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# An areal typology of kin terms in the Nuba Mountain languages

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## Abstract

Despite the relatively large amount of linguistic and anthropological data on kinship terminologies in the languages of the Nuba Mountains, we still lack cross-linguistic studies attempting at reconstructing the areal history of this highly variable lexical field. This paper aims at comparing the formal and semantic features of kin terms across the languages of the Nuba Mountains in order to provide historical evidence for their transmission through inheritance or their possible diffusion via language contact. The comparative study surveys the kinship terminologies of ten languages belonging to the three phyla attested in the Nuba Mountains (i.e. Niger-Congo, Nilo-Saharan and Kadu). In the first part of the paper, I analyze the morphosyntactic properties and functions of kin terms. By adopting a componential perspective of analysis, I then focus on the semantics of kin terms in the languages of the sample. The comparison eventually illustrates a high degree of typological variation whose origins can be traced back to the different genetic affiliations of the Nuba Mountain languages. It is also argued that matter and/or pattern borrowing can possibly occur in the domain of kin terms. However, language contact is less significant than shared sociocultural factors in triggering formal and semantic similarities across different kin terminologies. Above and beyond, the study intends to contribute to the ongoing debate on whether the Nuba Mountains constitute an ‘accretion’ zone and to point out some instances of micro-scale linguistic convergence between the languages of the region.

*Keywords:* kin terms, Nuba Mountains, areal typology, Niger-Congo, Nilo-Saharan, Kadu

## 1. Introduction<sup>1</sup>

The comparison of kin terminologies has always been central to anthropology and linguistics alike. This is mainly because languages differ a great deal with respect to the description of kin relationships and the categorization of kinsmen through the medium of kin terms (hereafter KTs). In anthropological literature, differences in kin terminologies are traditionally assumed to reflect differences in social norms such as rules of marriage, patterns of residence, or descent. This cultural anthropological understanding of KTs begun at the end of the 19<sup>th</sup> century and brought about different attempts to classify kinship terminologies. Morgan (1870) first proposed the basic distinction between classificatory (i.e. with no distinction for collateral relationships) and descriptive (i.e. with possible distinctions for collateral relationships) kin terminologies. Later on, Kroeber (1909) developed a componential analysis of kinship

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<sup>1</sup> <sup>1</sup> Many people have directly or indirectly contributed to this paper. First of all, I would like to thank Majzub Bade, Suleyman Tayara, Fatima Totto, and Yasir Hariri for their crucial collaboration during the fieldwork in Khartoum (Sudan). A special thank goes to Gerrit Dimmendaal, Nicolas Quint, and Gertrud Schneider-Blum for their constructive remarks that greatly contributed to improving the final version of this paper. I would also like to acknowledge Abeer Bashir, Nicolas Quint, and Gertrud Schneider-Blum for having kindly made their own fieldwork data available. Finally, I thank the two anonymous reviewers of this paper for their helpful comments. Any mistakes, or mistaken conclusions, remain mine alone. This study is part of the PHC-Napata project *Anthroponymes et termes de parenté dans les langues des monts Nouba* and of the PICS (CNRS) project *Les langues du Soudan: à la croisée des aires et types linguistiques*.

terminologies according to which every KT can be associated with up to eight fundamental semantic categories (i.e. generation, age difference within the same generation, sex of the referent, sex of the anchor,<sup>2</sup> sex of connecting relative, condition of connecting, consanguineal/affinal opposition, collateral/lineal opposition). Murdock (1949), on his part, identified six types of kin terminologies (i.e. Hawaiian, Eskimo, Sudanese, Iroquois, Crow, and Omaha) based on the available descriptions of the relationships ‘cousin’ and ‘sibling’. In spite of their different classificatory approaches, the above mentioned anthropologists share the view that changes occurring in kin terminologies always follow socio-economic and cultural changes affecting kin relationships in a given community.<sup>3</sup> At variance with this assumption, more recent anthropological studies (see Trautmann 2008 for an overview) tend to dissociate social and linguistic change and put forward the stability of kin terminological structures, regardless of the possibility of borrowing of KTs from one language to another. In this regard, Dzielbe’s diffusionist model of kinship (2007) convincingly demonstrates that KTs tend to be associated with language families rather than with social norms (cf. 6).

In linguistics, KTs are usually seen as a universal lexical field exhibiting special morphosyntactic properties (Jonsson 2001; Nikolayeva 2014). In lexical typology, KTs are most commonly described as relational lexical items used for referring to an individual by relating their kinshipwise to another individual (Dahl and Koptjevskaja-Tamm 2001: 201). Greenberg (1966, 1980) was the first linguist to propose a series of universal principles governing kin terminologies across the world’s languages. According to Greenberg, KTs can be ordered along a ‘markedness’ hierarchy depending on a number of linguistic factors such as the zero/overt expression of a kin category, the defectivation of a term for a kin category, the neutralization of certain distinctions within a kin category, and the higher text frequency of unmarked KTs.<sup>4</sup> Greenberg further argues that “the marked category never has more internal differentiation than the unmarked” (1980: 20) and that kinship distance can be measured by the number of occurrences of the relation ‘parent’ (and ‘child’) in the relational product required to define the term. In a similar manner, Dahl and Koptjevskaja-Tamm (2001) stress that KTs are proper name-like lexical items and posit a ‘parental prototype’ shaping the grammatical properties of KTs in the world’s languages. Interestingly enough, both Greenberg and Dahl and Koptjevskaja-Tamm reach the conclusions that a) an ascending KT is unmarked if compared to a descending KT of the same generation b) a lineal KT is unmarked if compared to a collateral KT c) KT markedness is directly proportional to generation remoteness. Despite its relative

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<sup>2</sup> In this paper I will adopt the notion of ‘anchor’ (corresponding the notion of ‘ego’ in anthropological literature) for referring to individual to which is related the ‘referent’ of a given KT. It should be stressed that the ‘anchor’ does not correspond to the speaker, even if it is often identical to it (Dahl and Koptjevskaja-Tamm 2001: 201).

<sup>3</sup> Murdock (1949: 221-222) explicitly argues that “when any social system which has attained equilibrium begins to change, such change regularly begins with modification of the rule of residence. Alteration in residence rules is followed by development or change in form of descent consistent with residence rules. Finally, adaptive changes in kinship terminology follow.”

<sup>4</sup> Though widely applied in comparative linguistics, the notion of ‘markedness’ remains quite controversial. It is generally assumed that ‘markedness’ refers to atypical or rarer linguistic forms in comparison to a regular or more common forms. According to Greenberg, frequency of occurrence is the primary determining factor of markedness in grammar. Accordingly, he suggests that unmarked categories could be determined by “the frequency of association of things in the real world” (1966: 66). See Haspelmath (2006) for a critical approach to the comparative notion of ‘markedness’.

success, the markedness model has also been object of criticism by anthropologists. Scheffler (1987), for example, argues that Greenberg overestimated the nature of markedness in kin systems and shows how lexical markedness can be differentially associated with polysemy through specialization or generalization. Concerning the possibility of diachronic change of kinship terminologies, most linguists (Greenberg 1980; Kryukov 1998; Dahl and Koptjevskaja-Tamm 2001; Jonsson 2001) admit the possibility of renewal of KT's and individuate a number of formal indicators of change such as lexical variation (i.e. doublets), semantic inconsistencies, and loanwords.

As far as the languages of the Nuba Mountain are concerned, we dispose of a large and heterogeneous set of data on kin terminologies. In his detailed ethnographic study on the Nuba groups of Southern Kordofan, Nadel (1947) provides the first comparative lists of KT's in Otoro (Heiban, Niger-Congo) and Nyimang (Nyima, Nilo-Saharan), joined with precious information about marriage, residence and descent rules. Stevenson's survey of the Nuba Mountain languages (1956/1957) also offers valuable comparative data on local kinship terminologies. Later on, further linguistic information became available thanks to the publication of grammars/dictionaries (e.g. Stevenson 2009 for Tira and Otoro; Schneider-Blum 2013 for Tima; Turner 2016 for Katcha; Smits 2017 for Lumun) and papers describing specific kinship terminologies of the Nuba Mountain languages (e.g. de Voogt 2011 for Afitti; Ismail 2015 for Tabaq; Jakobi 2013 for Nubian in general; Schneider-Blum and Veit forth. for Tima). As a matter of fact, given their high degree of linguistic diversity, the Nuba Mountains represent an ideal context for comparing different kin terminologies in an areal perspective. Dimmendaal (2015: 43) already stressed that "a detailed comparison of kin terminology [...] may lead to interesting historical evidence for contact between specific groups in the Nuba Mountains." Further to this, the comparison of KT's in genetically distinct languages spoken in a culturally homogenous area may shed new light on the possible interplay between sociocultural and language-dependent factors in the emergence of divergent kin terminologies. This study thus aims at developing an areal typology of the KT's in the Nuba Mountain languages in order to provide historical evidence either for divergence through language inheritance or for convergence due to shared cultural factors and to diffusion via language contact. For this aim, the study provides a detailed comparison of the formal and the semantic features of KT's in a restricted sample of languages while enlightening both differences and similarities across kin terminologies. The study also aims at contributing to the debate on whether the Nuba Mountains constitute an 'accretion zone' (, Dimmendaal 2015; 2021, cf. 2) and to point out some instances of micro-scale linguistic convergence in the domain of KT's.

The paper is organized as follows. Section 2 draws an overview of the linguistic situation of the Nuba Mountains and introduces the debate about the residual nature of this area. Section 3 briefly presents the language sample and the sources used for this study. Section 4 is devoted to the analysis of the morphological forms and syntactic properties and functions of KT's. In Section 5, I present a fine-graded componential analysis of the semantic features of KT's in the different languages of the sample. Section 6 finally sums up the typological properties of KT's across the languages of the Nuba Mountains and discusses different instances of linguistic convergence/divergence.

## 2. The linguistic situation of the Nuba Mountains

Administratively included in the State of South Kordofan, within the Republic of the Sudan, the Nuba Mountains are widely known as one of the most linguistically heterogeneous areas of Africa. Until nowadays there is no agreement about the number of languages spoken in the region and not even about their genetic classification. Following Blench and Schadeberg (2013), I adopt the umbrella term ‘Nuba Mountain languages’ for referring to the about fifty languages natively spoken in this area, to the exclusion of regional varieties of Arabic and of a number of diasporic languages (e.g. Fulani, Hausa). Since Greenberg (1963), the Nuba Mountain languages are broadly classified into two phyla: Niger-Congo and Nilo-Saharan.

The Niger-Congo phylum is essentially represented by Kordofanian languages. These include about twenty different languages that can be further subdivided into five subgroups (Blench and Schadeberg 2013; Quint and Manfredi 2020): Heiban, Talodi, Lafofa, Katla, and Rashad. Apart for Katla, that is located in the westernmost part of the Nuba Mountains, all the other Kordofanian languages are scattered across the eastern half of the Nuba Mountains. There is a general agreement on the fact that Kordofanian was among the first branches to break off from the Niger-Congo phylum (see Schadeberg 1989). Nonetheless, the internal classification of Kordofanian languages remains a matter of discussion. According to Dimmendaal (2015), Kordofanian does not constitute a single branch of Niger-Congo, as it rather gives evidence of two distinct subgroups: Heiban-Talodi and Katla-Rashad. Contrariwise, Quint (2020) stresses that it is harder to find cognates between Heiban and Talodi than between Heiban and Rashad. Accordingly, he advocates the existence of a stronger historical link between Heiban and Rashad than in other Kordofanian subgroups. In spite of the debate surrounding their historical reconstruction and internal classification, it is a fact that Kordofanian languages share an important number of lexical and grammatical features. For the sake of this study, it is worth reminding that most Kordofanian languages present a typical Niger-Congo system of noun class agreement that inevitably has a deep impact on both the morphosyntactic and the semantic features of KTs.<sup>5</sup>

If we admit the existence of a single Nilo-Saharan phylum (cf. Campbell and Poser 2008 for a critical discussion), this can be exemplified by four different language subgroups located in the Nuba Mountains. These are: Kordofan Nubian, Nyima, Daju, and Temein (see MacDiarmid and MacDiarmid 1931; Stevenson 1956/57). Kordofan Nubian is included into North Eastern Sudanic and it is genetically related to the Nubian languages of the Nile valley and Dar Fur. It features at least eight different languages spoken in the northernmost part of the Nuba Mountains (Stevenson 1956/57: 112-115). The Nyima subgroup is also included into North Eastern Sudanic (Rilly 2005, 2010; Dimmendaal 2016) and it features two main languages (i.e. Nyimang and Affitti) spoken in the northern part of the Nuba Mountains. The Daju subgroup, on its part, includes three languages (i.e. Lagowa, Laggori and Shatt) spoken in the southwestern fringes of the Nuba Mountains (Stevenson 1956/57: 110-112). Daju languages are also attested in Chad and Darfur and they constitute an independent subgroup within South

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<sup>5</sup> The only Kordofanian subgroup in which one finds languages lacking noun classes is Rashad, which is divided between classless languages (Tegali) and noun class languages (Tagoi). Whereas Stevenson (1956/57: 102) and Blench (2013: 575) argue that proto-Rashad already lacked nouns classes (which would have developed in Tagoi due to the neighboring Kordofanian languages’ influence), Schadeberg (1989) and Quint (2020) rather suggest that the lack of noun classes in Tegali is a product of internal drift.

Eastern Sudanic (Tucker and Bryan 1956: 231-242; Boyeldieu 2009).<sup>6</sup> The same applies to Temein, which features three languages (i.e. Temein, Keiga Jirru and Tese Umm Danab) exclusively spoken in the central-western Nuba Mountains (Stevenson 1956/57: 110-112). In spite of their different internal classification, we will see that the Nilo-Saharan languages of the Nuba Mountains also share a number of typological properties that contribute to shape the formal and semantic features of their KTs. A case in point is their common propensity for noun compounding (cf. 4.2) that produces highly descriptive kin terminologies.

Given the longstanding controversy over their genetic classification, Kadu languages deserve a separate discussion. The Kadu group is usually subdivided into three branches (i.e. Western, Central, Eastern, see Hall and Hall 2004) including at least nine different languages (i.e. Kadugli, Kanga, Katcha, Keiga, Korongo, Miri, Tulishi, Tumma, Tum-Tum) which are scattered across the southwestern Nuba Mountains. Based on the presence of a reduced system of noun classes, Greenberg (1963) originally placed Kadu within Niger-Congo. Later on, Schadeberg (1981, 1994) questioned Greenberg's classification and put forward strong arguments for the inclusion of Kadu into Nilo-Saharan. Following Schadeberg's proposal, Kadu languages are now generally seen as an independent branch of Nilo-Saharan. Still, Blench (2006a: 114) argues that Kadu data give evidence of an ancient historical connection between Nilo-Saharan and Niger-Congo. Quint (2020) rather claims that the presence of noun classes in Kadu resulted from a morphological borrowing from Kordofanian accompanied by semantic adaptation to a Nilo-Saharan biological gender system. Dimmendaal (2008: 850) has also added to the lack of consensus by suggesting that Kadu languages "probably constitute an independent language family". In this study, Kadu languages will be treated separately from both Niger-Congo and Nilo-Saharan and this choice seems to be corroborated by some peculiar features of their KTs (cf. 6).

From the 18<sup>th</sup> century onwards, the Nuba Mountains area has been affected at different degrees by a gradual process of Arabization. The arrival of Baggara cattle herders from Darfur in 1765-1775 (MacMichael 1912: 142) brought about the first intensive contacts between Arabic-speaking groups and the different ethnolinguistic communities of the region. These contacts were the result of slave raiding and trading activities that produced an asymmetric pattern of bilingualism in which local communities started to acquire Baggara Arabic as their second language. Baggara Arabic represented the main target language of bilingual Nuba communities until the Sudanese independence in 1956 when Standard Sudanese Arabic started to spread massively across Sudan. At the present time, there are no longer monolingual Nuba communities and most of the local languages are placed at risk by the dominant position of Arabic in Sudan. It is thus not surprising that lexical borrowing from Arabic contributes to the ongoing renewal of KTs in the Nuba Mountain languages. However, as we will see (cf. 5.1, 6), the integration of Arabic KTs is not necessarily accompanied by a reorganization of the categorization of kinsmen in the recipient language.

Since Stevenson's groundbreaking survey (1956/57), the linguistic diversity of the Nuba Mountains has always represented a major subject of discussion among scholars in African linguistics. In recent years, the debate focused around the question of whether the Nuba

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<sup>6</sup> Though the distinction between North and South Eastern Sudanic remains questionable (Bender 1981) was most plausibly the one only one to support this view), I adopt this internal classification of Eastern Sudanic languages as it seems to be confirmed by some isoglosses in the domain of KTs (cf. 6).

Mountains constitute an area of linguistic convergence (i.e. the traditional *Sprachbund*) or a residual zone characterized by a high degree of genetic and typological diversity. Güldemann (2008, 2018) refers to the Nuba Mountains as a ‘fragmentation’ zone (i.e. an area with a considerable amount of genetic diversity) and he locates it at the fringes of the larger and more homogeneous Macro Sudan Belt. Dimmendaal (2015; 2020), on his part, adopts the term ‘accretion’ zone in order to stress both the genetic and the typological diversity of the Nuba Mountain languages. According to Dimmendaal, the absence of a linguistic convergence between the languages of the region may be explained by three main sociohistorical factors: the economic self-sufficiency of the Nuba communities, their endogamous patterns of marriage, and the absence of a common lingua franca prior to the appearance of Arabic. These factors may have indeed reduced the possibility of interethnic relationships, and thus of linguistic convergence. Still, Nadel (1947: 24) formerly pointed out that the communities of the Nuba Mountains constitute a group of subsistence farmers whose “repeated movements, the natural growth of one or the decline of another settlement, kept its boundaries fluid”. So, even in absence of a widespread pattern of bilingualism in the area, contact between neighboring groups was a common aspect of the Nuba Mountains in pre-independence Sudan and it evidently produced some forms of linguistic convergence. Quint and Manfredi (2020), for instance, provide some examples of convergence in the lexicon (e.g. anthroponyms, cf. note 13) and morphosyntax (e.g. reflexive constructions) of the Nuba Mountain languages. Keeping the above in mind, the comparison of KTs clearly confirms the high degree of genetic and typological diversity of the Nuba Mountain languages, but it also identifies some possible instances of micro-scale convergence.

### 3. Sample and sources

This study is based on a survey of KTs in ten languages of the Nuba Mountains. The survey is restricted to the KTs used for kinship relationships from the second ascending generation to the second descending generation of consanguineal kinship. KTs for the affinal line of kinship are also taken into consideration. This makes a total of thirty-seven kinship relationships that can be encoded very differently across languages. The lexical data used for the survey come from different sources. First of all, I refer to a heterogeneous literature that provides linguistic and anthropological information on kinship terminologies in several languages of the Nuba Mountains (see below). These bibliographical sources have been completed by first-hand data gathered on the field by means of a lexical questionnaire on KTs. The fieldwork was conducted in October 2018 and October 2021 among internally displaced communities (i.e. Laggori, Miri, Temein, and Kadugli) living in Khartoum and Omdurman. The languages of the sample have been primarily chosen because of their genealogical diversity as they belong to the three main phyla attested in the Nuba Mountains (i.e. Niger-Congo, Nilo-Saharan, Kadu). The languages and the sources can be summed up as follows:

- *Niger-Congo*
  1. Koalib (Heiban, Kordofanian) – Quint (unpublished data)
  2. Lumun (Talodi, Kordofanian) – Smits (2017)
  3. Otoro (Heiban, Kordofanian) – Nadel (1947)

4. Tima (Katla, Kordofanian) – Schneider-Blum (2013), Schneider-Blum and Veit (forth.)
- *Nilo-Saharan*
  5. Laggori (Daju, South Eastern Sudanic) – own fieldwork data
  6. Nyimang (Nyima, North Eastern Sudanic) – Nadel (1947, tone unmarked)
  7. Tabaq (Kordofan Nubian, North Eastern Sudanic) – Ismail (2015)
  8. Temein (Temein, South Eastern Sudanic) – Blench (2006b), plus own fieldwork data *Kadu*
  9. Kadugli (Central Kadu) – own fieldwork data
  10. Miri (Central Kadu) – own fieldwork data

The sample obviously presents some limits in terms of representativeness. Kadu languages are clearly underrepresented and a couple Niger-Congo subgroups are not taken into consideration (e.g. Lafofa). Still, the sample is balanced with respect to the fundamental opposition between Niger-Congo and Nilo-Saharan languages as well as in terms of internal classification of the two phyla. Furthermore, it provides a good geographical coverage of the Nuba Mountain languages, as showed by the following map.

Map 1 - The languages of the sample

It is also worth remarking that Arabic will be disregarded in the quest to provide evidence of areal convergence/divergence in the domain of KTs. Nonetheless, the Baggara dialect of Kordofan (Manfredi 2010) offers a number of interesting hints with regard to the ongoing renewal of KTs in the languages of the Nuba Mountains as well as with regard to the substratum interference in local varieties of Arabic. Lastly, when data are available, I also make a number of comparative remarks with other languages of the region that are not included in the main sample.

## 4. Forms and functions

In this section, I first describe and compare proper/improper and simple/compound KTs. As we will see, these descriptive categories turn out to be particularly useful for individuating a number of inherited features of KTs. After that, I provide an overview of the morphosyntactic properties and functions of KTs in order to identify both shared and divergent typological features across the languages of the sample.

### 4.1 Proper and improper KTs

One of the most common ways of classifying KTs is to distinguish between ‘proper’ and ‘improper’ KTs (Dahl and Koptjevskaja-Tamm 2001; Jonsson 2001).<sup>7</sup> Whereas proper KTs typically refer relationally to kinsmen (e.g. French *père* ‘father’), improper KTs are metaphoric extensions of originally non-relational KTs (e.g. French *femme* ‘woman’ when used with the meaning of ‘wife’). Generally speaking, the Nuba Mountain languages confirm the tendency of improper KTs to designate either relatives by affinal relationship or consanguineal relatives of the first descending generation (Dahl and Koptjevskaja-Tamm 2001: 202, 220; Nikolayeva 2014: 42). However, the productivity of the metaphoric extension of non-relational KTs clearly hinges on language-dependent factors. Concerning the domain of affinal relationship, both Niger-Congo and Nilo-Saharan languages of the Nuba Mountains display the common metaphoric extensions ‘man’ > ‘husband’ and ‘woman’ > ‘wife’, as we can see in the following examples from Koalib and Tabaq, respectively.

- 1) Koalib (Niger-Congo - Quint, unpublished data)
  - a. *kwór* ‘man, husband’ – H
  - b. *kwào* ‘woman, wife’ – W
- 2) Tabaq (Nilo-Saharan - Ismail 2015: 237)
  - a. *kàtò* ‘man, husband’ – H
  - b. *ilqó* ‘woman, wife’ – W

Nonetheless, certain languages only present the ‘woman’ > ‘wife’ extension, opposed to a proper lexical form for ‘husband’. This is the case of Laggori.

- 3) Laggori (Nilo-Saharan - own data)
  - a. *yóx* ‘husband’ (vs *kík* ‘man, fellow’) – H
  - b. *ɣùx* ‘woman, wife’ – W

Improper KTs can also be used for marking a distinction between the anchor’s and other relatives’ affinal relationships. Miri, for instance, uses a proper KT for the anchor’s wife (ex. 4a), while displaying the metaphoric extension ‘woman’ > ‘wife’ for other relatives’ wives (ex. 4b).

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<sup>7</sup> Nikolayeva (2014: 40-42) rather adopts the notions of ‘semantically non-derivative’ and ‘semantically derivative’ KTs for ‘proper’ and ‘improper’ KTs, respectively.

- 4) Miri (Kadu, own data)
- a. *lèná mò-dé*  
wife DEM.F-POSS.1SG  
'my wife' – W
  - b. *yùhí m-àppá*  
woman POSS-paternal\_uncle  
'paternal uncle's wife' (lit. 'woman of paternal uncle') – FBW

Conversely, Niger-Congo languages that use restrictive noun phrases for expressing the lexical meanings of 'man' (5a) and 'woman' (5b) present proper KT's for denoting 'husband' (6a) and 'wife' (6b) relationships.

- 5) Lumun (Niger-Congo - Smits 2017: 287, 754)
- a. *pɔl ɪ-p-ócora*  
person RES-NC-male  
'man' (lit. 'the person who is male')
  - b. *pɔl ɪ-p-óparí*  
person RES-NC-female  
'woman' (lit. 'the person who is female')
- 6) Lumun (Niger-Congo - Smits 2017: 140)
- a. *pəɾɛ/əɾɛ* 'husband' – H
  - b. *parí/ari* 'wife' – W

Improper KT's designating blood relatives of the first descending generation are rarer across the languages of the sample, as they are exclusively attested in Nilo-Saharan languages (especially in South Eastern Sudanic). Temein, for example, gives evidence of the metaphoric extensions for both 'boy' > 'son' and 'girl' > 'daughter'.

- 7) Temein (Nilo-Saharan - own data)
- a. *dál* 'boy, son' – S
  - b. *púsùŋ* 'girl, daughter' – D

Laggori, on its part, optionally uses the term *čás* 'boy' for 'son' (8a) while denoting the 'daughter' relationship by means of a restrictive relative clause (8b, cf. 4.2, 5.2).

- 8) Laggori (Nilo-Saharan - own data)
- a. *pàx* 'son' (*čás* 'boy, son') – S
  - b. *pàx n-ássùx*  
son REL-female  
'daughter' (lit. 'the son who is female') – D

Overall, it seems that improper KT's are more common in Nilo-Saharan than in Niger-Congo. This divergence can be explained by the fact that improper KT's typically reproduce sex

distinctions formerly expressed by proper KT and that Niger-Congo languages only rarely specify the sex of the referent. Contrariwise, Nilo-Saharan and Kadu languages have a strong propensity to mark sex distinctions and they thus provide more instances of lexical renewal by means of sex-marked metaphorical extensions (cf. 5.2).

#### 4.2 Simple and compound KTs

Following Jonsson (2001: 1206), I define simple KTs as monolexemic items describing a kin relation between two individuals by involving reference to only one kinsman. Compound KTs, on their part, can be defined as analytic circumlocutions describing a kin relation either by linking a number of kinsmen to each other (e.g. *mother's mother*) or through metaphoric extension of other polylexemic items (e.g. *mother-in-law*). Adopting a diachronic perspective of analysis, Dahl and Koptjevskaja-Tamm (2001: 220) stress that, even if KTs show very different patterns of renewal depending on their semantics, “it is obvious that words for more complex relationships (e.g. terms for in-laws and non-first generation ) are often formed by derivation or compounding.” Yet, this generalization says nothing about the way the speakers of a given language conceive the ‘complexity’ of their kin relationships and how this may affect the formal features of KTs. As we will see, the comparison of kin terminologies in the Nuba Mountain languages shows that the propensity for KT compounding is actually influenced by both language-dependent and sociocultural factors.

First of all, if we look at the distribution of simple and compound KTs across the sample (Table 1), it is clear that KT compounding strongly correlates with the genetic classification of languages.

<i>Languages</i>	<i>Simple / Compound KTs</i>	<i>Ratio Simple / Compound KTs</i>	<i>Phyla</i>
Tima	15 / 0 (TOT 15)	100 / 0	Niger-Congo
Otoro	13 / 0 (TOT 13)	100 / 0	
Lumun	10 / 0 (TOT 10)	100 / 0	
Koalib	10 / 0 (TOT 10)	100 / 0	
Miri	17 / 8 (TOT 25)	68 / 32	Kadu
Kadugli	13 / 7 (TOT 20)	65 / 35	
Nyimang	13 / 6 (TOT 19)	68 / 32	Nilo-Saharan
Laggori	9 / 9 (TOT 18)	50 / 50	
Tabaq	13 / 17 (TOT 30)	43 / 57	
Temein	12 / 19 (TOT 31)	39 / 61	

Table 1 - Simple and compound KTs across the Nuba Mountain languages

On the one hand, Niger-Congo languages present small KTs inventories (counting between 10 and 15 KTs) and do not allow any KT compounding. On the other hand, Nilo-Saharan and Kadu languages display large KTs inventories (counting between 18 and 31 KTs) associated with different degrees of productivity of KT compounding. This typological divergence can be explained by the fact that in Niger-Congo languages with synchronically active noun class systems compounding can be extremely marginal (Creissels 2020), whereas most Nilo-Saharan languages present a large number of exocentric or endocentric nominal compounds, regardless of their rich derivational morphology (Dimmendaal 2016). In this regard, Kadu languages (i.e. Miri and Kadugli) seem to be more similar to Nilo-Saharan than to Niger-Congo.

Taking a closer look at the forms of the KTs, highly classificatory terminologies of Niger-Congo languages use simple KTs for encoding both consanguineal and affinal kin relationships.

- 9) Koalib (Niger-Congo - Quint, unpublished data)  
*éñkéri*  
 brother.POSS1SG  
 ‘my brother, sister, paternal cross/parallel cousin, maternal parallel cousin’ – B / Z / FBS / FBD / FZS / FZD / MZS / MZD
- 10) Lumun (Niger-Congo - Smits 2017: 181)  
*ɔ-peí*  
 PERS-daughter  
 ‘son / daughter’ – S / D
- 11) Tima (Niger-Congo - Schneider-Blum and Veit forthc.)  
*háhá<sup>1</sup>múŋ*  
 ‘parent-in-law’ – FLA / MLA

Contrariwise, in the descriptive terminologies of Nilo-Saharan languages most consanguineal relationships are encoded by compound nouns. Compound KTs may consist either of a series of two KTs or of a single KT in combination with (at least) one other nominal constituent. Most typically, compounding occurs in descending (e.g. ‘son of X’, ex. 12) and sex-marked (e.g. ‘X female’, ex. 13, cf. 5.2) KTs.

- 12) Temein (Nilo-Saharan - own data)  
*dál nà-dál*  
 son POSS-son  
 ‘grandson’ (lit. ‘son of son’) – SS
- 13) Tabaq (Nilo-Saharan - Ismail 2015)  
*ítè-n-tààdò-téèr*  
 sibling-POSS-child-female  
 ‘fraternal niece’ (lit. ‘sibling’s female child) – BD

In this overall context, South Eastern Sudanic languages stand out from other Nilo-Saharan languages in that they also use compound KTs for encoding the second ascending consanguineal generation, as we can see in the following examples from Keiga (Temein) and Laggori (Daju).<sup>8</sup>

- 14) Keiga (Nilo-Saharan - Blench 2006b, not included in the sample)  
*áfa n-apa*

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<sup>8</sup> The same is true for Kordofanian Baggara Arabic (Manfredi 2010: 132) that marks a distinction between *habōbt-i* ‘(my) paternal grandmother’ (FM) and *amṣamt-i* ‘(my) maternal grandmother’ (MM), the latter deriving from the lexicalization of the compound noun \**amṣ amṣ(.t)* ‘mother of mother’. As this lexical innovation is not shared with other varieties of Arabic, it seems plausible to think that the formal and semantic differentiation between ‘paternal grandmother’ and ‘maternal grandmother’ in Kordofanian Baggara Arabic is a result of substratum interference from the Nilo-Saharan languages of the region.

father POSS-father  
'paternal grandfather' (lit. 'father of father') – FF

- 15) Laggori (Nilo-Saharan - own data)  
*mé-skò*                                      *ná-mègík*  
father- POSS.EXCL.1PL      REL-old  
'my grandfather' (lit. 'our father who is old') – FF / MF

In most languages that allow KT compounding, sex-marked terms are encoded analytically by a lexeme meaning 'girl, woman, female' (ex. 16b, cf. 5.3) in combination with a proper KT representing the unmarked form for male referents (ex. 16a).

- 16) Temein (Nilo-Saharan - own data)  
a.     *kótò*  
          paternal\_uncle  
          'paternal uncle' – FB  
b.     *kótò nt-likámè?*  
          paternal\_uncleRELwoman  
          'paternal aunt' (lit. 'the paternal uncle who is woman') – FZ

However, Miri, Kadugli(Kadu) and Nyimang (Nyima) differ from other compounding languages in that they mark the sex of the referent by means of lexical suppletion (i.e. the use of different lexical roots for inflected nominal forms; cf. ex. 61 for Miri, ex. 62 for Kadugli; *abadiya* "grandfather" vs *atadiya* "grandmother" in Nyimang), rather than by lexical compounding (cf. ex. 16 for Temein, ex. 8.b Laggori, cf. 5.2). This explains why these languages have a relatively low compound/simple ratio when compared with other Nilo-Saharan languages (cf. Table 1). On a morphosyntactic level, languages that allow compounding present different patterns for combining the nominal constituents of a KT, the most common of which is simple juxtaposition as shown in the following example from Laggori.

- 17) Laggori (Nilo-Saharan - own data)  
*pàx mé-skò*  
son      father-POSS.INCL.1PL  
'my paternal cousin' (lit. 'son of our father') - FBS

Nonetheless, the productivity of nominal juxtaposition varies a great deal across languages. If in Laggori juxtaposition is highly productive being used for most consanguineal and sex-marked KTs, in Tabaq it is exclusively adopted for sex-marked KTs. The second most common pattern of KT compounding consists of a possessive paradigm involving the use of a possessive marker linking two simple KTs. This pattern is typically used for encoding collateral relationships and it is the only KT compounding strategy of Miri (with a possessed-possessor order, ex. 18) and Nyimang (with a possessor-possession order, ex. 19), but it is also productive in Temein (ex. 12) and Tabaq (ex. 13).

- 18) Miri (Kadu - own data)  
*né m-éyà*

sister POSS-mother  
'maternal aunt' (lit. 'sister of mother') – MZ

- 19) Nyimang (Nilo-Saharan - Nadel 1947: 99-100)  
*ata ne-nen*  
mother.POSS.1SG POSS-sister  
'my maternal aunt' (lit. 'sister of my mother') – MZ

The last strategy of KT compounding consists of a restrictive relative clause modifying simple KTs. This compound strategy seems to be particularly productive in South Eastern Sudanic languages and it can be used for both ascending (cf. ex. 15) and sex-marked KTs, as we can see in the following example from Laggori (cf. ex. 57 for Temein).

- 20) Laggori (Nilo-Saharan - own data) <sup>9</sup>  
*pàx bó-skò n-àssúx*  
son mother- POSS.INCL.1PL REL-female  
'my sister' (lit. 'the son of our mother who is girl') – Z

In languages that allow KT compounding, only a limited number of kin relationships are always encoded by simple KTs. These are the lineal relationships of 'father', 'mother', 'son', the collateral relationship of 'maternal uncle' (MB) as well as all the affinal relationships (LA). Given their high frequency of occurrence, the use of simple KTs for close lineal relationships (i.e. 'father', 'mother', 'son') is certainly not surprising. Furthermore, although resembling terms can be found cross-linguistically (e.g. Arabic *bāba* "daddy", Magyar *anya* "mother"), the high frequency of occurrence of these lineal KTs may also explain why most languages of the sample share the roots for 'father' (i.e. \*pappa; Koalib *ppáppà* ADDR, cf. ex. 35; Tima *papaŋ* ADDR; Lumun *ɔ-ŋappá* cf. ex. 34.a; Miri, *Kadugli àppá* cf. ex. 28; Tabaq *áfá* cf. ex. 32) and 'mother' (i.e. \*aya; Koalib *áyyà* ADDR; Tima *ayà* ADDR; Lumun *ɔ-ŋáia* cf. ex. 34.b; Miri, *Kadugli éyà* cf. ex. 43; Tabaq *áná*) providing a remarkable instance of lexical diffusion. Certainly more unexpected is the use of simple KTs for affinal relationships (see 5.5) and for the collateral relationship of 'maternal uncle' (see 5.4). Indeed, the formal divergence between the monolexemic forms used for these 'non-lineal' / 'non-consanguineal' relationships and the polylexemic terms used for lineal (cf. ex. 8 'daughter' in Laggori) and collateral (cf. ex. 17 'paternal cousin' in Laggori) relationships could be better explained by shared sociocultural factors.

Concerning the relationship of 'maternal uncle' (MB), it should be reminded that, regardless of their different ethnolinguistic backgrounds, Nuba communities are historically matrilineal (Nadel 1947). This means that lineage property is inherited by the maternal kin via the mother's brother. The social centrality of this kin relationship may thus explain why the KTs for 'maternal uncle' (MB) did not go through a process of lexical renewal by compounding. Moreover, the marked nature of the KTs for 'maternal uncle' (MB) is also confirmed by their treatment as inherently possessed nouns at par with KTs for lineal relationships such as 'father'

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<sup>9</sup> Concerning the word for 'sister' in Nilo-Saharan, Rilly (2008: 211) argues that medieval and modern Nubian languages have replaced the original KTs for 'brother' and 'sister' with compound KTs meaning either 'mother's son/daughter' or 'mother's child' (cf. also Laggori, *pàx bó-skò* 'my brother', lit. 'son of our mother'). This seems to be also the case of South Eastern Sudanic languages of the sample.

and ‘mother’ (cf. 4.3, ex. 24). In terms of language contact, Dimmendaal (2015: 42) and Quint and Manfredi (2020: 18) already stressed that the diffusion of the Nilo-Saharan root \*mam(a) for ‘maternal uncle’ (MB) goes well beyond the genetic affiliation of the Nuba Mountain languages, as it is found in both Nilo-Saharan and Niger-Congo languages. However, it seems that the actual diffusion of this root is larger than we would have expected, being attested in at least five languages of the sample.

- 21) The root \*mAm(A) ‘maternal uncle’ (MB) in the languages of the Nuba Mountains
- a. Koalib (Niger-Congo – Quint unpublished data): *mém*
  - b. Tima (Niger-Congo – Dimmendaal 2015): *mámúŋ*
  - c. Tagoi (Niger-Congo, not in the sample – Bashir unpublished data): *òmmóm*
  - d. Temein (Nilo-Saharan – own data): *mámáŋ*
  - e. Miri and Kadugli (Kadu - own data): *mámá*

As far as the use of simple KT for affinal relationships is concerned, it should also be remarked that Nuba communities traditionally practice a bride service consisting in the unpaid labor rendered by the bridegroom to the bride’s family as part of the dowry. Bride service is typically performed in conjunction with long periods (three to four years) of matrilineal residence during which the bridegroom resides with his family-in-law. This could suggest that matrilineal residence reinforces affinal relationships and limits the renewal of the corresponding KTs via noun compounding. Despite the generalization of simple KTs for encoding affinal relationships, we will see that languages differ greatly regarding the classification of affinal kinsmen (e.g. generation, sex of the referent, see 5.5), as shown by the following examples from Temein and Tabaq.

- 22) Temein (Nilo-Saharan, own data)  
*wòtíŋáŋ*  
 ‘relative-in-law’ – FLA / MLA / BLA / ZLA
- 23) Tabaq (Nilo-Saharan, Ismail 2015: 237)
- a. *wáqá* ‘father-in-law’ – FLA
  - b. *ólà* ‘mother-in-law’ – MLA
  - c. *kéér* ‘sibling-in-law’ – BLA / ZLA

All things considered, the formal opposition between simple and compound KTs gives evidence of a genetic boundary between the languages of the Nuba Mountains (i.e. Niger-Congo languages - not allowing nominal compounding vs Nilo-Saharan and Kadu languages - allowing nominal compounding). This clear-cut difference is due to the fact that the propensity for nominal compounding mainly relies on language-dependent factors, such as the presence/absence of a noun class system. Nonetheless, it is also true that the use of simple KTs in languages that allow KT compounding depends on sociocultural factors such as matrilinearity and matrilineal residence. This fact shows that the closer a kin relationship is socially perceived and constructed the less its linguistic expression is analytic and descriptive. Lastly, the large diffusion of the lexical roots for ‘father’, ‘mother’ and ‘maternal uncle’ (MB)

also suggests that simple/marked KT's are more likely to be transferred via lexical borrowing than unmarked ones.

#### 4.3 Morphosyntactic properties and functions

As is well known, KT's stand out from other lexical domains because of a number of specific morphosyntactic properties, such as the proclivity to be inherently possessed or the idiosyncrasy of their plural marking. As far as the domain of possession is concerned, KT's figure with body parts as the nouns that most often occur in inalienable possessive constructions (Koptjevskaja-Tamm 2003, Haspelmath 2017). The Nuba Mountain languages' KT's do not represent an exception to this cross-linguistic tendency, as they provide interesting cases of differential possession marking. In Laggori, for example, when the terms for 'father', 'mother' and 'maternal uncle' (MB) are used in relation with the anchor, they are inherently possessed by a 1<sup>st</sup> plural inclusive possessive pronoun.

24) Laggori (Nilo-Saharan – own data)

a. *bó-skò*

mother- POSS.INCL.1PL

'my mother' (lit. 'our mother') – M

b. *ηòλέη-skò*

maternal\_ uncle-POSS.INCL.1PL

'my maternal uncle' (lit. 'our maternal uncle') – MB

Contrariwise, all the other terms for consanguineal and affinal relationships when used in relation with the anchor require the possessor to be encoded analytically by a 1<sup>st</sup> person singular pronoun attached to the possessive marker *n(à)*-.

25) Laggori (Nilo-Saharan – own data)

a. *pàx n-àη*

son POSS-1SG

'my son' – S

b. *ηàx n-àη*

wife POSS-1SG

'my wife' – W

In a similar manner, in Niger-Congo languages such as Lumun the terms for 'father', 'mother' and 'maternal uncle' (MB) are inherently possessed by a 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> person (ex. 26.a) possessive pronoun, whereas terms for other relationships occur with a morphologically independent possessive determiner (ex. 26.b).

26) Lumun (Smits 2017: 180)

a. *ɔ-rém*

PERS-maternal\_ uncle.POSS.1SG

'my maternal uncle' – MB

b. *pɛi p-îñ*

son NC-POSS.1SG

‘my son’ – S

It thus seems that, in spite of the important typological differences in the morphosyntactic encoding of alienable/inalienable possession across the languages of the Nuba Mountains, there is a shared pattern of inherently inalienable possession which treats ‘maternal uncle’ (MB) as a marked kin relationship at par with the lineal relationships of ‘father’ and ‘mother’ (cf. 6). Still, this pattern does not generalize to all languages of the sample. Koalib, for instance, presents a different system of differential inalienable possession in which the terms for ‘father’, ‘mother’ and ‘sibling’ (B, D) are always inherently possessed by a 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> possessive pronoun (ex. 27.a), whereas other KTs can only be inherently possessed by 2<sup>nd</sup> or 3<sup>rd</sup> possessive pronouns (ex. 27.b), while being modified by a 1<sup>st</sup> person independent possessive determiner (ex. 27.c).

27) Koalib (Quint – unpublished data)

a. *léenyéí*

mother.POSS.1SG

‘my mother’ – M

b. *kwùkùrnèlù*

grandfather.POSS.2SG

‘your grandfather’ – SS / DS / SD / DD / FF / MF / FM / MM

c. *kwùkùrnè*            *kw-ínyí*

grandfather            NC-POSS.1SG

‘my grandfather’ – SS / DS / SD / DD / FF / MF / FM / MM

Kadu languages, for their part, stand out from both Nilo-Saharan and Niger-Congo languages in that they indistinctly make all the KTs deictically available by means of a demonstrative determiner in combination with a possessive pronoun, as we can see in the following examples.<sup>10</sup>

28) Miri, Kadugli (Kadu – own data)

*àppá yà-dé*

father DEM.M-POSS.1SG

‘my father, my paternal uncle’ (lit. ‘this father of mine’) – F / FB

29) Kadugli (Kadu – own data)

*nè mà-dé*

sister DEM.F-POSS.1SG

‘my sister’ (lit. ‘this sister of mine’) – Z

30) Katcha (Kadu – Turner 2016: 113, not included in the sample)

*nīimō me-edē*

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<sup>10</sup> In a similar way, it seems that Kordofan Nubian languages do not treat the terms for ‘father’, ‘mother’ and ‘maternal uncle’ differently from other KTs in terms of inalienable possession marking. In this regard, Jakobi (2013) shows that most KTs in Kordofan Nubian are inherently possessed by a prefix *in-* featuring the 1<sup>st</sup> (singular/plural) person marker *i-* and the genitive marker *-n*, while being modified by a ‘relationship’ suffix variously recorded as *-oon*, *-on*, *-an*, *-am*, *-n*, *-aŋ* (e.g. Uncunwee, *int-àŋ* ‘brother, sister’, Jakobi 2013: 426)

mother DEM.F-POSS.1SG  
'my mother' (lit. 'this mother of mine') – M

Turning to plural formation, it is also well known that KTs and other proper nouns may share special plural marking (Dahl and Koptjevskaja-Tamm 2001: 207). Indeed, the Nuba Mountain languages show a wide range of morphosyntactic strategies for marking nominal plurality on KTs. First of all, improper KTs (cf. 4.1.) keep the suppletive plural forms of their lexical sources, as shown by the following examples.<sup>11</sup>

- 31) Suppletive plurals of improper KTs
- a. Laggori (Nilo-Saharan – own data)  
*pàx* 'boy, son', *pàgg* 'boys, sons' – Ss
  - b. Temein (Nilo-Saharan – own data)  
*dál* 'boy, son', *kidél* 'boys, sons' – Ss

As a further matter, in line with their complex systems of nominal plural marking, Nilo-Saharan languages largely use suffixes for indicating plurality with KTs. Tabaq (Ismail 2015: 239), for instance, presents different plural suffixes (i.e. *-ε*, *-a*, *-na*, *-i*, *-ri*, *-q̣u*, *-tu*) whose occurrence cannot be phonologically predicted. In this case, plurality may be encoded either through suffixation of a plural marker to the unmarked singular noun (ex. 32.a) or through replacement of a singular suffix by a plural one (ex. 32.b).<sup>12</sup>

- 32) Tabaq (Nilo-Saharan – Ismail 2015: 239)
- a. Plural through suffixation  
*áfá* 'father', *áfá-é* father-PL 'fathers' – Fs
  - b. Plural through suffix replacement  
*ít-é* brother-SG 'brother', *ít-à* brother-PL 'brothers' – Bs

Karko (Kordofan Nubian), on its part, possesses a 'plurative' suffix restricted to certain KTs (Jakobi and Hamdan 2015, Jakobi and Dimmendaal 2021, ex. 33.a), while others express a plural meaning through tonal alternation (ex. 33.b).

- 33) Karko (Nilo-Saharan – Jakobi and Dimmendaal 2021, not included in the sample)
- a. Plural through suffixation  
*fâg* 'father', *fâg-âŋ* father-PL 'fathers' – Fs  
*âm* 'grandmother' *âm-âŋ* grandmother-PL 'grandmothers' – FMs / MMs
  - b. Plural through tonal alternation  
*tîy* 'maternal uncle', *tîy* maternal\_uncle\PL 'maternal uncles' – MBs  
*ágàt* 'grandfather', *ágăt* 'grandfathers' – FFs / MFs

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<sup>11</sup> Suppletive plurals are not limited to improper KTs as they can also correlate with proper (both simple and compound) KTs. In Laggori, for example, the compound noun *pàx bô-skò* 'brother' (lit. 'son of our mother') has the suppletive plural *pébùŋ*.

<sup>12</sup> Afitti (Nyima) seems to represent an exception within the Nilo-Saharan languages of the Nuba Mountains in that it also features dual suffixed forms of KTs. According to de Voogt (2012), this morphological innovation is a product of language contact with Arabic.

As far as Niger-Congo languages are concerned, KT<sub>s</sub> differ sharply from other nouns in that they are typically pluralized by means of an associative suffix, rather than by a plural class prefix. In Lumun, for instance, KT<sub>s</sub> and anthroponyms<sup>13</sup> (Smits 2017: 75) always present the persona prefix *ɔ-* and they form their plural through suffixation of the associative morpheme *-(ɲɔ̃)n*.

- 34) Lumun (Niger-Congo – Smits 2017: 179, 185)
- a. *ɔ-ɲappâ-n*  
PERS-father-ASS  
'My father and his family/companions' – Fs
  - b. *ɔ-íáíá-n*  
PERS-mother-ASS  
'My mother and her family/companions' – Ms

Different from Lumun, Koalib KT<sub>s</sub> do not present any persona prefix but they still form their plural by means of the associative suffix *-ɲa*.<sup>14</sup>

- 35) Koalib (Niger-Congo – Quint, unpublished data)
- a. *ppáppà*  
father  
'father' – F (addressing function)
  - b. *ppáppà-ɲá*  
father-ASS  
'my father and his family/companions, the ancestors' – Fs (addressing function)

Despite this, affinal KT<sub>s</sub> in Koalib are treated at par with nouns referring to human beings or other entities and they are therefore marked for singular and plural by means of class prefixes.

- 36) Koalib (Niger-Congo – Quint, unpublished data)
- a. *kw-éekà*  
NC.SG-sibling\_in\_law  
'sibling in law' – BLA / DLA
  - b. *l-éekà*  
NC.PL- sibling\_in\_law  
'siblings in law' – BLAs / DLAs

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<sup>13</sup> It is worth remarking that most Nuba communities share a naming practice according to which anthroponyms denote the birth order of the offspring (Quint and Manfredi 2020). Accordingly, these anthroponyms encode age differences within the same generation of kinsmen and they can well be considered as a subtype of KT<sub>s</sub> (see 6).

<sup>14</sup> The use of the associative plural suffix *-ɲa* with KT<sub>s</sub> is also attested in other Heiban languages such as Tira and Otoro (Stevenson 2009: 27, 147), as well as in Katla languages such as Tima. In Tagoi, the associative suffix *-n* can modify all the KT<sub>s</sub> except those for 'father', 'sibling' (B, Z) and 'maternal uncle' (MB) relationships, which are instead pluralized by the suffix *-(a)t*. Those latter KT<sub>s</sub> are also morphosyntactically marked through the medium of diminutive class concord markers (cf. ex. 41).

Different from both Nilo-Saharan and Niger-Congo languages, Kadu languages mark plural on KTs exclusively by means of plural prefixes on class-neuter singular nouns, as we can see in the following examples.

37) Miri (Kadu – own data)

- a. *áppà*  
father  
'father' – F
- b. *k-áppà*  
PL-father  
'fathers' – Fs

38) Kadugli (Kadu – own data)

- a. *mámà*  
maternal uncle  
'maternal uncle' – MB
- b. *nì-mámà*  
PL-maternal uncle  
'maternal uncles' – MBs

39) Katcha (Kadu – Turner 2016: 113, not included in the sample)

- a. *ore*  
brother  
'brother' – B
- b. *nak-ore*  
PL-brother  
'brothers' – Bs

Concerning the morphosyntactic uses of KTs, it is generally assumed that KTs may play two basic functions in the utterance (Dahl and Koptjevskaja-Tamm 2001: 203; Jonsson 2001: 1205): the referential and the addressing function. KTs are used referentially when they refer to a kinsman in the discourse (e.g. *my father died*). In this context, Niger-Congo languages are particularly interesting as they often use specific prefix concord markers for referential KTs. In Lumun, for example, KTs always present a singular concord marker *p-* (ex. 40.a), whereas common nouns bearing the persona affix *ɔ-* (cf. ex. 34) have the singular concord marker *k-* (ex. 40.b).

40) Lumun (Niger-Congo – Smits 2017: 194, 195)

- a. *ɔ-íáia p-áá.t*  
PERS-mother CC-come  
'My mother has come.'
- b. *ɔ-kəllán k-áá.t*  
PERS-old\_woman CC-come  
'The old woman has come.'

In a different manner, most KT<sub>s</sub> in Tagoi (Niger-Congo, Bashir unpublished data, not included in the sample) take the human concord markers *w-* SG / *y-* PL (ex. 41.a). However, *àppá* 'father, paternal uncle' (F, FB), *ηèdè* 'sibling' (B, Z), *òmmóm* 'maternal uncle' (MB) take the diminutive concord markers *c-* SG / *ɲ-* PL (ex. 41.b). Once again, the integration of MB 'maternal uncle' in this differential pattern of agreement may be due to the marked nature of this kin relationship in Nuba matrilineal societies (cf. 4.2, 6).

41) Tagoi (Niger-Congo – Bashir, own data, not included in the sample)

- a. *emme w-irij ta súk eqè*  
grandfather CC-POSS.1SG to market go.3SG  
'My grandfather went to the market.'
- b. *òmmóm c-irij ta súk eqè*  
maternal\_ uncle CC-POSS.1SG to market go.3SG  
'My maternal uncle went to the market.'

KT<sub>s</sub> have an addressing function when they are vocatively used to directly address a kinsman (e.g. *come here, dad!*). In this context, KT<sub>s</sub> fall outside the structure of the utterance and they typically occur in independent intonation units. Furthermore, the addressing function of KT<sub>s</sub> may be signaled by different morphosyntactic processes. In several Nilo-Saharan and Kadu languages, addressing KT<sub>s</sub> are deprived of the possessive determiners modifying their referential forms. This is the case of Tabaq (ex. 42), Miri and Kadugli (ex. 43).

42) Tabaq (Nilo-Saharan – Ismail 2015: 238)

- a. *àn-fáàfá*  
POSS.1SG-father  
'my father' – F (reference function)
- b. *fáàfá*  
father  
'father' – F (addressing function)

43) Miri, Kadugli (Kadu – own data)

- a. *éyà mò-dé*  
mother DEM.F-POSS.1SG  
'my mother' – M (reference function)
- b. *éyà*  
mother  
'mother' – M (addressing function)

Contrariwise, in Lumun (Niger-Congo), addressing KT<sub>s</sub> are deprived of the persona prefix *ɔ-* (see ex. 34) and they are obligatorily modified by a 1<sup>st</sup> person possessive determiner.

44) Lumun (Niger-Congo – Smits 2017: 181)

- a. *ɔ-peí*  
PERS-son

‘son, daughter’ – S / D (reference function)

b. *peí pîn*

son POSS.1SG

‘my son, my daughter’ – S / D (addressing function)

Moreover, both Niger-Congo and Nilo-Saharan languages largely use suppletive forms for distinguishing the referential and the addressing functions of KTs. This is the case of Tima (ex. 45) and Temein (ex. 46).

45) Tima (Niger-Congo – Schneider-Blum and Veit forth.)

a. *wéèn*

mother

‘mother’ – M (reference function)

b. *áyà*

mother

‘mother’ – M (addressing function)

46) Temein (Nilo-Saharan – own data)

a. *kótò*

paternal uncle

‘paternal uncle’ – FB (reference function)

b. *áfà*

paternal uncle

‘paternal uncle’ – FB (addressing function)

To sum up, the Nuba Mountains languages display a high degree of variation in the morphosyntactic encoding of the typical properties and functions of KTs. In this case too, typological divergences between languages may be due to different inherited features as in the case of associative plurals that are peculiar to Niger-Congo languages. Nonetheless, we can also identify a number of shared features that are rather induced by shared sociocultural elements. Such is the case of the marked morphosyntactic status of the ‘maternal uncle’ MB relationship which linguistically reflects matrilinearity.

## 5. Componential analysis

This section offers a componential analysis of the semantic features of KTs across the languages of the sample. By adopting a genealogical method, the analysis aims at comparing how kinsmen are differently classified across the languages while at the same time pointing out to similar patterns of colexification of KTs. The analysis is restricted to five semantic categories (i.e. generation, sex of the referent, sex of the anchor, collateral/lineal kinship, consanguineal/affinal kinship) and it pays particular attention to the semantics of self- and cross-reciprocal KTs.

### 5.1 Generation

Generally speaking, the genealogical generation of the referent is an extremely pervasive semantic category. This is especially true for the highly classificatory kin terminologies of Niger-Congo languages that only rarely distinguish the sex of the referent (cf. 5.2). Heiban and Talodian languages, for example, are similar in that they distinguish four consanguineal

generations (i.e. anchor's generation, first ascending generation, first descending generation and second ascending/descending generation) without any specification of the sex of the referent. This means that these languages present a single cross-reciprocal KT merging the kin relationships of 'grandparent' and 'grandchild', as shown by following examples from Koalib and Lumun respectively (cf. Fig. 1a).<sup>15</sup>

- 47) Koalib (Niger-Congo – Quint, unpublished data)  
*kwùkùrnè*  
 'grandparent / grandchild' – FF / MF / FM / MM / SS / DS / SD / DD
- 48) Lumun (Niger-Congo – Smits 2017: 181)  
*ɔ-pəki*  
 'grandparent / grandchild' – FF / MF / FM / MM / SS / DS / SD / DD

Tima, on its part, stands apart from other Niger-Congo languages of the sample in that it distinguishes five consanguineal generations as it also differentiates between second ascending and second descending generation, without any specification of the sex of the referent.

- 49) Tima (Niger-Congo – Schneider-Blum and Veit forth.)
- a. *páwúŋ*  
 'grandparent' – FF, FM, MF, MM
  - b. *kùwàwúŋ*  
 'grandchild' – SS, SD, DS, DD

As far as Nilo-Saharan languages are concerned, I have already pointed out (cf. 4.2) that KT compounding is functional for the encoding of kin relationships of the anchor's generation and of the descending consanguineal generations (ex. 17), whereas ascending generations are most commonly encoded by simple KTs (ex. 50).

- 50) Tabaq (Nilo-Saharan – Ismail 2015: 238)  
*wáɔ*  
 'grandparent' – FF / FM / MF / MM

Most Nilo-Saharan languages distinguish five consanguineal generations and, due to their proclivity to distinguish the sex of the referent (cf. 5.2), they can have up to six different terms for the second ascending and the second descending consanguineal generations, as we can see in the following example from Temein (cf. Fig. 1c).

- 51) Temein (Nilo-Saharan – own data)
- a. *fàfà* 'grandfather' – FF / MF
  - b. *fàfà nt-líkámè?*  
 grandfather REL-female  
 'grandmother' (lit. 'female grandfather') – FM / MM
  - c. *dál / púsùŋ nà-dál*  
 son / daughter POSS=son  
 'grandson, granddaughter' (lit. 'son/daughter of son') – SS / SD

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<sup>15</sup> In the following figures, the use of the same color for marking different KTs indicates that the same term encodes different kinship relationships.

- d. *dál / púsùŋ nà-púsùŋ*  
 son / daughter POSS=daughter  
 ‘grandson, granddaughter’ (lit. ‘son/daughter of daughter’) – DS / DD

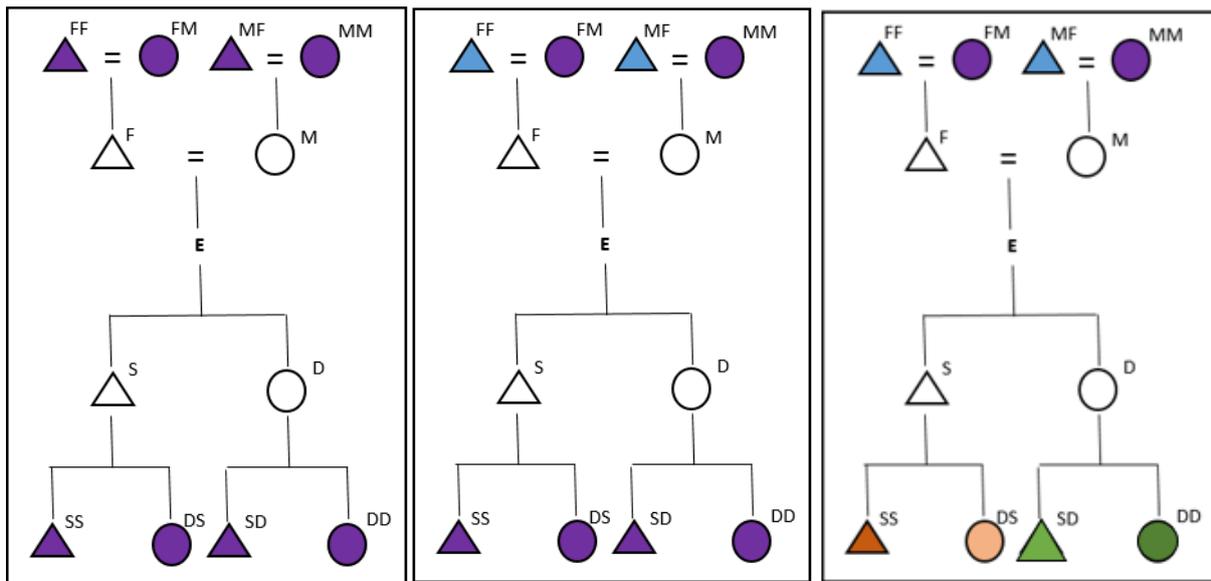
Kadu languages also distinguish five consanguineal generations. More interestingly, Miri and Kadugli provide a remarkable instance of asymmetric cross-reciprocity in which the relationships of ‘grandmother’ and ‘grandchildren’ (i.e. ‘grandson’ and ‘granddaughter’) are encoded by means of a single KT (ex. 52.a, 53.a), whereas the relationship of ‘grandfather’ is expressed by another KT (ex. 52.b, 53.b cf. Fig. 1b).

52) Miri (Kadu – own data)

- a. *fàffá* ‘grandfather’ – FF, MF  
 b. *tàttá* ‘grandmother, grandchild’ – FM, MM, SS, SD, DS, DD

53) Kadugli (Kadu – own data)

- a. *tàdá* ‘grandfather’ – FF, MF  
 b. *àtté* ‘grandmother, grandchild’ – FM, MM, SS, SD, DS, DD



a. Koalib, Lumun (Niger-Congo)

b. Miri, Kadugli (Kadu)

c. Temein (Nilo-Saharan)

Figure 1 – The encoding of second ascending/descending generations across language phyla

In comparative terms, Niger-Congo languages provide a case of polysemy by generalization in which the classification of second generation descendant kinsmen is derived by making an isomorphic copy of the second ascendant generation. This contrasts with Nilo-Saharan languages that give further evidence of the descriptive nature of their kin terminologies by distinguishing both the generation and the sex of second ascendant/descendant generation kinsmen. Against this background, the asymmetric pattern of cross-reciprocity found in Kadu languages can be analyzed as an originally sex-oriented kin terminology that adapted a generational-like system from Niger-Congo languages. The process of adaptation induced the collapsing of the distinction between ‘grandmother’ (FM, MM) and ‘grandchildren’ (SS, SD, DS, DD) while keeping a sex opposition between ‘grandmother’ (FM, MM) and ‘grandfather’

(FF, MF). Interestingly enough, a later stage of this pattern of colexification can be observed in the semantic adaptation of Arabic-derived KT's in Lumun. Being a Niger-Congo language, Lumun does not distinguish the sex of second ascendant/descendant generation kinsmen (cf. Fig. 1a). However, Smits (2017: 181) observes that the original term *ɔpəki* for second ascendant/descendant generation kinsmen is being replaced by the term *ápəpə*, which derives from Arabic *ḥabōba* 'grandmother' (FM, MM).<sup>16</sup> This instance of matter borrowing does not produce any change in the classification of kinsmen in Lumun as the reference of the term *ápəpə* < *ḥabōba* 'grandmother' is extended to include both 'grandchildren' (SS, SD, DS, DD) and 'grandfather' (FF, MF). Nevertheless, the choice of the term *ḥabōba* 'grandmother' (FM, MM) as source of colexification gives evidence of the fact that Niger-Congo and Kadu KT's for second generation descendant kinsmen are originally derived from sex-marked KT's of the second ascendant generation. This instance of colexification can thus be ruled out as follows: 'grandmother' (FM, MM) > 'grandmother + grandchildren' (FM, MM, SS, SD, DS, DD) > 'grandparents + grandchildren' (FF, MF, FM, MM, SS, DS, SD, DD).

## 5.2 Sex of the referent

If we exclude the lineal relationships of 'father' and 'mother' and the affinal relationships of 'husband' and 'wife' (cf. ex. 1), Niger-Congo languages never distinguish the sex of the referent.<sup>17</sup> However, due to the possible colexification of lineal and collateral KT's (cf. 5.4), the sex opposition between 'father' and 'mother' can be generalized to include other relationships, as we can see in the following example from Tima.<sup>18</sup>

54) Tima (Niger-Congo – Schneider-Blum and Veit forth.)

a. *wáyèn*

'father, paternal uncle' – F / FB

b. *wéèn*

'mother, paternal aunt, maternal aunt' – M / FZ / MZ

Nilo-Saharan languages, for their part, distinguish the sex of the referent for most consanguineal and affinal relationships. The sex of the referent can be expressed either by lexical suppletion (ex. 7 for Timein) or by noun compounding (cf. 4.2). When the sex of the referent is expressed via noun compounding, it is encoded either by inherently feminine nouns in ascending generations (i.e. 'X female', ex. 55) or by sex-marked KT's in descending generations (i.e. 'daughter of X', ex. 56).

55) Laggori (Nilo-Saharan – own data)

<sup>16</sup> As already observed (cf. note 8), Baggara Arabic distinguishes between *ḥabōbt-i* '(my) paternal grandmother' (FM) and *amḥamt-i* '(my) maternal grandmother' (MM), whereas Sudanese Arabic uses the term *ḥabōbt-i* for both maternal and paternal 'grandmother' (FM, MM). Given the relatively recent integration of *ápəpə* in Lumun, the undifferentiated Sudanese Arabic form is the most plausible source of borrowing.

<sup>17</sup> In this regard, it should be remarked that Otoro is the only Niger-Congo language of the sample that distinguishes the sex of the referent in the second ascending generation: *kurna* 'grandfather' (FF, MF) vs *kurninya* 'grandmother' (FM, MM).

<sup>18</sup> Probably due to the influence of surrounding Nilo-Saharan languages, Tima is the only Niger-Congo language of the sample that optionally distinguishes the sex of the referent for the first descending generation by means of a sex-marked compound KT (i.e. *cibà* 'child, offspring' vs *cí<sup>1</sup>bá kúúnèn* 'female child', cf. 6).

- a. *mé-skò*  
paternal\_uncle-POSS.INCL.1PL  
'my father, paternal uncle' – F, FB
- b. *mé-skò n-ássùx*  
paternal\_uncle-POSS.INCL.1PL REL-female  
'my paternal aunt' (lit. 'the paternal uncle who is female') – FZ

56) Temein (Nilo-Saharan – own data)

- a. *dál nà-mámàŋ*  
son POSS-maternal\_uncle  
'male maternal cross cousin' (lit. 'son of maternal uncle') – MBS
- b. *púsùŋ nà-mámàŋ*  
daughter POSS-maternal\_uncle  
'female maternal cross cousin' (lit. 'daughter of maternal uncle') – MBD

The expression of the sex of the referent by means of noun compounding can intertwine with the encoding of generation and/or other semantic categories. For example, Temein alternatively uses the inherently feminine nouns *púsùŋ* 'girl' (ex. 57.a) and *íkámè?* 'woman' (ex. 57.b) for expressing both the sex and the marital status of the referent.

57) Temein (Nilo-Saharan – own data)

- a. *aranyuná nt-púsùŋ*  
brother REL-girl  
'(unmarried) sister' (lit. 'brother who is girl') – Z
- b. *aranyuná nt-íkámè?*  
brother REL-woman  
'(married) sister' (lit. 'brother who is woman') – Z

Furthermore, a couple of Nilo-Saharan languages provide a singular instance of double marking of the sex of the referent in which the term for 'maternal aunt' (MZ) is composed by a sex-marked term for 'mother' followed by an inherently feminine noun meaning 'woman, female', as we can see in the following example from Laggori.

58) Laggori (Nilo-Saharan – own data)

- bó-skò n-ássùx*  
mother-POSS.INCL.1PL REL-female  
'my maternal aunt' (lit. 'the mother who is female') – FZ

Generally speaking, Nilo-Saharan languages mark the sex of lineal kinsmen with different degrees of fineness. For example, Temein distinguishes between 'grandfather' and 'grandmother' (cf. ex. 51), whereas Tabaq neutralizes the sex distinction of the second ascendant generation (cf. ex. 50). Besides, probably due to the influence of the surrounding Niger-Congo languages, Laggori (ex. 59) and Nyimang (ex. 60) are the only Nilo-Saharan languages that neutralize the sex of the referent in the second descendant generation.

59) Laggori (Nilo-Saharan – own data)

*ʔàtgá*

‘grandchild’ – SS / SD / DS / DD

60) Nyimang (Nilo-Saharan – Nadel 1947: 99-100)

*aninen*

‘my grandchild’ – SS / SD / DS / DD

As far as Kadu languages are concerned, they resemble Niger-Congo languages in that they encode the sex of the referent exclusively by means of suppletive lexical pairs (cf. 4.1). Nonetheless, the categorical extension of the sex of the referent is more similar to that of Nilo-Saharan languages as it also applies to affinal (cf. 5.5), second generation ascendant (cf. 5.1, ex. 52-53) and first generation descendant (ex. 61-62).

61) Miri (Kadu – own data)

a. *bélèlá*

‘son’ – S

b. *bálàtá*

‘daughter’ – D

62) Kadugli (Kadu – own data)

a. *bìrrá*

‘son’ – S

b. *bàrrá*

‘daughter’ – D

The typological divergences in the encoding of the sex of the referent across the languages of the sample are particularly evident when it comes to the relationships of ‘siblings’ and ‘cousins’. On the one side, Niger-Congo languages typically present a sex-neuter KT for ‘sibling’ (B, Z), ‘paternal cousin’ (FBS / FBD / FZS / FZD) and ‘maternal parallel cousin’ (MZS / MZD) (ex. 63a, cf. ex. 9 for Koalib), which stands in opposition to another sex-neuter KT covering the relationships of ‘maternal uncle’ (MB) and ‘maternal cross cousin’ (MBS / MBD) (ex. 63b, cf. Fig. 2a, 5.4). This classificatory arrangement only distinguishes generation and lineage.

63) Lumun (Niger-Congo – Smits 2017: 181)

a. *ɔpáŋ*

‘brother, sister, paternal cross/parallel cousin, maternal parallel cousin’ – B / Z / FBS / FBD / FZS / FZD / MZS / MZD

b. *ɔréin*

‘maternal uncle, maternal cross cousin’ – MB / MBS / MBD

On the other side, Nilo-Saharan languages distinguish the sex of both siblings and cousins while assigning them to different relatives via noun compounding. Under these conditions, Nilo-Saharan languages may present up to ten different KTs for the members of the anchor’s consanguineal generation (ex. 64, cf. Fig.2c). This classificatory arrangement differentiates generation, lineage and sex of the referent.

64) Temein (Nilo-Saharan – own data)

a. *araquná*

- ‘brother’ – B
- b. ‘sister’ – S, see ex. 53
- c. *dál / púsùṅ nà-kótò*  
son / daughter POSS-paternal\_uncle  
‘male / female paternal parallel cousin’ (lit. ‘son/daughter of the paternal uncle’) – FBS / FBD
- d. *dál / púsùṅ nà-kótò nt-likámè?*  
son / daughter POSS-paternal\_uncle REL-female  
‘male / female paternal cross cousin’ (lit. ‘son/daughter of the paternal uncle who is female’) – FZS / FZD
- e. *dál / púsùṅ nà-kàṅàṭá*  
son POSS-maternal\_aunt  
‘male / female maternal parallel cousin’ (lit. ‘son/daughter of the maternal aunt’) – MZS / MZD
- f. ‘male / female maternal cross cousin’ (lit. ‘son/daughter of the maternal uncle’) – MBS / MBD, see ex. 52

Similar to Nilo-Saharan languages, Miri also distinguishes the sex of siblings and cousins. However, Miri generalizes the terms for ‘brother’ and ‘sister’ to all the male and female paternal cousins respectively while deriving the terms for maternal cousins from the relative ascendant KTs via noun compounding (cf. Fig.2b).

- 65) Miri (Kadu – own data)
- a. *ré*  
‘brother, male paternal cousin’ – B / FBS
  - b. *ṅé*  
‘sister, female paternal cousin’ – Z / FBD
  - c. *bélèlá m-ìṅé m-éyà*  
son POSS-sister POSS-mother  
‘male maternal parallel cousin’ (lit. ‘mother’s sister’s son’) – MZS
  - d. *bálàtá m-ìṅé m-éyà*  
daughter POSS-sister POSS-mother  
‘female maternal parallel cousin’ (lit. ‘mother’s sister daughter’) – MZD
  - e. *bélèlá mà-mámà*  
son POSS-maternal-uncle  
‘male maternal cross cousin’ (lit. ‘son of maternal uncle’) – MBS
  - f. *bálàtá mà-mámà*  
son POSS-maternal-uncle  
‘female maternal cross cousin’ (lit. ‘daughter of maternal uncle’) – MBD

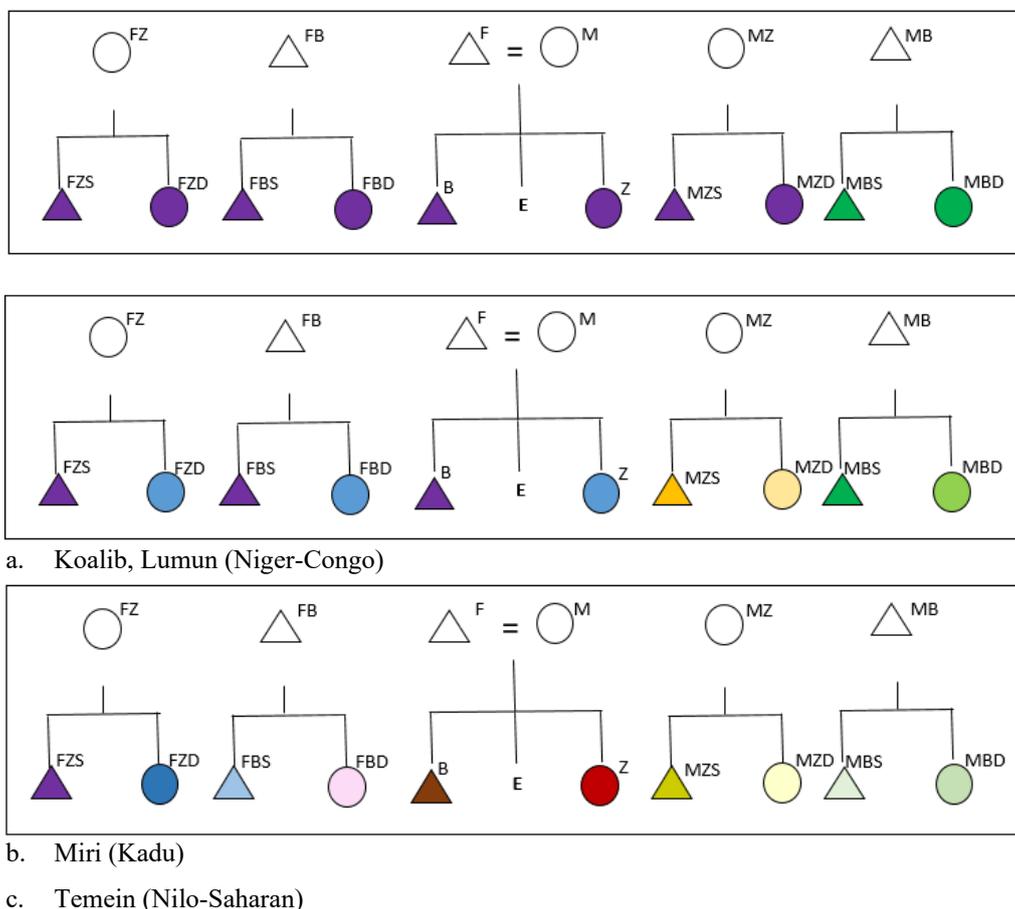


Figure 2 – ‘Siblings’ and ‘cousins’ across language phyla

The cross-linguistic variation affecting the expression of the sex of referent for ‘siblings’ and ‘cousins’ suggests that the grammatical productivity of this semantic category largely depends on the different gender systems of the languages of the sample. Given that Niger-Congo languages typically express a basic semantic contrast between human and non-human referents (Creissels 2000: 243), they only rarely specify the sex of kinsmen. Conversely, Nilo-Saharan languages make a basic semantic distinction between male and female referents, regardless of the fact that grammatical gender marking is not widespread across the Nilo-Saharan phylum as a whole (Dimmendaal 2019). Kadu languages also distinguish between male and female referents. But, different from both Niger-Congo and Nilo-Saharan, the expression of the sex of the referent in Kadu follows the agreement rules of a masculine/feminine gender system (cf. agreement of demonstrative determiners ex. 28-30). As a further matter, the concomitant colexification of ‘brother’ with ‘male paternal cousin’ (FBS, FZS) and of ‘sister’ with ‘female paternal cousin’ (FBD, FZD) in Miri is not found in any other language of the sample. This particular arrangement of ‘siblings’ and ‘cousins’ also suggests a process of adaptation of a generational-like kin system of Niger-Congo origin to a more descriptive and sex-oriented terminology similar to those of Nilo-Saharan languages (cf. 6).

### 5.3 Sex of the anchor

The sex of the anchor is semantically relevant in only two genetically unrelated languages of the sample. Moreover, this relatively rare semantic category functions in relation with the classification of different kinsmen. First, Tima represents an exception among the Niger-Congo languages of the sample, as it distinguishes ‘siblings’ and ‘cousins’ (cf. 5.2) by means of three self-reciprocal KT’s merging twelve relationships according to the sex of the anchor (ex. 66a, 66b, 66c). Besides, it gives also evidence of the common Niger-Congo colexification between

‘maternal uncle’ and ‘maternal cross cousins’ (MBS, MBD) (ex. 66d, cf. 5.4) opposed to a marked term for ‘paternal cross cousins’ (FZS, FZD) (ex. 66e).

- 66) Tima (Niger-Congo – Schneider-Blum and Veit forth.)
- a. *kwàán*  
‘male’s brother, male paternal parallel cousin; female’s sister, female paternal parallel cousin; female maternal cousin’ – B, Z, FBS, FBD, MZD, MBD
  - b. *kínà*  
‘female’s brother; male’s female paternal cousin’ – B / FBS
  - c. *lùwí*  
‘male’s sister, female paternal parallel cousin, female maternal cousin’ – Z / FBD / MZD / MBD
  - d. *mámúŋ*  
‘maternal uncle, male maternal cousin’ – MB / MBS / MZS
  - e. *ɲárùlúŋ*  
‘paternal cross cousin’ FZS / FZD

The second instance of anchor’s sex marking is found in Nyimang. In this case, two distinct KT’s group the affinal relationships of the anchor’s generation.

- 67) Nyimang (Nilo-Saharan – Nadel 1947: 99-100)
- a. *anyara*  
‘my male’s brother/sister in law’ – WB, WZ
  - b. *anešin*  
‘my female’s brother/sister in law’ – HB, HZ

Given the rare and irregular occurrence of anchor’s sex marking across the languages of the sample, it is difficult to assess the actual diffusion of this semantic category. However, it is clear enough that anchor’s sex marking represents a residual feature within both Niger-Congo and Nilo-Saharan languages of the region.

#### 5.4 Collateral/lineal kinship

The Nuba Mountain languages offer a great deal of variation in the encoding of the opposition between collateral and lineal kinsmen. This is mainly because they present different language-dependent colexification patterns both across and within consanguineal generations. Since Lowie (1928), a common way for classifying collateral/lineal terminologies is based on the available descriptions of the blood relatives of the first ascending generation. Lowie’s kinship model produces four different types of terminologies (i.e. generational, lineal, bifurcate merging and bifurcate collateral) that can be applied to both male and female relatives. As far as the description of male relatives is concerned, all the Niger-Congo languages of the sample give evidence of a bifurcate merging system grouping the relationships of ‘father’ (F) and ‘paternal uncle’ (FB) (ex. 68a), while distinguishing ‘maternal uncle’ (MB) with another term (ex. 68b). This system differentiates parallel / cross kinsmen, without any collateral distinction.

- 68) Koalib (Niger-Congo – Quint, unpublished data)
- a. *térnyéři*

father.POSS.1SG

‘my father, my paternal uncle’ – F, FB

b. *kwikri*

maternal\_uncle

‘maternal uncle, maternal cross cousin’ – MB / MBS / MBD

Most Nilo-Saharan languages, on their part, present a bifurcate collateral system with three different terms for ‘father’ (F), ‘paternal uncle’ (FB) and ‘maternal uncle’ (MB). Such a system makes both parallel/cross and lineal/collateral distinctions, as we can see in the following example from Nyimang.

69) Nyimang (Nilo-Saharan – Nadel 1947: 99-100)

a. *aba*

‘my father’ – F

b. *aba ne-nen*

father POSS-sibling

‘my paternal uncle’ (lit. ‘father’s sibling’) – FB

c. *andr*

maternal\_uncle

‘my maternal uncle’ – MB

Despite this clear-cut distinction in the classification of male kinsmen of the first ascending generation, it seems that the diffusion of the bifurcate merging system found in Niger-Congo languages can affect both Nilo-Saharan and Kadu kin terminologies (cf. 6). This is the case of Laggori (ex. 55a), Miri and Kadugli (ex. 28) that give evidence of the colexification of ‘father’ (F) and ‘paternal uncle’ (FB). On the contrary, due to the recent influence from Arabic, Tagoi (Basheer, unpublished data, not included in the sample) is the only Niger-Kordofanian language to mark a distinction between ‘father’ (F) and ‘paternal uncle’ (FB) following the integration of the term *ammî* ‘paternal uncle’ < \* *ʕamm-i* ‘my paternal uncle’.<sup>19</sup>

Looking at the female relatives of the first ascending generation, Niger-Congo language are again very stable in presenting a generational system with a single term that groups the relationships of ‘mother’ (M), ‘paternal aunt’ (FZ) and ‘maternal aunt’ (MZ). This system makes neither lineal/collateral nor parallel/cross distinctions, as we can see in the following example from Otoro (cf. ex. 54.b for Tima).

70) Otoro (Niger-Congo – Nadel 1947: 99-100)

*nana*

‘mother, paternal aunt, maternal aunt’ – M / FZ / MZ

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<sup>19</sup> In this regard, it is also interesting to note that, due to substratum interference in Kordofanian Baggara Arabic, the common distinction between *abū-i* ‘father’ (F) and *amm-i* ‘paternal uncle’ (FB) is neutralized in addressing contexts (cf. 4.3): *abū-i* ‘father, paternal uncle’ (Manfredi 2010: 125). The same pattern of neutralization can be observed in Tabaq that uses the addressing form *áfā* for both ‘father’ and ‘paternal uncle (FB)’ (cf. ex. 46.b), while distinguishing the two relationships in referential context. This fact confirms that the direction of this instance of colexification is F > FB, and never the opposite (cf. Souag 2021).

If we exclude Tabaq, which is the only language of the sample that colexifies ‘mother’ and ‘maternal aunt’ (*màà* M, MZ, Ismail 2015: 235), and Kadugli that presents the same generational system of Niger-Congo languages, other Nilo-Saharan and Kadu languages classify female relatives of the first ascending generation with a collateral system symmetric with the one used for male relatives.

71) Temein (Nilo-Saharan – own data)

a. *óhúnò*

‘mother’ – M

b. *kótò nt-likámè?*

paternal\_uncle REL-female

‘maternal aunt’ (lit. ‘the paternal uncle who is female’) – FZ

c. *káhàtá*

maternal\_aunt

‘maternal aunt’ – MZ

Looking at the distribution of the different classificatory systems across the languages of the sample in Table 2, it clearly appears that the encoding of the opposition between collateral and lineal kinsmen correlates mainly with inherited patterns of colexification and only limitedly with their diffusion (cf. 6).

	<i>Male relatives</i>			<i>Female relatives</i>			<i>Phyla</i>
	<i>generational</i>	<i>merging</i>	<i>collateral</i>	<i>generational</i>	<i>merging</i>	<i>collateral</i>	
Koalib		X		X			Niger-Congo
Lumun		X		X			
Otoro		X		X			
Tima		X		X			
Kadugli		X		X			Kadu
Miri		X				X	
Laggori		X				X	Nilo-Saharan
Nyimang			X			X	
Temein			X			X	
Tabaq			X		X		

Table 2 - Blood relatives of the first ascending generation

In this overall context, matrilinearity turns out to be a pervasive homogenizing factor that can eventually produce classificatory similarities across languages. As I have already argued (cf. 4.2), all the languages of the sample give evidence of the anchor's complementary filiation to their 'maternal uncle' (MB) by means of specific KTs. In Niger-Congo languages this complementary filiation is extended to the maternal uncle's lineage via the colexification of a cross-reciprocal term grouping the relationships of 'maternal uncle' (MB) and 'maternal cross cousin' (MBS, MBZ) (cf. ex. 63.b for Lumun). However, in Tima, due to the marking of the sex of the anchor in relation to female maternal cousins (MZD, MBD, cf. 5.3, ex. 66), the term for 'maternal uncle' (MB, ex. 21.a) is extended to cover male maternal cousins (MZS, MBS). Nilo-Saharan and Kadu languages, on their part, present a simple KT for 'maternal uncle', while deriving via noun compounding the terms for maternal cross cousins, as we can see in the following example from Tabaq (cf. ex. 21.f, 65.e, 65.f for Miri).

72) Tabaq (Nilo-Saharan – Ismail 2015: 234)

- a.  $\underline{t}i\underline{i}$   
'maternal uncle' – MB
- b.  $\underline{t}i\underline{i}-n-\underline{t}o\underline{o}d\underline{o}$   
maternal\_uncle-POSS-child  
'maternal male cross cousin' (lit. 'child of maternal uncle') – MBS
- c.  $\underline{t}i\underline{i}-n-\underline{t}o\underline{o}d\underline{o}-\underline{t}e\underline{e}r$  – MBD  
maternal\_uncle-POSS-child-female  
'maternal female cross cousin' (lit. 'female child of maternal uncle') – MB

Matrilinearity can also be marked by means of specific terms for referring to members of the sororal lineage. Otoro, for example, has two specific terms for 'sororal nephew' (ZS) and 'sororal niece' (ZD), respectively, with the latter being inherently possessed at par with primary lineal relationships (ex. 73.b).

- 73) Otoro (Niger-Congo – Nadel 1947: 99-100)
- a. *dare*  
‘sororal nephew’ – ZS, SS, SD, DS, DD
  - b. *kwigreri*  
sororal niece.POSS.1SG  
‘my sororal niece’ – ZD

Nilo-Saharan languages, on their part, can mark matrilinearity on the sororal lineage by means of specific sex-marked compound KTs, as we can see in the following example from Tabaq.

- 74) Tabaq (Nilo-Saharan – Ismail 2015: 236)
- a. *kótó-n-tʃóqǎ̀*  
vagina-POSS-child  
‘sororal nephew’ (lit. ‘child of vagina’) – ZS
  - b. *kótó-n-tʃóqǎ̀-tʃèèr*  
vagina-POSS-child-female  
‘sororal niece’ (lit. ‘female child of vagina’) – ZD

### 5.5 Consanguineal/affinal kinship

As we have already observed (4.2), all the language of the sample refer to affinal kinsmen by means of simple KTs. Despite this, they differ a great deal with respect to the internal classification of affinal kinsmen. On the one side, all the Niger-Congo languages of the sample distinguish two affinal generations, without any specification of the sex of the referent, as we can see in the following example from Tima.

- 75) Tima (Niger-Congo – Schneider-Blum and Veit forthc.)
- a. *hʌhʌ<sup>↓</sup>múŋ*  
‘parent in law’ – FLA, MLA
  - b. *kʌ<sup>↓</sup>dúŋ*  
‘sibling in law’ – BLA, ZLA

On the other side, if we except Nyimang that classifies affinal kinsmen of the anchor’s generation on the basis of the sex of the anchor (cf. 5.3, ex. 63), North Eastern Sudanic languages classify affinal kinsmen into two generations and distinguish the sex of the referent only for affinal parents (cf. ex. 23 for Tabaq). South Eastern Sudanic languages, on their part, mark neither the generation nor the sex of affinal kinsmen. Accordingly, they present a single KT grouping all the affinal relationships, as we can see from the following example from Laggori (cf. also ex. 22 for Temein).

- 76) Laggori (Nilo-Saharan – own data)
- ʔàydá*  
‘relative-in-law’ – FLA, MLA, BLA, ZLA

This is also the case of Kadugli within Kadu languages.

- 77) Kadugli (Kadu – own data)

*barki*

‘relative-in-law’– FLA, MLA, BLA, ZLA

Conversely, Miri is the only language of the sample that classifies affinal kinsmen into two generations while distinguishing the sex for both affinal parents and siblings. 78) Miri (Kadu – own data)

a. *hàmái*

‘father-in-law’– FLA (< Arabic \**ḥamā-i* father\_in\_law-POSS.1SG)

b. *hàmátí*

‘mother-in-law’– MLA (< Arabic \**ḥamāt-i* mother\_in\_law-POSS.1SG)

c. *è má*

‘brother-in-law’– BLA

d. *nímó*

‘sister-in-law’– ZLA Despite the fact that Miri sex-marked KT for affinal parents (78.a, 78.b) are clearly of Arabic origin, in the absence of other comparable data from Kadu languages, it is difficult to understand whether this instance of matter borrowing produced a change in the original classification of affinal kinsmen in the recipient language. That being said, it is clear that the variation affecting the classification of affinal kinsmen across the Nuba Mountain generally reflects the genetic classification of the languages (cf. 6) and that it is hardly affected by diffusion.

## 6. An areal typology of KTs in the Nuba Mountain languages

The previous comparative overview of the formal and semantic features of KTs in the Nuba Mountain languages suggests three main things. First, the comparison of kin terminologies corroborates the idea that the Nuba Mountains constitute an ‘accretion zone’ (Dimmendaal 2015; 2020) as genetic divergences prevail over convergence in determining surface features of KTs. Second, the complementary interplay between language-dependent and sociocultural factors play a primordial role in producing typological divergences/convergences across kin terminologies. Third, convergence via diffusion can obviously affect kin terminologies via both matter and pattern borrowing. However, language contact seems to be less influential than shared sociocultural factors in triggering similarities across kin terminologies (cf. Table 3).

Generally speaking, typological divergences in kin terminologies are a product of language inheritance (cf. Dziebel 2007). At a broader level, I have individuated a number of features that oppose Niger-Congo to Nilo-Saharan and Kadu languages. On the one side, Niger-Congo languages present highly classificatory and generation-oriented kin terminologies with phylum-specific formal and semantic features such as the presence of associative plural suffixes (cf. 4.3, ex. 34-35) or the colexification of ‘maternal uncle’ (MB) with ‘maternal cross cousin’ (MBS, MBD) (cf. 5.4, ex. 63, 68). On the other side, Nilo-Saharan and Kadu languages present highly descriptive kin terminologies owing to the productivity of noun compounding (cf. 4.2, tab. 1) and of referent’s sex marking (cf. 5.2, fig. 2). Divergences in kin terminologies can also signal different internal classifications of the Nuba Mountain languages. As far as Niger-Congo is concerned, the closeness between Heiban and Talodi subgroups as compared to Katla

(Dimmendaal 2015) is confirmed by a number of residual features exclusively attested in Tima such as the marking of the anchor's sex for 'sibling' and 'cousin' relationships (cf. 5.3, ex. 66) or the distinction between second ascending and descending generations (cf. 5.1, ex. 49). Concerning Nilo-Saharan, the division between North and South Eastern Sudanic subgroups is proved by several exclusive features of Daju and Temein languages such as the productivity of KT compounding with restrictive relative clauses (ex. 4.2, ex. 16, 20) or the absence of sex and generation distinction for affinal kinsmen (cf. 5.5, ex. 76). Against this background, Kadu languages certainly provide the most innovative kin terminologies of the sample. Indeed, Kadu languages differ from both Niger-Congo and Nilo-Saharan languages in that they make all the KTs deictically available by means of a demonstrative determiner (cf. 4.3, ex. 28-30). Furthermore, Miri and Kadugli give evidence of a number of 'mixed' semantic features such as the partial cross-reciprocity between second ascending and descending generation (cf. 5.1, ex. 52-53) or the colexification of 'brother' (B) with 'male paternal cousin' (FBS, FZS) and of 'sister' with 'female paternal cousin' (FBD, FZD) (, ex. 65). These features seem to indicate the adaptation of a more classificatory and generation-oriented system to an originally descriptive and sex-oriented terminology. This fact could be interpreted as evidence for an ancient language contact between Nilo-Saharan and Niger-Congo and, it obviously raises the question of the genetic classification of Kadu languages (Blench 2006a, Quint 2020, cf. 2).

Looking at the similarities across kin terminologies of the Nuba Mountain languages, they may be the product either of convergence due to a shared sociocultural background or of diffusion via language contact. Concerning the sociocultural sphere, we have seen that matrilinearity is a strong homogenizing factor that has both formal and classificatory effects on local kin terminologies. Actually, regardless of their different genetic classifications, most languages of the sample tend to treat 'maternal uncle' (MB) and the members of the sororal lineage (ZS, ZD) as marked relationships on both a lexical and morphosyntactic level (cf. 4.3, 5.5). Besides, I have also argued that matrilineal residence may hinder the renewal of affinal KTs in languages that allow noun compounding (cf. 4.2, ex. 22-23). An additional sociocultural element to take into account is that both Niger-Congo and Nilo-Saharan/Kadu languages of Nuba Mountain encode age differences within the same generation by means of anthroponyms (cf. note 13). Turning to possible instances of convergence via diffusion, we have seen that lexical borrowing is limited to the addressing KTs for 'father' (i.e. \*pappa), 'mother' (i.e. \*AyA) and the referential KTs for 'maternal uncle' (\*mam(a), cf. 4.2, ex. 21). The lack of other major instances of matter borrowing (i.e. the transfer of morphophonological or lexical material without the integration of semantic features) between the languages of the Nuba Mountains confirms that KTs, together with body parts, rate rather low in borrowability scales (Tadmor et al. 2010: 232). However, pattern borrowing (i.e. the transfer of semantic features without integration of morphophonological or lexical material) can well occur in the absence of loanwords as demonstrated by the colexification of 'father' (F) and 'paternal uncle' (FB) = whose diffusion goes well beyond the Nuba Mountains area (Souag 2021). On a smaller scale, it seems that Nyimang and Laggori neutralize the sex of the referent in the second descending generation possibly due to the influence of Niger-Congo (cf. 5.2, ex. 59, 60). Contrariwise, similar to its surrounding Nilo-Saharan languages, Tima is the only Niger-Congo language to optionally mark a sex distinction in the first descending generation (cf. note 18). This

bidirectional pattern of semantic diffusion across language families confirms the absence of a shared pattern of bilingualism in the Nuba Mountains prior to the introduction of Arabic.

Given its dominant position, Arabic has inevitably an important impact on the kin terminologies of local minority languages of the Nuba Mountains. In this regard, we have seen that the integration of Arabic-derived KT is not necessarily associated with a reorganization of the classification of kin relationships in the recipient language. Such is the case of the integration of *ápɔpɔ* (FM, MM, SS, SD, DS, DD) < \**ḥabōba* ‘grandmother’ (FM, MM) in Lumun (cf. 5.1). In other languages, however, Arabic-derived KT can also produce a reorganization following the integration of a loanword. This is the case of the term Arabic-derived term *ammî* ‘paternal uncle’ < \**ʕamm-í* ‘my paternal uncle’ in Tagoi that signals an ongoing conceptual shift from a matrilineal to a patrilineal kin system due to Islamisation (cf. 5.4). Substrate interference from local languages in Kordofanian Baggara Arabic can also be observed in the innovative distinction between ‘paternal grandmother’ (FM) and ‘maternal grandmother’ (MM) (cf. note 8) as well as in the merging of ‘father’ and ‘paternal uncle’ (FB) in addressing forms (cf. note 19).

As a final remark, the comparison of the KT of the Nuba Mountain languages gives some interesting hints concerning the applicability of ‘markedness’ as a comparative concept for kin terminologies (cf. 1, Greenberg 1966; Dahl and Koptjevskaja-Tamm 2001). For example, the marked status of the KT for ‘maternal uncle’ (MB) and kinsmen belonging to the sororal lineage (ZS, ZD) seems to confirm the universalist prediction that collateral relationships are typically more marked than lineal relationships. However, this is not the case of the other collateral relationships in the languages of the sample. In the same manner, the fact that there is no overt expression of affinal relationships (cf. English *in-law*) in languages that largely use compound KT is in contradiction with the expectation for affinal KT to be more marked than consanguineal ones. These exceptions also demonstrate that typological predictions in the domain of kin terminologies cannot be exclusively based on linguistic considerations, as the formal and semantic features of KT are also determined by the way the speakers of a given language socially conceive kin closeness/distance.

<b>Divergence</b>	
<i>Factors of divergence</i>	<i>Features</i>
<i>Broad genetic transmission</i> (Niger-Congo vs. Nilo-Saharan/Kadu)	<ul style="list-style-type: none"> <li>- KT compounding in Nilo-Saharan/Kadu;</li> <li>- Associative plural in Niger-Congo;</li> <li>- Sex of the referent in Nilo-Saharan/Kadu;</li> <li>- Colexification of MB/MBS/MBD in Niger-Congo.</li> </ul>
<i>Narrow genetic transmission – Nilo-Saharan</i> (N. Eastern Sudanic vs. S. Eastern Sudanic)	<ul style="list-style-type: none"> <li>- Compounding in ascending generations in South Eastern Sudanic;</li> <li>- Compounding with restrictive relative clauses in South Eastern Sudanic;</li> <li>- No sex/generation distinction in affinal KTs in South Eastern Sudanic.</li> </ul>
<i>Narrow genetic transmission – Niger-Congo</i> (Heiban/Talodi vs. Katla)	<ul style="list-style-type: none"> <li>- Distinction between 2<sup>nd</sup> ascending and descending generations in Katla;</li> <li>- Anchor's sex marking in Katla.</li> </ul>
<i>Innovation – Kadu</i>	<ul style="list-style-type: none"> <li>- Deictic marking of KTs;</li> <li>- Partial cross-reciprocity between 2<sup>nd</sup> ascending and descending generation;</li> <li>- Colexification of B/FBS/FZS and Z/FBD/FZD in Miri.</li> </ul>
<b>Convergence</b>	
<i>Factors of convergence</i>	<i>Features</i>
<i>Shared sociocultural background</i> (matrilinearity and matrilocality)	<ul style="list-style-type: none"> <li>- Marked KTs for MB, sororal lineage and affinal relationships;</li> </ul>
<i>Diffusion</i>	<ul style="list-style-type: none"> <li>- Lexical roots for F, M and MB;</li> <li>- Colexification of F/FB in Miri and Laggori;</li> <li>- Loss of sex distinction in the 2<sup>nd</sup> descending generation in Nyimang and Laggori;</li> <li>- Optional sex distinction in the 1<sup>st</sup> descending generation in Tima.</li> </ul>

Table 3. An areal typology of KTs in the Nuba Mountain languages

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## List of glosses

1, 2, 3	1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> person
-	morpheme boundary
\	ablaut
ADDR	addressing form
ASS	associative
CC	class concord marker
F	feminine
INCL	inclusive
PERS	persona prefix
PL	plural
POSS	possessive pronoun/determiner
M	masculine
NC	noun class prefix
REL	relative
RES	restrictor
SG	singular

## List of abbreviations for kinship relationships

B	brother
C	children
D	daughter
F	father
H	husband
LA	in-law
M	mother
S	son
W	wife
Z	sister