

# THE HISTORICAL-COMPARATIVE STATUS OF EAST SUDANIC<sup>1</sup>

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## **Abstract**

Revolving around the genealogical assessment of Nilotic, Greenberg (1950) first proposed East(ern) Sudanic as a language family and in Greenberg (1963) came to develop it into the core of the even larger super-family Nilo-Saharan. While little contested among Africanists, the publicly available evidence for East Sudanic remains scarce and hard to assess. This contribution gives an overview of the current perception of and arguments for East Sudanic, concluding that this grouping cannot be accepted as a language family according to canonical historical-comparative standards.

## **1 Research history and inventory**

East Sudanic<sup>2</sup> is a widely known and accepted genealogical concept in African linguistics. It is usually associated with Greenberg's (1963) continent-wide classification as a sub-family of Nilo-Saharan. However, it originates in pre-Greenbergian work with partly divergent conceptualizations and thus has a longer and more complex research history.

The work of Westermann (1911, 1912) and Struck (1911/2) established the concept in terms of both name (cf. Meinhof 1911:4) and approximate linguistic composition. They proposed a large genealogical entity in Central Africa called Sudanic within which an eastern branch was contrasted to the much larger western Sudanic 'core'. This first East Sudanic comprised in particular Nilotic and Nubian languages as well as a few geographical neighbors like Kunama. A very similar classification had been proposed as early as Lepsius (1880:XVII), using, however, the term "Misch-Negersprachen" rather than Sudanic. It is also important that in this context, Nubian was even included in a wider concept of "Nilotic" that some historical linguists like Murray (1920) entertained at the time.

Westermann (1927, 1935, 1940) eventually abandoned his wide Sudanic theory by excluding Nilotic and doubting the membership of Nubian, Kunama etc. Tucker (1935, 1967 [1940]) took up this view and, by retaining the term, came to locate an East Sudanic unit geographically much further west, so that it comprised very different lineages, namely Bongo-Bagirmi, Kresh, Moru-Madi, and Lenduic, which are subparts of the modern Central Sudanic family, and Ndogoic, Raga, and Zandic of the Ubangi pool of Niger-Congo. Just as important is that Tucker replaced the original genealogical idea of East Sudanic with a purely areal concept.

When Greenberg (1950, 1963) eventually proposed his influential classification, he relied on all the above works in some form, even though he did not cite the relevant references. He chose to ignore the later work by Westermann and Tucker and revived instead the East Sudanic concept of early Westermann, Struck and Murray in terms of both geography and historical nature.

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<sup>2</sup> I here use the short form "East Sudanic" rather than the original "Eastern Sudanic", as the longer form becomes unwieldy with additional modifiers like Northern and Southern (see below).

Table 1: The development of East Sudanic since Greenberg (1963)<sup>3</sup>

Greenberg (1963)	Bender (e.g., 1989, 2005)	Ehret (e.g., 1989, 2001)	Rilly (e.g., 2005, 2010)	Dimmendaal (2007, 2014)
(Meroitic)	(Meroitic)	-	Meroitic	Meroitic
1. Nubian	Nubian	Nubian	Nubian	Nubian
3. Barea	Nara	Nara	Nara	Nara
7. Merarit, ...	Taman	Taman	Taman	Taman
5. Nyima, ...	Nyimang	Nyimang	Nyimang	Nyimang
4. Ingassana, ...	Jebel	Jebel	Jebel	Jebel
8. Dagu of Darfur, ...	Dajuic	Dajuic	Dajuic	Dajuic
2. Murle, ...	Surmic	Surmic	Surmic	Surmic
9. Nilotic	Nilotic	Nilotic	Nilotic	Nilotic
6. Temein, ...	Temeinic	Temeinic	Temeinic	Temeinic
10. Nyangiya	-	Kuliak	-	-
-	-	Berta	-	-

Greenberg's (1950, 1963) East Sudanic came to be widely accepted among Africanists and remains so today, in spite of serious reservations raised early on by such specialists as Köhler (1955) and Heine (1970). If subject to change, it merely underwent minor revisions in terms of the membership of one or the other family. Table 1 gives the major versions of East Sudanic entertained by various specialist scholars.

Table 2: Basic classificatory units of East Sudanic

Lineage		No.	1	2	3	Areal affiliation according to Güldemann (2018a)	
						Macro-area <sup>4</sup>	Accretion zone
(Kuliak)		3	X			East Sudan-Gregory Rift	
Northern	Taman	4		X	X	Chad-Ethiopia	
	Nyimang	2		X	X	Chad-Ethiopia	~ Nuba Mountains
	Nara	1		X	X	Chad-Ethiopia	~ Ethiopian escarpment
	Meroitic	1	X	X	X	Chad-Ethiopia	
	Nubian	13				Chad-Ethiopia	Nuba Mountains
Southern	Dajuic	7		X		Sahel	Nuba Mountains
	Temeinic	2/3	X	X	X		Nuba Mountains
	Nilotic	51				East Sudan-Gregory Rift	Southern Gregory Rift
	Surmic	10				East Sudan-Gregory Rift	Ethiopian escarpment
	Jebel	4	X	X			Ethiopian escarpment
(Berta)		1		X	X		Ethiopian escarpment

Note: No. = Number of languages; 1 = No grammar sketch before 1965;

No comprehensive modern published description: 2 = before 2000, 3 = today

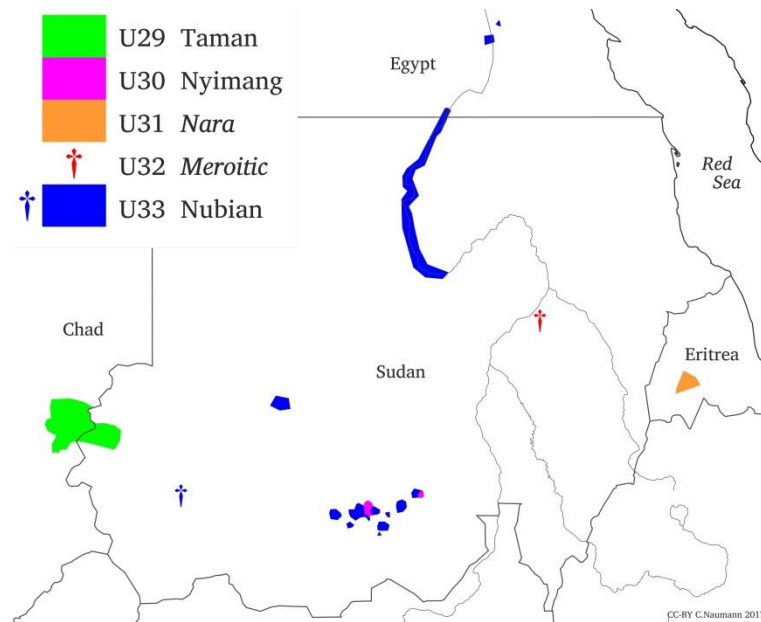
Table 2 shows that East Sudanic subsumes today approx. 100 languages, representing about half of the Nilo-Saharan total, and comprises 10-12 lineages, with 10 finding the widest consensus (including the extinct ancient Meroitic). The common assumption of a major break between a northern and a southern branch aside, there is considerable disagreement about the internal classification, which is

<sup>3</sup> Meroitic does not occur in Greenberg's and Bender's classifications but they argued for its inclusion elsewhere. Except for Greenberg (1963), I have unified the group terminology rather than using idiosyncratic labels.

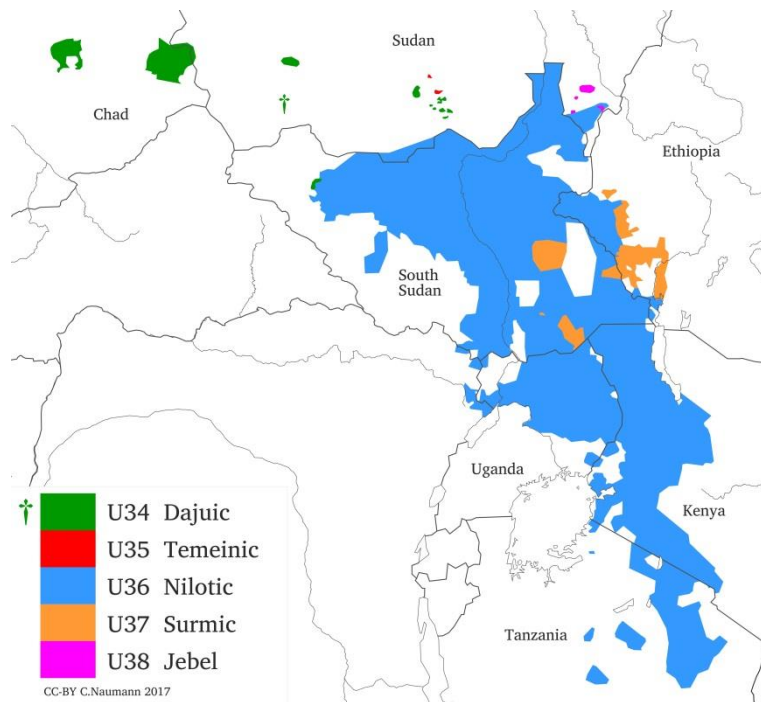
<sup>4</sup> See §3 for more detailed explanation of this terminology.

symbolized by the different frames in Table 1. The maps 1 and 2 show the geographical distribution of the two subgroups separately.

Map 1: Northern East Sudanic



Map 2: Southern East Sudanic



A final fact important in the present context and recorded in columns 1-3 of Table 2 is that many assumed member languages or even entire lineages had been or still are poorly described, which was/is a serious block to a conclusive historical assessment.

## 2 Comparative evidence and its interpretation

My present aim is to assess the public evidence for East Sudanic in view of the widely accepted framework of historical-comparative linguistics. This is because Greenberg's (1963) African classification is judged by general historical linguists to be "badly in need of major reinvestigation and

reworking” (Campbell and Poser 2008:128). Against this background, suffice it to note that standard methodology requires evidence of a particular kind in order to “prove” relatedness whereby quality is more important than quantity. In particular, a hypothesis must be phylogenetically plausible in terms of regularity, diachronic typology, etc. and is better based on paradigms rather than atomic items and on morphology rather than lexicon. The reader is referred to Güldemann (2018b) for an extensive discussion embedded in the wider context of Nilo-Saharan and cross-African comparative linguistics.

One detrimental factor inhibiting more conclusive genealogical assessments is that there is no substantial, diagnostic evidence for a secure core of East Sudanic let alone Nilo-Saharan against which the membership of uncertain languages or lineages can be assessed, as opposed to Niger-Congo and Afroasiatic. Accordingly, I will report in the following on the available typological (§2.1), morphological (§2.2), and lexical (§2.3) evidence invoked so far for East Sudanic as well as on low-level genealogical proposals within it (§2.4).

## 2.1 Typology

While typological evidence tends to be important for genealogical hypotheses for African languages, this does not play a role in the case of East Sudanic. This is for an obvious reason, namely that this entity has been known to actually be surprisingly diverse.

Table 3: Typical typological features of Nilo-Saharan (after Güldemann 2018b)

Lineage	Word order	Peripheral case	Attested alignment by case marking	Tripartite number
<i>Shabo</i>	HF	<i>Shabo</i>	NOM	-
Songhay	HI	-	-	-
Kadu	HI	<i>Krongo</i>	-	X
Kuliak	HI	<i>Ik</i>	NOM	X
Central Sudanic	HI	-	(NOM)	-
<i>Kunama</i>	HF	<i>Kunama</i>	NOM~DOM	-
Furan	HF	<i>Fur</i>	NOM~DOM	X
Saharan	HF	<i>Kanuri</i>	NOM~DOM    ERG	-
Maban	HF	<i>Maba</i>	NOM~DOM	X
Taman	HF	<i>Tama</i>	NOM~DOM	X
Nyimang	HF	<i>Ama</i>	NOM	-
<i>Nara</i>	HF	<i>Nara</i>	NOM	-
<i>Meroitic</i>	HF	?	NOM~DOM	-
Nubian	HF	<i>Dongolese</i>	NOM~DOM	X
Dajuic	HI	-	-	X
Temeinic	HI	?	?	X
Nilotic	HI	<i>Turkana</i>	NOM   M.NOM   ERG	X
Surmic	HI	<i>Murle</i>	NOM   M.NOM   ERG	X
Jebel	HI	( <i>Gaam</i> )	(ERG)	(X)
<i>Berta</i>	HI	( <i>Berta</i> )	M.NOM	-
Koman	HI	-	(NOM)    (ERG)	-
Baga~Gumuz	HI	-	(M.NOM)	-
Ari-Banna (Omotic)	HF	<i>Dime</i>	NOM	(X)
[ <b>Ta-Ne (Omotic)</b> ]	HF	<i>Gimira</i>	NOM   M.NOM	-
[ <b>Maji (Omotic)</b> ]	HF	<i>Sheko</i>	NOM	-
<b>Cushitic</b>	HF	<i>Oromo</i>	NOM   M.NOM	X

Note: (...) = non-canonical, - = feature absent, ? = no information

**Bold** = [Likely] Afroasiatic; **Frame** = Nilo-Saharan according to Dimmendaal (2014)

Light grey = Northern East Sudanic; Dark grey = Southern East Sudanic

Table 3 displays three structural domains some of which have been entertained as potentially diagnostic on the higher level of Nilo-Saharan, namely word order, and the marking of case and number. It can be observed that East Sudanic harbours the same amount of structural diversity that is encountered across Nilo-Saharan as a whole, and for that matter, could be expected for unrelated languages. The group comprises cases with predominant head-final and various types of head-initial syntax (which coincides with the common split between the northern and southern branches (see Heine (1976) for a more fine-grained typology, my head-final (HF) closely corresponds to his type D); with and without peripheral case comprising such diverse alignment patterns as neutral, nominative-accusative (featuring in addition differential object marking and marked nominative), and ergative-absolutive; and finally with and without so-called tripartite number marking in terms of Dimmendaal (2000). While such diversity does not preclude genealogical relatedness, it has so far not been accounted for in terms of convincing arguments of diachronic typology (but see §2.5 below).

Furthermore, what is disturbing for a genealogical argument is that all features are also found in unrelated but geographically close languages, which points to their status as partly areal rather than just genealogical signals. Such lineages are particularly Cushitic and Omotic from Afroasiatic as well as Shabo, Kadu, Koman, and B'aga-Gumuz that have started to be viewed as non-Nilo-Saharan even by scholars that support this entity as well as East Sudanic. That areal convergence is a real possibility for explaining such isoglosses has been proposed at least since Heine (1975, 1976) for the clustering of head-final languages in the north. Accordingly, none of the above features are acceptable genealogical traits unless they are accompanied by solid reconstructions of concrete grams across subgroups that show clear etymological relatedness, pace recent claims by Blench (2020) for the domain of tripartite number marking.

## 2.2 Morphology

Table 4 assembles Greenberg's (1950) morphological evidence for East Sudanic. While the 27 comparisons look substantial at first glance, they do not meet standard requirements of proof in historical linguistics. This type of "cherry-picked" evidence is of the same kind as that advanced for the effectively abandoned "Khoisan" language family (cf. Güldemann 2008) in suffering from such problems as insufficient representation of the different member lineages, short and atomic forms that are not diagnostic as unequivocal genealogical signals, etc. Regrettably, recent surveys like Dimmendaal (2018), Dimmendaal et al. (2019), and Dimmendaal and Jakobi (2020) are no improvement in this respect as they are still lacking any attempt of solid subgroup reconstructions.

I restrict myself here to a brief discussion of Greenberg's (1950) pronominal evidence in the first five rows of Table 4 (and of feature 15 in §2.3 below), because this context does not permit a discussion of all the comparative sets of the table. I assume that the evaluation of just a few traits is in fact representative for the overall quality of Greenberg's and similar comparisons. Pronouns also tend to be central in the convincing establishment of genealogical language groups. The table in the appendix assembles the heretofore fullest survey of pronominal data across East Sudanic. These consist either of reconstructed forms that have been proposed by specialists or sets of language-specific forms as complete as possible in order to establish quasi-reconstructions for the relevant family. As opposed to Greenberg's data, this material better allows one to assess whether a certain language-specific form is a realistic reflex of an intermediate proto-language (given in the appendix table in bold) and thus really supports a purported Proto-East Sudanic, or whether it merely represents a superficial coincidental similarity to another atomic language-specific form.

Observe in Table 4 that Greenberg's (1950) evidence merely involves a vocalic opposition between *a* for first person and some high vowel *i/u* for second person. This cannot be taken as a secure genealogical diagnostic on account of findings from such large-scale pronoun comparisons as Gordon (1995), Nichols and Peterson (1996, 1998, 2005), Rhodes (1997), Nichols (2001, 2012), and Güldemann (2017). The conclusions from these studies are that pronouns show a strong bias toward a

restricted set of unmarked speech sounds increasing chance resemblance; that their paradigms recurrently display “closed-set phono-symbolism” in the sense of Nichols (2001:265); and that such paradigm-induced canons can even characterize linguistic convergence areas. The fuller appendix data do not furnish new evidence pointing to shared inheritance. If Greenberg’s vowel pattern across the entire group reflects more than plain chance (cf. Hammarström’s (2012) discussion of this possibility), it is at best an areal signal.

Table 4: Greenberg’s (1950:154-7) grammatical evidence for East Sudanic

Lineage	Nilotic	Surmic	Jebel	Dajuic	Nubian	Nara	Taman
1 1SG.SBJ	*a	a	-	a	ai	-	wa
2 2SG.SBJ	*i	i	-	i	*i-	-	i
3 2SG/PL.POSS	*(-)u(-)	(c)u(ni)	u(n)	-	-	-	onu
4 3 DEM	-	či	-	-	te-r	ti	te
5 SG/PL on DEM	-n/-k, n-/č-	-n/-gi	-	-	-	-	-
6 REL~ADJ	ma-	-	-	ma-	-	-mo	-
7 PL.DEM~REL	*T	-	-	-	-	-te-	-
8 REL~ADJ	ko-	-	-	-	-go	-go	-k
9 F	*n	-	ñe	-	-en	-	-
10 SG on noun	*-Vt	-it	-	-	-(i)d	-	-t
11 PL on noun	*K	k	-k	-	-gu	-ka/-gu	$\eta < k$
12 PL on noun	*T	-ta	-	-	-du	-ta	-
13 PL on noun	*N	-en/-nV	-	-	-in	-	-
14 PL on noun	*-V <sup>front</sup>	-i	-	-	-i	-	-
15 Suppletion	see §2.3 below						
16 NOM.SG	-	-i	-	-	-i	-	-
17 GEN.SG	-a	-o	-	-	-u	-	-
18 LOC.SG	*T-	-to/-ti	-te	-ti	-do	-t(V)	ta
19 LOC.SG	-	-	-ul	-	-la	-li	-
20 ACC.SG	-	-	-	-	*-kV	-	$\eta < k$
21 LOC.PL	-nV	-ni	-	-	-	-	-
22 COP~tense	*a	-	-	-	a	-	-
23 PL on verb	-	-k	-	(-ka)	-	-K(e)	-key
24 FUT	*P-	-	-	-	PV	-	-
25 NEG on verb	*B-	(ma)	-	ba	m-	(ma)	m-
26 INCH	*N	-aN	-	-	-	-en	-
27 DAT on verb	*-K(in)	-eki	-	-	-	-	-

Notes: *Family* = only represented by a single language, *X* = language-specific element, *X* = pseudo-reconstruction from several languages

If anything, the search for pronominal affinities beyond the East Sudanic constituent groups yields another potential finding. That is, one can arguably posit the more concrete and complex canon in Table 5 based on (quasi)-reconstructions, with the caveat that these remain preliminary and have gaps in particular positions in different lineages. This paradigm not only involves the counter-position of the vowel qualities low vs. high vs. (front)-mid for person but also the abstract consonant alternation N vs. K for number.

Table 5: Pronoun canon potentially shared by Nilotic, Surmic, Temeinic and Jebel

Features	1st person	2nd person	3rd person
Singular	*V <sup>LOW</sup> -N	*V <sup>HIGH</sup> -N	*V <sup>MID</sup> -N
Plural	*V <sup>LOW</sup> -K	*V <sup>HIGH</sup> -K	*V <sup>MID</sup> -K

This kind of double “block pattern” (cf. Tucker and Bryan 1956:140) or parts thereof have been noticed in previous work, notably Murray (1920:345-6), Greenberg (1950, 1963), Bryan (1968, 1975), and Bender (1989, 2000b). However, these works entertained isoglosses within comparisons that only considered synchronic material and/or were even more abstract. Moreover, they were generalized for East Sudanic as a whole and even beyond instead of being identified more stringently for a smaller group. Based on the more extensive and historically assessed data in the appendix I would at best propose the canon of Table 5 for four of the five groups of Southern East Sudanic, namely Temeinic, Nilotic, Surmic, and Jebel – a level of possible language relationship much lower than East Sudanic (see Table 2 above and §2.4 below). The rest of East Sudanic does not clearly partake in this potential isogloss. Thus, Dajuic does not obviously show the pattern and remains in this domain more isolated vis-à-vis the four aforementioned families. Northern East Sudanic lineages also do not possess paradigms similar to that in Table 5 (nor any other obvious reconstruction that holds across this group, pace Rilly 2005; see §2.4 below). In the appendix, I have also included data on Berta, because Bremer (2015) has recently revived the hypothesis that this lineage is a closer relative of Jebel, and by implication, of East Sudanic. However, Berta does not have pronouns similar to Jebel or, for that matter, to any other East Sudanic group. In summary, the available pronoun data do not provide robust evidence for East Sudanic as a whole.

### 2.3 Lexicon

Already the earliest relevant work by Westermann (1912:36-44) entertains shared lexicon for associating Nilotic and Nubian, the later core of East Sudanic. This line of thought was taken up by such scholars as Murray (1920), Conti Rossini (1926), and Verri (1950) and now also included Kunama and Nara. The later work by Greenberg (1963), Bender (e.g., 2005), and Ehret (e.g., 2001), involving yet larger groupings including East Sudanic, mainly employs unsystematic and potentially deceptive “mass comparison”. Mikkola (1998, 1999), Blench (2001), and Dimmendaal (2011:314-8) provide information on the deficient quality of these earlier lexical comparisons, although they are not unfavorably disposed to the genealogical hypothesis as such (see also Güldemann (2018b:249-54, 304-5, 307) for some more discussion). This is also not the place to evaluate Starostin’s (2015, 2017) recent lexicostatistic attempt to demonstrate the validity of the family. Suffice it to note here that his procedure is already questionable in view of the fact that it hardly engages with previous scholarship and that the same methodology in the “Khoisan” domain yields genealogical conclusions that are not accepted by specialists.

Unable to engage here with an extensive body of empirical data and their previous analyses by means of non-canonical historical approaches, I focus, similar to the discussion of morphological evidence in §2.2, on one purported isogloss that keeps being invoked as exemplary support of East Sudanic, presumably standing for a larger amount of evidence that still remains to be provided. I refer to the irregular partly suppletive number marking in the lexeme ‘cow/cattle’ that is viewed to be diagnostic for some form of East Sudanic since the earliest work (cf. Greenberg 1950, 1963; Ehret 1983, 2001; Dimmendaal 2007, 2011). Its assumed significance can be understood from the following citation:

“So powerful is this piece of evidence that it is almost enough by itself to show that the languages with the innovation form a separate subgroup of Nilo-Saharan excluding Nubian-Tama [belonging to northern East Sudanic], Central Sudanic, and Maban, all of which maintain the simple unmodified root.” (Ehret 1983:400)

Table 6 purposely gives the typical kind of data that is provided in support of this isogloss in publications. They are largely purported reflexes from single modern languages that, provided they reflect inheritance, look convincing. The table already shows that the feature is no longer claimed to support East Sudanic as a whole, pace Greenberg (1950), but rather its southern branch only.

Table 6: Irregular forms for ‘cow/cattle’ in Southern East Sudanic (Dimmendaal 2011:97)

Lineage	(Proto)-language	Singular	Plural
Dajuic	Daju of Lagowa	<i>tepe</i>	<i>tukke</i>
Temeinic	Temein	<i>n-tɛ̃ɲ</i>	<i>kɪ-tók</i>
Nilotic	Proto-Nilotic	*ɢɛ̃ɲ	*ɢók
Surmic	Majang	<i>taŋ</i>	<i>tɔgi</i>
Jebel	Gaam	<i>tɔɔ</i>	<i>tɔgg</i>

In the following, I turn to a more complete comparison assembled in Table 7. Similar to my approach to pronouns, I try to consider reconstructions, which either are published or can be achieved by a superficial inspection of synchronic data that are as complete as currently possible. Plausible subgroup reconstruction is necessary, as the feature must have been present in all proto-languages if it were to count as evidence for their assumed descent from a common ancestor.

Table 7: Fuller survey of forms for ‘cow/cattle’ in East Sudanic (Güldemann 2018b:302)

Lineage	(Proto)-language	Singular	Plural	Source(s)
Nyimang	Proto-Nyimang	*(m)bṼr	*(m)bṼr	Bender (2000a:107, 118)
Nara	Nara	<i>ar</i>	<i>aré</i>	Reinisch (1874:105)
Meroitic	Meroitic	? <i>dime</i>	?	Rilly (2010:120)
Taman	Tama	<i>tɛɛ</i>	<i>tɛɛɲ</i>	-
	Proto-Taman	*tEE	*tE(-)	Edgar (1991b:218)
Nubian	Proto-Nubian	*tEE	*tE(-)	Rilly (2010:521-2)
Dajuic	Daju of Lagowa	<i>tepe</i>	<i>tukke</i>	-
	Proto-Dajuic	*tepe	*təke	Thelwall (1981b:139)
Temeinic	Temein	<i>n-tɛ̃ɲ</i>	<i>kɪ-tók</i>	Stevenson (1976-86)
	Keiga Jirru	<i>a-ɢɛ̃ɲ</i>	<i>ko-ɢók</i>	Blench (nd.)
	Tese	<i>ɛ-ɢɛ̃ɲ</i>	<i>kwú-ɢúk</i>	
	Proto-Temeinic	*-Tɛ̃ɲ	*kV-TUk	-
Nilotic	Proto-Nilotic	*ɢɛ̃ɲ	*ɢók	Dimmendaal (1988:36)
Surmic	Majang	<i>taŋ</i>	<i>tɔgi</i>	Joswig (2011:12)
	Proto-Southwest	*taŋ(a)	*tiin	Moges (2001:318, 327, 364)
	Proto-Southeast	*bi	*bio	Dimmendaal & Last (1998)
	Proto-Surmic	? *taŋ	?	-
Jebel	Gaam	<i>tɔɔ</i>	<i>tɔgg</i>	Stirtz (2011:101)
	Aka	<i>mɔɔ-gɔ</i>	<i>mɔɔ</i>	Bender (1997:208)
	Molo	<i>mɔ</i>	-	
	Kelo	<i>mɔ</i>	<i>mɔ</i>	
	Beni Sheko	<i>mu</i>	-	
	Proto-Jebel	? *mɔ	? *mɔ	-

Notes: Shading = Southern East Sudanic, **bold** = apparent reflex of irregular pattern

Against the fuller data set of Table 7, the seemingly plausible conclusion from the incomplete “cherry-picked” data in Table 6 cannot be upheld for various reasons (see Güldemann (2018b:300-4) for more detailed discussion). Robust reconstructions of the pattern can be posited for Dajuic according to the data in Thelwall (1981b:139) and Boyeldieu (2011:43) as well as for Proto-Temeinic on account of the data in Table 7. For all other lineages there are serious problems to assume the same. First, although Dimmendaal’s Proto-Nilotic form is the only reconstruction that has so far informed the discussion, this cannot be taken for granted, because other authors like Hall et al. (1975:5-8) and Hieda (2009:31-33, 2018:150) entertain explanations for the irregular stem pair in terms of family-internal scenarios that Dimmendaal does not mention, let alone refute conclusively. However, whatever the correct solution, any Nilotic-internal explanation must be disproved if the irregular pattern is to qualify as a



likely candidate trait of a state older than Proto-Nilotic. Finally, the material in Table 7 shows that a reconstruction of the pattern for Proto-Surmic and Proto-Jebel is not plausible due to the isolated attestations in just Majang and Gaam, respectively. Moreover, as argued in more detail by Güldemann (2018b:303-4), an alternative explanation needs to be considered for these two languages, namely that the plural~collective number form of such a culturally sensitive term as ‘cattle’ was borrowed, a plausible source being neighboring Nilotic languages. In conclusion, what has so far been presented as a strong diagnostic of East Sudanic is in fact not even secure for the narrow southern grouping.

After this exemplary qualitative case study about a single lexeme, it remains to be said that quantitative assessments of synchronic lexical similarity, too, do not support East Sudanic unequivocally. Thus, traditional lexicostatistics merely confirmed the primary units but beyond this level returned distance values that are also compatible with similarity due to chance and/or contact (cf. e.g., Thelwall’s (1978) study on six Nubian, five Dajuic and two West Nilotic languages). Recently and in contrast to Starostin (2015), a quantitative comparison that appears systematic and thus arguably stringent even rejects explicitly a crucial link within East Sudanic. An approach that assesses the degree of support for genealogical proposals in available collections of comparative lexical sets and determines whether the observed similarity exceeds coincidental expectation was applied by Brown (2017) to various non-obvious genealogical hypotheses from across the globe. The four African test cases were Defaka vs. Nkorō in Ijoid, Kwadi vs. Proto-Khoe in Khoe-Kwadi, Efik vs. Proto-Bantu in Benue-Congo, and crucially here, Nubian vs. Nilotic in East Sudanic. The last comparison, based on Greenberg’s (1963) data and at the heart of the East Sudanic concept, was the only one that was evaluated as “No support for historical connection”. I do not mention this here because I deem the method to be reliable in general and/or to prove the non-relatedness of East Sudanic languages in particular. It only reiterates that not even non-canonical, quantitative approaches to synchronic lexical similarity consistently support East Sudanic, however subjective and thus partly arbitrary the diverse approaches may be.

## **2.4 Genealogical proposals within East Sudanic**

Concluding on the basis of the available evidence that one cannot be confident about an East Sudanic family as a whole, it is meaningful nevertheless to evaluate genealogical proposals on a lower level, which is done in the following.

Ehret’s (e.g., 2001) highly structured family tree involves the most genealogical hypotheses within East Sudanic, which are normally based on purported lexical innovations. These are Nilotic-Surmic, Jebel-Berta (his “Jebel”), Taman-Nubian (his “Western Astaboran”), and Nyimang-Temeinic (his “Nuba Mountains”). The author unfortunately does not offer very detailed justification for the various proposals; he limits himself to referring merely to scanty lexical data treated in Ehret (1983) and three non-diagnostic lexicostatistic studies by Bender (1971) and Thelwall (1981a, 1982). Hence, I briefly discuss here only those proposals for East Sudanic that are based on morphological evidence and/or were taken up by other scholars. These are: a) Surmic-Taman, b) Jebel-Berta, c) Nilotic-Surmic, d) Southern East Sudanic, and e) Northern East Sudanic.

The first hypothesis on Surmic-Taman was put forward by Bryan (1955) comparing the verb structure of three languages from each family, namely Murle, Didinga, and Me’en from Surmic, and Tama, Sungor, and Merarit from Taman. A positive result would certainly be significant, because it deals with morphology and crosses the typological north-south divide. Bryan argues that the two language groups share an inherited morphological verb template with partly similar markers. The reader is referred to Güldemann’s (2018b:295-7) more detailed discussion concluding that her comparison is riddled with problems, so that it remains weak. Unsurprisingly, this direct close relationship was never entertained again.

The Jebel-Berta proposal goes back to Evans-Pritchard (1932) who classified the three Jebel languages other than Gaam with Berta – a relation that would even go beyond the most widely received version of East Sudanic. It was taken up by Bender (1971), Ehret (1989, 2001), and Bremer (2015) but rejected by Bender (1983) himself, explaining similarities as contact-induced. Güldemann (2018b:299) briefly comments on the most recent unconvincing treatment by Bremer (2015). As mentioned in §2.2 above, it is also not supported by the pronominal data given in the appendix, according to which Berta remains isolated but Jebel appears quite close to Nilotic, Surmic and Temeinic.

The third of the above hypotheses on Nilotic-Surmic differs from the previous two, as it involves multiple promising data in diverse linguistic domains, namely in lexicon (Ehret 1983, Dimmendaal 1988, Denning 1989), morphology (Dimmendaal 1983, 1998; Unseth 1989, 1998), and in terms of diachronic syntactic typology (Dimmendaal 1998), all of which are outlined in more detail by Güldemann (2018b:294-5). Problems certainly persist with this hypothesis, too, notably that a complete and compact outline and discussion of the full evidence is lacking, and isoglosses are never evaluated regarding the possibility that some are contact-induced. Studies such as Dimmendaal (1982), Hieda (1991), and Arensen (n.d.) indicate that this is an issue in need of attention. Nevertheless, the Nilotic-Surmic proposal is overall the strongest of any hypotheses beyond the individual East Sudanic lineages.

As mentioned above, the idea about a Southern East Sudanic family is closely tied to a typological argument in that it subsumes all lineages with a largely head-initial syntactic profile. Although argued for by some scholars (e.g., Bender 1996, 2005), it is not universally accepted as a genealogical unit. Hence, the result of the present pronominal survey discussed in §2.2 above turns out to be important, because it suggests that Temeinic and Jebel are linked to a very promising Nilotic-Surmic core.

Finally, there is the hypothesis of a Northern East Sudanic family that subsumes all lineages with a largely head-final syntax. That Nubian languages have relatives with such a structural profile was suspected early on, for example, by Murray (1920) and Lang (1926) concerning Nara, and by Thelwall (1982) concerning Taman and Nyimang. The idea has gained major momentum with the detailed research by Rilly (2005, 2010; see also Rilly and de Voogt 2012) in connection with the greatly increased linguistic understanding of the extinct Meroitic and the author's assessment of all the relevant data according to a more canonical historical-comparative approach. The evidence he proposes is extensive and concerns typology, lexicon, and morphology. Methodological problems certainly remain (see Güldemann 2018b:305-7). For example, the present pronoun survey in the appendix is not obviously compatible with the pronominal reconstruction proposed by Rilly in Table 8.

Table 8: Rilly's (2005: 10) pronoun reconstructions for Northern East Sudanic

Lineage	1SG	1PL	2SG	2PL	3SG	3PL
Nubian	*a-i	*a-	*e-/en-	*u-	*ta-	*te-
Nara	*a	*ag	*e-n	*eng/eg-n	*t-u	*t-ug
Nyimang	*a-i	*agV	*i	*igV	*an	*aŋgi
Taman	*wa	*wag	*i	*ig	*an	*aŋg

Starostin (2015, 2017) is a follow up of Rilly's research, observing (2017:92) with respect to previous work and particularly to that by Rilly that "a formal demonstration of this [Northern East Sudanic] relationship based on a general, universally applicable methodology is still lacking". Starostin also states (2017:93) that the:

"perfect way to demonstrate this relationship would have been a thorough, methodologically rigorous reconstruction of the phonological inventory of Proto-Nubian-Nara-Tama, supported by a large etymological corpus and based on recurrent phonetic correspondences, along with comparative grammatical evidence."

He opts, however, himself for his own lexicostatistic approach, which, albeit universally applicable, is not universally accepted by the community of historical linguists and is thus unlikely to change the general perception of Northern East Sudanic, let alone of the larger unit. Nevertheless, a family that comprises Meroitic, Nubian, Nara, Nyimang, and Taman is, if not yet conclusive, the currently most promising larger hypothesis in the East Sudanic domain.

## 2.5 The Wadi Howar hypothesis

Beyond the argument concerning purely linguistic properties, recent research has started to intricately combine the historical linguistic scenarios for East Sudanic with archeological findings in the relevant geographical area. It concerns the ancient Wadi Howar river area north of the confluence of the Blue and White Nile that was found to have supported human settlement in the past but later desertified (cf. Pachur and Kröpelin 1987). Two different hypotheses have been proposed about the relation between this area and an early human population that presumably spoke some form of East Sudanic.

According to Dimmendaal's (2007) interpretation, the Wadi Howar area correlates with Proto-East Sudanic, implying major southward migrations to areas far away from this homeland. It also brings in certain typological questions about the assumed family. Recall from §2.1 that East Sudanic is structurally extremely diverse, which needs to be explained in terms of diachronic typology. Dimmendaal (2007:56-65, 2014) has attempted to do this, thereby trying to "kill two birds with one stone", that is, linking an early Wadi Howar population with East Sudanic - an in principle plausible idea - and explaining the linguistic diversity of these languages. He posits that Proto-East Sudanic had a head-final and dependent-marking profile, as retained in the northern branch. This came to be replaced by a head-initial and head-marking profile in the southern branch due to contact with unknown linguistic populations that previously inhabited the newly colonized area. There is no space here for assessing the evidence in modern languages that may support Dimmendaal's hypothetical typological history of East Sudanic. Given the previous discussion, which casts doubt on the very existence of this family, suffice it to note here that such a complex scenario ceases to be necessary as soon as no such lineage is assumed.

An alternative scenario is proposed by Rilly (e.g., 2009, 2016). He associates the Wadi Howar population with a better substantiated Northern East Sudanic family. This idea is more compatible with the modern language distribution and the likely migration trajectories out of the desertifying area and does not require any further linguistic hypotheses concerning typology etc. Since Northern East Sudanic is a more likely genealogical entity on the basis of the available evidence, Rilly's hypothesis is for now the more plausible one. Accordingly, if Northern East Sudanic can be substantiated further as a genuine family, I proposed in Güldemann (2018b) to call this the Wadi Howar family, also because this term does not imply the existence of the larger family, which remains so uncertain.

## 3 Summary and outlook

Table 9 summarizes my assessment of East Sudanic and the proposed internal relationships according to different types of evidence as per Güldemann (2018b:79-81, 352-7). In order to distinguish the likelihood of the various higher-order proposals, I have ranked them by means of Roman numbers from I (most plausible) to VI (least plausible), whereby I consider IV-VI to be unwarranted without new, substantial, and systematically assessed evidence.

When concluding here that East Sudanic as a whole is insufficiently supported by the evidence publicly available, an obvious question arises. If some linguistic data were available to hold it at all together, what else could such evidence mean historically? To answer this question, it is useful to have a look at the macro-areal linguistic profile of Africa proposed by Güldemann (2018a) and given in Map 3.

Table 9: East Sudanic and types of evidence for different genealogical relationships

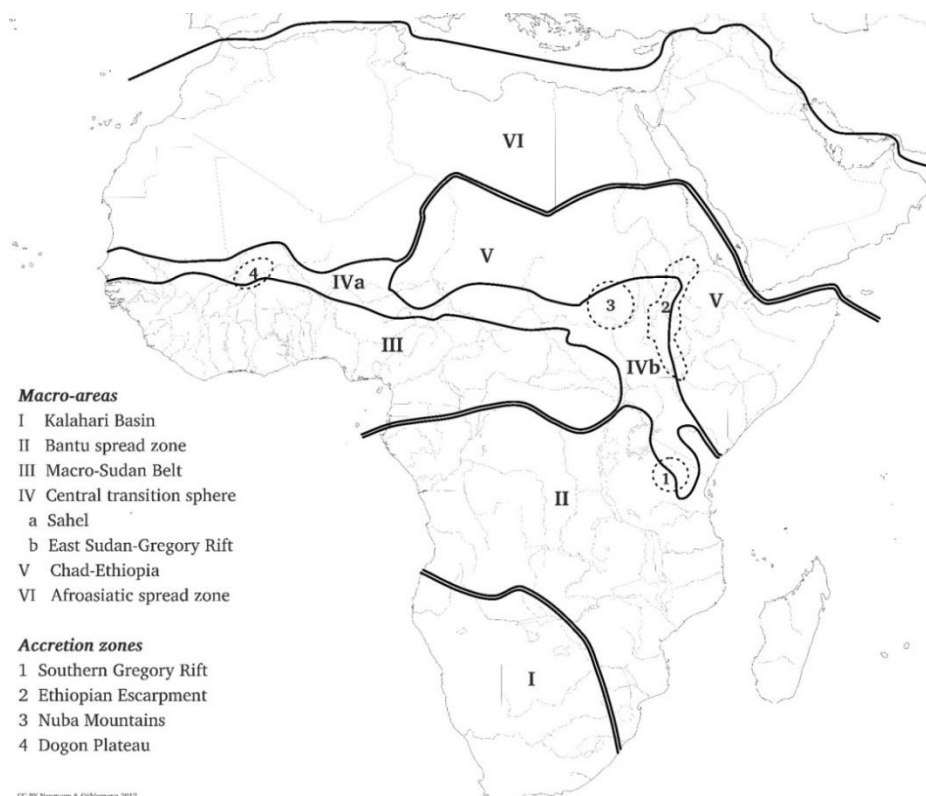
Area	Lineage	Lowest <	Genealogical level > Highest		
Chad-Ethiopia	Taman		<b>II</b> Northern East Sudanic ~ “Wadi Howar”: D, E, F	<b>V</b> East Sudanic: D	<b>VI</b> Wider East Sudanic: D
	Nyimang				
	Nara				
	Meroitic				
	Nubian				
Sahel	Dajuic		<b>III</b> Southern East Sudanic: D, F		
East Sudan-Gregory Rift	Temeinic				
	Nilotic	<b>I</b> Nilotic-Surmic: C, F			
	Surmic				
	Jebel	<b>IV</b> Jebel-Berta: D, F			
	Berta				
	Kuliak				

Notes: A = Reconstructed morpheme paradigms; B = Regularly reconstructed lexicon; C = Strong resemblances of bona fide reconstructibility; D = Scattered resemblances; E = Lexicostatistic calculations; F = Structural similarities.

The following areal entities are involved in the geographical realm of East Sudanic (cf. also the information in Table 2 and Maps 1 and 2 above):

- Chad-Ethiopia (V) as a convergence zone of different families characterized inter alia by a head-final syntactic profile with **Nubian** as one of its most widespread families
- East Sudan-Gregory Rift (IVb) as the eastern part of a Central transition sphere (IV) that is dominated today by the **Nilotic** family
- Southern Gregory Rift (1), Ethiopian Escarpment (2), and Nuba Mountains (3) as three accretion zones in terms of Nichols (1992, 1997) that have been accumulating linguistic diversity

Map 3: Macro-areal profile of Afrabia (Güldemann 2018a:473)



Taking into account that Nilotic and Nubian, the numerically largest and linguistically most robust families in their respective areas, have been “centres of gravity” for wider genealogical associations throughout the history of research, a new and currently more realistic perspective on the East Sudanic hypothesis emerges. Pending further historical-comparative investigation, it can currently be viewed at best as historically somehow linked spread zones of two larger and so far, independent lineages, each with one expansive family and several minor units. Most of the small groups became “sedimented” in the adjacent accretion zones of the Nuba Mountains and the Ethiopian Escarpment. More generally, Chad-Ethiopia in the north hosts amongst others a probable head-final family composed of the major member Nubian and the minor ones Taman, Nyimang, Meroitic, and Nara. Around the East Sudan-Gregory Rift area in the south, one finds a head-initial grouping composed of the major family Nilotic and its minor potential relatives Surmic, Temeinic, Jebel, and, with a bigger question mark, Dajuic.

With the central role of Nubian and Nilotic, in some sense, one is thrown back to the historical assessment of East Sudanic (and the major divide between the two typological and possibly genealogical blocks of languages) as approached in the earliest research by Westermann and others who identified first of all lexical affinities between the two. Unfortunately, these remain hard to assess still today due to the lack of conclusive proto-forms for all language groups involved.

On a more speculative note, and without being able to engage with the extensive literature on this topic, it is noteworthy, however, that some kind of historical connection is not implausible, notably concerning domestic animal vocabulary. Table 7 above shows that Nubian and Taman have simple forms \*tE for ‘cow/cattle’. As has been considered for a long time, these may be related to the singular form attested in the southern East Sudanic families. Moreover, the basic root \*tV<sup>front</sup> is also found in other lineages nearby but outside East Sudanic, for example, in Moru-Madi from Central Sudanic for which one could reconstruct a form \*ti (Boone and Watson 1996:A68). Rather than following the traditional assumption that the forms in Moru-Madi, Nubian, Taman, the southern East Sudanic lineages, and yet other groups are inherited from Proto-East Sudanic or a more comprising but even less secure Proto-Nilo-Saharan, borrowing in whatever direction is an explanation to be seriously considered, because the semantic concept obviously refers to a culture-specific rather than a universal lexical domain. Thus, the hypothesis emerges that certain observable historical linguistic connections in the wider geographical area beyond this single lexical item, notably those across the East Sudanic grouping, revolve around the early north-south expansion of pastoralism in this part of Africa. In this context the ancestors of Nilotic and Nubian in particular may have had a shared history of intimate contact. Obviously, this issue goes far beyond a genealogical classification of the languages subsumed heretofore under East Sudanic.

In any case, this linguistic question requires a different approach within the discipline itself. As argued by Güldemann (2018b), many current hypotheses in the genealogical classification of African languages are not compatible with the standards of general historical linguistics, including that on East Sudanic proposed first by Greenberg (1950). Given this unsatisfactory status quo between the general and the particular discipline existing since this first study, I venture that there is a need for a reorientation of the research agenda. A basic requirement for real progress is a more complete language documentation in view of the fact that only Nubian, Nilotic, and Surmic are reasonably well understood as families while the other seven East Sudanic lineages are still known very poorly. For Dajuic and Jebel, there is just a single larger description each, namely Palayer (2011) and Stirtz (2011), respectively. Finally, as reported in Table 2, the extinct Meroitic aside, Taman, Nyimang, Nara, Temeinic, and the distinct second branch of Jebel entirely lack comprehensive modern grammars. A second important step would be a bottom-up reconstruction within primary units, focusing preferably on paradigmatic and/or morphological traits that are more diagnostic; such structures are in fact present and sufficiently complex in most lineages in both the verbal and nominal domain. Comparisons across primary lineages should only be the final step on the basis of such solid group-internal reconstructions.

In general, the present contribution is not meant as a claim, let alone proof, of non-relatedness of the lineages subsumed under East Sudanic. It should rather serve as a reminder that this unit is not yet a proven group of genealogically related languages. In its current conception it should instead be looked at as what remains after 70 years of its poorly substantiated existence, namely a “stimulating suggestion” (Heine 1970:9). It still requires, in line with Greenberg’s (1971:438) own assessment of Nilo-Saharan as a whole, “initial sifting as well as further extension”, according to standard historical-comparative methodology.

### Abbreviations

1, 2, 3	person feature	I	inclusive
ACC	accusative	INCH	inchoative
ADJ	adjective	IND	independent
COP	copula	DOM	differential object marking
DAT	dative	LOC	locative
DEM	demonstrative	M	masculine
DU	dual	M.NOM	marked nominative
E	exclusive	NEG	negative
ERG	ergative-absolutive alignment	NOM	nominative/nominative-accusative alignment
F	feminine	PL	plural
FUT	future	POSS	possessive
GEN	genitive	REL	relative
HF	head-final	SG	singular
HI	head-initial	SBJ	subject

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## Appendix: Pronominal forms across East Sudanic lineages

Lineage or language	1SG	1PL(.E)	1PL.I	2SG	2PL	3SG	3PL	Source
<i>Midob</i>	á(y)	àadí	àngá	ná, fin	ùnnú	nà, òn	ànná	Werner (1993:36-7)
<i>Old Nubian</i>	ay	er	u	ir	ur	tar	ter	Browne (2002:40)
<i>Nobiin</i>	ày	ùu	-	ìr	úr	tàr	tér	Werner (1987:116-20)
<i>Dongolese</i>	ái	ár	-	ér	ír	tér	tír	Armbruster (1960:172)
<i>Birgid</i>	ama	adi	-	edi	udi	tar (M)/ idi (F)	?	Thelwall (1977:203, 205, 207, 208)
<i>Uncunwee</i>	ye	? a-	-	ad	?	fo	fi	Williams and Comfort (n.d.:12, 17)
<i>Dair</i>	ē	ā, ai	-	ai	ū	fō	fī	Junker and Czermak (1913:18)
<i>Dilling</i>	ẹ	i	-	a	u	tẹ	ti	Kauczor (1920:96)
<b>Proto-Nubian</b>	*ai	*a(D)	-	*V(D)	*u(D)	*tV(r)	*tV <sup>Front</sup> (r)	-
<i>Nara</i>	ag	agga	-	’inṇa	in’ṇa	tlb	tiba	Bender (2000b:100)
<i>Ama</i>	a(i)	aṇi	-	i	ni	en	ani	Bender (2000b:100-1)
<i>Afitti</i>	oi	ɔgɔ	-	i	ig(w)o	ano	ange	Bender (2000b:100-1)
<b>Proto-Nyimang</b>	*ai	?	-	*i	?	*En	*an-	-
<b>Proto-Taman</b> IND: VERB:	*wa *n-	*wai *n-/k-	-	*ii *V-/Ø-	*(a)i *V-/Ø-	*ansi *Ø-/C-	*ansin *Ø-/C-	Edgar (1991a:119-20)
<b>Proto-Dajuic</b>	*a(n)ga	*asko	*kon-	*(in)ing(i)	*Vngo	*ce (F)/ *ma (M)	*sa	Thelwall (1981b:161)
<i>Temein</i>	nán	kát	sasák/ sák (DU)	nín	kít	naKa	naKaṭa	Stevenson (1956-7, 1976-1986)
<i>Keiga Jirru</i>	nán	kák	kalásik	nín	kík	né	kanná’	Stevenson (1956-7, 1976-1986)
<i>Tese</i>	nán	kák	kasák	nín	kík	enná’	kanná’	Stevenson (1976-1986)
<b>Proto-Temeinic</b>	*n.a.N	*k.a.K	*(-)sak	*n.i.N	*k.i.K	?	?	Bender (2000b:98)
West: South Lwoo	*an	*wan	-	*in	*wun	*en	*gin	Heusing (2004:219-22)
South	*an(a)	*aca	-	*ip(a)	*okwα	*ma	*(i:)ca	Rottland (1982:229, 248)
East	?	?	-	?	?	?	?	-
<b>Proto-Nilotic</b>	*a.n	-	-	*i.N	-	*E.n	*(I).C	-
Southwest	*ane-, *nana	*aGe-	-	*ine-, *nina	*iGe-	?	?	Moges (2011:197, 270, 374, 390, 395)
Southeast	*aṇne	*aGe	-	*iṇne	*iGe	?	?	Moges (2011:300, 374, 390, 395)
<b>Proto-Core Surmic</b>	*a.N	*a.G	-	*i.N	*i.G	-	-	-
<i>Majang</i> IND: POSS:	eet -a-	eteṇk -a-	-	iin -o-	iinak -o-	se.en -ε-	se.εg -ε-	Joswig (2011:14)
<i>Aka</i>	ee	ege	-	in	egu	enə	εge	Bender (1983:55)
<i>Kelo</i>	əṇ	əy	-	uṇ	uu	εenε	igeegə ?	Bender (1983:55)
<i>Molo</i>	əṇ	ɔy	-	in	uu	een	?	Bender (1983:55)
<i>Gaam</i>	a	a.gg	-	ɔ	ɔ.gg	ε	ε.gg	Stirtz (2011:78)
<b>Proto-Jebel</b>	*V.(N)	*V.(g)	-	*i.N	*V.(g)u	*E.n-	*E.g	-
<i>(Berta)</i>	*Ali	*haDaṇ	-	ṇgo’	*haDu	*Nine	*mAre	Bender (2000b:107)

Notes: *Italic* = single language, Frames = Northern vs. Southern East Sudanic, \* = published reconstruction, \* = quasi reconstruction based on surveying individual languages