11

Linguistic Features and Typologies in Languages Commonly Referred to as 'Nilo-Saharan'

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11.1 Introduction

The phylum referred to today as Nilo-Saharan (occasionally also Nilosaharan) was established by Greenberg (1963). It consists of a core of language families already argued to be genetically related in his earlier classification of African languages (Greenberg 1955:110–114), consisting of Eastern Sudanic, Central Sudanic, Kunama, and Berta, and grouped under the name Macrosudanic; this language family was renamed Chari-Nile in his 1963 contribution after a suggestion by the Africanist William Welmers. In his 1963 classification, Greenberg hypothesized that Nilo-Saharan consists of Chari-Nile and five other languages or language families treated as independent units in his earlier study: Songhay (Songhai), Saharan, Maban, Fur, and Koman (Coman).

Bender (1997) also included the Kadu languages in Sudan in his survey of Nilo-Saharan languages; these were classified as members of the Kordofanian branch of Niger-Kordofanian by Greenberg (1963) under the name Tumtum. Although some progress has been made in our knowledge of the Kadu languages, they remain relatively poorly studied, and therefore they are not further discussed here, also because actual historical evidence for their Nilo-Saharan affiliation is rather weak.

Whereas there is a core of language groups now widely assumed to belong to Nilo-Saharan as a phylum or macro-family, the genetic affiliation of families such as Koman and Songhay is also disputed (as for the Kadu languages). For this reason, these latter groups are discussed separately from what is widely considered to form the core of Nilo-Saharan, Central

Sudanic, and what is referred to here as Northeastern Nilo-Saharan. This classification followed in the present chapter is not just a replication of Greenberg (1955) because in the latter study (Eastern) Saharan, Maban, Fur, Temainian, and Nyangiya were classified as independent language families, whereas these are treated as subgroups of Northeastern Nilo-Saharan in the present study, based on several widespread cognate grammatical markers that point towards their common genetic origin.[1] The name Nyangiya is replaced by the name Kuliak in the present chapter (and is referred to as Rub by Ehret 2001 in his historical-comparative study of Nilo-Saharan). It forms a primary branch of Northeastern Nilo-Saharan, as do Kunama together with Fur and Amdang, whereas Saharan is argued to form a subgroup with Eastern Sudanic in the present contribution.

The primary branches of Nilo-Saharan presented in Figure 11.1 form the basis for a discussion of prominent phonological as well as grammatical features below. As shown in Figure 11.1, more recent research has resulted in the discovery of additional languages, here grouped under the name 'B'aga', as further discussed in Section 11.3.

11.2 Songhay

Songhay (or Songhai) consists of a cluster of languages and dialect continua spoken mainly along the Niger River in north-eastern Mali and western Niger, with extensions into Algeria, Benin, and Nigeria. (See Map 11.1 for these and other (presumed) Nilo-Saharan branches.) The wide spread of Songhay is due amongst others to the important role played by Songhay lects as contact media of the Songhay Empire in the western Sahel. They can be divided into the main regional varieties shown in Table 11.1 (Souag 2012, 2015).

Songhay varieties have nearly identical basic vocabularies but manifest strong influence from neighbouring languages phonologically as well as grammatically, in particular from Berber, Gur (more specifically Bariba), Mande, and Chadic (in particular from Hausa), as illustrated below.

Nicolaï (1981) reconstructs the consonants for Proto-Songhay as in Table 11.2.

Dwyer (1989:56) reconstructs a virtually identical consonant system for the common ancestor of a neighbouring language family, Proto-Mande (whose time depth nevertheless is much deeper than for Songhay), except that Proto-Mande is assumed to have had labiovelars, **kp* and **gb*, instead of labialized velars as in Proto-Songhay; however, the south-eastern Songhay lect Dendi does have labiovelar *kp*, *gb*, and *ŋm*. The proto- (and pan-)

[1] Greenberg (1963:130) included two languages that are probably extinct now and are known basically from short word lists as 'Mimi of Nachtigal' and 'Mimi of Gaudefroy-Demombynes' in his Maban group. These are treated as linguistic isolates in the present contribution (see also Chapter 7 on comparative linguistics for further discussion).

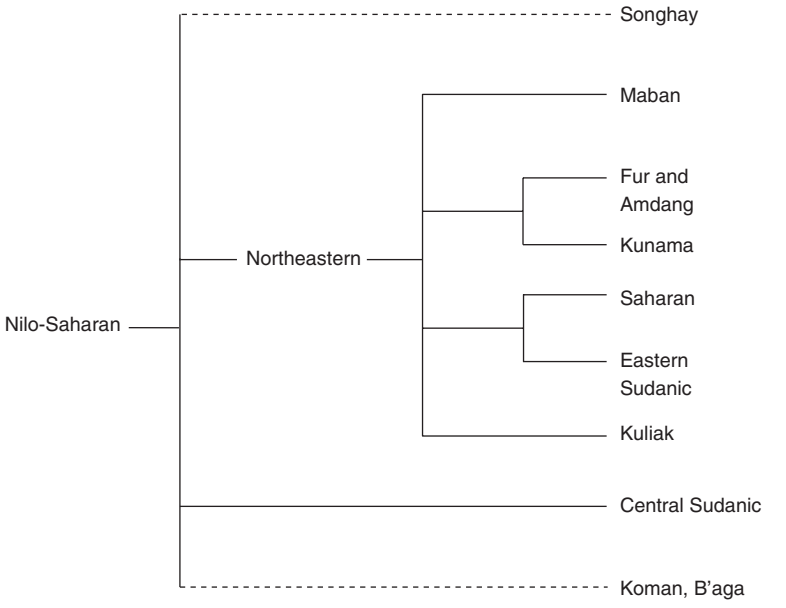


Figure 11.1 Nilo-Saharan subgroups

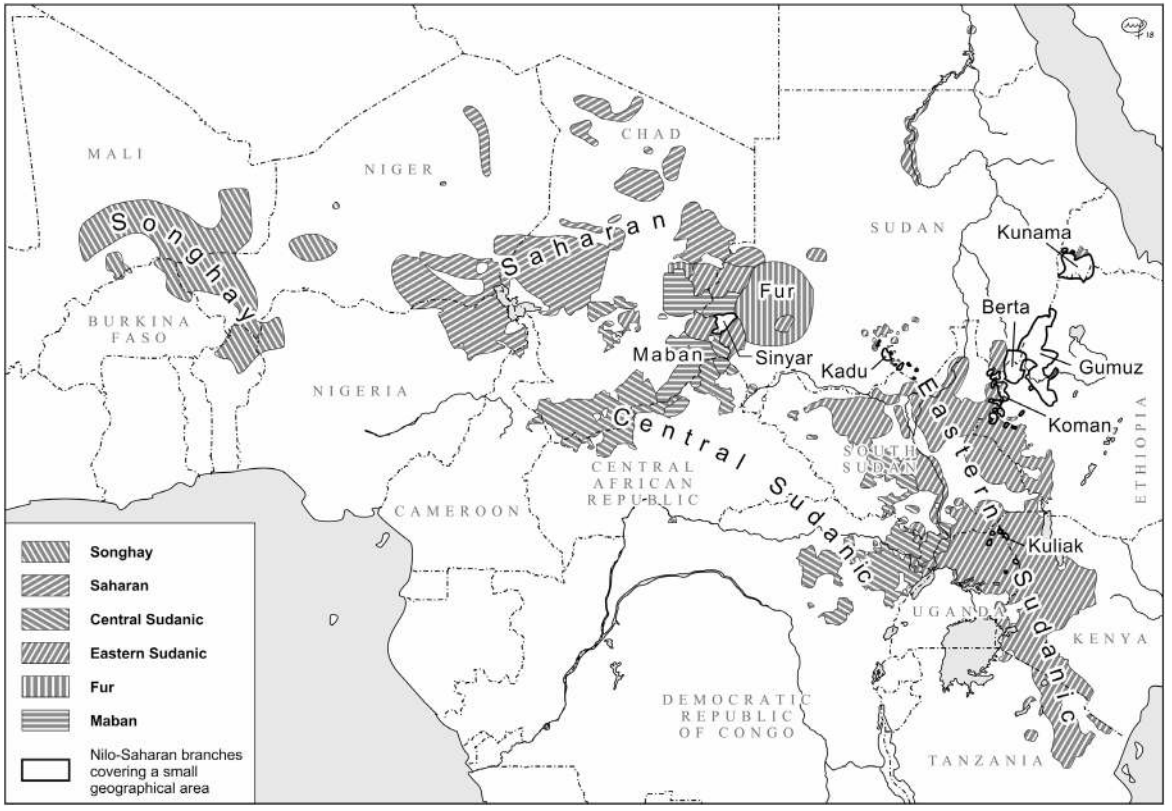
Table 11.1 Songhay varieties

Eastern	Dendi (Benin, Niger)
	Zarma (Niger, Nigeria)
	Humburi Senni (Mali, Burkina Faso)
	Kaado (Niger)
	Koyraboro Senni (Mali, Sudan)
	Tondi Songway Kiini (Mali)
North-western	Koyra Chiini (Mali)
	Djenné Chiini (Mali)
	Korandjé (Algeria)
	Tadaksahak (Mali)
	Tasawaq (Niger)
	Tagdal (Niger)
	Emghedesie (Niger)

Songhay vowel system consists of *a*, *e*, *i*, *o*, *u*, with contrastive vowel length. Whereas Dendi is probably a tone language, other varieties of Songhay are not; it is not clear what the original prosodic system of Songhay looked like.

Modern varieties of Songhay such as the Eastern lect Koyraboro Senni (described by Heath 1999a) have retained the original phonological system. North-western varieties such as Tadaksahak, for example, have a central vowel *ə* as well as *ħ*, *ʕ*, *q*, *ɣ*, and *x* as a result of phonologically unadapted borrowing from Tuareg (Berber).

Morphosyntactically, the typological similarities in particular to languages belonging to Mande (for example, Bambara, Dyula, and Maninka)



Map 11.1 The distribution of Nilo-Saharan languages

Table 11.2 The consonant system of proto-Songhay

*b	*t *d		*k *g	*k^w *g^w	
*m	*n	*ȳ (*ñ)		*w̃ (*$ŋ^w$)	
*f	*s *z				*h
	*l	*y		*w	
	*r				

are striking. Thus, core arguments are marked by position; the fairly inflexible basic order in varieties like Koyraboro Senni is S AUX (the latter encompassing mood, aspect, negation), Object, Verb (S AUX O V X, or A AUX P V X, depending on the labels one prefers to use for subjects of transitive versus intransitive predications as well as for objects), with postpositions, and with clausal complements ('X') following the main verb, as in Northern Mande. An example adapted from Heath (1999b:9, whereby ␣ marks a ligature, i.e., a contraction or assimilation).

(1)	ay	ga␣	a	kar	i	se
	1SG:SU	IPF	3SG:OB	hit	3PL	DAT
	'I struck it for them'					

With 'non-kinetic' verbs like 'see' in Koyraboro Senni, S AUX V O order occurs (Heath 1999b:161–162).

(2)	a	mana	dii	agey
	3SG:SU	NEG	see	1SG:Fm
	'(s)he didn't see me'			

A further characteristic property of Koyraboro Senni shared with Mande is possessor/possessed order in genitive constructions (example from Heath 1996b:117).

(3)	ay	čer-oo	wane	hāyš-oo
	1SG	friend-DEF:SG	POSS	dog-DEF:SG
	'my friend's dog'			

Heath (1999b:170–172) describes an additional typologically interesting property of Koyraboro Senni, the incorporation of nouns (usually involving body-part terms, but also words like 'wind') into an intransitive verbal predication.

(4)	haŋa-jer	'listen'	mee-haw	'fast (from food)'
	ear-lift		mouth-tie	

Similar structural properties, with incorporated nouns, are found in Mande languages like Mandinka (Creissels & Sambou 2013:303–310), and in Koman and B'aga, as shown in the next section. In addition, Koyraboro Senni has incorporated adverbials following the verb, which tend to be transitive, such as *fur-ganda* 'put down (lit. drop ground)'.

Heath (1999b:131) shows that the Northwestern Songhay variety Koyra Chiini has essentially retained the phonological properties of Proto-Songhay, with mainly postpositions as well as a few prepositions, but with S AUX V O as a general template (and not just with one semantic group of verbs).

(5)	ay	si	duu	haya
	1SG:SU	IPF:NEG	get	thing
	'I won't get (=obtain) thing'			

(6)	ay	fatta	baŋgu	woo	ra
	1SG:SU	exit	floodplain	that	LOC
	'I exited that (rice) field'				

As in other Songhay varieties, there are a few valency-changing operations in Koyra Chiini, for example the suffix *-ndi*, which marks the causative (i.e., the addition of an argument) or the mediopassive (i.e., the suppression of an argument), or the centripetal suffix *-kate* (indicating motion towards the deictic centre).

Whether Songhay indeed is part of the Nilo-Saharan phylum, as claimed in Greenberg (1963), can be clarified with more certainty only once the reconstruction of grammatical morphemes has reached a more advanced stage, as lexically there are various similarities with Mande as well as with the Saharan branch of Nilo-Saharan which could equally well be due to borrowing.

11.3 Gumuz and Koman

The Gumuz and Koman languages have been traditionally considered members of the Nilo-Saharan phylum (Greenberg 1963; Bender 1997; Ehret 2001). In recent years, some have questioned the membership of these two families in the phylum, suggesting they are possible isolates or isolate families (Mikkola 1999:130; Dimmendaal 2008a:843, 2011:313). Yet, there is some evidence that these two language families may indeed be part of a broader Nilo-Saharan phylum, albeit outliers in the family (Ahland 2013). Furthermore, Bender (1994) had previously assumed that Gumuz and Koman were related, but he later recanted, stating that the two had no special relationship (Bender 1997). More recent evidence, however, suggests that Gumuz and Koman may indeed form two subgroups within a broader 'Komuz' family (Ahland 2013). The present section explores the predominant features shared by Gumuz and Koman languages as well as those shared only within each family. Some of the overall shared features appear to be reconstructable to a parent 'Komuz' language, while other features are assumed to be areal. The following section provides some background for the Gumuz and Koman languages. Section 11.3.1 explores comparative phonetics/phonology. Section 11.3.2 discusses pronominal forms in

both B'aga and Koman languages. Section 11.3.3 covers nouns and noun phrases. Section 11.3.4 explores verbal morphology. Section 11.3.5 covers noun incorporation and grammaticalization of body part nouns. Section 11.3.6 compares the associative construction across all living languages. Last, Section 11.3.7 briefly describes basic word order and alignment patterns in Gumuz and Koman.

Gumuz and Koman are language families spoken along the Ethiopia-Sudan borderlands, with Gumuz languages being spoken in the Blue Nile and various river valleys further north and Koman languages spoken south along the border with South Sudan (see Map 11.2). Hereafter we refer to the broader Gumuz family as *B'aga*,[2] which consists of Southern Gumuz, Yaso Gumuz, and Northern Gumuz, Daats'ín, and Kadallu.[3] The Koman languages consist of Uduk (T'wampa), Komo, Gwama, Opo (Opuo), and Gule.[4] As only scant information is available for Gule, an extinct language, we will focus on the spoken languages for which the data is more readily available.

Thus far, there exists no internal subgrouping for the B'aga languages other than that proposed in Ahland (2004), which does not include the newly documented Daats'ín language or Kadallu. For the Koman languages, Otero (2016) proposes a tree based on Ehret (2001:88) and Bender (1983a:286–287) in which Gwama branches off first parallel to a Komo-Uduk-Dana-Opo subgroup.[5] This subgroup further divides into two parallel subgroups: Komo-Uduk and Dana-Opo (Figure 11.2).

11.3.1 Phonetics and Phonology

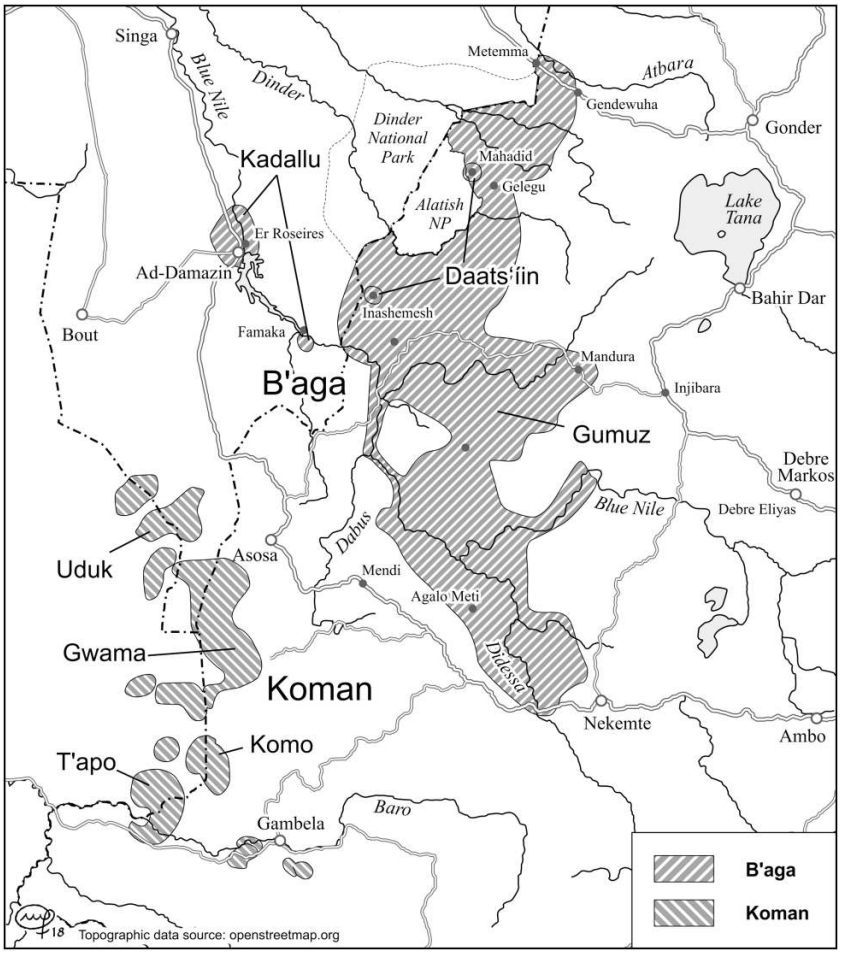
The B'aga languages have rather large consonant inventories. Northern Gumuz has 31 consonants and Southern Gumuz has 32; each has 38 if including suspect phonemes (see C. Ahland 2012). Similarly, Daats'ín has 31 phonemic consonants and 33 when including suspect phonemes (Ahland 2016b). As only two short word lists are available for Kadallu, it is difficult to estimate its inventory. All B'aga languages save Kadallu exhibit five places of articulation for stops (labial, alveolar, palatal, velar, glottal) and have both ejectives and implosives; Kadallu does not appear to have a palatal series and it is not clear whether it has glottalized consonants (cf. Schuver 1882 in James et al. 1996; Muratori 1955). In any event, it is clear that the palatal stop series was innovated in Northern Gumuz,

[2] *ɓaga* is the word for 'people' in the Gumuz languages and Daats'ín.

[3] Kadallu (Kadalo) is a language spoken in the Republic of Sudan that is currently listed as an alternate name for Gumuz in the *Ethnologue* (Simons & Fennig 2017). However, from examining existing word lists (Schuver 1882 in James et al. 1996; Muratori 1955), we suspect that Kadallu is a distinct language.

[4] Each of these languages comprises two or more varieties. For Uduk, there are at least two varieties: Northern (Chali) and Southern (Yabus) (Killian 2015b). For Komo, there are two possible varieties: Ethiopian and Sudanese (Yabus) (Manuel Otero, personal communication). Gwama has Highland and Lowland varieties (Goldberg 2015). Opo has several varieties, one of which is labelled *Dana* (Kebebw 2010:4; Otero 2016), and may be a distinct language (Smolders 2018).

[5] Otero (2016) notes that it is unclear whether Dana should be classified as a variant of Opo or a distinct language.



Map 11.2 The distribution of B'aga and Koman languages

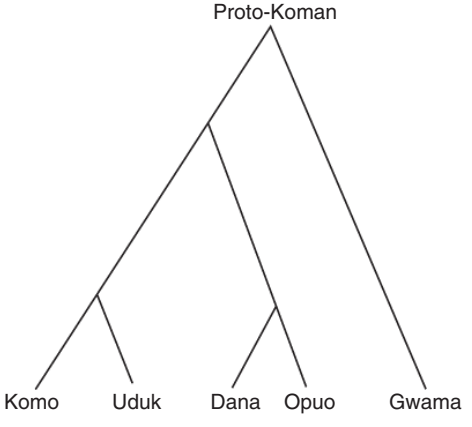


Figure 11.2 Koman subgrouping

Southern Gumuz, and Daats'íin. In a similar manner, the labialized velars were innovated in Northern and Southern Gumuz (C. Ahland 2012:34–38). All B'aga languages have a five-vowel system with length/vowel quality contrasts for high and low vowels.

One unusual and robust regular sound correspondence found across all B'aga languages is the following: *g/ɣ : r : ŋ : χ : Ø* (Kadallu : Daats'íin : Southern Gumuz : Northern Gumuz : Yaso Gumuz). For this correspondence Ahland (2016a) posited **g* for Proto-B'aga. Curiously, this same correspondence includes Gwama, a Koman language, exhibiting a regular sound correspondence of *j* (Ahland 2013).

Across Daats'íin, Northern Gumuz, and Southern Gumuz, there is a regular sound correspondence between palatal fricatives *ʃ* and *ʒ* in Gumuz and labiodentals *f* and *v* in Daats'íin for which Ahland (2016a) postulates **ʃ* and **ʒ*.

The B'aga languages have two level tones with downstepped H tones. We assume Kadallu has a similar system. However, tone is not marked in the Kadallu data.

Bender (1983a:282) proposes 25-27 consonants and five vowels for proto-Koman. However, Otero (2016) proposes that proto-Koman has a seven vowel system with phonemic (ATR) contrasts in high vowels: */i ɪ ɛ a ɔ ʊ u/*. Vowel inventories for all daughter languages but Uduk have seven phonemic vowels while Uduk has only five (Killian 2015b).

Consonant inventories of the daughter languages range from 21 in Gwama (Justin Goldberg, personal communication) to 34 (Manuel Otero, personal communication) or 55 (Killian 2015b) in Uduk. Otero (2016) found that 18 consonants are shared across all living Koman languages (Table 11.3).[6]

All Koman languages save Opo have three level tones with contour tones. The most recent analysis of Opo proposes four level tones (Joshua Smolders, personal communication). All B'aga and Koman languages (save Kadallu perhaps) have glottalized (ejective and implosive) consonants. While the palatal series has a stronger attestation among Gumuz languages, a palatal series is also found in Uduk (Killian 2015b).

Table 11.3 Phonemic consonants shared across Koman

	Labial	Alveolar	Palatal	Velar	Glottal
Stop	p b	t d		k g	h
glottalized	p' ɓ	t' ɗ		k'	
Nasal	m	n			
Lateral		l			
Flap/trill		r			
Semi-vowel	w		j		

[6] Table 11.3 is not a proto-inventory but rather a chart of shared consonant phonemes (Manuel Otero, personal communication).

Table 11.4 Regular sound correspondences between B'aga and Koman

Gloss	Komo	Uduk	Opo	Gwama	Daats'íin	Southern Gumuz	Northern Gumuz
	ʃ	**ʃ**	**s**	**ʃ**	**s**	**s**	**s**
'tooth'	ʃɛ̀	ʃē	sɛ̄	ʃíʔ	k'ô-s	k'ó-sa	k'ó-sa
'eat'	ʃá	ʃwá	sá	ʃā	sa	sá	sá
'louse'	ʃùwɛ̀n	àʃōkōm	sūk'ɛ̀n	ʃɔ́gɔ̀n	sinkun	—	sakúná
'stomach, large intestine'	bùʃ	bùʃ	pùsà	bùʃìʔ	—	boosa	boosa
	p	**p^h**	**p/p^h**	**p (')**	**f**	**f**	**f**
'drink'	íp	p^hí	pí	t'op'	fá	fá	fá
'bathe'	úp	úp^h	úp	úpā	—	ef-	af-
'blow' v.	pī	p^hí	p^hú	—	afwítʃa	fwítʃ'	fwítʃ'
'woman, women'	ù̀p	ūp^h	ɔ̄p^{h}ɔ̄	—	gáf	gááfa ef- 'wife'	gááfa ef- 'wife'

Table 11.5 Reconstructed free pronouns in Gumuz plus Daats'íin

1SG	*á-ɗa	1PL.INC	*á-ko (m) a	1PL.EXC	*á-íla
2SG	*á-ma	2PL	*á-kia (m)		
3SG	*á-gá-má	3PL	*á-gá-ˈmáámá		
			*má-á-gá-má		

There are some fairly regular sound correspondences among B'aga and Koman languages. Two strong correspondences involve sibilants and labials (Table 11.4).

Other somewhat regular correspondences involve *k : c : k : c : t : c : c : c*, for example, 'give' *kí* (Opo) versus *cá* (Gumuz), and *r : ɗ : r : ɗ : ɗ ~ r : ɗ* (save Gwama), for example, 'lick' *t'aɗ* (Northern Gumuz) versus *t'ɛr* (Komo).

11.3.2 Pronouns

Free pronouns in the Gumuz languages plus Daats'íin can be reconstructed as in Table 11.5. Note that there exist two competing strategies for forming the third person form: one in which the third person possessive pronoun is suffixed to the 3SG pronoun versus a plural prefix (*má-*) attaching to the 3SG pronoun.[7]

The only available data for free pronouns in Kadallu are an old Comboni Mission word list collected in Roseires, Sudan (Muratori 1955). The

[7] The **g* in the third person forms does not occur in the daughter languages; it is merely posited based on the regular sound correspondence given in Section 11.3.1. The direction of change assumes **g > x/h* for Northern Gumuz, **g > ŋg > ŋ* for Southern Gumuz, and *ŋ > n > r* in Daats'íin (see Ahland 2016a). For Daats'íin, sound change could also be **g > *ɣ > r*. The proto-sound could also feasibly be **r*.

Table 11.6 Free pronouns in Kadallu

1SG	kaɣa	1PL	bukinamo
2SG	halla	2PL	guumicok
3SG	bâ	3PL	gumiimahtan

pronouns from this list are not cognate with the present-day B'aga languages of Ethiopia (see Table 11.6).

Many of the Gumuz-Daats'íin bound pronominals are reduced forms of the free pronouns save the third person plural indexed on the verb: *úu* (Northern Gumuz), *ûi* (Southern Gumuz), and *úúa* (Daats'íin). These bound forms vary in tone marking depending on whether the argument indexed is an S argument (i.e., subject of an intransitive verb) versus A argument (subject of a transitive verb). In Northern Gumuz, P arguments can be affixed to the verb as well and these follow an S argument form (see also Section 11.3.7). Likewise, objects of prepositions can be indexed on the verb following an incorporated preposition; these also follow an S argument pattern (C. Ahland 2012:123–129). In Daats'íin, the bound pronominals following incorporated prepositions are limited to 1SG and 2SG (Ahland 2016b:429).

Most of the bound possessive pronominals in the Gumuz-Daats'íin languages are reduced forms of the free plural pronouns. The first singular possessive form in Daats'íin *=mádà* is the free pronoun form plus *m-*. This initial *m-* also appears in the 1PL exclusive form in Daats'íin as well as Gumuz: **-míla.* The remaining singular forms, on the other hand, are somewhat distinct. In Northern and Southern Gumuz, the 1SG possessive pronoun are *-mâ* and *-m̂*, respectively. The 2SG forms are *-uá* (Northern Gumuz), *-ú* (Southern Gumuz), and *-ʔú* (Daats'íin). The 3SG appear to be reduced forms of the free pronouns but these do not typically include reflexes of the **gá* root: *-má* (Gumuz) and *-ʔám* (Daats'íin).

Otero (2016) reconstructs the proto-Koman free pronouns in Table 11.7. Clusivity was later innovated in the daughter languages.[8]

The bound pronominal forms on verbs are often reduced forms of the free pronouns in Koman with one exception: the 1SG S/A bound pronominal can either be a reduced form of the free pronoun or another unrelated form reconstructed as **-na*. In the Koman languages (save Uduk), up to three arguments can be indexed on the verb.

All possessive pronouns in Komo and Uduk (and plural forms in Opo and Gwama)[9] begin with a bilabial stop followed by a reduced form of the free pronoun for all but 1SG and 2SG forms. Otero (2016) posits **-am* for the 1SG possessive pronoun. For the 2SG possessive pronoun in Koman, he proposes **(m)ini*.

[8] While Ehret (2001) reconstructs clusivity to Proto-NS, Otero (2016) proposes that clusivity as a concept should be reconstructed for Proto-Koman, but that crucially the synchronic pronominal inclusive/exclusive forms are not cognate across the family but rather to subgroups within Koman.

[9] The initial bilabial in the plural possessive pronouns of Opo and Gwama may have been reanalysed as 'plural' or 'possessive plural' rather than 'possessive' (note that *mā-* can mark plural on nouns in Gwama).

Table 11.7 Free pronouns in proto-Koman

1SG	*aKa/aGa	1PL	*mana
2SG	*aɪk?	2PL	*ʊma
3SG.Msc	*haɗ (i)	3PL	*hʊn (i)
3SG.Fm	*haɓ (i)		
3SG.Ntr	*han		

The pronominal forms in B'aga are not very similar to that of Koman. That said, there are a few similarities worth mentioning. For one, the 2PL form **ákia* of Gumuz and Daats'íin is remarkably similar to the tentative 2SG reconstruction for Koman: **aɪk*. According to Otero (2016), this along with the 1SG **aKa/aGa* was possibly innovated later in Koman, with the bound forms **mini* 2SG possessive, **na* 1SG (S/A) and **-am* 1SG Possessive being older. The older **-am* form resembles the 1SG possessive pronouns in Gumuz: *-mâ* and *-m̂*. Also, the 2SG possessive pronoun of B'aga **ua* is similar to the 2PL free pronoun of Koman: **ʊma*. Thus, the singular and plural second person forms may have reversed historically, possibly the result of reanalysis of *ca* < **kia* as a classifier in Gumuz which can denote plural number (C. Ahland 2010).[10] Again, examining bound pronominal forms, the 3PL bound pronominal *úu* (Northern Gumuz) and *úúa* (Daats'íin) resemble **hʊn* 3PL of Proto-Koman. Otero (2016) proposes that 1PL **mana* is composed of *ma-* PL and **na* 1SG; a *má-* plural prefix is also found in Gumuz.

The source of the Gumuz-Daats'íin 1SG pronoun **áɗa* is unknown. Curiously, the Kadallu 1SG pronoun *kaɣa* is similar to the Koman 1SG pronoun **aKa/aGa.*

11.3.3 Nouns and Noun Phrases

Gender marking is found in all Koman languages except Uduk. Masculine is tentatively **-ɗ (i)* and feminine is **-ɓ (i).* While gender is not marked on pronouns in B'aga, sex-based gender prefixes are used on nouns, namely animals. The masculine sex-based gender prefix in B'aga *odá-* [*wədə́-*] is similar in form to the masculine affixes found in Koman (see also Ahland 2013). The Opo masculine has a full form *ʊ̀tà* used on nouns and *ʊ̀-* used to derive masculine nouns from verbs (Smolders 2018). In a similar manner, the Gumuz full form *odá-* 'male' is used in one context (male animals) while the short form *óó-* is used in another (to mark human male names). Although Uduk has no synchronic gender marking on nouns, the 3SG pronoun has retained the masculine suffix **-ɗ (i)*: *áɗi* (Killian 2015b). Also at least one apparent reflex of this masculine marker is found in noun form: *wàn̰tí* 'man' (Killian 2014). This masculine form is found in Western Nilotic

[10] We refer to *B'aga* as a whole here because there is evidence of the 2SG bound possessive form in Kadallu. The body parts in both word lists, which are inherently possessed, end in *-wa* (Schuver 1882 in James et al. 1996; Muratori 1955).

as well; Heine and Vossen (1983) propose that the source of the masculine gender prefix *o-* is *wad* 'son'; Reh (1996) proposes a similar source for masculine gender in Anywa.

Feminine gender can be reconstructed in Koman pronouns as **-ɓ (i)* (based on Otero 2016). This form does not appear to be cognate with the B'aga *éé-* for humans and *eé (k'ó-)* for animals. However, the lexical item for 'cow' in Kadallu suggests a possible link between these two forms: *iepò̰s* (*iep-òs*, FEM-bovine) (Schuver 1882 in James et al. 1996).

Number in B'aga and Koman can be expressed as nominal number on the noun and verb, or via verbal number. Nominal number relates to real-world entities while verbal number relates to events (Corbett 2000). B'aga and Koman languages mark both nominal and verbal number on the verb and tend to have limited number marking on nouns.

Nouns are not generally marked for number in B'aga (C. Ahland 2012, 2016b) and Koman (Otero 2015a:21; Killian 2015b:62; Goldberg et al. 2017; Smolders 2018), exhibiting what has been labelled 'general number' (Corbett 2000:2). Typically, only human and some animate nouns can be marked for plural. This pattern of number marking appears to be areal as this is also found in neighbouring languages such as the Omotic language Northern Mao (M. Ahland 2012). In B'aga languages, the plural prefix *má-* can be marked on most human nouns and there are at least two plural strategies for a smaller subset of nouns (C. Ahland 2012, 2016b).

Of the Koman languages, Gwama has a plural prefix marked on animate nouns which is most similar to Gumuz: *mā-* (Goldberg et al. 2017). Certain feminine nouns in Gwama are marked with the feminine plural prefix *ī-*.[11] Lastly, Opo has *wū- ~ ū- ~ w-* as a plural prefix on kinship terms (Smolders 2018).

11.3.4 Verbs

In B'aga and Koman languages nominal number (via bound pronominals) can be marked on the verbs. In addition, all Koman languages encode participant number (singular vs. plural) in the verb stem (Killian 2015b; Otero 2015b; Goldberg et al. 2017; Smolders 2018). The Gumuz languages and Daats'íin, in contrast, only have a small set of inherently singular versus plural verb stems, for example, *dugw* 'run.SG' versus *rand* 'run.PL' (Daats'íin). Instead, these languages have a special verbal plural form (the prefix *N-* in Gumuz and reduplication in Daats'íin) to encode either participant number or event number.[12] Participant number is encoded as a distinct construction in the Koman languages of Opo, Gwama, and Komo; Uduk, however, only encodes participant number.

[11] The *ī-* feminine plural may be cognate with the feminine prefix *éé-* in B'aga. A form apparently cognate to Gwama exists in Uduk, *ī* associative plural (Killian 2015b:63), and Opo *bi-*PL (Smolders 2018).

[12] 'Verbal plural' is roughly equivalent to the oft-used term 'pluractional.'

Table 11.8 Deictic directionals in Koman and B'aga

	Komo	Uduk	Opo	Gwama	Daats'íin	Northern Gumuz	Southern Gumuz
Ventive	-ú́	-ú	-ú́	-í	-é	-é	-é
Itive	-úk, í	-kú	-á ~ -(j)há	-gí		-îʒ?	

In Northern Gumuz and Daats'íin, number can be marked on the verb to make an additional distinction between plural (paucal) and greater plural using the greater plural suffix (*-óa* in Daats'íin and *-óo* in Gumuz). A similar distinction is found in Komo (with dual marking) (Otero 2015b) and Uduk (using a plural subject with a singular verb) (Killian 2015b).

All B'aga and Koman languages exhibit ventive and itive markers, also referred to as deictic directionals; see Payne and Otero (2016:1), who define the latter as 'a grammatical verb affix morpheme that, among its functions, indicates PATH information relative to a DEICTIC REFERENCE POINT'. The B'aga languages typically encode only motion towards the deictic reference point, while Koman languages encode both motion away and motion towards the deictic reference point (Table 11.8). In Northern Gumuz, direction away can be marked on certain verb stems in the imperative (C. Ahland 2012:206).

In Komo, Uduk, Gwama, Daats'íin, and Gumuz languages, the deictic directional for motion towards (on non-translational motion verbs) can indicate doing something in another location and then returning to the deictic reference point. These deictic directionals also have a benefactive function in Gwama and the B'aga languages.

In the B'aga and Koman languages, deictic directionals have grammaticalized as tense/aspect markers (C. Ahland 2012, 2016b; Killian 2015b:180; Payne & Otero 2016; Goldberg et al. 2017; Hellenthal 2018; Otero 2018).

11.3.5 Noun Incorporation and Grammaticalization of Body Part Nouns

Synchronic noun incorporation exists in the Gumuz languages (C. Ahland 2010, 2012) as well as in Daats'íin (Ahland 2016b). It is not clear that synchronic noun incorporation exists in the Koman languages. In Uduk, body part nouns are incorporated into the predicate rather than the verb stem. The resulting construction appears to be an external possession (EP) construction (see Payne & Barshi 1999:3) in which the possessor serves as a core argument of the verb and the possessum serves as an extra 'argument' of sorts which does not receive assigned case. For example, in the Uduk example below (7), if 'neck' were part of an associative construction, 'neck' would precede 'hen' (see (14)).

(7) Uduk (Killian 2015a:184)

wàthíʔ	ʼcítʰ-íʼd	ā	ŋwá	ʼbāʔ
man	cut:PF-3SG	CL2.ACC	hen	neck

'The man cut the head off the chicken.'

Example (7) mirrors the external possession constructions in Gumuz in which an incorporated noun (the possessum) does not function as an argument of the verb and the possessor is the P argument (8).[13]

(8) Southern Gumuz

cʼér-okʼ	métá
cut-head	chicken

'cut off the head of the chicken'

These EP constructions likely led to more grammaticalized constructions such as that of the verb 'mix (liquid)' in Uduk (9) and 'smell (liquid)' in the Gumuz languages (10) in which 'eye' forms part of the verb and categorizes liquids. In both Uduk and Gumuz, one must change the body part term if something other than a liquid is the P argument (e.g., Uduk *kʼofīs* 'hit body' for solids; see Killian 2015a:186). However, this system of verbal classifiers is more fully developed in Gumuz, classifying either the S or P argument of the verb (C. Ahland 2010, 2012).

(9) Uduk (Killian 2015a:188)

shwānénín	áhā	ʼkósh-á	ā	ālbŭn	ē	nyàk̲ká	kó
recently	1SG	hit:PF-1SG	CL2.ACC	coffee	eye	with:CL2	milk

'I mixed the coffee with the milk a little bit ago.'

(10) Northern Gumuz

fúŋ-ac	búná
smell-CL1:eye	coffee

'Smell the liquid coffee.'

Among the Koman languages, noun incorporation exists in Opo (Smolders 2018), and possibly in a few examples in Gwama and Komo (Manuel Otero, personal communication). For Komo, there are a few expressions with 'eye' (Manuel Otero, personal communication). For Gwama, the only known incorporated nouns are 'eye' and 'mouth' (11) (Justin Goldberg, personal communication).

(11) Gwama

hɔ̀	nàn-ní-gí-gà	tʼwā
come	tell-3SG.MSC.I-DD2-1SG.II	mouth

'Coming he told me.'

Again, these may not be true incorporated nouns in Koman but rather body part terms that are incorporated into the verb phrase which do not serve as an argument of the verb.

Table 11.9 gives a list of body part terms shared across B'aga + Koman which are incorporated into the verb complex and which have lexicalized

[13] Killian (2015a) demonstrates some characteristics of argument status for this additional 'argument' in the verb phrase, hence his coined term 'partargument'.

Table 11.9 Incorporated body part terms in B'aga and Koman

	Northern Gumuz	Southern Gumuz	Daats'íin	Uduk	Opo	Gwama	Komo
'eye'	-c (á)	-c (á)	-cé	ē	dʒɛ̀	zì	ɓí
'mouth'	-s (a)	-s (a)	-s (a)	t'ʷáʔ	t'ā	t'wā	*
'head'	-k'ʷ (á)	-k'ʷ (á)	-k'ó	k'úpʰ	k'úp	*	*
'body'	-ts (a)	-ts (a)	-ts (a)	īs	ɛ̄s	*	*
'belly'	-ííl (a)	-ííl (a)	-ííl (a)	bʷà	*	*	*
'tooth'	-k'ós (a)	-k'ós (a)	*	ʃɛ̄ʔ	sɛ̄	*	*
'hip/loins'	-ʃ (a)	-ʃ (a)	-f (a)	*	*	*	*
'ear'	-ts'é (a)	-ts'é (a)	*	*	tʃʾɛ̄	*	*

Table 11.10 Relator nouns < Body part terms

SOURCE > TARGET	Northern Gumuz	Southern Gumuz	Daats'íin	Komo	Gwama	Uduk	Opo
belly > in /inside, within	líí	ííl	íl	kímí	tát	bwà	pùmà
head > top	k'wá /k'ó	k'wá /k'o	k'ó	*	úp	k'úpʰ	k'úp
rear end > under	nza	(ííl-)anza	sinza	p'èn	*zìn	p'en	*
back > behind	boŋgó	tʃátʃá	c'éc'é	pɔ́g	k'was	*	k'ɔ̄rɔ̄
mouth > edge / opening of	sá	sá	sa	t'á	t'wā	*	*
rib > beside	gónáχá	taganá	*	gɛ̀ɛ̄m	*	gwǎr	*
face/eyes > facing /in front of	líí-cá	ííl-cá	*	*	t'wá-zì	*	kùí-dʒɛ̀
loins > at base of, underside	ʃa	ʃa	fa	*	*	*	ū̄s

*Grammaticalization not attested.

with the verb or have grammaticalized in some way. While many of these body part terms appear cognate, noun incorporation/phrasal verb constructions are likely the result of an areal pattern which incidentally is found only in neighbouring languages thought to be Nilo-Saharan, including Berta (C. Ahland 2010, 2012; Neudorf 2015).

In addition to grammaticalizing as verbal classifers, many of these body part terms have grammaticalized as relator nouns. Table 11.10 shows relator nouns across B'aga and Koman that arose from body part terms.

11.3.6 Associative Constructions

The B'aga and Koman languages (save Uduk) share a very similar noun-noun modification construction that involves the insertion of a vowel, either *a* or *ɪ* between the two nouns of the construction. Most Koman languages mark this vowel with a H or M tone. In all B'aga and Koman languages the first noun of the construction is the syntactic head. For Gwama (12), the associative construction is in *construct form* (or 'construct state') that is traditionally associated with languages of East Africa within Semitic,

Cushitic, and Nilotic families (Creissels 2009:73). Construct form is simply head-marking within a noun-noun modification construction. This head-marking pattern is shared across many languages in eastern Africa.

(12) Gwama

ʃāŋà-á	kājā	→	ʃà. ŋá. kā. jā.	
light-ASC	sun		'light of the sun'	

For Opo (13) and Komo (14), the resulting construction is one phonological word and it is therefore difficult to determine which noun of the construction is being marked.

(13) Opo

k'ʊ́p	-í-	dʒàw	→	k'ɔ́pídʒàw
head	ASC	rock		'mountaintop'

(14) Komo

ɔ̀m	-ī-	wàgá	→	ɔ̀mɪ wàgá
egg	ASC	chicken		'chicken egg'

The Gumuz and Daats'íin associative constructions are most similar to Opo and Komo in that the resulting construction is often one phonological word. The associative morpheme is realized as H tone on the final *a* of the first noun in the Gumuz languages (15) and is simply */á/* in Daats'íin.

(15) Northern Gumuz

ɓatʃ'a	H	χosa	→	ɓatʃ'áχosa
meat	ASC	bovine		'beef'

The Uduk construction (16) appears to be the most divergent in that the associative is often formed via N-N juxtaposition without any additional morphological marking.

(16) Uduk

ɟùs	jáp^{h}	→	ɟùsjáp^{h}
hole	porcupine		'porcupine hole'

However, the associative construction involves tonal change when class II nouns are the second (modifying) noun of the construction. There are two classes of nouns in Uduk – ones that are unmarked for case in the Absolutive (class I) and ones that are marked for case in the Absolutive (class II) (Killian 2015b:71). Class II nouns are marked for Absolutive case with a L tone *a* before the noun. When it functions as the second noun of the construction, the *a* carries M tone, see (17) from Killian (2015b:88).

(17) Uduk

à ōm	à ŋwá	→	à ōm ā ŋwá
egg	chicken		'chicken egg'

Both Uduk and the B'aga languages have a nasal inserted in certain associative constructions. Killian (2015b:88) calls this the *associative nasal*. In Uduk, it is inserted between N_1 and N_2 when N_1 ends in a vowel and N_2 begins with a plosive (18). Similarly, the Pame dialect of Opo has *mú* as the associative

(Joshua Smolders, personal communication). In B'aga, the nasal appears in a few frozen forms (19). In all languages (except Pame), the nasal of this construction assimilates to the place of articulation of the following plosive.

(18) Uduk

shē	N	'ká	→	shēŋ' ká
tooth	ASC	dog		'dog tooth'

(19) Southern Gumuz

ts'éa	N	ɟá	→	ts'éɲˈɟá
leaf	ASC	tree		'tree leaf'

11.3.7 Word Order and Alignment

The B'aga and Koman languages exhibit AVP (SVO)/SV word order.[14] However, other word orders are attested depending on the discourse context, namely PVA (Otero 2016; Killian 2015b) and PAV (Goldberg et al. 2017) in Koman and PVA, VAP, APV, and VS in the Gumuz languages (C. Ahland 2012). When an A argument follows the verb in Uduk and the Gumuz languages, special case marking is used. In Gumuz this same case marking is also used for postverbal S and to provide emphasis for any S/A argument. Such a case-marking pattern is considered type 1 marked nominative with a split system. Killian (2015b) does not consider Uduk to exhibit such a pattern since there are few postverbal S arguments. The other Koman languages do not use any special case marking on nouns. It is unclear whether case-marking exists in Daats'íin (Ahland 2016b).

Bound pronominals in Koman demonstrate a nominative-accusative pattern. The Gumuz languages and Daats'íin, in contrast, have special forms for S bound pronominals versus A bound pronominals (C. Ahland 2012, 2016b). In Northern Gumuz, the bound pronominals follow an ergative-absolutive pattern in that the S and and P forms are identical. However, the fact that S and A bound pronominals are required on the verb whereas P pronominals are optional also suggests a nominative-accusative pattern (C. Ahland 2012).

11.4 Central Sudanic

Central Sudanic languages are scattered across five countries: southern Chad, the north of the Central-African Republic, the northeast of the Democratic Republic of the Congo, north-western Uganda, and the west of South Sudan. The primary division between Western Central Sudanic and Eastern Central Sudanic was first proposed by Tucker and Bryan (1956:142), who refer to these groups as Bongo-Bagirmi and Moru-Mangbetu

[14] Here we use 'AVP' (cf. Comrie 1981), which is equivalent to 'SVO'.

respectively. The Western branch consists of Bongo-Bagirmi (comprising around 40 languages) as well as the Sara group; the Eastern branch consists of four clusters: Moru-Ma'di, Mangbutu-Efe, Mangbetu-Aswa, and Lendu-Ngiti. This primary division within Central Sudanic coincides with typological differences, as discussed below. Relatively little is known about a language called Kreish or Gbaya (not to be confused with the Ubangian language Gbaya). Its genetic status as a member of the Central Sudanic family or as a more distantly related Nilo-Saharan language remains unclear. This also applies to Sinyar, another language spoken in South Sudan. Neither Kreish nor Sinyar are included in the discussion below.

11.4.1 Phonology

There is a clear-cut difference between the vowel systems of Eastern Central Sudanic languages and the Bongo-Bagirmi languages of Western Central Sudanic on the one hand, and those of the Sara group within the Western branch. The main distinction is that in the former languages, ATR vowel harmony plays a significant role, whereas in the Sara languages, there is no trace of ATR vowel harmony. On the whole, it can be said that languages and speech varieties belonging to the four subgroups of the Eastern group and the Bongo-Bagirmi languages have vowel inventories of between six and ten contrastive vowels with (traces of) ATR vowel harmony. Because of the fact that some of the languages have predominantly monosyllabic roots and minimal segmental morphology as well as the loss of one or more front or back vowels in some others, vowel harmony may not function to its full extent.

The varieties of the Mangbetu subgroup analysed so far all have a complete and symmetrical nine-vowel system with nine contrastive vowels and ATR harmony (Larochette 1958; Demolin 1992; McKee 2007) (see Table 11.11).

Basic phonological research has been done in most of the Mangbutu-Efe languages, and it appears that they all have seven contrastive vowels (see Table 11.12). In these systems, the vowels *ɛ* and *ɔ* are contrastive, with [*e*] and [*o*] as allophonic realizations in the context of the high [+ATR] vowels *i* or *u*.

Table 11.11 The vowels of Mangbetu

[–ATR]		[+ATR]	
ɪ	ʊ	i	u
ɛ	ɔ	e	o
a			

Table 11.12 The vowels of Mangbutu-Efe

[–ATR]		[+ATR]	
ɪ	ʊ	i	u
ɛ	ɔ	[e]	[o]
a			

In the Moru-Ma'di subgroup, a variety of vowel systems is found. Ma'di-Lokai has a complete nine-vowel ATR vowel-harmony system, in fact, with a tenth vowel [ʌ] as [+ATR] allophone of *a* (Blackings & Fabb 2003:33). Keliko of South Sudan also has a nine-vowel system. However, Ma'di Okollo, Aringa, and Lugbara have a seven-vowel system, with [*e*] and [*o*], and possibly [ʌ] as allophones when occurring in the vicinity of [+ATR] vowels.

Avokaya (Kilpatrick 2004), Logo (Wright 1995), and Omi(-ti) (Bradley n.d.) have an asymmetrical vowel system due to the loss of **e*, **o*, and **ʊ*. All three languages have a central vowel *ə* or *ʌ*, whose status does need further study, since it is not automatically the [+ATR] counterpart of *a* (see Table 11.13).

All speech varieties in the Lendu subgroup have predominantly monosyllabic roots. Lendu has no affixational morphology, which makes it unique universally. This means that ATR vowel harmony is not attested either, though the relationship to related languages with ATR vowel-harmony systems is still visible. Ngiti is slightly different, since there is an initial vowel prefix preceding the root, which is no longer functional in the nouns, but which changes and alternates in a system of verbal derivation. These vowels harmonize with the ATR-value of the root (Kutsch Lojenga 1994:63). The Ngiti nouns in Table 11.14 carry a petrified prefix, *i-* or *ɪ-* and *o-* or *ɔ-*, which agree in ATR value with the root.

Even though there is an amount of agglutination in the verbal inflectional system, most of the prefixes in the inflectional system consist of a consonant, and most of the suffixes contain the vowel *a*, which does not trigger or undergo vowel-harmony processes. Ngiti does have an amount of borrowed vocabulary from the Bantu language KiHema (Lunyoro/RuTooro), in which roots are often disyllabic, preceded by a petrified Bantu prefix. ATR vowel harmony is fully functional in such words, even though the original Bantu language has only five vowels.

Table 11.13 The vowels of Avokaya, Logo, and Omi

[–ATR]		[+ATR]	
ɪ		i	u
ɛ	ɔ		
a		ə	

Table 11.14 Vowel harmony in Ngiti nouns

[+ATR]		[–ATR]		[+ATR]		[–ATR]	
ī-ɓī	'egg'	ì-ɓǐ	'bamboo'	ō-ɓī	'knife'	ɔ̀-mbǐ	'thorn tree'
ī-ɓū	'hole'	ì-ɓù	'valley'	ō-tú	'wound'	ɔ̄-ɗ̄ū	'calabash'
ì-kpè	'cough'	ì-ɓɛ̀	'fish'	ó-tsè	'vegetable sp.'	ɔ̄-ɓɛ́	'dance'
ī-kō	'salt'	ɪ-ɗɔ̄	'sleep'	ō-zō	'twins'	ɔ̄-gɔ̀	'forest'
		ɪ-dzā	'house'				

(20) [+ATR]

mù-kéyí	'snake, sp.'
rù-gōβì	'red bull with black stripes'

(21) [–ATR]

mʊ̀-lèmà	'victory'
rʊ̀-kɔ̀mì	'bull with bent horns'

Lendu-Dja, which is considered the standard variety and which is also used for written documentation, has eight contrastive vowels. It appears that the vowel *e has got lost and has most likely merged with the vowel ɪ. The vowel *o has shifted to a front rounded vowel œ. The present vowel system can be displayed as in Table 11.15.

The Lendu varieties Pi, Rrkpa, Ddra, and Ndrulo have no vowel harmony either, because of their monosyllabic roots and lack of affixational morphology. In these speech varieties, certain vowels have diphthongized. There are seven plain vowels in Ndrulo (spoken in Uganda); however, the vowels *e*, *ɛ*, and *o* are very rarely attested, or sometimes only found in grammatical morphemes. Ndrulo has four diphthongs which function in the same way as the plain vowels do. The four diphthongs form a symmetrical pattern: two central vowels [*a*] and [*ə*] with an offglide to a front or a back vowel, [*i*] or [*u*]. The Ndrulo diphthongs $ə^i$ and $ə^u$ correspond to the Lendu vowels *i* and *u* respectively; the diphthongs a^i and a^u correspond to Lendu-Dja ɪ and ʊ. The majority of the words with the vowels ɪ and ʊ in Ndrulo correspond to Lendu-Dja words with *ɛ* and ɔ.

Among the Western Central Sudanic languages, documentation on Bongo-Bagirmi languages also shows systems of up to ten vowels displaying ATR vowel harmony. Bongo has ten contrastive vowels (Kilpatrick 1985; Persson 2004); Baka has eleven surface vowels, but [*e*], [*ə*] and [*o*] seem to be allophones of *ɛ*, *a*, and ɔ, a 'neutral' vowel *ɨ* is attested, which may resemble the [*ɨ*] in the Sara languages treated below.

Table 11.15 The vowels of Lendu-Dja

Front unrounded	Front rounded	Central	Back rounded
i			u
ɪ			ʊ
	œ		
ɛ			ɔ
		a	

The Sara group shows no trace of ATR vowel harmony. Contrary to the Eastern subgroup of Central Sudanic, in which all languages have exclusively open syllables (Tucker & Bryan 1966:31), a number of Western Central Sudanic languages have closed syllables, presumably caused by erosion of a final vowel: *CVCV > CVC. The final consonant is mostly a nasal or an oral sonorant (*y, w, l, r*). As for the vowels, Gor is taken as representative for other Sara varieties, and displays a system of six underlying vowels, with often eight surface realizations, as follows (adapted from Roberts 2003): whereby [ɨ] and [ə] can be considered as non-contrastive, [ɨ] being an allophone of *i* in closed syllables and as realization of the release of any obstruent before pause, and [ə] as an allophone of *e* in pre-pausal position (see Table 11.16).

In addition, three nasalized vowels, ɛ̃, ã, and ɔ̃, are attested throughout the core Sara languages (J. S. Roberts, personal communication), a feature shared with neighbouring Adamawa languages. Contrastive vowel nasalization is not attested in any of the other Central Sudanic languages, although vowels may be nasalized automatically in the vicinity of nasal consonants.

Central Sudanic languages tend to have rich consonant inventories, as shown for Ngiti in Table 11.17.

Central Sudanic languages have basic consonant inventories containing voiced and voiceless stops, including the affricates *tʃ* and *dʒ*. Lendu has in addition *ts* and *dz*. Ngiti, and also Logo, and maybe others, have *pf* and *bv*, originally allophones of *p* and *b* preceding round/back vowels, which have gradually phonologized or are in a process of doing so. Central Sudanic

Table 11.16 The vowels of Sara

i	[ɨ]	u
e	[ə]	o
	a	ɔ

Table 11.17 The consonants of Ngiti

vl. implosives	ɓ		ƭ	ƈ		ʔ	
vd. implosives	ɓ		ɗ	ʄ			
vl. stops	p	t	tr	c	k		kp
vd. stops	b	d	dr	ɟ	g		gb
prenasalized stops	ᵐb	ⁿd	ⁿdr	ᶮɟ	ᵑg		ᵑ͡ᵐgb
vl. affricates	pf	ts					
vd. affricates	bv	dz					
vl. fricatives	f	s				h	
vd. fricatives	v	z					
prenasalized fricatives	ᵐv	ⁿz					
nasal sonorants	m	n		ɲ			
oral sonorants	β	l	r	j			w

consonant inventories also contain a series of prenasalized voiced obstruents: ᵐb, ⁿd, ᵑg, etc., and most languages have both voiced and voiceless fricatives in various places of articulation (labiodental, alveolar, and some even palatal), whereas the Sara languages generally have only one voiceless fricative *s*. All Central Sudanic languages have nasal and oral sonorants.

As for places of articulation, Thayer (1974), in her study of Bongo-Bagirmi-Sara phonologies, regularly distinguishes between dental and alveolar, or alveolar and retroflex consonants. The Eastern member Lendu has interdental fricatives *θ* and *ð* as well as alveolar stops *d* and *t* (Kutsch Lojenga 1994:10–11). Lendu and several other Eastern Central Sudanic languages have the following series *tr*, *dr*, and ⁿ*dr* synchronically, which may have developed out of retroflex consonants.

Voiceless, voiced, and voiced prenasalized labial-velar stops, *kp*, *gb*, ᵑᵐ*gb*, are also common across Central Sudanic, and some languages have a labial-velar nasal *ŋm* as well (the Western language Jur Modo [Persson 2004:82] and the Eastern members Keliko and Aringa [Kilpatrick 2004:89]).

Implosives, glottals, and preglottalized consonants are also a widespread phenomenon throughout Central Sudanic, though the number of these may vary per language: most languages have at least the bilabial and alveolar implosives *ɓ* and *ɗ*; quite a few also have a palatal implosive *ƒ*, which is sometimes in free variation with a preglottalized ʔ*y*. Some languages have a phonemic glottal stop, and some have a preglottalized ʔ*w* as well. Lugbara has many examples of all five (Kutsch Lojenga, personal data):

(22)

ɓá	'person'
ɗù	'millet'
ʔyɛ́	'arrow'
ʔwàrà	'big (size)'
āʔú	'chicken'

All speech varieties in the Lendu group have a contrast between voiced and voiceless implosives in three places of articulation: *ɓ* and *ꞵ*, *ɗ* and *ƒ*, as well as *ƒ* and *ƈ*, as the examples from Ngiti in Table 11.18 show (Kutsch Lojenga 1994:38).

Another unusual consonant is the labial or labiodental flap *ⱱ*, which occurs in quite a few Central Sudanic languages. In some, it is used only in ideophones; in others, it is used as a regular consonant in the lexicon, like, for example, in Mangbutu (Kutsch Lojenga 2013):

(23)

áⱱí	'person'
èⱱɛ́	'pygmy'
kává	'calabash'

Table 11.18 Glottalized consonants in Ngiti

bilabial		alveolar		palatal	
āɓū	'grandfather'	ɔ̄ɗū	'calabash'	āƒú	village name
àꞵù	'clouds'	ɔ̄ɽù	'burial'	āƈú	'need, desire'

Yet another universally rare phenomenon is a bilabial trilled release of bilabial or labial-velar obstruents, heavily represented in languages of the Mangbetu-Asua group: in some only following bilabial obstruents (Demolin 1990) but in others also with the labial-velar consonants, as in the following example from Lombi (Kutsch Lojenga 2013).

(24) nɛ̀kpʙɔ́ʔɔ̀ ‘footsole’
nàgbʙúgbʙù ‘bitter leaves’
náàngbʙú ‘mushroom, gen.’

In general terms, it can be said that most Central Sudanic languages have a two-tone or a three-tone system, with some exceptional four-tone systems as well (Demolin 1999:315). The Sara languages have a three-tone system, whereas other languages belonging to the Western branch spoken further to the east generally have two-tone systems. This latter system (with a binary contrast) is also reconstructed by Boyeldieu (2000) in his historical-comparative study of the Western branch of Central Sudanic. Boyeldieu (2009) shows that in the Bongo-Bagirmi language Yulu, there is a four-way distinction between high, mid, low, and extra-low, with the extra-low register resulting historically from depressor consonants as well as the expressive use of the extra low register tone. The following minimal pairs illustrate three of the four tonal registers of Yulu.

(25) ùudə̃ ‘it germinates’
ùudə ‘he hits with his fist’
ūudə̃ ‘he deposes’
ūudə ‘you hit with your fist’
úudə̃ ‘you depose’

In three subgroups of the Eastern branch, most languages have three-tone systems: Lendu-Ngiti, Mangbutu-Efe, and Moru-Ma’di. The Mangbetu subgroup has been analysed as having a two-tone system underlyingly. Andersen (1986a) has shown that the fourth, extra high tone level in western Lugbara developed from a high tone on a [+ATR] vowel (whereby the original tonal allophony was phonemicized due to vowel merger and reduction or loss of segments). Ma’di-Okollo in Uganda also has four contrastive tone levels.

Lendu, with its strongly reduced segmental structure and three level tones and a rising contour, has numerous minimal pairs distinguished by tone only.

(26) ɓù ‘hole’
ɓū ‘tribe’
ɓú ‘canoe’
ɓŭ ‘eagle’

Lendu also has ‘vowelless syllables’ whereby the nucleus consists of a tone-bearing continuation of *s, z, r* from the syllable onset. The *s* must acquire voicing in order to carry a tone (Kutsch Lojenga 1989).

Table 11.19 Independent pronouns in Ngiti

person	singular	gloss	plural	gloss
1	īmā	'I, me'	ɨmă	'we, us'
2	ĩŋī	'you'	ɨŋĭ	'you pl.'
3	àbāɗī	'he, him'	ābáɗí	'they, them'

(27) tsɔ̀ 'laziness'
dzɔ̄ 'earth'
ndrɨ̀ 'goat'

In most of the languages, tone has a grammatical function as well. In quite a few Eastern members of Central Sudanic, singular/plural distinctions of some [+human] nouns and also pronouns are made exclusively by tone. Table 11.19 shows the Ngiti independent pronouns, in which the singular-plural distinction is exclusively marked by tone (Kutsch Lojenga 1994:194).

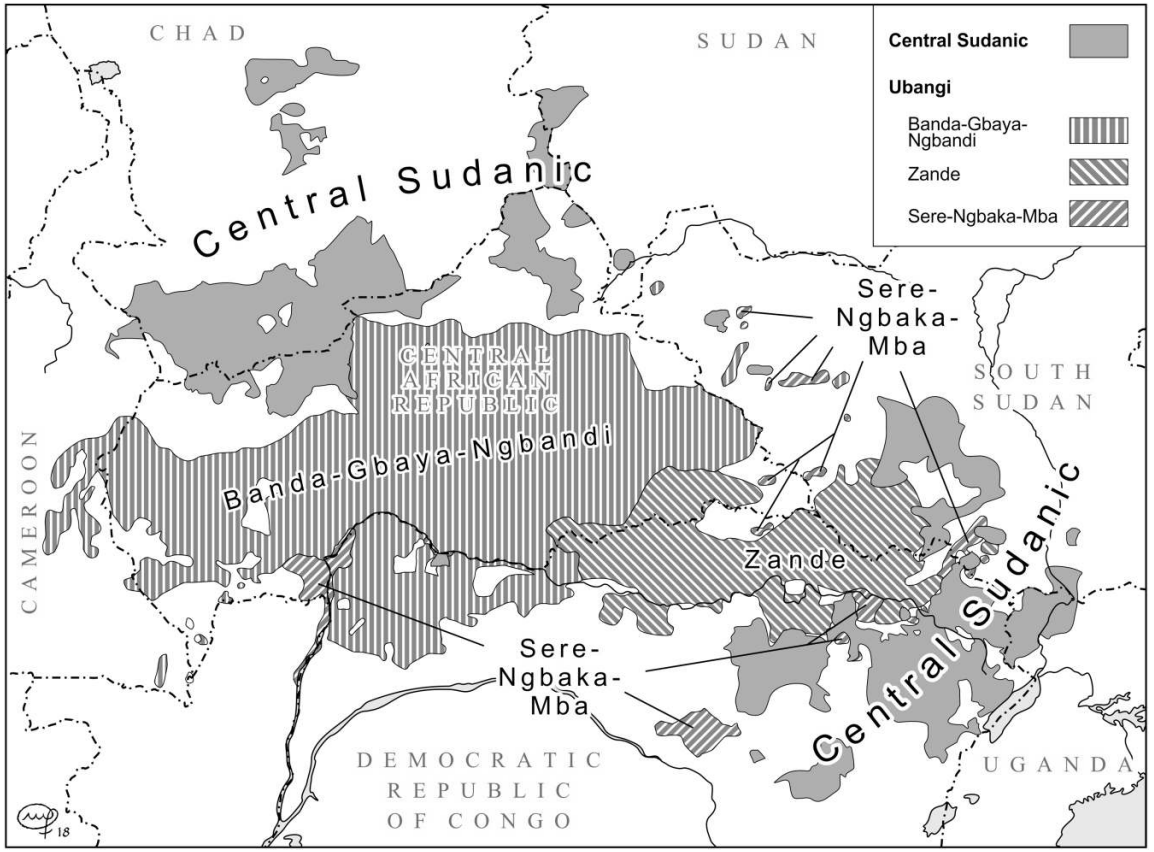
11.4.2 Morphosyntactic Features

The genetic division between Eastern and Western Central Sudanic corresponds to a typological division at the clausal as well as the phrasal level in terms of constituent order. The Western branch members (consisting of Bongo-Bagirmi and Sara) have SVO (AVP) as their basic constituent order, with prepositions and a head-initial structure in their noun phrases (Keegan 2012). In this respect, they are similar to neighbouring Ubangian languages (see Map 11.3). Moreover, these languages share the extensive use of discourse particles, usually occurring as enclitic elements in sentence-final position; see Dimmendaal (2017) for further details. Example (28) from Yulu (based on Santandrea 1970) and from the Baramba-Pamba dialect of the Ubangian language Zande (29) (based on Tucker & Bryan 1966:153) illustrate these parallel structures whereby discourse particles (or attitude markers) encliticize onto the preceding verb.

(28) Yulu
ake luu' bo-lee
3PL.AUX find-PART
'they will find it/him/her'

(29) Zande
nye-nzí túngú à
1SG-AUX work PART
'I have done work'

The Eastern branch members (consisting of Moru-Ma'di, Mangbutu-Efe, Mangbetu-Aswa, and Lendu-Ngiti) have two constituent-order possibilities, SAuxOV with imperfective or incompletive aspect, and SVO (AVP) with perfective aspect; they have postpositions and are generally head-final, with



Map 11.3 The distribution of Central Sudanic and Ubangian languages

modifiers preceding the head noun. In Lendu, the AUX element expressing imperfective aspect consists of a floating high tone. Example (30) shows the perfective aspect with the SVO word order; in the imperfective aspect (31), the floating high tone merges with the mid tone of the 3rd person singular pronoun *kɛ̄´* → *kɛ́* (Kutsch Lojenga 2003:2–3).

(30) kɛ tʃī dzā
3SG build house
'he has built a house'

(31) kɛ́ dzā tʃǐ
3SG.AUX house build
'he is building a house'

The floating high tone expressing imperfective aspect in Lendu is presumably a reflex of the root of the verb 'to be', which is still found in the closely related language Ngiti, where it is realized as *-í*. In Logo it is an invariable *adré* (Wright 1995:36ff.); in Moru it is the morpheme *-á* (Andersen 1986b:20). In Ma'di, the non-past (i.e., present and future) tense auxiliary is expressed by way of a floating low tone preceding the verb (SO`V) (Blackings & Fabb 2003:155, 157).

11.4.3 The Verbal Template

11.4.3.1 Pronominal Reference

It is common in Central Sudanic languages to distinguish between independent (syntactic) pronouns and shortened forms realized as proclitics (or prefixes); the latter form a phonological word with the following auxiliary or verb. (Pronominal object marking is not discussed in the present chapter.) One of the most detailed descriptions can be found in Blackings and Fabb (2003:133–164) for Ma'di. Table 11.20 summarizes the set of independent and bound subject pronouns.

Independent pronouns in Ma'di and other Central Sudanic languages are used in order to express specific pragmatic roles, such as emphasis. Examples from Blackings and Fabb (2003:140, 134).

Table 11.20 Subject pronouns in Ma'di

	Long subject pronominals	Short subject pronominals
1SG	má	á-
2SG	ɲɨ́	ɨ́-
3SG	(none)	ɔ̄-
1PL	àmà	à-
2PL	àɲɨ	ɨ-
3PL	(none)	ɔ̄-

Table 11.21 Coreference pronouns in Lendu and Ngiti

	Ngiti	Lendu-Dja	Lendu-Ndrulo
3.SG	ndì	ndì	ndà^{i}
3.PL	ʔì	ndìmà	ʔì

(32) má ɲā gbándà
1SG eat cassava
'I ate cassava'

(33) á-ndrɛ̄ rá
1SG-see AFF
'I have seen it'

Logophoric pronouns are found in a wide variety of Central Sudanic languages.[15] In Eastern languages, the use of special pronouns to mark coreference with an aforementioned antecedent is much broader, as first documented by Andersen and Goyvaerts (1986) for Moru-Ma'di. In their article, they present examples from Moru, Kaliko, and Logo, showing that in these languages, there is a clear link between reflexive and logophoric pronouns. Andersen and Goyvaerts (1986) use the term 'logophoric' when the special pronouns are found in complement clauses of the verbs 'to say' or 'to speak', and 'reflexive' when these same pronouns are used clause-internally, for example, as object pronoun or possessive pronoun coreferential with the subject of the clause. It might therefore be more appropriate to use the term 'coreference' for languages in which reflexive pronouns are also used with a logophoric function.

In Lendu and Ngiti, the reflexive pronouns, both singular and plural, are also used as logophoric pronouns (Kutsch Lojenga 2007). The forms of the coreference pronouns in the three languages are shown in Table 11.21.

The actual forms in Lendu and Ndrulo, *ndì* and *ndà*^{i}, are grammaticalized forms of the inalienable noun *ndì* meaning 'skin'. In the Lendu 3PL pronoun *ndìmà*, a plural marker *-mà* (infrequently used in some [+human] forms) is added. The form *ʔì*, used for the other two languages, is not transparent as to its origin.

The antecedent of the reflexive/logophoric or coreference pronouns in these Eastern Central Sudanic languages is not necessarily the subject of a verb of speaking, thinking or feeling; rather, the subject of any verb in the main clause can be the antecedent of these coreference pronouns in subordinate clauses, both preceding and following the main clause. They are limited to the multi-clause sentence, though.

Ngiti has a special set of two referential demonstratives which are used to refer to somebody or something which has already been mentioned before in a discourse or text beyond the scope of the sentence (Kutsch

[15] Elsewhere in Nilo-Saharan, logophoric pronouns appear to be restricted to the Western branch of Nilotic, which borders on Central Sudanic.

Table 11.22 Coreference pronouns and referential demonstratives in Ngiti

	Coreference pronouns S/O	Referential demonstratives
SG	ndì	ndɪ
PL	ʔì	ʔɪ

Lojenga 1994:375–376). The forms used are segmentally identical to the reflexive/coreference pronouns used for subject/object but tonally distinct. The latter carry a low tone, whereas the referential demonstratives carry a mid tone (see Table 11.22).

As for Western Central Sudanic languages, logophoric pronouns are described for several languages. The most extensive list of languages with logophoric pronouns is given in Boyeldieu and Nougayrol (2004). They list about a dozen Western languages which have logophoric pronouns, often only a 3rd person singular form, sometimes also a 3rd person plural form. Logophoricity in Bongo is also mentioned by Nougayrol (2013) and Stirtz (2015), and in Baka by Waag and Phodunze (2015). No in-depth study exists as yet comparing them with reflexive pronouns, or looking at their function other than in subject position.

As pointed out by Greenberg (1963:133), there is also a widespread reflexive or middle-voice marker pointing towards a common origin for languages classified as Nilo-Saharan by him, and reconstructed as **ru(h)* 'self/body' by Ehret (2001:539). In the Western Central Sudanic language Kabba, for example, the word for 'body' *rɔ* is often followed by the third person (logophoric) pronoun *ɛ́: rɔ-ɛ́ → rɛɛ́*. The latter form corresponds to a widespread reflexive/middle-voice marker *-rɛ* in Northeastern Nilo-Saharan branches like Nilotic, as in Turkana *a-tɔ-n-ɛ-rɛ* 'die (singular)', *a-tɔ-k-ɛ-rɛ* 'die (plural)'. The *n*/*k* alternation in this example is a reflex of an additional widespread deixis marking, probably going back to the earliest stages of Nilo-Saharan, as it is widespread in Central Sudanic as well as Northeastern Nilo-Saharan.

11.4.3.2 Verbal Derivation

Verbs may consist of a root or a stem, that is, a root preceded by a derivational prefix. One of the best diagnostic features pointing towards a common historical origin of Central Sudanic and Northeastern Nilo-Saharan is the presence of a causative marker **i-* (with a possible allomorph **ɪ-*, if ATR harmony goes back to the earliest stages of Nilo-Saharan). This prefix has been retained as such, for example, in the Central Sudanic language Ma'di (as in *tū* 'to climb up' / *ī-tú* 'to make climb up, promote') or the Eastern Sudanic language Me'en (*-dibis* 'be full'/ *-idibis* 'fill').

But apart from this cognate prefix, Central Sudanic and Northeastern Nilo-Saharan differ. Whereas additional derivational prefixes occur on verbs in Central Sudanic (see, for example, Kutsch Lojenga 1994 and

Kutsch Lojenga n.d.), Northeastern Nilo-Saharan languages use derivational suffixes (see below).

Number marking on nouns in Central Sudanic languages is usually restricted to animate nouns, but pluractional marking on verbs usually shows verbal plurality reflected on subjects or objects (examples from Ngiti; Kutsch Lojenga n.d.:20).

(34) ma m-í ìndrì náɗa
1SG 1SG-AUX goat (s) pull
'I am pulling one goat, or a group of goats simultaneously (collective plural)'

Distributive plurality is found when a plural subject or object accompanies a pluractional verb.

(35) ma m-í ìndrì núɗă
1SG 1SG-AUX goat (s) pull:PLUR
'I am pulling several goats one by one (distributive plural), or one goat several times'

With corresponding intransitive verbs in Ngiti, the implication is that a singular subject is involved in some event by performing it several times (example (37)) rather than once (as in example (36)).

(36) ma m-ákpĕ
1SG 1SG.AUX-whistle
'I am whistling'

(37) ma m-úkpĕ abhɔ
1SG 1SG.AUX-whistle:PLUR much
'I am whistling a lot'

Apart from pluractionality and singular action, Ngiti verbs express diminutive action by way of yet another prefix and tonal morphology, as illustrated by the following minimal set of verbs (Kutsch Lojenga 1994:300), in which the suffix *-ta* is an infinitive marker.

(38) aʔà-ta 'to cut, slash (base form)'
ʊʔa-ta 'to cut up (pluractional form)'
ʊʔà-ta 'to cut (single action)'
ɪʔá-tá 'to cut, slash (diminutive singular)'
ɪʔà-ta 'to cut up (diminutive plural)'

In addition, it is common in Ngiti and other Central Sudanic languages to express direction towards the deictic centre on the verb. Whereas verb roots in Central Sudanic tend to have a CV structure, derivational prefixes take the structure V- or CV-; the latter only in the Western branch.

11.4.4 The Noun Phrase

Nominal modifiers in Central Sudanic typically follow the head noun, except for possessors, which tend to precede the latter. Lendu and Ngiti

are unique within Central Sudanic in that modifiers, including relative clauses, precede the head noun. The following is a subject relative clause from Lendu (Kutsch Lojenga 2003:6) in which the head, *tsžtsž*, is preceded by the relative clause, shown in brackets. The relative clause marker *ná* is found at the end of the relative clause.

(39)	[ngbá	dzĭ	ná]	tsžtsž	kā	nzá
	child.IPF	buy:PRES	REL	bananas	ripen:PF	NEG
	'the bananas which the child is buying are not ripe'					

11.5 Northeastern Nilo-Saharan

11.5.1 Introduction

The nucleus or core of Nilo-Saharan in the present contribution consists of Central Sudanic on the one hand and Northeastern Nilo-Saharan on the other. The latter branch contains Eastern Sudanic and Kunama (which were already assumed to be genetically related by Greenberg 1955), but also includes Maban, Fur, and the closely related Amdang language, Saharan, and Kuliak (or Rub, as this cluster is called in Ehret 2001), whose genetic affiliation to Eastern Sudanic and Kunama was first proposed by Greenberg (1963).

Kuliak was classified as a branch (called 'Nyangiya, Teuso') of the Eastern Sudanic subgroup of Chari-Nile, the latter constituting one of the six primary branches of Nilo-Saharan in Greenberg (1963:86). But research by Schrock (forthcoming) on Ik (or Teuso, the only actively spoken member of this cluster) has shown that around 70 percent of its lexicon was borrowed from neighbouring Nilotic languages belonging to the Teso-Turkana cluster (Nilotic being part of Eastern Sudanic). In the present contribution Kuliak is classified as a more isolated Northeastern Nilo-Saharan branch (see Figure 11.1), which nevertheless shares a number of cognate grammatical morphemes with other languages classified as Northeastern Nilo-Saharan.[16]

Berta, which was classified as one of the four primary branches of Chari-Nile by Greenberg (1963), has been shown to be most closely related to the Eastern Sudanic Jebel group by Bremer (2015) on the basis of an extensive lexical as well as grammatical comparison primarily with Gaahmg, the only Jebel language for which extensive data are available.

In our typological survey below, we also argue that the largest subgroup within Northeastern Nilo-Saharan, Eastern Sudanic, forms a subgroup with Saharan (rather than with Kunama, which is argued to be more closely related to Fur and Amdang; see Figure 11.1). The Eastern Sudanic branch itself has the following internal structure.

[16] Sands (2009) classifies Kuliak as a linguistic isolate rather than as a member of the Nilo-Saharan phylum.

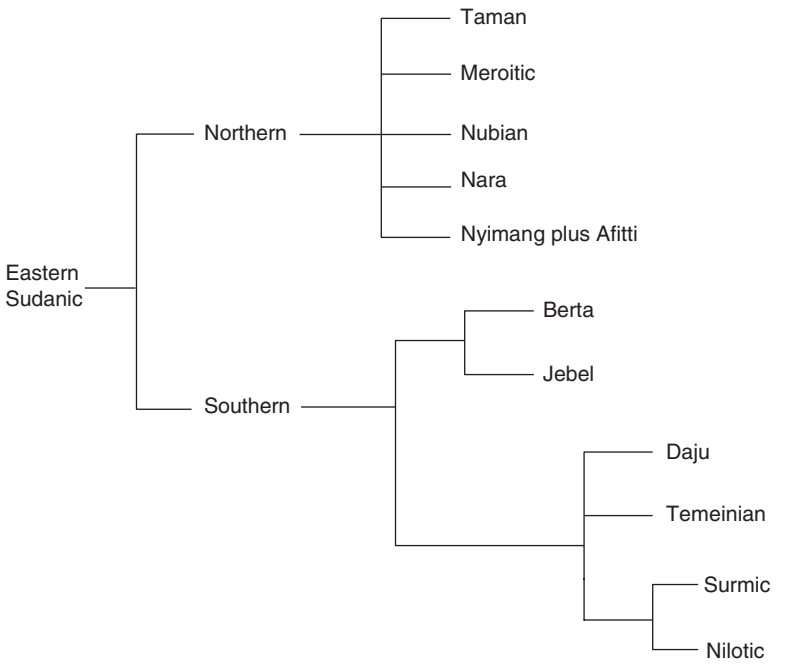


Figure 11.3 The subclassification of Eastern Sudanic

Rilly (2010) provides lexical and grammatical arguments for a Northern branch within Eastern Sudanic, which includes the extinct Meroitic language. Dimmendaal (2014a) provides arguments in favour of a genetic subgrouping for the remaining branches, called Southern Eastern Sudanic.

From a typological point of view, the Northern branch within Eastern Sudanic is similar to other Northeastern Nilo-Saharan groups like Maban, Fur and Amdang, or Kunama. They all have reflexes of an (enclitic) Accusative case marker **ka* (Dimmendaal 2010), and as further discussed below, they have a verb-final constituent order, converbs, and coverb + light verb constructions, which consequently probably reflect the most archaic properties of Northeastern Nilo-Saharan from a typological perspective. The Southern members of Eastern Sudanic are either verb-initial or verb second. They also lost Accusative case marking, and instead mark the subject for case. They also show typological similarities with Koman and B'aga (and possibly the Omotic branch of Afroasiatic) due to geographical proximity to the latter. Below, first phonological and morphophonological properties of Northeastern Nilo-Saharan are discussed (Section 11.5.2), followed by a presentation of morphosyntactic properties (11.5.3).

11.5.2 Phonological and Morphophonological Structures

Like various Central Sudanic languages, many Northeastern Nilo-Saharan languages have ATR-based cross height vowel harmony systems with nine

or ten vowels; as this genetic and areal feature is discussed for Central Sudanic above, it is not further discussed here. The number of distinct vowel phonemes is reduced the further north these languages are removed from the core area geographically. (A similar reduction was observed for the Sara group within Central Sudanic above.) The Nubian group within Eastern Sudanic is typical in this respect. Whereas Tagle (spoken in the Nuba Mountains in Sudan) has a classical ten-vowel system, Midob (in western Sudan) has six vowels, and the Nile Nubian languages have only five (thereby showing that ATR harmony as a prosodic feature is relatively unstable historically), as does Nara in Eritrea. Within the Saharan group, for instance, eleven distinct vowels are attested for Kanembu, nine vowels for Beria, Dazaga, and Teda, but seven vowels for the geographical outlier Kanuri. Whereas the Taman language Tama has a rather classical ten-vowel system with ATR harmony, Sungor has seven vowels and height assimilation. For example, the plural suffixes *-u*, *-uk*, and *-uɲ* trigger the root vowel *a* to be raised to *ɔ*, whereas the plural suffixes *-i* and *-iŋ* trigger the root vowel *a* to be raised to *ɛ* (Guinet 1973:84).

(40)	gárá	'raven'	gɔ̀rú	'ravens'
	làd	'tongue'	lɔ̀dúk	'tongues'
	áltá	'stick'	ɔ́ltúɲ	'sticks'
	wál	'house'	wɛ̀lí	'houses'
	kádà	'stone'	kɛ̀díŋ	'stones'

Full assimilation of short suffix vowels is another typological feature which may be more widespread in the area but which has received less attention than ATR harmony. It is attested in Tama (Taman group), but also in the Nubian language Karko, as the following examples show (Jakobi, forthcoming):

(41) ēb-ēnd 'tails'
tail-PL

(42) tòr-òd 'entered'
enter-PTCP

(43) kwál-àr 'you have'
have-2SG

Vowel systems include the universally rare three-way vowel length contrast within Western Nilotic, more specifically in the Dinka-Nuer cluster (which also includes Atuot) as well as the neighbouring Shilluk language. Remijsen et al. (2016:204) have given the following examples for Shilluk.

(44) á-kŏl 'you disturbed (away from the deictic centre)'
PAST-disturb:FUG.2SG
ákŏɔl 'drumstick'
ákŏɔɔl 'drumsticks'
drumstick:PL

Extra long stem vowels in Western Nilotic result from anticipated vocalic suffixes (as with 'drumsticks' above).

Andersen (1990) shows that the seven breathy vowels of Dinka go back historically to five [+ATR] vowels in Proto-Western Nilotic, whereas the seven creaky vowels go back to five [-ATR] historically. In another Western Nilotic language, Mabaan, a universally rare contrast between short diphthongs (*ie, iɛ, ua, uʌ*) and long diphthongs (*iie, iiɛ, uua, uuʌ*) occurs (also going back to an original ten vowel system with ATR harmony in Western Nilotic); examples adapted from Andersen (1999):

(45)

nùal-ɛ́	ɖùuaj-ɛ́
cook-PAST:3PL:3	put-PAST:3PL:3
'they cooked it/them'	'they put it/them'

Consonant systems in Northeastern Nilo-Saharan vary between moderately small, for example 17 in the Saharan language Beria (Jakobi & Crass 2004:10), to average. With 28 consonants, the Nilotic language Alur (spoken in eastern Congo) constitutes a notable exception (Dimmendaal 1996) (see Table 11.23).

The voiceless bilabial stop, as in Alur, tends to be absent from phoneme systems in most other Northeastern Nilo-Saharan languages, as attested in Saharan (Kanembu, Beria, Dazaga), or Eastern Sudanic languages like Tama, Nyimang and Afitti, Nara, as well as several Nubian languages. In the Nubian language Midob, by contrast, *p* has phonemic status due to a historical devoicing process that is attested for all voiced stops, nasals, and the approximant **w* in word-initial position (Rilly 2010:276). In Kanuri (Hutchison 1981:18) and Fur (Waag 2010:27), however, word-initial *p* varies freely with *f*.

Whereas the presence of voiced implosives as well as a set of voiced and voiceless plosives is common in Eastern Sudanic, Alur also has *kp* and *gɓ*, a feature shared with neighbouring Central Sudanic languages (Dimmendaal 2011:183).

The three-way contrast between *d̪*, *d*, and *ɗ* in Alur is rare elsewhere in Northeastern Nilo-Saharan. The phonological opposition between dental and alveolar stops, an areal feature of languages in Eastern Sudan (Schadeberg 1987), is found in Nilotic, Surmic, Kordofan Nubian, Nyimang

Table 11.23 The consonants of Alur

vd. implosives	ɓ		ɗ			gɓ	
vl. stops	p	t̪	t	c	k	kp	ʔ
vd. stops	b	d̪	d	ɟ	g	gb	
vl. fricatives	f	s					h
vd. fricatives	v	z					
nasal sonorants	m	n		ɲ		ŋ	
oral sonorants		l		j		w	
		r					

and is internally reconstructed for Fur (Jakobi 1990). Elsewhere, there is no phonological contrast, but the dental point of articulation tends to be the phonetic norm, as in Kanembu, which has dental *t* and *d* (Jouannet 1982:28).

It is common in Northeastern Nilo-Saharan to distinguish between two types of rhotics, an alveolar flap *r* and an alveolar trill *r* (next to *l*), for example, in the Saharan languages Beria and Dazaga, or different Eastern Sudanic groups, for example Nilotic, Nubian, Nyimang, or Taman. Examples are from the Kube (*kúbɛ́*) dialect of Beria, which distinguishes between an apico-alveolar tap *r*, an alveo-lateral tap *ɾ̪*, and a lateral *l* (Jakobi & Crass 2004:16).

(46)	térí	'salt'
	báɾ̪ā	'mother-in-law'
	bʊ̀lôn	'fabric bag'

Ejectives are uncommon in Northeastern Nilo-Saharan. Their presence in Eastern Sudanic Berta (which has *t', c', k',* and *ts'*) and some Surmic languages is due probably to contact with Koman and/or Omotic (Afroasiatic) languages.

Contrary to many Central Sudanic languages, syllable onsets may also be closed in Northeastern Nilo-Saharan languages. Syllable onsets may contain labialized consonants; sequences of homorganic nasal plus stop on the other hand are extremely rare (unlike in Central Sudanic), but do occur in Western Nilotic, Saharan, or Nara. Some Kanuri examples (Hutchison 1981:65–80):

(47)	mbə́rʃè	'strength'
	ndə́wú	'knot'
	nzə́tkə̀	'ignoramus'
	ɲɟî	'water'
	ŋgánɟì	'chest'

Restrictions on voicing distinctions for obstruents except in word-initial or root-initial position are widespread in the eastern zones of Northeastern Nilo-Saharan, especially in Eastern Sudanic, a feature probably related to consonant alternation in these positions. Gaahmg, the only member of the Jebel branch within Eastern Sudanic still spoken today and described in Stirtz (2011), is characteristic in this respect. Stirtz (2011:28–29) points out that voiceless plosives surface at the beginnings of words, but not in other environments, and that voiced plosives surface at the beginnings of words and in consonant sequences. 'When the plosives [*b*], [*ɟ*] and [*g*] surface in intervocalic and word-final position, they are underlyingly geminate even though they surface with little or no contrastive length. If they were not geminate, they would be weakened to approximants and vowels in these environments. They are realized as single, devoiced unreleased plosives word-finally, and are realized with little or no length intervocally' (Stirtz 2011:28). The other two voiced plosives (*ɖ̪* and *d*) never surface with contrastive length and are not weakened intervocalically or word-finally in Gaahmg.

(48)	dāggár	[dāgár]	'tortoise'
	gàágg	[gàág˳˥]	'bird type'
	dɔd	[dɔd˳]	'bird type'

Geminate consonants occur intervocalically but also word-finally, also as a result of derivational or inflectional processes, as with the infinitive suffix in Gaahmg (Stirtz 2011:208).

(49)	kɔ́r-r	'speak'
	kɔ́ɛ́j-j	'enter'
	rāg-g	'stop (ITR)'

Word-final consonant alternation accompanying inflectional and derivational morphology are also widespread in Afroasiatic languages in Ethiopia, and consequently may be due to areal contact historically between the two phyla (although the direction of this areal diffusion is not clear).

Consonant alternation in word-initial position on the other hand is a characteristic of Northeastern Nilo-Saharan subgroups in the western zones, such as Maban, Fur, or Saharan. This phenomenon and its possible historical origin is illustrated in the discussion of verb morphology in Section 11.5.3.3.

Most Northeastern Nilo-Saharan languages are tonal, but systems between closely related languages may vary between three registers without downdrift or two with downstep. Level tones may also be combined to form complex (rising and falling tones), as in the Nilotic language Luo, which also has downstep and upstep; see Tucker (1994:43–63) for a discussion. Systems with four tone levels, as in Central Sudanic, do not occur in Northeastern Nilo-Saharan, as far as present knowledge goes.

Whereas vowels tend to be tone-bearing units, the trill *r* can occur as syllabic nucleus and be a tone-bearing unit in Eastern Sudanic languages like Nyimang and the closely related language Afitti (as in Central Sudanic Lendu and Ngiti). Examples from the latter language (de Voogt 2009):

(50)	sŕ	'sheikh'
	tr̀	'vagina'

Nara (Northeastern Sudanic) attests tone carried by vowels but also by postvocalic glides and sonorant consonants (Dawd & Hayward 2002:249).

Devoiced word-final vowels are found in a number of Nilo-Saharan languages in East Africa, for example in Ik (Kuliak; Schrock 2014:50–53). In the neighbouring Teso-Turkana languages, short final vowels carrying a complex (HL or LH) tone remain voiced before pause; vowels carrying a single tone are devoiced in this position and pronounced as extra short voiced vowels before another vowel (see Dimmendaal & Breedveld 1986 for a discussion). In Ik, the voiced obstruents *b, d, dz, g, j, z*, and *ʒ* as well as *h* are depressor consonants pulling down the pitch on following vowels, as shown in Schrock (2014:108–114).

As is common elsewhere in Africa south of the Sahara, tonal alternation may be the exponent of different morphological processes, as in

the Saharan language Kanuri, where noun-to-noun derivation may be expressed this way (examples drawn from Hutchison 1981:65).

(51)	fúfù	'lungs'	fùfú	'lung disease of cattle'
	férò	'girl'	fèró	'typical of girls, girlish'
	Kànúrì	'Kanuri person/people'	Kànùrí	'Kanuri language'

Apart from derivational functions, tone may express inflectional properties like number distinctions on nouns, case, or person and tense-aspect distinctions, as in the Saharan language Beria (data from Jakobi & Crass 2004).

(52)	tènē	'girl' (SG)	tènè	'girls' (PL)
	gèrì	'(s)he looks for it'	gèrí	'they look for it'
	tĕngī	'I put it down'	tĕngí	'I have put it down'

There is a permanent tendency in Nilo-Saharan (and other African) languages to anticipate the tone(s) of suffixes, and subsequently delete the segmental part of such grammatical markers. With prefixes on the other hand this tendency is far less strong; they tend to become petrified instead, as illustrated in the discussion of the verbal template in Northeastern Nilo-Saharan below (Section 11.5.3.3). The most dramatic degree of vertical (internal) morphology in Nilo-Saharan is found in the Dinka-Nuer-Atuot cluster within Nilotic, where tonal alternation but also vowel and consonant alternation in stems are exponents of inflectional or derivational processes. As shown by Andersen (1992–1994), up to three layers of internal morphology can be identified for Dinka in monosyllabic verb forms: the root as the deepest layer, followed by a derivational layer, followed by an inflectional layer. An example from Andersen (1992–1994):

(53) lɛ̰̀er 'roll it!'
roll:2SG

(54) leɛ̰̀er 'is he rolling it?'
roll:3SG

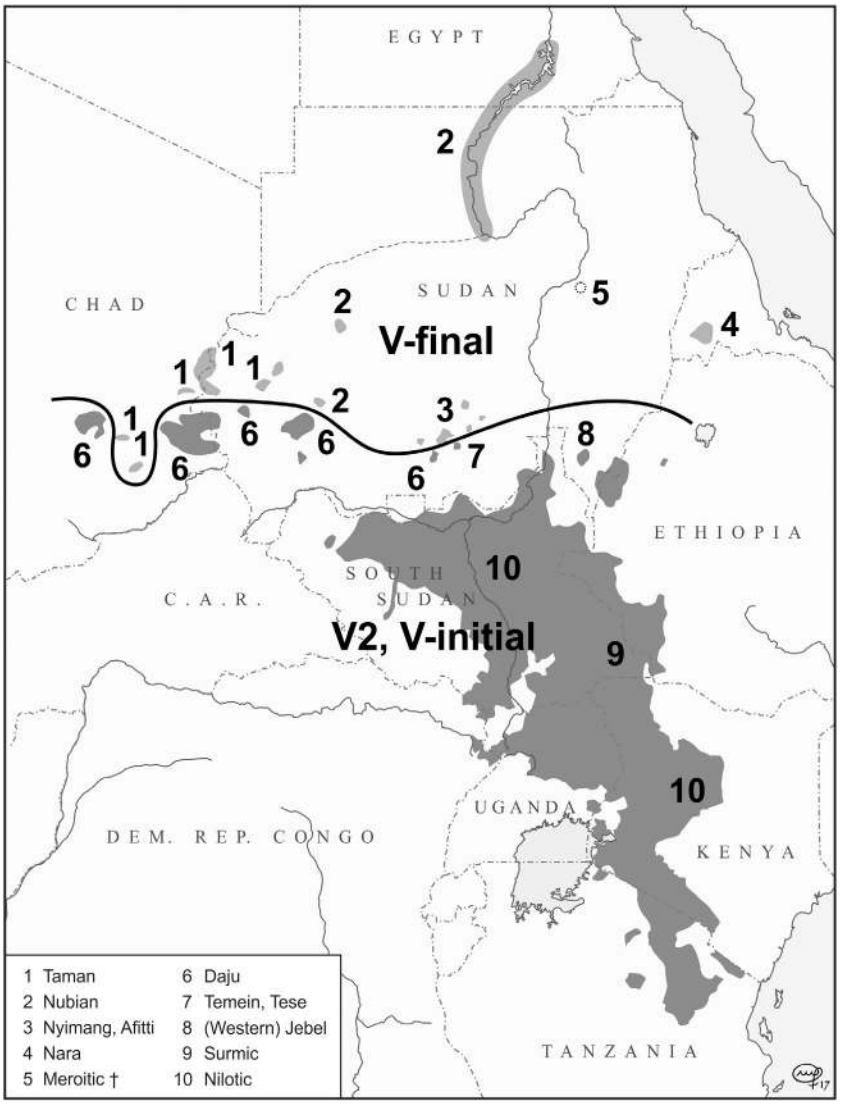
(55) leɛ̰̂er 'is he rolling it thither?'
roll:CF:3SG

Some languages in the geographically peripheral northern zones of Northeastern Nilo-Saharan appear to have pitch-accent systems. Possible candidates are the Saharan language Dazaga (Walters 2016:29–34), some members of the Eastern Sudanic Daju cluster, and Nara.

11.5.3 Morphosyntactic Variation

There is a rather dramatic typological division at the morphosyntactic level between Northeastern Nilo-Saharan languages belonging to the Southern branch of Eastern Sudanic and Kuliak, and the remaining groups, that is,

the Northern branch of Eastern Sudanic, Saharan, Fur and Amdang, and the Maban group. This disparity manifests itself in the position of the verb (verb-initial or verb second in the Southern branch of Eastern Sudanic and Kuliak, versus verb-final in the rest), the presence of converbs, which are absent in the Southern branch of Eastern Sudanic or Kuliak as are coverb plus light verb constructions as main predications. Map 11.4 shows the areal distribution of this typological division. These as well as other typological features, mainly involving the noun and verb as major categories as well as clause structure, are discussed below.



Map 11.4 The position of the verb in Eastern Sudanic languages and Kuliak

Postpositions are common across Northeastern Nilo-Saharan languages, including several verb-initial Surmic and Nilotic languages. A number of postpositions as found in Central Sudanic appear to be cognate with Northeastern Nilo-Saharan case markers marking peripheral roles. For example, the postposition *ta* (used with infinitive verbs in Central Sudanic languages like Ngiti, as in example (38) above) occurs as a Locative or Directional case marker in Northeastern Nilo-Saharan. Ehret (2001:205) points towards such a case marker in Kunama (*-tta*), different Eastern Sudanic groups (for example Berta *-ϴa/-ϴɛ*, or *ta* in the Kuliak language Soo; see Carlin 1993 for a description of this language). A further element attested in Central Sudanic with cognates functioning as case markers in Northeastern Nilo-Saharan is a 'genitive in n' in Greenberg (1963:131) or associative marker reconstructed as **-(ɛ:)ni* in Ehret (2001:204). Whereas in Central Sudanic this linker connecting nomen rectum and nomen regens is an independent word (as in Ma'di *tí ni zè* 'cow dung' (lit. cow GEN dung), it occurs as a clitic Genitive case marker attached to the possessor in different Northeastern Nilo-Saharan languages, for example in the Nubian language Andaandi (Jakobi & El-Guzuuli 2016:168).

(56) erhiis=n missi
skipper=GEN eye
'the skipper's eye'

In addition, there is one highly stable preposition *kɪ/ki* in Northeastern Nilo-Saharan (for example the Nilotic language Anywa) as well as Central Sudanic (for example Kabba), which is also attested in Koman languages such as Komo (Griscom 2015) and Gwama (Goldberg et al. 2017).[17] A related set of prepositions, *ká* (dative/benefactive) and *ka* (comitative/instrumental), is attested in the B'aga languages as well; the *ka* form also precedes adverbials (C. Ahland 2012, 2016b) (see Table 11.24).[18]

Table 11.24 The widespread preposition *kɪ/ki*

Kabba	kə	'precedes adverbal expressions' (Moser 2004:211)
Fur	kí ʒərri	'quickly' (Waag 2010:63)
Anywa	kī lwēt-gí	'with their fingers' (Reh 1996:320)
Komo	kí pú	'in/to the garden' (Griscom 2015:365)
Gwama	gì tʾwā-á mā gá hāpʾ	'with our language' 'for her' (Goldberg et al. 2017:73–74)
Bʾaga languages	ka=kʾoɓa (N. Gumuz) ká=ííl-gúzá (S. Gumuz)	'with hunger' (C. Ahland 2012:223) 'to the sky' (C. Ahland 2012:159)

[17] Variations of this preposition are also found in the Koman languages of Opo (Smolders 2018) and Uduk (Killian 2015b).

[18] In the Gumuz languages, these prepositions have characteristics of case marking in that every constituent of the noun/prepositional phrase can be optionally marked with the 'preposition' (C. Ahland 2012:147–150).

This preposition probably lies at the basis of what Greenberg (1981) referred to as 'moveable k' in Nilo-Saharan languages, as it also shows up in headless nominal complements in Eastern Sudanic (as in the Nilotic language Nandi [Creider & Creider 2001:129]: *ki-p-kaliang'it* 'fly whisk', which is to be compared with *kaliang* 'flies'). For further discussion of stable (as against unstable) morphological features of Nilo-Saharan languages, the interested reader is referred to Dimmendaal (2018).

11.5.3.1 Nouns and Noun Phrases

One of the typological features setting most Northeastern Nilo-Saharan languages apart from other (presumed) Nilo-Saharan groups is the tripartite number-marking system for nouns. Apart from plural-marking (plurative) suffixes, some of which may go back to the earliest stages of Nilo-Saharan (e.g., **-i, *-k,* or **-in*, as argued by Ehret 2001:188–199), there is the characteristic singulative marking in Northeastern Nilo-Saharan, a typological feature shared with Afroasiatic; the third type of number inflection in numerous extant members is a replacement pattern; see Dimmendaal (2000b) for specific details.

Whereas prototypically number suffixation is involved in Northeastern Nilo-Saharan languages, Fur combines the tripartite division with number prefixation, as shown in the following examples (Waag 2010).

	Singular	Plural	
(57)	d-èyá-ŋ	k-èyá	'thorn'
	n-ànsá-ŋ	k-ànsà	'feather'
	n-ùmtì	k-ùmtì	'Albizia sp.'
	dìwìl	dìwìl-tà	'thigh'
	d-ɾá	k-ɾá-ŋá	'wound'

Singulative marking typically occurs with nouns referring to paired items (such as 'wing' or 'eye') or items naturally occurring in groups ('thorn', 'fingernail', 'fly').

Singulative marking was lost historically in a number of languages or clusters, more specifically in Kunama, and, within Eastern Sudanic, the Taman language Mararit, Nara, as well as the Southern Lwoo cluster within Nilotic. Since these are spoken in zones where Northeastern Nilo-Saharan languages border on Afroasiatic languages without such systems, or Central Sudanic (where plural-marking suffixes but no singulative marking occurs), areal influence presumably played a role. Nevertheless, the areal source for the loss in the Taman language Mararit (spoken in Chad) remains a mystery; this also applies to Eastern Sudanic Nyimang and Afitti (in the Nuba Mountains in Sudan), where number marking on nouns is virtually absent, although no areal source can be identified. Generalization of the replacement pattern is another reason for the absence of singulative marking, as in the following examples from Maba, where the replacement

pattern is also used for nouns typically requiring singulative marking elsewhere in Northeastern Nilo-Saharan. Examples from Weiss (2009):

	Singular	Plural	
(58)	ɛfɛr-ɛt	afar-ak	'wing'
	ɛm-si	ɛm-ŋɛ	'eye'
	ŋiːŋ-ɪt	ŋiːŋ-ak	'fingernail'
	ŋɪn-tɪ	ŋɪn-ɪŋ	'fly'

In addition, there is a 'pluriel du pluriel', that is, a distributive plural form (expressing 'different groups of …') in Maba. When such a distributive plural suffix is added to morphologically marked plurals, the other plural suffix is kept, as with 'shoes' below; when added to nouns that are unmarked in the plural such as 'water', it is added to the unmarked stem.

(59)	bara:	bar-tu:	bar-tuː-siː
	'shoe'	'shoes'	'different (pairs of) shoes'

(60)	ɛnji-ga	ɛnjiː	ɛnji-siː
	'a bit of water'	'water'	'many containers/quantities of water'

The crucial point for the way in which quantification is to be expressed in a grammatical construction is the question whether the quantity is fixed, in which case number is expressed on the noun (as in the examples with 'water' above), or whether the quantity is the result of some event or action, in which case it is expressed on the verb by way of diminutive or singulative versus pluractional marking (Dimmendaal 2014b). Examples from Maba (Weiss 2009):

(61)	ɛ̀njìː	à-wáː-n-ì
	water	1SG-pour-SGL-DECL
	'I pour out a bit of water'	

(62)	ɛ̀njìː	à-wáː-k-ì
	water	1SG-pour-PLUR-DECL
	'I pour out a lot of water, I pour out water regularly'	

Whereas it was assumed in Dimmendaal (2000b) that transnumerals, that is, count nouns receiving either a singular or a plural interpretation without any formal marking, occur in Afroasiatic but not in Nilo-Saharan, we now have evidence for transnumerals with inanimate nouns in Maba (Maban group; data from Weiss 2009).

(63)	kɔ́drɔ́ː	sɔ̀llɔ́kɔ́ː	'1. slippery stones; 2. a slippery stone'
	stone (s)	slippery	

Number marking on nominal modifiers of the verb is obligatory only with animate nouns in Maba (hence the ambiguity in the form illustrated above).

(64)	mésɛ́ː	kúllɛ́y	'big hut'
	hut	big	

(65)	írí:	kùllà-g (**kúlléy)	'big leopard'
	leopard	big-SG	

The Nilotic language Lopit has retained the tripartite number-marking system, and in addition has a 'greater plural' (or collective form), as in example (66), as well as a 'greater singular' form, as in (67) (Moodie, forthcoming).

(66)	toru	'axe'
	toru-o	'axes'
	toru-sen	'(uncountable number of) axes'

(67)	lome	'millet'
	lome-ti	'1. grain of millet; 2. huge amount of grain'

Nouns in some Nubian as well as Nilotic languages may also be left uninflected for number, singular versus plural being expressed by means of the noun modifiers, for example demonstratives or numerals, as illustrated for the Nubian language Tagle (which appears to be the only Nubian language that admits demonstratives either to precede or follow the head noun).

(68)	tíí bɛ̀ɛ̀	'one cow'	tíí órò	'two cows'
	ìʃí úŋù~ úŋù ìʃî	'this hand'	ìʃí íŋì ~ íŋì ìʃî	'these hands'

For additional typological details of nominal morphology, in particular in Nilotic, the interested reader is referred to Storch (2005).

Irrespective of the predominant constituent order at the clausal level (verb-final, verb-second, verb-initial, or a relatively free order depending on information packaging in a clause), there is a strong tendency towards a head-initial structure for noun phrases in Northeastern Nilo-Saharan languages, with few exceptions. In some languages demonstratives precede the head noun, as shown for the Nubian language Tagle above. Possessive relations may be expressed by way of juxtaposition (as in Beria, *álì bìɛ̀* 'Ali's house'), but also by way of a Genitive case marker on the possessor, *bìɛ̀ álì kìì* (Jakobi & Crass 2004:140). The possessor either precedes or follows the head noun in verb-final Northeastern Nilo-Saharan languages, sometimes in one and the same language, as in Fur (Waag 2010).

(69)	dɔ̀gɔ́lâ-ŋ íyà	'children's mother'
	kásà kıra-´ŋ	'calebash for beer'

11.5.3.2 Case

The expression of grammatical relations within a clause by way of case is a common property of Northeastern Nilo-Saharan languages (with few exceptions, as discussed below). Since there are no traces of case suffixes (or enclitics) in Central Sudanic (or Koman, B'aga, and Songhay, if these are indeed genetically related), this dependent-marking (or flagging) strategy most likely is an innovation of Northeastern Nilo-Saharan, as are converbs, coverbs, or the tripartite number-marking system. These typological

Table 11.25 Case markers in Northeastern Nilo-Saharan

	Accusative	Ergative/Nominative	
Maban			
Maba	-gu		
Masalit	-ko		
Fur	-gɪ -sɪ		
Kunama	-k -si		
Saharan			
Dazaga	-gà	-ì	
Kanuri	-(g)à	-yè*	
Eastern Sudanic			
Tama	-ɪŋ, -kʊŋ, -ʊŋ		
.... Nyimang	-ɔ, -o		
.... Nub/Nobiin	-ga		
.... Nub/Uncu	-gi ~ -gɪ		
Nub/Midob	-g ~ -k		
Nara	-go		-n, -nu
Surmic			
Tennet		-ɪ/-i, -ɛ/-e	
Majang			-ŋ
Nilotic			
Päri,		-ɪ/-i, -ɛ/-e	
Anywa		-ɪ/-i, -ɛ/-e	
Sinyar			-n / -Ni (sg) -su (pl)
Kuliak	-k[a]		

*Hutchison (1981:215) analyses *yè* as 'a postposition indicating that the subject NP is the agent or source of the action of the verb'.

properties and the predominantly verb-final syntax suggests areal contact with Afroasiatic (type of) languages (Dimmendaal 2008b).

In addition, several Northeastern Nilo-Saharan languages manifest active or split (intransitive) alignment. Since this appears to be attested in all four types of case-marking languages distinguished below, it is discussed separately after the survey of the four major case-marking strategies identified for Northeastern Nilo-Saharan in the present contribution (see Table 11.25).

1. Accusative case marking
2. Accusative case marking combined with Ergative case marking
3a. Accusative case marking with loss of Ergative case marking
3b. Ergative case marking with loss of Accusative case marking
4. Marked Nominative case marking

Not only are these four types related to each other historically, they also represent subsequent stages chronologically, as argued below.

Northeastern Nilo-Saharan languages with Accusative case marking all have a system whereby the presence of the (enclitic) case marker depends on features such as animacy and definiteness associated with the argument involved, that is, they have Differential Object Marking. Such systems are attested in different language families across the world, but

Northeastern Nilo-Saharan languages are particularly interesting from a typological point of view because the information status of the object (as a topic or a focused constituent) is also relevant (Dimmendaal 2010).

In Northeastern Nilo-Saharan languages with Ergative case marking the presence of the Ergative case marker also depends on the pragmatic status of the subject (A-role). Consequently, this may be referred to as Differential Subject Marking. In other words, Northeastern Nilo-Saharan languages with case marking have Differential Argument Marking systems, with the exception of Kuliak, where case marking is an obligatory inflectional property, as discussed below.

The first case-marking type, involving Nominative-Accusative alignment with Accusative case marking is found in primary branches like Maban, Fur, and Kunama, and the Northern branch of Eastern Sudanic. The Accusative case marker in these groups is probably cognate (usually consisting of a voiced or voiceless velar stop plus a vowel *a*, and hence reconstructed as **ka* in Dimmendaal 2009) as well as Kuliak, where Ik has an Accusative case marker k^a. An example from Schrock (2014:273):

(70) tsídz-it-et-a=náá íńó-k^a
carry-CAUS-VEN-REAL=PST1 animal-ACC
'he flushed out an animal (from a thicket)'

Ik is unique within Nilo-Saharan in that it is a verb-initial language with extensive case marking (unlike verb-initial Eastern Sudanic languages). In addition to Accusative case marking, Ik has Nominative case as well as Oblique, Instrumental, Ablative, Genitive, Dative, and Copulative case (Schrock 2014:246–288).

Reflexes of the archaic case marker **ka*/**ga* are still found in restricted contexts on the verb with first or second person objects in Fur (= *(g)ɪ*; Waag 2010:227), but Fur and Kunama share the innovation of a new Accusative case marker *si*. An example from Fur (Waag 2010:72).

(71) ʔălbá y-ío ʔáláŋ yɛ=sí ʔ-úra
when 1SG-go.CPL that 3SG=ACC 1SG-touch.PF
'when I was about to touch it, …'

Tucker and Bryan (1966:223 and 340) already pointed towards formal similarities between the Genitive and Locative case markers in Kunama and Fur. Based on these shared innovations in the case-marking system, the latter are therefore assumed to form a subgroup within Northeastern Nilo-Saharan in the present contribution (see Table 11.26).

Table 11.26 Cognate case markers in Fur and Kunama

	Accusative	Genitive	Locative
Fur	-gɪ=sɪ	=íŋ	=lɛ
Kunama	-k =si	=ŋŋ	=la

The second type of case marking, involving optional ('differential') case marking on objects as well as subjects of transitive verbs, is attested in Saharan languages and, within Eastern Sudanic, in Nara (and possibly the Surmic language Majang). Since in Saharan this case marker is only used with subjects of transitive verbs (i.e., A-roles), but not with subjects of intransitive verbs (S-roles), its distribution is reminiscent of an ergative system, also because the object is not necessarily inflected for case (whereas the subject of intransitive verbs never is). This system of Differential Argument Marking has been described for the Saharan language Dazaga by Walters (2016:126), who observes that '[t]ransitive subjects are optionally ERG-marked by *-ì,* intransitive subjects are unmarked (Ø), and transitive objects by *-gà.* The presence or absence of case marking in Dazaga depends on several factors including the relative degree of agentivity and animacy. Thus, transitive subjects with low agentivity are unmarked for ergative. Agents that are lower in animacy than the object, do not receive the ERG-marker. Moreover, the ERG-marker is required on subjects of speech verbs followed by a direct or indirect quote.' Examples from Dazaga (Walters (2016:120 and 125):

(72)	àgɨɾì	èrkéllìrù	d͡ʒàú
	àgɨɾ=ì	èrkéllì=ɾù	d-j-báb
	donkey=ERG	kick=DAT	1.OB-3-hit
	'the donkey struck me with a kick'		

(73)	kɪ̰̀ɪ̰̀ì	kɔ̀gʷɔ́jɛ̀ (gà)	tʲrá (gà)	gɔ́ì
	kɪ̰̀ɪ̰̀=ì	kɔ̀gʷɔ́jɛ̀ (gà)	tʲrá (=gà)	gɔ́-Ø-j
	bush. cat=ERG	chicken	INDEF	take-3.OB-3
	'the bush cat took a (specific, indefinite) chicken'			

Apart from the Ergative case marker *-i*/*-ɪ* in the Saharan language Dazaga, there is an Ergative/Nominative marker *-yɛ*/*-ye* in Kanuri (called 'agent postposition' by Hutchison 1981:8). As shown below, exactly the same two case markers are found in the Southern branch of Eastern Sudanic, and thus probably present a shared innovation of Saharan and Eastern Sudanic; see Table 11.25 for a summary of common case markers in Northeastern Nilo-Saharan.

Type 3a, involving loss of the Ergative case markers **-ɛ*/**-e* and **-ɪ*/**-i* on subjects of transitive predications, is a shared innovation of languages belonging to the Northern branch of Eastern Sudanic. Nara appears to be the only Northern member that has maintained a system of Differential Argument Marking, but whereas the Accusative case marker *-go* is a reflex presumably of the common Northeastern Nilo-Saharan Accusative case marker, the Differential Subject Marker *-nu* /*-n* (mentioned by Kievit 2007:1143) is not. Other members of the Northern branch of Eastern Sudanic do not case mark the subject of transitive (or intransitive) verbs, which consequently must have been lost.

Jakobi (2009) shows for the Nubian language Uncu, which belongs to the Northern branch and consequently has a Type 3a case system, that

a non-focused object pronoun procliticizes onto the verb and does not receive case marking, whereas the latter receives Accusative case marking when it carries focus; subjects of transitive and intransitive predications are not marked for case, as is true for other members of the Northern branch of Eastern Sudanic (except for Nara).

(74) yě à ɖúk-kɛ̀rɛ̀
1SG 2SG beat-FUT.1SG
'I will beat you.'

(75) yě à-gì ɖúk-kɛ̀rɛ̀
1SG 2SG-ACC beat-FUT.1SG
'I will beat *you* (picked out of a group of people).'

Type 3b case systems occur in the Southern branch of Eastern Sudanic, where the same Ergative case markers are found as in Saharan (*-ɛ/-e* and *-ɪ/-i*); these consequently must constitute a shared retention going back to the latest common ancestor of Eastern Sudanic and Saharan. But contrary to Saharan and the Northern branch of Eastern Sudanic, there is no Accusative case marking for objects in the Southern branch of Eastern Sudanic.

So far reflexes of the Ergative case markers have been found in the Jebel language Gaahmg, the Surmic language Tennet, and Western Nilotic Anywa and Päri. The argument receiving Ergative case always occurs postverbally in these languages except in Tennet, where preverbal A-roles can also be case marked (as in Saharan). The (morphologically unmarked) Object, which is never marked for case, occurs either postverbally or preverbally. Stirtz (2014:248) gives an example of such a verb-second order in Gaahmg.

(76) ɟāān tĺrsə́ tɔ́ɔ́ ɛ́ ŋān
person.DEF kill.COMP cow GP whom
'the person killed whose cow?'

(77) tɔ́ɔ́ ɛ́ ŋān tĺrs=ĺ ɟáà-n=ɛ̄
cow GP whom kill.COMP=ERG person=DEF.ERG=ERG
'whose cow did the person kill?'

Cross-linguistically, Ergative case markers tend to go back to Instrumental and Genitive case markers. As argued in Dimmendaal (2014a), there is initial evidence that **=ɛ/*=e* goes back to an Instrumental case marker, whereas **=ɪ/*=i* appears to go back to a Genitive case marker (possibly used in corresponding nominalized sentences, whereby the Agent was expressed as a Genitive phrase) in these Northeastern Saharan languages.

The fourth and final type of case marking involves Marked Nominative case systems, which occur in languages belonging to the Southern branch within Eastern Sudanic, more specifically in Berta, and a range of Nilotic and Surmic languages. It occurs with postverbal subjects, which already suggests a historical link with Ergative case marking. However, as Marked Nominative is always expressed by way of tonal inflection in these

languages, there is no clear-cut historical-comparative evidence that this type of case marking resulted from an extension of the erstwhile Ergative case markers (*=ɛ/*=e, *=ɪ/*=i) in transitive predications to intransitive predications, although there is conjectural evidence for this hypothesis (Dimmendaal (2014a). In Nilotic languages like Dinka, for example, the Marked Nominative is formally identical to the Genitive case form. An example from Andersen (1991), who refers to the postverbal Nominative case marking as the Oblique case form:

(78) báa̤ɲ à̤-tò̤oc d̪ɔ̤̀ɔk
chief:ABS D-send boy:ABS
'the chief is sending the boy'

(79) d̪ɔ̤̀ɔk a̤-tò̤ooc bàa̤ɲ
boy:ABS D-send:NTS chief:NOM
'the chief is sending the boy'

Within the Southern branch of Eastern Sudanic, case marking was lost in Daju, Temeinian, and a number of Nilotic languages (Bari cluster, Southern Lwoo). As none of these languages appears to allow postverbal subjects, the loss most likely was related to a change in constituent order (as Ergative or Marked Nominative are typically associated with postverbal subjects).

Split (or active) alignment is also attested in Northeastern Nilo-Saharan. Such a split-intransitive (or split-S) system, whereby the subject (A-role) of a monovalent clause is sometimes treated as the object (P-role) of a transitive verb in terms of case marking, has been described for the Saharan language Beria by Jakobi (2011). Split alignment (or active alignment) is also realized by the selection of person affixes on the verb. Beria is characterized by suffixed subject markers, as in (80) below, and prefixed object markers, as in (82). However, one group of single participant – i.e., intransitive – verbs use pronominal reference (or indexing) markers that correspond to the pronominal object markers of transitive verbs, as seen in (82). This split-S system can be briefly described as S_a = A (as in (81)), S_p = P (as in (81)). Note that the single participant verb in (81) has two grammatical arguments, though only one referential argument is encoded in the P marker. The 3rd person A marker encodes a non-referential argument representing an impersonal Agent.

(80) kéì-n-ì
come-2SG-IPF
'you will come'

(81) nɔ́-s-kʊ̀-r-ì
2SG-IPF-get.lost-3-IPF
'you will get lost'

(82) nɔ́-rɔ́-g-ī
2SG-marry-1SG-IPF
'I will marry you.'

In Beria and other Northeastern Nilo-Saharan languages with split alignment, the single participant of S_p verbs is conceived of as playing a patient-like role with specific event structures. In the case of Beria, these involve body posture events (e.g., 'sit'), locational events ('stay, spend the day'), displacement events (arrive, go, walk), and static events ('exist'). The participant is conceived of as being affected. In spontaneous events, such as 'fall' or 'forget', the participant lacks control. In inherently reciprocal events, such as 'fight' and 'repay', the participant is both an actor and undergoer. However, in displacement events, such as 'run, go, leave, come', the single participant is conceived of as having control of the situation and as acting intentionally and volitionally. In these events the single participant of these S_A verbs is conceived of as playing an agent-like role.

11.5.3.3 The Verbal Template

Like in Central Sudanic, it is common in Northeastern Nilo-Saharan to express pronominal subjects (and to a lesser extent, also pronominal objects) on the verb. Modifications with respect to the core syntactic functions subject and object (passive or impersonal active, middle voice, and causative) also tend to be marked on the verb. Pluractionality and direction are commonly marked on the verb as well (as in Central Sudanic). However, they differ with respect to other types of valency-marking devices on the verb. More peripheral semantic notions (for example Location, Instrument, Benefactive) tend to be expressed by way of case on syntactic arguments in Northeastern Nilo-Saharan languages with extensive case systems, that is, in Maban, Saharan, Fur and Amdang, the Northern branch of Eastern Sudanic, and Kuliak. The reduced system of case marking (i.e., dependent marking) in the Southern branch of Eastern Sudanic and the more extensive use of indexing (i.e., head marking) on the verb for more peripheral semantic roles suggests that there is a historical correlation between these phenomena (Dimmendaal 2014c, 2017:459). Because the structure of the verbal stem (i.e., the root and derivational extensions) interacts with the formal expression of pronominal subject marking on verbs, the former is discussed first.

As shown in Section 11.4.3.2, there is a causative prefix **ɪ-/*i-* which can be reconstructed for the common ancestor of Central Sudanic and Northeastern Nilo-Saharan. In the latter branch, there is a second variant **-ɪta* (probably consisting of the same prefix plus an auxiliary verb **-ta*); the latter is found in such distantly related branches as Maban (for example in Maba), Saharan (for example Kanuri) and Nara (which belongs to Eastern Sudanic).

		Base		Causative	
(83)	Maba	yàŋàn	'having drunk'	nd-àŋ-á	'make drink!'
	Kanuri	lúwùkìn	'I leave'	tù-lúwùkìn	'I take out'
	Nara	dengi	'wait'	da-dengi	'cause to wait'

The causative prefix **-ɪta* has become the most productive causative marker in Eastern Nilotic languages, as in Maasai *-ɪta-lam* 'cause to avoid', which is derived from *-lam* 'avoid'.

Whereas it is also common across Northeastern Nilo-Saharan as well as in Central Sudanic to express movement towards the deictic centre (i.e., ventive marking) and, to a lesser extent, movement away from the deictic centre (i.e., itive marking) on the verb, Northeastern Nilo-Saharan languages use suffixes whereas Central Sudanic languages use prefixes. Also, the actual markers are usually not cognate, even between families that are genetically close, such as the Eastern Sudanic subgroups Nilotic and Surmic. One reason for this tends to be that there is a strong tendency historically to extend the function of directionality into more abstract domains such as tense or aspect.

This also applies to pluractional marking, which again is common across Nilo-Saharan. There are usually a number of formal strategies in one and the same language. Also, no obvious cognate morphemes for pluractionality marking can be identified (which also applies to singulative marking on verbs, which is less common by itself in Northeastern Nilo-Saharan languages).

As the following examples from the Nubian (Eastern Sudanic) language Karko show, in a transitive clause it is the number of the P(atient) participant (or object) which is decisive for the selection of the singular or plural verb stems (Jakobi 2017:137).

(84) íìd bəgəl=əg fúr-àŋg-àà
man.SG lion.SG=ACC kill.SGL-TR.PAST-3
'The man killed the lion'.

(85) íìd bəgəl-ɖ-əg tɔ́m-àŋg-àà
man lion-PL-ACC kill.PLR-TR.PAST-3
'The man killed the lions.'

Formally suppletive (simple versus pluractional) verbs, as in the examples for 'kill' in Karko above, are common cross-linguistically, although there is usually a semantic difference between the singular as against the pluractional stem.

By contrast, it is the number of the S(ubject) participant that triggers the selection of the singular or plural verb stem in an intransitive clause (Jakobi 2017:133).

(86) kɔ̄ɔ̄l ōr-ók-nē ʃìì
house.SG burn.SGL-INS-FOC be.there.3SG
'The house is burning.'

(87) kə̂l wār-ák-nē ʃɛ̀ɛ̀
house.PL burn.PLR-INS-FOC be.there.3PL
'The houses are burning.'

As shown by Weiss (2009) for Maba, number marking is associated with nouns when permanent states are expressed (for example, *ɛnji-ga* 'a bit of water', *ɛnji:* 'water', *ɛnji-si:* 'many containers/quantities of water'), but with verbs when temporary or variable states are expressed. The following

examples from Maba illustrate singulative and pluractional marking on verbs by way of the widespread Nilo-Saharan *-n-/-k-* deictic markers (Greenberg 1963:132).

(88) ɛ́njì: à-wá:-n-ì
water 1SG-pour-SGL-DECL
'I pour out a bit of water'

(89) ɛ́njì: à-wá:-k-ì
water 1SG-pour-PLUR-DECL
'I pour out a lot of water, I pour out water regularly'

Head marking on the verb for semantic roles other than Agent and Patient is relatively limited otherwise in Maba and other Nilo-Saharan languages with extensive case marking. Datives (covering benefactive, malefactive, or experiencer roles) appear to occur next on the semantic hierarchy of valency-changing devices on verbs in Northeastern Nilo-Saharan. In the Nubian group within Northern Eastern Sudanic, for example, there is extensive case marking as well as an applicative verbal extension. An example from Karko (Jakobi, forthcoming):

(90) kɔ̄ɔ̄l-ɔ́g ɔ̀ kwáá-ɲàn
house-ACC 2SG.ACC build.SNG-APPL.IMP
'Build the house for me'

Within the same Eastern Sudanic branch, there is an interesting typological 'break' between the Northern and the Southern branch in this respect. The reduced case systems (from a historical-comparative point of view) in languages belonging to the Southern branch within Eastern Sudanic correspond to an increased degree of head marking on the verb. In the Kalenjin cluster within Nilotic, for example, there is a binary case distinction between (Marked) Nominative (for postverbal subjects of transitive and intransitive predications) and Absolute (Absolutive) case for objects, preverbal subjects and nouns in isolation. But the verbal template consists of pronominal subject and object markers, the (inherited archaic) causative prefix as well as a range of suffixes marking movement towards and away from the deictic centre, essive, stative/passive, dative, comitative, mediative/instrumental, and contemporative. An example from Marakwet adapted from Rottland (1982:127), who also presents a detailed historical reconstruction of the morphology of Southern Nilotic:

(91) kee-pal-a:nu:n-é 'to come and dig (with it)'
INF-come-VEN.INS-IPF

One of the lexical typological features shared between Northeastern Nilo-Saharan languages with a verb-final syntax (Maban, Fur and Amdang, Kunama, Saharan, and the Northern branch of Eastern Sudanic) and Afroasiatic languages in Ethiopia is the coverb plus light verb construction. This construction consists of a predicational element (also sometimes

referred to as preverb and originating in various parts of speech) and an inflected (light) verb.[19]

Fiedler (2013:436) argues for Nyimang (which belongs to the Northern branch of Eastern Sudanic) that there are several light verbs collocating with different coverbs, including verbs of utterance ('speak, talk'), verbs of movement ('rise, walk, go'), verbs of physical impact ('hit, beat, break') and verbs of transfer ('take, take out, take away, send, put'). Examples from Fiedler (2013:440).

(92)	bóŋ	sòbájè	'swim (lit. water move/wash)'
	dídídì	múì	'skip (lit. IDEOPHONE rise)'
	xòxōr	ʃìɛ́	'snore (lit. IDEOPHONE do/say)'

Whereas in Saharan languages like Kanuri more than 90 percent of the predications expressing events involve coverb plus a light verb *n-* 'say, think', Maban, Fur, and Northern members of Eastern Sudanic tend to have fewer. Light verbs in Northeastern Nilo-Saharan are also commonly used to integrate lexical borrowings (usually from Arabic) into the grammatical system, as in Fur (Waag 2010:88):

(93)	járríbɛŋ	pıá	'try' (from Arabic jarrab 'try (out)')
	dáábɛŋ	pıá	'slaughter' (from Arabic dabıa 'slaughter')

Coverb plus light verb constructions are not attested as predicate formation strategies in the Southern branch of Eastern Sudanic. However, a verb *ni* 'say' is found in Nilotic languages, for example in Acholi, where *ni* or *li* (depending on the speaker) is used to introduce the semantic notion of manner in secondary predicates or adverbial phrases (rather than being used as main predications), as in Acholi *ni/lí rìk-rìk* 'restlessly'.[20] The verb *ni* is cognate presumably with the light verb 'say' *n-* in Taman or Saharan languages.

Additional typological differences occur between Kuliak and the Southern branch of Eastern Sudanic on the one hand and the remaining subgroups of Northeastern Nilo-Saharan on the other with respect to verbs in narrative discourse. Whereas in the former, a special subsecutive (consecutive) verb form tends to be used in order to express events enhancing the storyline, Northern members of Eastern Sudanic as well as Maban or Saharan languages as well as Fur tend to use converbs. Such dependent verbs usually have a restricted system of inflection, and precede the fully inflected main verb. In Saharan languages like Beria and Kanuri, for instance, converbs are marked for person and aspect but not for modality; also, negation and question markers are attached to

[19] Such constructions are also sometimes referred to as compound verbs. This label is avoided here in order to be able to distinguish such constructions from verb + verb constructions, as in Central Sudanic, or converb plus main verb constructions, as discussed for Northeastern Nilo-Saharan below.

[20] The 'inverted' order (light verb followed by a coverb) is in line with a more general tendency towards head/modifier order at the clausal level in the Southern branch of Eastern Sudanic.

the finite verb and have scope over the whole clause.[21] In Beria, converbs express sequences of events with perfective aspect marking, and purpose with imperfective marking on the converb. Examples from Jakobi and Crass (2004:168 and 172):

(94) dèī kí-dí-é k-úár-í
foot put.into-CVB$_1$ turn.over-PF.3
'he put [his] foot into it [i.e., the pot] and turned it over'

(95) tɛ́nɛ̄ gɛ̀r-ɛ́ kɛ́ígín-í
girl look.for-CVB$_2$ depart-PF.3
'he left to look for a girl'

Converbs in Beria (and other Saharan languages) are also used in periphrastic constructions to encode modality (e.g., 'can', 'want'), and may have a valency-increasing function, for example, in the formation of applicatives (Jakobi & Crass 2004:171).

(96) áská gín-ɛ́ é-géí
door open-CVB$_1$ 1SG.P-give.IMP
'open the door for me'

It is common for languages with converbs to develop close semantic ties (or idiomatic meanings) between the latter and the main verb. Gulfan (2013:377–378) gives examples from the Nubian language Taglennaa.

(97) ol-i ŋa-I
come.out-SSC walk-IMP
'die!'

The considerable variation between Northeastern Nilo-Saharan languages in the way pronominal subject marking is expressed on the verb suggests that, like constituent order, this is a rather unstable grammatical phenomenon historically. The following variation occurs for subject marking on verbs, sometimes between languages belonging to the same sub-branch (as in Western Nilotic):[22]

1. Prefixes or proclitics; 2. suffixes or enclitics; 3. prefixes combined with enclitics; 4. prefixes or suffixes depending on the verb.[23]

It is not always clear from descriptions whether pronominal subject markers on verbs have the status of affix or clitic synchronically, but historically these subject markers appear to have been clitics, as they could precede as well as follow the verb (as further discussed below).

With the relatively rare Type 3, as found in Nilotic languages like Lotuxo or Päkoot for example, it is clear that the verb-initial subject marker is a

[21] Because the primary function of converbs is to express series of events, converbs have also been labelled 'sequential' or 'consecutive', or even 'conjunctive' in Kanuri grammars as in Hutchison (1981:128).

[22] Pronominal object marking on verbs also varies, but is not further discussed.

[23] Nyimang or the Nilotic language Bari (and its closest relatives) are unique in that no subject reference markers occur on verbs.

prefix and the verb-final element an enclitic. An example adapted from Lotuxo (Tucker & Bryan 1966:470):

(98) a-bak-ne iye 'I struck you'
1SG-strike-1SG 2SG

Type 4, involving prefixation and suffixation, is found in Kunama, for example. As pointed out by Tucker and Bryan (1966:337), Kunama has two verbal conjugationals: one group of verbs taking subject prefixes, and a second group taking suffixes 'which, however, may be historically prefixes of the verb "say"' (Bender 1996:24). Kunama thus shows one historical scenario along which a language may develop subject suffixes out of prefixes, namely through light verbs that now form a phonological word with the preceding coverb.

This leaves us with two patterns, both of which appear to be old in Northeastern Nilo-Saharan: Type 1, which is also found in Central Sudanic (as well as in Koman and B'aga), and therefore probably goes back to their latest common ancestor because some of the proclitics (or prefixes) are cognate. Compare example (33) with the first person singular prefix *a-* in Ma'di above with the first person singular prefix *ka-* in Eastern Sudanic Afitti (de Voogt 2011:901) in example (99) as well as the first person forms given for Koman and B'aga in Section 11.3.

(99) óy jógò kà-tə̀mán
1SG chicken 1SG.PRES-eat
'I eat the chicken'

But whereas in Central Sudanic languages pronominal subject prefixes or clitics combine with either an auxiliary verb or a main verb (as shown in Section 11.4.4), they combine with the main verb in Northeastern Nilo-Saharan languages with a verb-final syntax (as in the Afitti example). In Fur (and Amdang), Maban, and Saharan, all spoken in the western zones of this Nilo-Saharan subbranch, this has resulted in complex morphophonological alternations between the subject prefix and the verb stem. Verb stems in Fur, for example, may alternate due to three changes: (a) metathesis of the first two segments of the verbal root, (b) deletion of the root-initial consonant, or (c) the combination of metathesis and alternation of the root-initial consonant (Jakobi 1990:64–80; Waag 2010:118–134). The following examples juxtapose the unmarked 3rd person singular and the 2nd person singular form, the latter being marked by the prefix *ɟ-*.

Metathesis:

(100) ti-o '(s)he strained'
ɟ-it-o 'you strained'

Deletion of root-initial consonant:

(101) tú-i '(s)he grew up'
ɟ-ŭ-i 'you grew up'

Change of root-initial C:

(102) tús-él '(s)he is poking [a hole]'
ɟ-úrs-él 'you are poking [a hole]'

Wolff (1989) provides an internal reconstruction of such verb-initial consonant alternation in Maba (Maban branch), showing amongst others that a first person singular **ʔa* prefix (or proclitic) can be reconstructed, which is cognate with the widespread first person pronoun marker elsewhere in Northeastern Nilo-Saharan as well as Central Sudanic (see Greenberg 1963:130 for a discussion).

(103) a-nar-i 'I brought'
ta-nari '(s)he brought'

(104) énri < ʔa-ne-ri 'I had'
te-nri '(s)he had'

(105) ɔ́ŋgóorí < ʔa-nuŋgoy-ri 'I paid respect'
túŋgóorí '(s)he paid respect'

Wolff (1989:79) also points out that in Maba vowel-initial verb stems either do or do not undergo alternation or deletion and that there is a lexical, rather than a phonological, basis for this dichotomy.

A similar, morphologically conditioned dichotomy is found in Kunama, as first observed by Tucker and Bryan (1966:337). Next to mainly consonant-initial (intransitive) verbs, there is a class of (transitive) verbs in Kunama whereby the verb-initial vowel is deleted after the subject prefix, and a class whereby the vowel is not elided after the subject prefix.

(106) na-sasa-ke 'I told' (basic verb isasa- 'tell')
na-ite-ke 'I found' (basic verb – ite 'find')

As argued in Section 11.4.4.2, there were probably derivational prefixes at the earliest stages of Nilo-Saharan. This system disappeared as a lexical device in Northeastern Nilo-Saharan (with the exception of the causative). Verbs undergoing consonant and vowel alternation in Northeastern Nilo-Saharan groups like Maban, Fur and Amdang, Saharan, and (to a lesser extent) Kunama, presumably reflect fusion of subject proclitics (or prefixes) and verbs stems containing petrified derivational prefixes (*-V-CVC); these former prefixes became obsolete in Northeastern Nilo-Saharan (with the exception of the causative) due to the innovation of extensive case marking, that is, dependent marking instead of head marking on the verb.[24] Verbs not undergoing any morphophonemic alternation in that case would reflect combinations of subject proclitics (or prefixes) with vowel-initial roots (*-VC).

[24] Alternatively, those undergoing fusion reflect erstwhile underived verbs, and those not undergoing fusion reflect sequences of subject plus derived (vowel-initial) verb stems. This can be clarified only on the basis of a detailed study of cognate verbs.

The Kuliak languages, which form a genetically isolated branch of Northeastern Nilo-Saharan in the present contribution, have literally hundreds of verbs with a petrified V- or CV-prefix followed by a -CV(V)C verb root. Schrock (2014:318–319) lists such petrified (V- or CV-) prefixes 'of unknown origin' for Ik, whereas additional examples can be found in Schrock (2016).

(107)	egés-	'to place, put'
	ɛ́mí t-	'wheeze'
	ɔ̀fɔ̀n-	'to cough'
	ógoós-	'to be left, be excused'
	arút-	'make a sound'
	hákát-	'be boastful'
	tébin-	'lean on'
	tɪmɪ́ɗ	'lick fingers'

Although it cannot be excluded that these verbs were borrowed from Central Sudanic, this is rather unlikely since the Ik examples usually contain a root-final consonant, which is typically absent in Central Sudanic languages. Ik consequently will be crucial for any systematic search for cognate verbal stems in Central Sudanic and Northeastern Nilo-Saharan branches in the future. Since subject marking in Ik is expressed by pronominal enclitics (or suffixes), rather than prefixes, these erstwhile derived verb stems were not affected morphophonologically.

Type 2 pronominal subject marking, involving encliticized subject markers (reminiscent of Wackernagel's Law in Indo-European), is common in such distantly related branches as Saharan and Eastern Sudanic (more specifically in Nubian, Berta, the Surmic language Majang, the Dinka-Nuer cluster within Nilotic) as well as in Kuliak. Its genetic distribution suggests that it may have occurred next to a system of subject proclitics (or prefixes) in their latest common ancestor; examples are given below.

Saharan (Beria)

(108) kɛ̂ì-n-ì
come-2SG.A-IPF
'you come'

(109)	bíī	gér-n-ì
	water	look. for-2SG.A-IPF
	'you look for water'	

The in-depth synchronic study by Andersen (1991) of the Nilotic language Dinka suggests that subject encliticization (as against procliticization) occurred whenever there was a clause-internal preverbal topic (an object, or any other syntactic constituent) (see Table 11.27).

Considerable progress has been made over the past two decades with the synchronic investigation of languages 'commonly referred to as Nilo-Saharan'. As a result, it is now clear that these languages manifest

Table 11.27 Pronominal enclitics or suffixes in Northeastern Nilo-Saharan

	Saharan			Eastern Sudanic				Kuliak	
	Dazaga	Kanuri	Beria	Dongolawi	Berta	Majang	Nuer	Ik	So
1SG	-ɾ	-k	-g	-i	-lii	-aa	-ä	-ɪɪ, -ii	-ɪsa
2SG	-m	-m	-n	-n	-ŋo	-un	-i	-ɪdɪ, -idi	-ɪba
3SG	-j		-ɽ, -rn, Ø	-n	-ne	-ɛ, -u, -i	-ɛ	-ɪ	(ica)
1PL. EXC	-ɾ	-y	-d	-u	-ŋaa	-ii	-kɔ	-ɪmɪ, -imi	-ise
1PL. INC					-ŋaa	-ii	-ɛ	-ɪsɪnɪ, -isini	-iine
2PL	-m	-w	-b	-u	-ha	-ari	-ɛ	ɪtɪ, -iti	-ide
3PL	-j		-ɽ, -n, Ø	-an	-	-ar	-kɛ	-ati	(itia)

typological features also attested outside the continent such as noun incorporation, Differential Subject Marking (or ergativity) and Differential Object Marking, converbs, or singulative marking, but each with its own interesting regional twitches. For most subgroups, there is usually at least one language which has been described in detail. But Eastern Sudanic Taman languages as well as Nara, or the Temeinian languages Tese and Temein proper, remain poorly known. A more extensive historical-comparative investigation of the largest subgroup within Nilo-Saharan, Eastern Sudanic, will provide the best basis for a systematic comparison with the more distantly related groups assumed to be genetically related and commonly referred to as Nilo-Saharan.

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