Khartoum.

- Olson, K. S. (2004). *An Evaluation of Niger-Congo Classification*, volume 2004-005 of *SIL Electronic Working Papers*. SIL International.
- Patriarchi, C. and Rottland, F. (1996). Sprachkenntnis und sprachgebrauch in den nuba-bergen. In TODO, editor, *TODO*, pages 201–227. TODO.
- Quint, N. and Kokko, S. A. K. (2006). *Phonologie de la langue koalibe: Dialecte réré (Soudan)*. Paris: L’Harmattan.
- Rüppell, E. (1829). *Reisen in Nubien, Kordofan und dem peträischen Arabien*. Frankfurt am Main: Friedrich Wilmans.
- Schadeberg, T. (1981a). The classification of the kadugli language group. In Schadeberg, T. and Bender, M. L., editors, *Nilo-Saharan: Proceedings of the First Nilo-Saharan Linguistics Colloquium, Leiden, September 8-10, 1980*, pages 291–305. Dordrecht: Foris.
- Schadeberg, T. (1981b). Das kordofanische. In Heine, B., Schadeberg, T., and Wolff, E., editors, *Die Sprachen Afrikas*, pages 117–128. Hamburg: Helmut Buske.
- Schadeberg, T. (1989). Kordofanian. In Bendor-Samuel, J., editor, *The Niger-Congo Languages: A Classification and Description of Africa’s Largest Language Family*, pages 66–80. Lanham: University Press of America.
- Schadeberg, T. (2006). Kordofanian. In Brown, K., editor, *Encyclopedia of Language and Linguistics*, volume 6, pages 233–234. Amsterdam: Elsevier, 2 edition.
- Schadeberg, T. C. (1981c). Die geschichte der nominalklassen des laru (kordofanisch). In *Berliner Afrikanistische Vorträge: XXI. Deutscher Orientalistentag, Berlin 24.-29. März 1980*, volume 28 of *Marburger Studien zur Afrika- und Asienkunde: Serie A*. Berlin: Dietrich Reimer.
- Schadeberg, T. C. (1981d). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske.
- Schadeberg, T. C. (1981e). *A Survey of Kordofanian Vol 2: The Talodi Group*, volume 2 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske.

- Schadeberg, T. C. (1987). Zwei areale sprachmerkmale im ostsudan. In Mukarovsky, H., editor, *Leo Reinisch: Werk und Erbe*, volume 492 of *Sitzungsberichte / Österreichische Akademie der Wissenschaften in Wien: Philosophisch-historische Klasse*, pages 213–229. Wien: Österreichische Akademie der Wissenschaften.
- Schadeberg, T. C. (1994). Kordofanian. In Asher, R. E., editor, *Encyclopedia of Language and Linguistics*, pages 1868–1868. Oxford: Pergamon Press.
- Schadeberg, T. C. and Elias, P. (1979). *A Description of the Orig Language (Southern Kordofan) based on the notes of Fr. Carlo Muratori*, volume 26 of *Koninklijk Museum voor Midden-Afrika: Archief voor Antropologie/Musée Royale de l'Afrique Centrale: Archives d'Anthropologie*. Belgique: Tervuren.
- Stebbins, O. M. and Ali, K. (1966). *Kitham Gina Giyaṅ: The New Testament in Nuba: Heiban*. Khartoum: The Bible Societies.
- Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196.
- Stevenson, R. C. (1962). Notes on the people of liguri and neighbouring hills in the kadugli area. *Sudan Society*, 1:45–58.
- Stevenson, R. C. (1962, 1964). Linguistic research in the nuba mountains. *Sudan Notes and Records*, 43, 45:118–130, 79–102.
- Stevenson, R. C. (1971). The significance of the sudan in linguistic research past, present and future. In Hassan, Y. F., editor, *Sudan in Africa Part One: Sudan in the Past*, pages 11–25. Khartoum: Khartoum University Press.
- Stevenson, R. C. (1975). The present position of research in the nuba mountain languages. In Ḥāmid Ḥurreiz, S. and Bell, H., editors, *Directions in Sudanese Linguistics and Folklore [the second and final part of the proceedings of the Conference on language and literature in the Sudan organized by the Sudan research unit, University of Khartoum, 1970]*, volume 4 of *Sudanese Studies Library Number 4*, pages 58–62. Khartoum: Institute of African and Asian Studies (Sudan Research Unit).



- Stevenson, R. C., Rottland, F., and Jakobi, A. (1992). The verb in nyimang and dinik. *Afrikanistische Arbeitspapiere*, 32:5–64.
- Strandqvist, R. E. (2003). Article incorporation in mauritian creole. Master's thesis, University of Victoria.
- Thelwall, R. (1981). *The Daju Language Group*. PhD thesis, New University of Ulster.
- Thelwall, R. and Schadeberg, T. (1984). The linguistic settlement of the nuba mountains. *Sprache und Geschichte in Afrika*, 5:219–231.
- Tucker, A. N. and Bryan, M. A. (1956). *The Non-Bantu languages of North-Eastern Africa*, volume III of *Handbook of African Languages*. Oxford University Press.
- Tucker, A. N. and Bryan, M. A. (1966). *Linguistic Analyses: The Non-Bantu Languages of North-Eastern Africa*. Handbook of African Languages. Oxford University Press, 2 edition.
- Tutschek, L. (1848, 1849-1850). On the tumali language. *Proceedings of the Philological Society*, III, IV(75, 86):239–254, 138–139.
- Williamson, K. and Blench, R. (2000). Niger-congo. In Heine, B. and Nurse, D., editors, *African Languages: An Introduction*, pages 11–42. Cambridge University Press.

## 0.1 Appendix A: Sources for Original Data on Individual Languages

### 0.1.1 Heiban

#### Ko (Fungor/Kau/Nyaro) [fuj]

MacDiarmid, P. A. and MacDiarmid, D. N. (1931). The languages of the nuba mountains. *Sudan Notes and Records*, XIV(II):149–162

Faris, J. C. (1978). Nominal classes of the southeastern nuba: Implications for linguistic science. In Thelwall, R., editor, *Aspects of Language in the Sudan*, volume 5 of *Occasional Papers in Linguistics and Language Learning*, pages 97–113. Ulster: The New University of Ulster

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 94-99)

Riefenstahl, L. (1991). *Die Nuba von Kau*. Frankfurt am Main: Ullstein Sachbuch (Ethnological work containing some words.)

#### Warnang (Werni) [wrn]

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 99-103)

#### Heiban (Ebang) [hbn]

Meinhof, C. (1943-1944). Das heiban in kordofan. *Zeitschrift für Eingeborenen-sprachen*, XXXIV:94–130

MacDiarmid, P. (1928). *The grammar of the Nubas of the Heiban region of Nuba mountains province, Anglo-Egyptian Sudan*. PhD thesis, New Zealand: University of Dunedin

MacDiarmid, P. A. and MacDiarmid, D. N. (1931). The languages of the nuba mountains. *Sudan Notes and Records*, XIV(II):149–162

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 27-35)

Stebbins, O. M. and Ali, K. (1966). *Kitham Gina Giyaḡ: The New Testament in Nuba: Heiban*. Khartoum: The Bible Societies

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 68-72)

Unpublished Heiban dictionary

### **Laro (Laru) [lro]**

Schadeberg, T. C. (1981a). Die geschichte der nominalklassen des laru (kordofanisch). In *Berliner Afrikanistische Vorträge: XXI. Deutscher Orientalistentag, Berlin 24.-29. März 1980*, volume 28 of *Marburger Studien zur Afrika- und Asienkunde: Serie A*. Berlin: Dietrich Reimer

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 72-75)

### **Logol (Lukha) [lof]**

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 103-109)

### **Utoro (Kawama) [otr]**

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73-84, 93-115, 27-65, 117-152, 171-196 (pp. 27-35)

Bond, H. M., Astbury, M. R., Kwumi, M., Juro, N., Aligen, T., and Kamis, M. (1966). *Nurun, ḡurun ḡun ḡiya ḡun ḡikaiilo elo: The New Testament in Nuba: Otoro*. Khartoum: The Bible Societies

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. [19-59, 75-79])

Seligmann, B. Z. (1910-1911). Note on language of the nubas of southern kordofan. *Zeitschrift für Kolonialsprachen*, I:167-188

Meinhof, C. (1916-1917j). Sprachstudien im ägyptischen sudan 8: Kawama. *Zeitschrift für Kolonialsprachen*, VII:72-80

## 0.1. APPENDIX A: SOURCES FOR ORIGINAL DATA ON INDIVIDUAL LANGUAGES<sup>3</sup>

Guest Utoro mss

Ali/Guest/Persson Cwaya text, vocabulary, pronoun mss

### **Koalib (Rere) [kib]**

Meinhof, C. (1916-1917d). Sprachstudien im ägyptischen sudan 13: Koalib. *Zeitschrift für Kolonialsprachen*, VII:133–133

Quint, N. and Kokko, S. A. K. (2006). *Phonologie de la langue koalibe: Dialecte réré (Soudan)*. Paris: L'Harmattan

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 27-35)

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 59-64)

Mills, W. L. (1967). *Tikitadiza Tian: The New Testament in Nuba: Nirere (Abri)*. Khartoum: The Bible Societies

### **Shwai (Shirumba/Schabun) [shw]**

Meinhof, C. (1916-1917a). Sprachstudien im ägyptischen sudan 10: Schabun. *Zeitschrift für Kolonialsprachen*, VII:107–109

Rüppell, E. (1829). *Reisen in Nubien, Kordofan und dem peträischen Arabien*. Frankfurt am Main: Friedrich Wilmans

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 79-84)

### **Moro [mor]**

Gibbard, G., Rohde, H., and Rose, S. (2009). Moro noun class morphology. In Matondo, M., McLaughlin, F., and Potsdam, E., editors, *Selected proceedings of the 38th annual conference on African linguistics: linguistic theory and African language documentation*, pages 106–117. Somerville MA: Cascadilla Proceedings Project

Meinhof, C. (1917-1918b). Sprachstudien im ägyptischen sudan 22: Moro. *Zeitschrift für Kolonialsprachen*, VIII:47–47

Black, K. and Black, B. (1971). *The Moro Language: Grammar and Dictionary*, volume 6 of *Linguistics Monograph Series*. Sudan Research Unit, University of Khartoum. States authors as "Mr. and Mrs. K. Black". However, the authors' full first names are Keith and Betty

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 27-35)

Edwards, G. and Edwards, A. (1965). *Ɖarreiðia eyen TODOamaijan iði ramwa riðu: The New Testament in Nuba: Moro*. Khartoum: The Bible Societies

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 87-94)

Kossmann, M. (2004). Some moro. Ms  
Guest Moro mss

### **Tira (Kanderma) [tic]**

MacDiarmid, P. A. and MacDiarmid, D. N. (1931). The languages of the nuba mountains. *Sudan Notes and Records*, XIV(II):149–162

Meinhof, C. (1917-1918c). Sprachstudien im egyptischen sudan 23: Tira. *Zeitschrift für Kolonialsprachen*, VIII:47–48

Meinhof, C. (1916-1917i). Sprachstudien im egyptischen sudan 7: Kanderma. *Zeitschrift für Kolonialsprachen*, VII:64–71

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 27-35)

Watters, K. S. (1993). Status and function of tone in tira. Master's thesis, University of Nairobi

Seligmann, B. Z. (1910-1911). Note on language of the nubas of southern kordofan. *Zeitschrift für Kolonialsprachen*, I:167–188

Schadeberg, T. C. (1981b). *A Survey of Kordofanian Vol 1: The Heiban Group*, volume 1 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 19-59, 84-87)

Watters Tira vocabulary mss

## Rashad

### Tegali (Gom) [ras]

Rüppell, E. (1829). *Reisen in Nubien, Kordofan und dem peträischen Arabien*. Frankfurt am Main: Friedrich Wilmans

Meinhof, C. (1916-1917b). Sprachstudien im ägyptischen Sudan 11: Tegele. *Zeitschrift für Kolonialsprachen*, VII:110–131

Tucker, A. N. and Bryan, M. A. (1966). *Linguistic Analyses: The Non-Bantu Languages of North-Eastern Africa*. Handbook of African Languages. Oxford University Press, 2 edition (pp. 289-298)

Munzinger, W. (1864). *Die Deutsche Expedition in Ost-Afrika 1861 und 1862*, volume 13 of *Ergänzungsheft zu Petermann's Geographischen Mittheilungen*. Gotha: Justus Perthes

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 46-52)

### Tagoi (Orig/Tumale/Tingal) [tag]

Schadeberg, T. C. and Elias, P. (1979). *A Description of the Orig Language (Southern Kordofan) based on the notes of Fr. Carlo Muratori*, volume 26 of *Koninklijk Museum voor Midden-Afrika: Archief voor Antropologie/Musée Royale de l'Afrique Centrale: Archives d'Anthropologie*. Belgique: Tervuren

Meinhof, C. (1916-1917c). Sprachstudien im ägyptischen Sudan 12: Rashad. *Zeitschrift für Kolonialsprachen*, VII:132–132

Tutschek, L. (1848, 1849-1850). On the tumali language. *Proceedings of the Philological Society*, III, IV(75, 86):239–254, 138–139 which formed the basis for t [L]

Meinhof, C. (1915-1916a). Sprachstudien im ägyptischen Sudan 1: Tagoy. *Zeitschrift für Kolonialsprachen*, VI:164–181

Tucker, A. N. and Bryan, M. A. (1966). *Linguistic Analyses: The Non-Bantu Languages of North-Eastern Africa*. Handbook of African Languages. Oxford University Press, 2 edition (pp. 289-298)

Meinhof, C. (1915-1916b). Sprachstudien im ägyptischen Sudan 2: Tumale. *Zeitschrift für Kolonialsprachen*, VI:182–205

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro,

katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 46-52)

## Talodi

### Talodi (Jomang) [tlo]

Spronk, T. (2004). A brief description of current talodi orthographies. *Occasional Papers in the Study of Sudanese Languages*, 9:119–126

Meinhof, C. (1915-1916c). Sprachstudien im ägyptischen sudan 3: Talodi. *Zeitschrift für Kolonialsprachen*, VI:264–284

Seligmann, B. Z. (1910-1911). Note on language of the nubas of southern kordofan. *Zeitschrift für Kolonialsprachen*, I:167–188

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 35-43)

Schadeberg, T. C. (1981c). *A Survey of Kordofanian Vol 2: The Talodi Group*, volume 2 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 16-47, 47-53)

### Nding (Eliri) [eli]

Meinhof, C. (1916-1917g). Sprachstudien im ägyptischen sudan 4: Eliri. *Zeitschrift für Kolonialsprachen*, VII:36–50

Seligmann, B. Z. (1910-1911). Note on language of the nubas of southern kordofan. *Zeitschrift für Kolonialsprachen*, I:167–188

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 35-43)

Schadeberg, T. C. (1981c). *A Survey of Kordofanian Vol 2: The Talodi Group*, volume 2 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 16-47, 53-61)

### Dagik (Masakin) [dec]

Meinhof, C. (1917-1918a). Sprachstudien im ägyptischen sudan 20: Dagig. *Zeitschrift für Kolonialsprachen*, VIII:46–46

## 0.1. APPENDIX A: SOURCES FOR ORIGINAL DATA ON INDIVIDUAL LANGUAGES<sup>7</sup>

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 35–43)

Schadeberg, T. C. (1981c). *A Survey of Kordofanian Vol 2: The Talodi Group*, volume 2 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 16–47, 61–65)

Crocker phonology, discourse, vocabulary mss

Norton phonology mss

### **Ngile (Daloki) [jle]**

Schadeberg, T. C. (1981c). *A Survey of Kordofanian Vol 2: The Talodi Group*, volume 2 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 16–47, 65–72)

### **Acheron [acz]**

Norton, R. J. (2000). The noun classes of asheron. *Occasional papers in the study of Sudanese languages*, 8:23–56

Norton, R. J. (1995). Variation and change in the phonology of asheron. Master's thesis, University of Essex

### **Lumun [lmd]**

Seligmann, B. Z. (1910–1911). Note on language of the nubas of southern kordofan. *Zeitschrift für Kolonialsprachen*, I:167–188

Meinhof, C. (1916–1917k). Sprachstudien im ägyptischen sudan 9: Lumun. *Zeitschrift für Kolonialsprachen*, VII:105–106

Roger Blench Lumun mss

Norton phonology mss

### **Tocho (Tacho) [taz]**

Schadeberg, T. C. (1981c). *A Survey of Kordofanian Vol 2: The Talodi Group*, volume 2 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 16–47, 72–76)

Roger Blench Lumun mss



### 0.1.2 Tegem

#### Tegem (Lafofa) [laf]

Seligmann, B. Z. (1910-1911). Note on language of the nubas of southern kordofan. *Zeitschrift für Kolonialsprachen*, I:167–188 on which Meinhof, C. (1916-1917h). Sprachstudien im ägyptischen sudan 5: Lafofa. *Zeitschrift für Kolonialsprachen*, VII:51–56. Based entirely on Brenda Z. Seligmann. 1910-1911. Note on Language of the Nubas of Southern Kordofan. *Zeitschrift für Kolonialsprachen* I:167-188 in based.

Schadeberg, T. C. (1981c). *A Survey of Kordofanian Vol 2: The Talodi Group*, volume 2 of *Sprache und Geschichte in Afrika: Beiheft*. Hamburg: Helmut Buske (pp. 16-46, 76-84, 167-175)

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196 (pp. 43-46)

### 0.1.3 Katla-Tima

#### Katla [kcr]

Meinhof, C. (1916-1917e). Sprachstudien im ägyptischen sudan 14: Katla. *Zeitschrift für Kolonialsprachen*, VII:212–235

Heinitz, W. (1917). *Phonographische Sprachaufnahmen aus dem Ägyptischen Sudan*, volume XXXVIII of *Abhandlungen des Hamburgischen Kolonialinstituts*. Hamburg: L. Friederichsen. Reihe B: Völkerkunde, Kulturgeschichte und Sprachen 21

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196

Tucker, A. N. and Bryan, M. A. (1966). *Linguistic Analyses: The Non-Bantu Languages of North-Eastern Africa*. Handbook of African Languages. Oxford University Press, 2 edition

#### Tima [tms]

Meinhof, C. (1916-1917f). Sprachstudien im ägyptischen sudan 15: Tima.

*Zeitschrift für Kolonialsprachen*, VII:236–242

Stevenson, R. C. (1956/1957). A survey of the phonetics and grammatical structures of the nuba mountain languages, with particular reference to otoro, katcha and nyimang. *Afrika und Übersee*, 40, 40, 41, 41, 41:73–84, 93–115, 27–65, 117–152, 171–196

Alamin Mubarak, S. (2009). *Tima Word Structure (Noun and Verb)*. PhD thesis, University of Khartoum

Dimmendaal, G. J. (2009). Tima. In Dimmendaal, G. J., editor, *Coding Participant Marking: Construction Types in Twelve African Languages*, volume 110 of *Studies in Language Companion Series*, pages 331–353. Amsterdam: John Benjamins

## MSS not seen by the present author

DALE [Miss] (Sudan United Mission, Abri). Grammatical notes on Shwai. [MS.]

EDWARDS [Rev. and Mrs.]. Grammatical notes, vocabulary and sentences in Moro. [MS.]

MILLS [Mrs.]. Diɽɽɽɽ-English vocabulary; grammatical notes. [MS.]

NOBBS, K. J. 'Linguistic Guide' in Laro; grammatical notes on Otoro 'Linguistic Guide' in Tira. [MS]

[Sudan United Mission, Heiban.] Vocabulary and grammatical notes on Heiban. [MS.]

[Sudan United Mission, Kauda.] Vocabulary and grammatical notes on Otoro and Tira [MS]