From asymmetric grammatical treatment of nouns to gender: animacy-based noun classification in Central Africa and its typological significance[1]

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Abstract

As opposed to many African languages described so far, languages in Central Africa have a bias to simple bipartite gender systems based on animacy. This phenomenon must be seen against a general tendency in the area toward a different behavior of nouns/referents high on the nominal hierarchy in a wide range of language structures beyond gender, including a special treatment in pronominalization. The article assesses noun categorization in Central African languages, compares the different systems with respect to their structural relations and historical dynamics, and tries to explain the observed geographical distribution. The results of this survey are not only significant on the level of the African continent but also inform the question of how gender systems emerge and develop more generally.

1 Introduction

The African continent is a global hotspot of languages with grammatical gender (Heine 1982, Nichols 1992), as defined by these two authors as well as Greenberg (1978), Corbett (1991) and many other scholars, namely as noun classification expressed by agreement. Three types of gender systems have already received due attention in African linguistics and beyond. First, there are the typologically unique systems with a large inventory of non-sex-based genders known under the term “noun classes” and commonly ascribed to the large Niger-Congo family in western, central and southern Africa (see, e.g., Westermann 1935, Williamson 1989: 31-40). Second, bipartite or tripartite sex-based gender systems are mostly found in Afroasiatic languages of northern and northeastern Africa (see, e.g., ??, Greenberg 1960, Frajzyngier 2012: 522-3, 538-40) and a few more smaller families, for example, in Khoe-Kwadi, a language group of the Kalahari Basin (see, e.g., Köhler 1962, Güldemann 2004). Starting with Güldemann (2000), typologically interesting gender systems from two other families of the Kalahari Basin, Kx’a and Tuu, have also been subjected to systematic comparative investigation. The systems are similar to those in some Nakh-Daghestanian languages of the Caucasus (cf. §2.3.1) in terms of systemic organization and, in being largely animacy-based, also partly regarding semantic assignment but differ in lacking sex gender.

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These three basic types, which all involve a large amount of semantically arbitrary assignment, account for the large majority of gender languages in Africa heretofore discussed and surveyed in more detail (see, e.g., Corbett 2013a, b).

A number of gender systems in Central Africa are of a yet different type but remain far less known and documented. They are mostly bipartite, semantically transparent gender systems based on a ±animate distinction. An explicit and dedicated description of such a system is Vorbichler's (1963) treatment of the Ituri Bantu language Beeke (D335).[2] Examples (1)-(3) show that in various agreement contexts an animate gender entailing a number distinction illustrated in the examples under a. is opposed to an inanimate number-insensitive gender shown in the counterparts under b.

(1)a.	*nyama*	***ndzo***	*ba-nyama*	***mbaa***
	animal	AN.SG:DEM	PL-animal	AN.PL:DEM
	this animal		these animals	
b.	*bitu*	***ni***	*ba-bitu*	***ni***
	bow	IAN:DEM	PL-bow	IAN:DEM
	this bow		these bows	(Vorbichler 1963: 33)

(2)a.	*seki*	***e****ndi* [< *a-endi*]	*seki*	***b****endi* [< *ba-endi*]
	tortoise	3AN.SG.SBJ:go	tortoise	3AN.PL.SBJ:go
	the tortoise went		the tortoises went	
b.	*singa*	***e****sei*	*ba-singa*	***e****sei* [< ? *V-(e)sei*]
	trap	3IAN.SBJ:sleep	PL-trap	3IAN.SBJ:sleep
	the trap "slept" (= remained set up)		the traps "slept"	(Vorbichler 1963: 33)

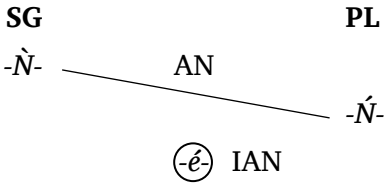
(3)a.	*mè-****m̀****-èní*	*tò*	*mè-****ḿ****-èní*	*tò*
	1SG.SBJ-3AN.SG.OBJ-see	?	1SG.SBJ-3AN.PL.OBJ-see	?
	I saw him/[her]		I saw them	(animal, human)
b.	*mè-****é****-ènì*	*tò*		
	1SG.SBJ-3IAN.OBJ-see	?		
	I saw it/them	(thing, tree)		(Vorbichler 1963: 33)

Table 1 displays the entire agreement system of Beeke as described in the source. Throughout the five agreement targets, a tripartite coding distinction establishes three agreement classes that are best labelled animate singular, animate plural, and inanimate.

[2] For the large Bantu family, I provide at first mention of a language its reference code according to Maho (2009). However, this does not reflect its exact genealogical classification.

Agreement class	Adjective/ numeral	Possessor pronoun	Demon-strative	Subject on verb	Object on verb
1 AN.SG	*ma-*	*yV-*	*ndzo*	*à-*	*-Ǹ-*
2 AN.PL	*ba-*	*(m)bV-*	*mbaa*	*ba-*	*-Ń-*
3 IAN	*a-*	*Ø*	*(i)ni*	*?V-*[3]	*-é-*

Table 1: Agreement classes across various targets in Beeke



Note: agreement classes represented by verbal object indexation

Figure 1: The animacy-based gender system of Beeke (after Vorbichler 1963)

Figure 1 displays the resulting picture in the form of a chart commonly used in describing gender systems (cf., e.g., Heine 1982, Corbett 1991). There is, however, one difference to established conventions in representing the second inanimate gender as a circle around its single class. This is tied to an important trait of gender exponence to be observed more often in the following discussion. That is, the relevant agreement class, in only conveying gender, is number-insensitive or "transnumeral" (note in (1)a. and (2)b. that the classified nouns are not). While such functionally iconic agreement classes encoding the single meaning of a gender value are well-known (cf., e.g., Aboriginal languages of Australia (Harvey 1997) and Tuu and Kx'a languages of the Kalahari Basin (Güldemann 2000)), their significance in the typology of gender systems remains little explored until today.

Descriptions in more comprehensive grammars aside, I am not aware of a treatment other than Vorbichler's of Beeke that focusses on such a bipartite animacy-based gender system in a Central African language by analyzing it in a sufficiently transparent fashion let alone dealing with it from a comparative perspective. Only when involving an additional semantic elaboration of the basic system by a sex-based distinction for animates, has it received attention, as is the case with Zande (cf. in particular Claudi 1985; see §2.1.3 below).

Vorbichler's work is also unique and pioneering in another way. Referring to a yet earlier contribution by Schebesta (1952: 435-7, 450), the author (1963: 23-4, 27, 34; 1968: 414-5) tries to tackle the historical origin of animacy-based gender systems in the area. For the specific context of the northeastern Ituri rainforest, he ventures the hypothesis that they result from prehistorical substrate interference by languages that were spoken by indigenous

[3] The source does not specify the exact form of the inanimate subject index, so that I only represent it tentatively as *?V-*.

forager groups known as “Pygmies”[4] before their commonly assumed shift to languages of food-producing groups that colonized the area later. He writes (1963: 34):

> Die Entdeckung dieser Unterscheidung für das Sua-Kango ist das Verdienst Schebestas. Eine noch zu lösende Frage bleibt es, ob und wie diese Unterscheidung in der ostsudanischen Gruppe Mamvu-Lese-Bvuba-Efe durchgeführt ist und wie sich die Verhältnisse in dem den Mangbetu-Dialekten nahestehenden Asua-ti darbieten. Bewahrheitet sich die Zweiteilung von Lebewesen und Nichtlebewesen für alle Gruppen der Waldneger- und Pygmäendialekte des Ituri-Waldes, so kann diese nur aus einer dritten, noch immer wirksamen Sprachschicht erklärt werden, denn weder die Bantu- noch die Ostsudansprachen kennen sie von Haus aus. [We owe the discovery of this (animacy-based gender) distinction in Sua-Kango (part of the Bira-Komo group of Bantu) to Schebesta. A problem still to be resolved is whether and how this distinction is conveyed in the East Sudanic Mamvu-Lese-Bvuba-Efe group (= Mangbutu-Efe of Central Sudanic) and what the situation is in Asua-ti, the close relative of the Mangbetu dialects (= Mangbetu-Asua of Central Sudanic). Should the division into animate and inanimate entities be shown to hold for all groups of rainforest-farmer and Pygmy forager languages of the Ituri, it can only be explained by means of a third still active language stratum, as neither Bantu nor East (aka Central) Sudanic languages know it.]

Before assessing this potentially areal trait in detail, a few theoretical remarks on gender systems and the assignment feature ±animate are in order. As indicated above, I assume the typological approach by such works as Heine (1982), Corbett (1991), Nichols (1992) etc. in defining gender as noun classification expressed by agreement, that is, as a cross-section between a wider primarily semantic-functional domain and an equally wider but purely morphosyntactic phenomenon. This does not contradict more complex approaches to gender as assumed by Corbett (2014) within canonical typology or in Wälchli and Di Garbo’s (2019: 330-1) “dynamic” characterization. I also follow Heine (1982), Corbett (1991: 5, 168-70), and other scholars in considering pronominal gender systems as an instance of grammatical gender, even though pronouns do not instantiate the most canonical type of agreement.

With respect to the categorization of nouns according to a ±animate opposition, it is important from the very beginning to keep in mind that this distinction needs to be viewed as a language-specific and, to the extent it is semantic, culture-specific phenomenon. This has been amply discussed regarding animacy-based gender systems in Algonquian languages (cf., e.g., Black-Rogers 1982, Straus and Brightman 1982, Goddard 2002, Kilarski 2007). Accordingly, nouns that count as inanimate in one system may well be treated as animate in another and, in particular, the categorization may not meet semantic expectations from a cultural European let alone scientific perspective. This also means that the feature +animate, if semantically definable, is not necessarily the same as the composite of nouns

[4] I refrain from the use of the term “Pygmy” as much as possible and replace it with “(Central African Rainforest) Forager.” I am aware of the fact that this alternative term may not be fully adequate for each group that is/has been subsumed conventionally under the term “Pygmy”.

for humans and (higher) animals, as applies, for example, to so-called "animate concord" in a number of Bantu languages where animal nouns are treated to different degrees as nouns of the human gender (cf., e.g., Wald 1975, Corbett 1991: 98).

With respect to the ±animate distinction, I speak from now on of a "macrogender" opposition. This concept was introduced by Nichols (1992: 126-7) and refers to the highest level of nominal categorization, which can but need not be expressed by a gender system. Importantly, one value of a binary macrogender opposition can subsume a set of more specific genders. The idea also turns up in other studies, for example, Croft (1994) and Dahl (2000a, b). Thus, regarding "elementary gender distinctions", Dahl (2000a: 101) comes to the following basic generalizations about animacy and gender:

> (1) In any gender system, there is a general semantically-based principle for assigning gender to animate nouns and noun phrases.
>
> (2) The domain of the principle referred to in (1) may be cut off at different points of the animacy [aka nominal] hierarchy: between humans and animals, between higher and lower animals, or between animals and inanimates.

The last statement implies that the ±human opposition is an alternative macrogender option, for which a good example is Niger-Congo, whose mainstream system involves one human gender that is opposed to a larger set of genders in the non-human domain (see §2.1.2 on Bantu as a salient example). On the so-called "animacy" hierarchy, which involves at least [human (animate) > (non-human) animate > inanimate],[5] "animate" is one specific focal point opposed to human and inanimate. I thus avoid the more widespread but in this context potentially confusing term "animacy hierarchy" and rather speak neutrally of the "nominal hierarchy" (cf. Matthews 2014), and accordingly use "animate" in the above narrow sense. Moreover, I call the feature values of the animate and human genders as hierarchically "higher" in the macrogender opposition, and inversely the inanimate and non-human genders as "lower." Finally, I do not consider sex genders as a basic macrogender option, which I motivate in detail in §2.2.5 and again in §2.3.1.

The macrogender concept is entrenched in the nominal hierarchy and thus also captures the fact that the semantically basic categorization of ±animate and ±human are conveyed frequently by grammatical phenomena other than agreement-based gender. As I show in this article, such reflexes of noun classification turn out to be highly relevant in the area at issue and crucially inform the emergence of a certain type of gender system.

The paper is organized as follows. In §2.1, I survey the domain of noun classification in Central African languages that straddle the wider transition zone between the rainforest and the adjacent northern savannah belt with a particular focus on gender systems but

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[5] Further possible distinctions on this hierarchy are not relevant in this context and thus not discussed (cf., e.g., Helmbrecht et al. (2018) for the status of proper names or Contini-Morava (2008) on kinship terms within the domain of human referents).

including signs of differential animacy-based grammatical behavior. After a full genealogical survey of the area I discuss each language group separately, namely Bantu, Non-Bantu Niger-Congo aka Ubangi, Central Sudanic, and language varieties of forest foragers. In section §2.2, I discuss the data of my survey from more general perspectives. In particular, I analyze the empirical findings in terms of diachronic typology by establishing different system types and elucidating their historical relationships. I also assess the distribution of animacy-based noun classification across the different linguistic groups in Central Africa in order to trace the emergence of what turns out to be a larger areal trait, thereby addressing also Vorbichler's forager substrate hypothesis, and embed the feature in the wider continental picture about noun classification. In §2.3, I show that my conclusions regarding the Central African phenomenon are highly relevant for the general theory about the typology, evolution, and very emergence of gender systems. A summary in §3 concludes the article.

2 Nominal classification in Central Africa and beyond

2.1 The Central African survey

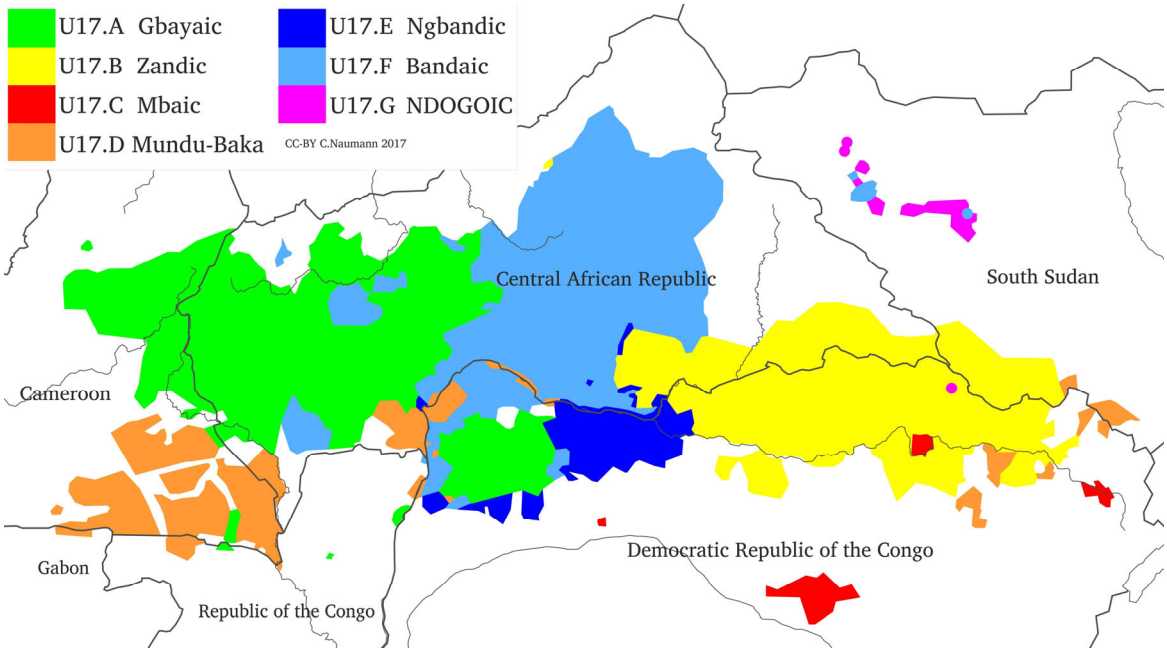
2.1.1 Language classification shorter and geared to later sections

A precondition for a comprehensive synchronic and diachronic assessment of animacy-based noun classification in Central Africa is a robust language classification in order to represent the relevant linguistic lineages completely. Since the widely accepted classificatory framework by Greenberg (1963) is methodologically and empirically inadequate from a modern perspective (cf., e.g., Campbell and Poser 2008), I follow the detailed outline in Güldemann (2018b), which is more cautious about proven genealogical relationships.

A first approximation to the linguistic diversity in the area is already contained in Vorbichler's substrate hypothesis referred to in §1 above. He assumes for his geographical area three linguistic-historical "layers", namely Bantu, "East Sudanic", and "Pygmy". The two last concepts are, however, in need of clarification according to a modern genealogical language classification. What Vorbichler refers to as "East Sudanic" is a concept going back to Tucker (1940) and must not be confounded with the East Sudanic language family proposed by Greenberg (1963) concerning a distinct set of languages (see Güldemann forth. for a recent detailed discussion). Tucker's East Sudanic is a purely areal, genealogically diverse concept comprising modern Central Sudanic (commonly subsumed under Nilo-Saharan) as well as Ubangi affiliated to Niger-Congo. With respect to the languages of Central African Rainforest foragers aka "Pygmies", it is important to recognize that these do not constitute a separate genealogical unit because all foragers have undergone a shift to languages spoken by colonizing food-producing groups, who were themselves linguistically heterogeneous (cf., e.g., Bahuchet 2012). The main concern here is to investigate whether

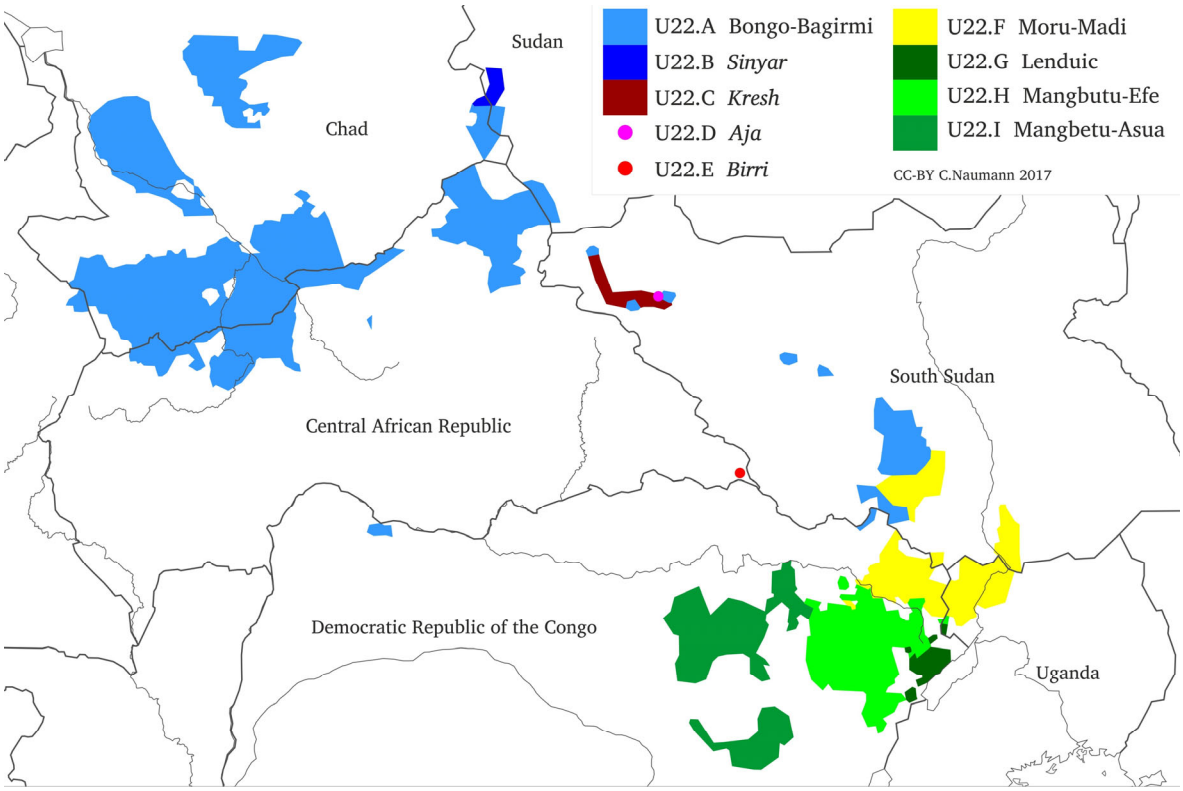
the language varieties spoken by foragers today harbor any features of their pre-shift language(s) that inform the question about the origin of animacy-based gender in Central Africa. Overall, the area hosts more than just three language groups to be distinguished in the present context, which will be surveyed briefly in the following.

Bantu is the largest coherent subfamily within Niger-Congo with an origin around the Nigeria-Cameroon border area (Greenberg 1972). While its historical-comparative reconstruction is highly advanced, its internal classification remains inconclusive despite considerable progress by recent research (cf., e.g., Grollemund et al. 2015). It is the largest language group in Central Africa, with its most compact distribution in the west and south.



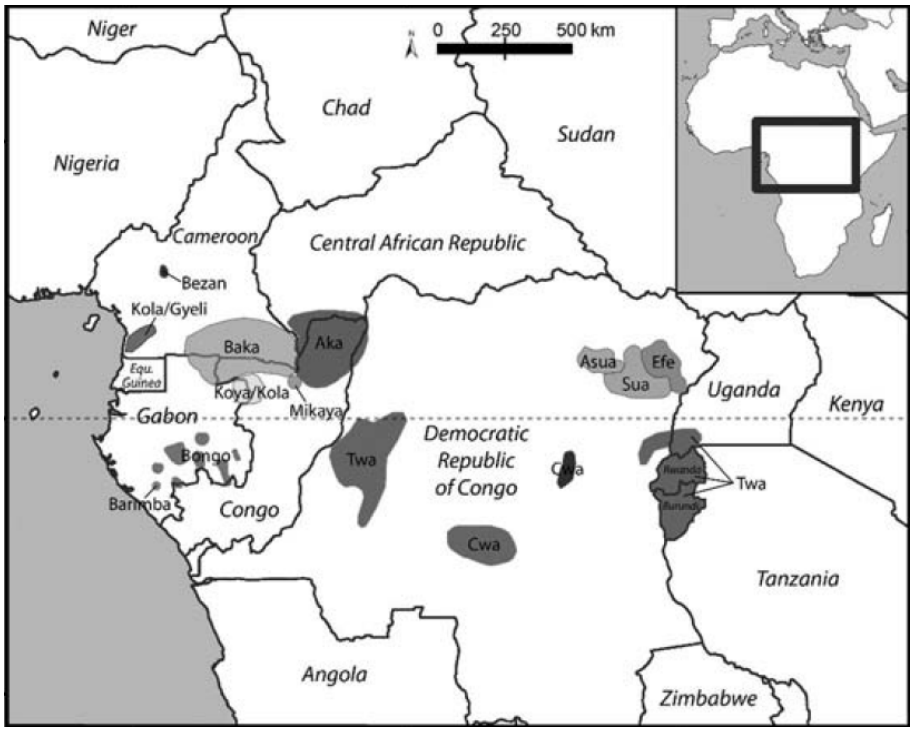
Map 1: Ubangi language groups (Güldemann 2018b: 213)

The language groups subsumed under Ubangi shown in Map 1 are viewed by most linguists as members of Niger-Congo (but see Dimmendaal 2011: 319-20). This assignment aside, they form a geographical cluster rather than a proven family (cf. Moñino 1988, Güldemann 2018b: 213-23). Gbayaic in the west in particular is not closely related to the Ubangi core (Moñino 2010b) and the northeastern group called here Ndogoic is heterogeneous in comprising Narrow Ndogoic, Feroge-Mangaya, Togoyo, and Indri whose relation to each other and other Ubangi languages remains unclear. While I keep using here the term Ubangi, the language set is best conceived of neutrally as an areal pool of Non-Bantu Niger-Congo languages. While Ubangi is overall as entrenched in the area at issue as Bantu, some northern languages are distant from the rainforest.



Map 2: Central Sudanic language groups (Güldemann 2018b: 261)

Central Sudanic is an independent language family rather than a proven member of a Nilo-Saharan super-family (Güldemann 2018b: 261-71). It comprises close to ten subgroups shown in Map 2. Only Mangbutu-Efe and Mangbetu-Asua as well as one geographically isolated Bongo-Bagirmi language straddle the northern rainforest and its borderland.



Map 3: Pygmy groups in Central Africa (Bahuchet 2012: 12)

Finally, the Central African rainforest hosts a number of (former) forager groups who are culturally and biologically distinct from their food-producing neighbors (Bahuchet 2012). Map 3 shows the distribution of the groups that are better known. All forager groups are assumed to have spoken in the past languages that are extinct due to language shift; today, they speak languages of farmer groups who colonized the rainforest later and are repeatedly not their current contact partners. While the basic linguistic affiliation of modern forager languages is mostly clear, their linguistic documentation is overall very poor and/or outdated. Thus, it also remains recurrently open whether they speak a separate language or just a dialect of a language also spoken by non-foragers (see, e.g., Güldemann and Winkhart (forth.) for a recent reassessment of Baka as a dialect of the language complex Baka-Gundi rather than a separate language, pace Bahuchet 2012). Figure 2 gives the genealogical classification of known varieties of important forager groups, showing that they occur in all major language groups encountered in Central Africa.

Lineage	**Language (variety)**
Central Sudanic	
Mangbutu-Efe	**(Efe)**
Mangbetu-Asua	*Asua*
Niger-Congo	
Gbayaic	Bofi
Ubangi (Mundu-Baka)	**Baka**
Bantoid (Non-Bantu)	Bezan
Bantoid (Narrow Bantu)	many and in numerous sub-groups, e.g.:
Zone A:	**Kola~Gyeli (A801)**
Zone B:	Koya (B221), *Bongwe* (B303)
Zone C:	**(Y)aka (C104)**, *Nkundo Twa*, *Konda Twa*, *Foto*, *Jofe* (all C60)
Zone D:	4 varieties in 3 sub-groups: Kango and Sua 1 in Bira-Komo, Tchwa in Huku, Sua 2 in Liko-Bali group (Demolin 2008)
Zone J:	*Interlacustrine Twa*

Note: **Bold** = grammar (Efe description may concern also Mvuba), *Italic* = sketch

Figure 2: Genealogical classification of sufficiently known forager language varieties

2.1.2 Bantu

Bantu languages are known for their elaborate gender system that can be reconstructed for the proto-language (cf., e.g., Meeussen 1967) and which goes back to an earlier state in the higher-order lineage Niger-Congo (Westermann 1935, Williamson 1989: 31-40, Güldemann 2018b: 123-41). The Proto-Bantu system represented in Figure 3 is characterized by extensive agreement as well as overt gender-number marking on nominal controllers, thus

involving a complex inventory of both genders and noun inflections with a large amount of alliteration. A semantic trait important in the present context is the ±human macrogender opposition, which is reflected by a basic distinction of the human gender 1/2 vs. all other, essentially non-human genders.[6]

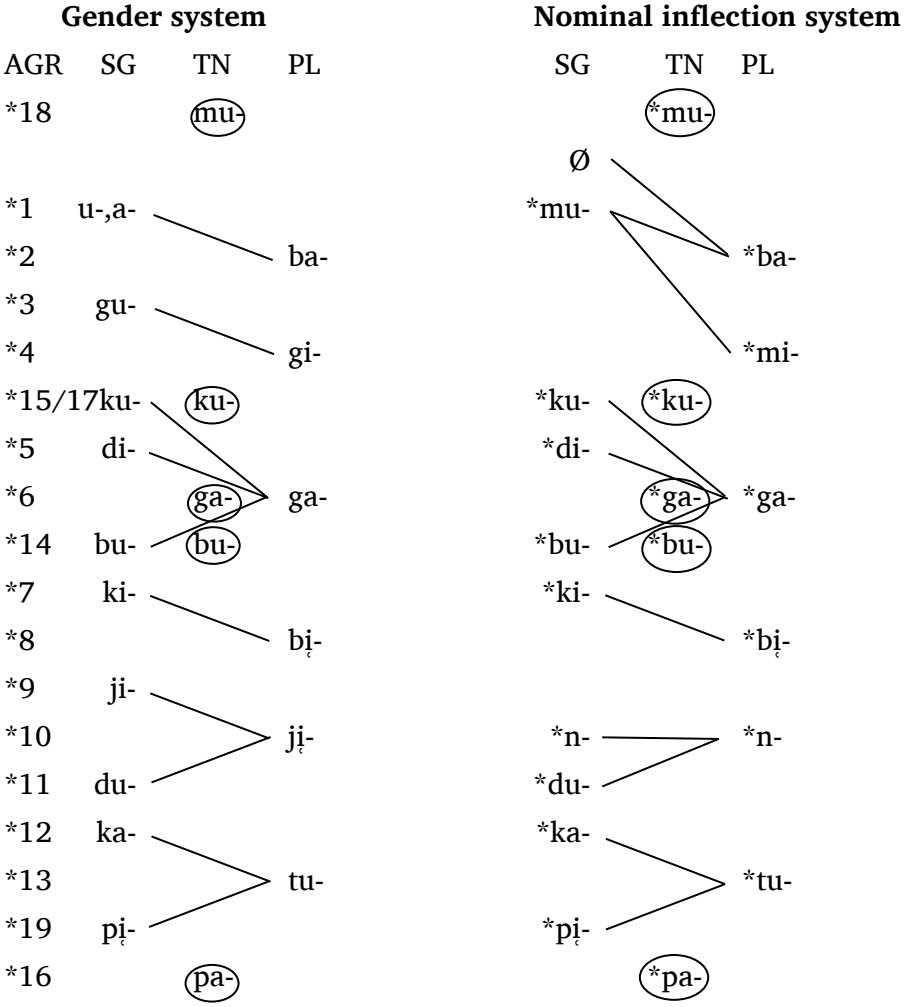


Figure 3: Gender system (left side) and inflection system (right side) of Proto-Bantu

However, many Bantu languages, notably in Central Africa, possess nominal systems that are considerably restructured vis-à-vis that of Proto-Bantu (see, e.g., Maho 1999, Di Garbo and Verkerk 2021, Verkerk and Di Garbo 2021). Such deviant patterns in northern Bantu are due to two major types of change that are in principle independent of each other but can also co-occur. One change is the reduction of the originally elaborate gender inventory, even up to a complete loss of relevant agreement. making a language to lose gender completely. A second change is the macrogender shift from a ±human to a ±animate distinction. The

[6] Both human and non-human nouns may occur in an unexpected gender but are then “untypical” for their class in some way, like, e.g., a human affected by a permanent disability.

complete loss of agreement-based gender aside, the two processes lead to three basic types of gender systems (II-IV) that deviate from the Proto-Bantu type (I), as given in Table 2.

System changes		Macrogender	
		±human	±animate
Gender reduction	NO	I Inherited default	II Pagibete etc.
	YES	III Nzadi etc.	IV Beeke etc.

Table 2: Bantu languages and two types of gender-system restructuring

One deviant type has already been exemplified in §1 with Beeke and is represented in Table 2 in the bottom-right cell under IV, namely a bipartite animacy-based gender system. It emerges by the occurrence of both changes, namely the semantic shift in the inherited gender 1/2 from human to animate as well as the loss of all other genders except one that comes to cater for inanimate nouns and lacks potentially a number distinction. Such systems are reported in Central Africa both in the east and in the west. In the east, Schebesta (1953: 366-73), Vorbichler (1963, 1968), Krzywicki (1985), and Kutsch Lojenga (2003) report it for languages of the Bira-Komo group in the neighborhood of Beeke; but only the two last authors provide more detailed empirical data for the situation in (Plains) Bira (D32) and (Forest) Bila (D311), respectively. Concerning languages in the west, compare Wega (2016) for Polri (A92a), Ernst (1992) for Kako (A93), Richardson (1957: 35) for Pande (C12), Richardson (1957: 39-42), Bouquiaux and Thomas (1994: 93), and LePage (2020: 37-41, 60-1) for Mbati (C13), and finally Meeuwis (2010) for Kinshasa Lingala (C30B).

A second deviant system type in Central Africa, represented in Table 2 in the bottom-left cell under III, seems to be rarer (see, e.g., Crane, Hyman and Tukumu 2011 for the case of Nzadi (B865)). It is similar to type IV regarding the drastic reduction of the gender inventory to a binary distinction but remains close to Proto-Bantu by retaining the basic semantic opposition of ±human. It is thus of minor relevance for the present topic of animacy-based gender in Central Africa.

The third deviant system shares with type IV that gender 1/2 encodes animate nouns but differs from it in that the other genders remain largely intact. In Table 2, this system with one animate and multiple inanimate genders is given in the top-right cell under II. An example is Pagibete (C401) according to Reeder's (2019: 454-6) description. While most of the close to ten agreement patterns of its gender system are assigned according to the morphological form of the relevant nouns, the agreement class pair 1/2 seems to be used for humans and animals irrespective of inflectional noun marking.

The apparent macrogender distinction of ±animate has additional reflexes in Pagibete in that nouns distinguished according to this semantic criterion also behave differently in various other grammatical contexts. For example, in nominal coordination, the element *ɓúnà* is restricted to conjoining animate nouns as opposed to the other, more

flexible marker *nà* (Reeder 2019: 462). Similarly, the form of the genitive linker is determined by the animacy of the possessor: animate nouns involve an agreement marker followed by *kà*, as with 'chimpanzee' in (4)a., while inanimate nouns require a different series of connectives, as with 'village' in (4)b.

(4)a. *ngí* ***wé-kà*** *ɓà-kómbòzó*
3.village 3-GEN.AN.POSSR 2-chimpanzee
'village of the chimpanzees'
b. *ɓà-gbàyá* ***ɓá*** *ngí*
2-elder 2: GEN.IAN.POSSR 3.village
'elders of (the) village' (Reeder 2019: 459)

Furthermore, the repetitive verb suffix has two allomorphs: *-ɛg-* is used for animate and *-ag-* for inanimate objects; hence, *bòm-ɛg-* 'beat an animate being, such as a dog' vs. *bòm-ag-* 'beat an inanimate object, such as a drum' (Reeder 2019: 465). Finally, there is transitive verb type on which an object can only be indexed if it is animate, as shown in (5).

(5)a. *à-bìb-ìs-í* *ò-ɓɔ́kɔ̀*
3SG.SBJ:PST-raise-CAUS-PST 15a-arm
'He strengthened the arm.'
b. *à-**m**-bìb-ìs-í* *míkí*
3SG.SBJ:PST-3AN.SG.OBJ-raise-CAUS-PST 1a.child
'She raised the child.' (Reeder 2019: 469)

The semantic reorganization of the inherited gender 1/2 from human to animate in contrast to a multiplicity of retained inanimate genders as well as differential grammatical behavior of animate nouns beyond gender agreement appears to be widespread in Bantu C40 languages. This emerges from descriptions of Ngombe (C41) (Motingea Mangulu 1988: 26); Bati (C43) (Nkabuwakabili 1986: 64, Motingea Mangulu 2005: 132); Boa (C44) (Motingea Mangulu 2005: 44-50); and Beo (C45A) (Gérard 1924: 13, 17, 24, 38, 104, 120).

There are other Bantu languages in Central Africa and beyond where the inherited gender system is intact, including gender 1/2 still being essentially human, but animacy-based agreement exists as a non-universal and/or non-obligatory phenomenon. Such more widespread "animate concord" does not create a categorical and consistent distinction between animate and inanimate nouns, although such a system may well emerge this way (cf. Wald 1975, Corbett 1991: 98). ??Swahili possibly animacy-based Here, I distinguish the fully animacy-based types II and IV from partial animate agreement and analize the latter as still pertaining to languages that keep in line with Proto-Bantu where gender 1/2 is

essentially human.[7] Languages with the inherited picture are subsumed under type I in the top-left column of Table 2.

2.1.3 Non-Bantu Niger-Congo ??subchapters for subgroups

In this section, I survey noun classification in the languages commonly subsumed under Ubangi. I start out with the situation in the genealogically isolated Gbayaic family. The data given in Moñino's (1995, 2010a) comparative studies show that these languages recurrently have an animacy-based distinction in 3rd-person pronouns. This is attested in all major branches of the family, particularly in the southern and eastern languages spoken close to and in the rainforest. Table 3 gives a summary and (6)-(9) are illustrating examples.

Family sub-classification			Language variety	AN	IAN	
Southern-Western	Western	Bokoto-Gbeya	Gbeya	*ʔǎ̀*	*-à*	POSSR
		Northwest	Yaayuwee	*ʔà*	*-à*	OBJ
	Southern		'Buli	*ʔà*	*yò*	SBJ
Eastern			Manza	*ʔà*	*mâ*	SBJ
			Ngbaka Minagende	*ʔà*	*má*	SBJ

Table 3: Gender distinction in 3rd-person singular pronouns across Gbayaic (after Moñino 1995: 65, 98, 169, 227, 242, 421-2; 2010a: 89)

Gbeya (Western, Bokoto-Gbeya)

(6)a. *ɗòŋ-ʔǎ̀* /ɗ**ò**ŋǎ̋ǎ̀/
back-3SG.AN
his/her back ~ behind him/her

b. *ɗòŋ-à* /ɗ**ò**ŋáà/ ~ [ɗ**ǒ**ŋǎ̋ǎ̀]
back-3SG.IAN
its back ~ behind/after it (Moñino 1995: 169)

Yaayuwee (Western, Northwest)

(7)a. *ʔám* *zɔ̀ká* *ʔà*
1SG see 3SG.AN
I have seen him/her.

[7] Regarding this distinction, Di Garbo and Verkerk (2021: §3.2) report "Our coding for animacy-based marking aims at capturing whether any type of animacy distinction is marked on any of the fourteen target types, but does not differentiate between specific cutoff points along the Animacy Hierarchy (that is, whether the distinction is between 'human' vs. 'everything else' or 'animate' vs. 'inanimate')." In not differentiating between my type II and partial animate agreement, their Bantu survey is insufficient for assessing the problem issue.

b. *ʔám* *zɔ̀káà*
1SG see:3SG.IAN
I have seen it. (Moñino 1995: 65)

'Buli (Southern)

(8)a. *ʔà* *gàsá*
3SG.AN be.big
S/he is big.

b. *yò* *gàsá*
3SG.IAN be.big
It is big. (Moñino 1995: 98)

Ngbaka Minagende (Eastern)

(9)a. *mbálàwálá* *yú,* *à* *úsú* *tí* *bùlúkù*
monitor.lizard escape 3SG.AN hide under grass
le varan s'enfuit, il se cacha sous les herbes.

b. *tè* *má* *tɨ́á*
tree 3SG.IAN fell
l'arbre est tombé (Maes 1959: 19-20, 34, 120)

introduce the concept of pronoun zero > example, now entertained too abruptly

The examples show that the pronominal distinction arises in variable morphosyntactic contexts, namely as bound possessor in (6), as partly bound object in (7), and as free subject in (8) and (9). The animate forms are cognate, despite the different grammatical roles, and go back to Proto-Gbayaic *ʔɜ̀̀ with a plural counterpart *wà (Moñino 1995: 421-2). The inanimate forms, however, differ and thus appear to have been innovated later in addition to the basic set *ʔɜ̀̀/wà (see §??). That is, the diversity indicates that individual languages used different reference devices in different contexts for inanimates, including pronominal zero, which is also reported for some languages (see below). Hence, it is not necessary to conclude from the diverse modern data that animacy-based noun classification by means of pronouns is the result of recent innovation. It is equally possible that the proto-language had a system as in Figure 4, which already encoded the distinction by overt pronouns for animates vs. zero for inanimates, at least as a strong discourse preference.

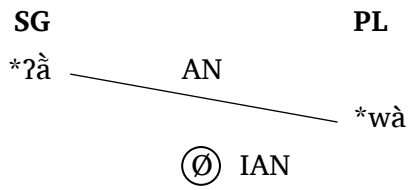


Figure 4: The possible animacy-based pronoun system of Proto-Gbayaic

This system can account for the partly diverse situation in modern languages, including cases of a covert animacy system. This is reported, for example, by Samarin (1966: 81, 102, 135) for Gbeya: a) overt pronouns, if used, are strongly preferred for animates, even if the system leaks depending on the discourse context, and b) plural marking is far less common on inanimate nouns, a trait Tucker and Bryan (1966: 89) mention for Gbayaic in general.

Even without Gbayaic, Ubangi is a complex language group whose internal historical profile is largely opaque. Güldemann (2018b: 213-23) lists close to ten subgroups whose exact relationships to each other are uncertain. Owing to poor documentation the historical assessment remains particularly unclear in the northeast, in the western South Sudan, where one has to distinguish Feroge-Mangaya, Togoyo, Indri (all subsumed under a so-called Raga group), and the Ndogoic family. Most languages are only known in published form from Santandrea's (1950, 1961, 1969) research, whose description does not always meet modern standards.

I begin with a treatment of the four Raga languages. For Feroge-Mangaya, Santandrea (1969: 106-8) reports that 3rd-person pronouns are largely used for humans and animals as opposed to several other reference devices for inanimate nouns. Normally inanimates are not at all pronominalized, but depending on the context, a so-called "neuter" pronoun *a*, demonstratives or, occasionally in Mangaya, the normal 3rd-person pronouns can be used. That is, personal pronouns are essentially pronouns referring to animate entities. For Togoyo, Santandrea (1969: 110) reports demonstratives to serve as "neuter" ~ inanimate pronouns.

Santandrea's complete data on Indri has been subject to a dedicated linguistic analysis by Huber (2017). It shows that 3rd-person pronouns distinguish nominal referents according to animacy and for animates also number; a "neuter" pronoun *le/lɛ* or zero pronominalization apply to inanimate referents. This suggests an animacy-based pronominal gender system as shown in Figure 5 (see also Santandrea 1969: 108-9).

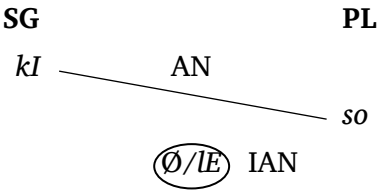


Figure 5: The animacy-based pronoun system of Indri (Huber 2017: 34)

The preferential treatment of animates in Indri is also supported by Santandrea's (1969: 76) observation that the plural prefix *cu-* is only employed for such nouns. The overall picture thus echoes the situations in a Bantu language like Beeke as well as Gbayaic languages where the default number-sensitive pronouns are largely used for animate referents and animate nouns receive also other kinds of special grammatical treatment.

The Narrow Ndogoic family, too, is only known poorly. The only published sources are a missionary grammar of Ndogo by Ribero (1922), grammatical family surveys by Santandrea (1961) and Tucker and Bryan (1966), and a short treatment of the noun phrase in Belanda Viri by Wau (2002). None of the sources reports a pronominal gender system, although Santandrea (1961: 30-1, 52-4, 58, 71, 108) refers to a “neuter pronoun” that interacts with other reference devices partly similarly to such pronouns in neighboring Ubangi and Central Sudanic languages. Moreover, Tucker and Bryan (1966: 89) observe that only animate nouns are regularly marked by a plural affix, so that such nouns seem to have a special grammatical status at least in some contexts.

Winkhart’s (2015) first comparative treatment of the Mundu-Baka family also does not give any hint toward an animacy-based gender distinction by means of pronouns or other linguistic forms that single out animate nouns. However, a dedicated search in available grammatical descriptions reveals that the situation in various languages is overall similar to cases just dealt with. In particular, the basic 3rd-person pronouns are predominantly used for animate referents like humans, animals, personified objects etc., which contrasts with the absence of overt reference to inanimates or reference to them by means of a deictic element, a generic noun like ‘thing’ or the repetition of the noun itself. Since I give evidence in §2.1.5 and §2.2.1 below that other Mundu-Baka languages of both the western and eastern branches display such a system, I restrict myself here to Monzombo of the western branch as described by Boyi (1983: 148, 245). It is the only language where an animacy-based pronominal distinction is explicitly reported, as shown in Figure 6; additionally animate nouns are targeted preferentially by the plural enclitic *-ō*.

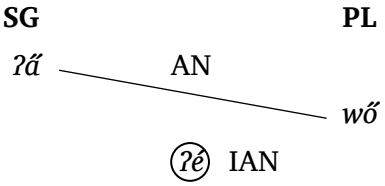


Figure 6: The animacy-based pronoun system of Monzombo (Boyi 1983)

Languages of the Bandaic family also have systems with 3rd-person pronouns distinguishing animacy and for animates also number. A case in point is the Mono system presented in Figure 7 (Kamanda Kola 2003: 269-79, 443-7).

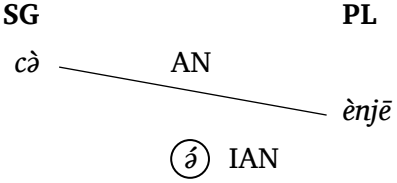


Figure 7: The animacy-based pronoun system of Mono (Kamanda K. 2003)

This language also displays various types of animacy-sensitive grammatical behavior of nouns. Thus, plural marking by the prefixes *à-/àlà-* is restricted to animate nouns or their quality attributes (Kamanda Kola 2003: 180, 247-259, 281-2, 288-9). Genitive linkers interact with animacy features of both nouns involved in the construction (Kamanda Kola 2003: 324-46). Finally, there are various forms for the quantifier 'many', namely *úkpú* and *ɨ̄lɨ̄* for animate nouns and *àgà* for inanimate nouns (Kamanda Kola 2003: 318).

Parallel situations can be observed in all other sufficiently described Bandaic languages, notably Mbandja (Tingbo-nyi-Zonga 1978: 68-9, 82-8, 94-6, 98-102), Bambari-Linda (Cloarec-Heiss 1986: 45, 58, 71, 81, 95, 100-1, 104, 203-6, 218), and Ndele-Tangbago (Sampson 1997). Regarding Banda in general, Santandrea (1965: 64-7) also reports zero pronominalization of inanimate nouns in connection with prepositions, and Boyeldieu and Cloarec-Heiss (1989: 9) confirm an animacy-based distinction in genitive constructions.

In Ngbandic, whose core is a language complex rather than a family of different languages, 3rd-person pronouns also refer largely to animate entities, while Ø (or other proforms such as a generic noun *yé* 'thing' or a demonstrative) refer to inanimates. Figure 8 displays the pronoun inventory of Northern Ngbandi according to Toronzoni (1989: 271-92); see also Samarin (1963: 127, 135-46) on Sango, and §2.2.4 on the more distant Gbayi.

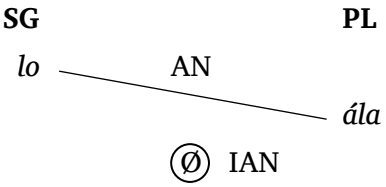


Figure 8: The animacy-based pronoun system of Ngbandi (Toronzoni 1989)

Animate nouns also behave differently from inanimate nouns in other respects. As in other languages dealt with above, the plural word∼prefix *á* is restricted to or at least strongly biased toward animate nouns (cf. Toronzoni (1989: 208-14) on Ngbandi, Samarin (1963: 127, 132-4) on Sango). Toronzoni (1989: 313-6) describes genitive linkers to select differently for the possessor noun, namely *té* for animates vs. *tí* for inanimates (but see Lekens (1923: 16) for potential counterexamples). Finally, wh-elements and their constructions also differ according to the animacy of the questioned referent, as illustrated in (10)b. for an animate and (11)b. for an inanimate noun (Toronzoni 1989: 493-4).

(10)a. *zɛ̃̀ hándà nákó*
leopard outwit turtle
Le léopard a trompé la tortue.

b. ***zo*** *hándà nákó* ***nà?***
person outwit turtle AN.INTERR
Qui a trompé la tortue? (Toronzoni 1989: 493-4)

(11)a. *nzɛ́ngɔ́ ho lɔ́ngɔ* (proverb)
fatigue kill snake
La fatigue a tué la vipère.
b. ***yé*** *ho lɔ́ngɔ* ***nɛ?***
thing kill snake IAN.INTERR
Qu'est-ce qui a tué la vipère? (Toronzoni 1989: 494)

Taking anaphoric and interrogative pronouns of Northern Ngbandi together, the animacy-based classification in 3rd-person forms can be summarized as in Table 4.

Gender-number		Pronoun	Interrogative
AN	SG	*lo*	*zo … nà*
	PL	*ála*	
IAN		*Ø*	*yé … nɛ*

Table 4: The pronominal system of Northern Ngbandi (after Toronzoni 1989)

As opposed to most other Central African language groups, the Zandic family has received some attention in the literature on gender, with particular reference to its major language Zande (see in particular Claudi (1985) as the most extensive study). However, since this language has a sex distinction for human nouns, animacy has not been recognized as a salient feature for gender assignment. I argue in the following that pronominal systems in Zandic languages, while certainly more elaborate, are in fact variants of the simpler pattern described above for neighboring Ubangi languages and historically derived from it.

That the family is in line with the general areal trend toward animacy-based noun classification is suggested by the fact that the meaning of nouns in most Zandic languages determines their interaction with prefixing plural morphology, that is, it is largely restricted to animate nouns (cf. Tucker 1959: 119, 140-1 and Tucker and Bryan 1966: 145-6). A deeper analysis of the pronoun systems across the family confirms this indication.

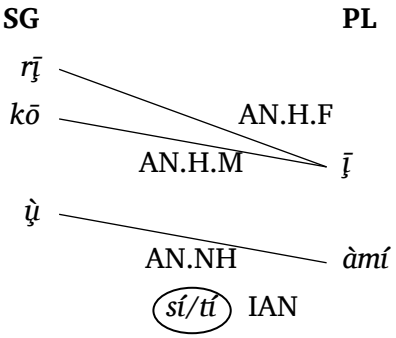


Figure 9: The pronoun system of Zande (after Boyd n.d.)

I start out with the case of Zande itself, which has the most complex and best-described system. Figure 9 shows that it distinguishes four genders, inanimate, animate non-human, animate human masculine, and animate human feminine, whereby all but the first gender involve a number distinction. Earlier authors like Gore (1926), Tucker (1959: 45, 47, 86, 93, 98-9, 118), and Santandrea (1965: 69) labelled the first two genders "neuter" and "animal", which might suggest a primary ±human opposition. My analysis follows the later research, starting with Claudi (1985), which, based on various types of evidence, questioned such a dichotomy and eventually came to refer to the "animal" gender as animate (cf., e.g., Boyd n.d., Pasch 2012: 506). In particular, quite similar to the situation in Algonquian languages, the distinction in the non-human domain is lexicalized and semantically not fully transparent as the pronominal anaphor of certain (groups of) technically inanimate nouns is that of non-human animates (see the information and discussion by Gore (1926: 21-2) and Claudi 1985: 114-27)). Moreover, the pattern of number marking is clearly that of other languages of the area in singling out only the inanimate pronoun for not encoding this feature. I thus argue that the pronominal gender system of Zande is indeed sensitive to a grammatical ±animate distinction and that this is more basic than the distinctions within the set of animate nouns, which are ±human and, for humans, feminine vs. masculine.

The pronoun systems of Geme and Nzakara, the closest relatives of Zande, have a more or less similar structure. The situation in Geme appears to be identical to that in Zande according to Boyd and Nougayrol (1988: 71).

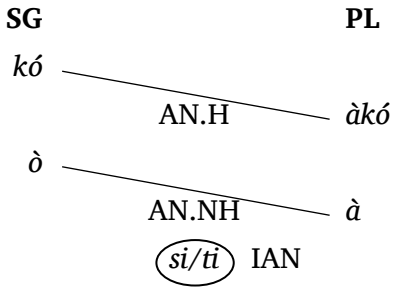


Figure 10: The pronoun system of Nzakara (after Tucker 1959)

Figure 10 gives the Nzakara system as per Tucker (1959: 118-9, 126-37) according to whom the major differences to Zande are the lack of a feminine gender, the masculine form of Zande thus encoding the human gender, and that the animate human plural form is not simplex but based morphologically on the singular. According to R. Boyd (p.c.), Tucker's description is, however, unclear and other studies indeed vary from this picture by even failing to record a ±human distinction. Thus, Santandrea (1965: 75-6) and Foulou-Bazouma (2006: 78-86) only report the forms *kó/àkó* as general animate pronouns, which would yield a simple gender system of the ±animate type recorded for most other Ubangi languages.

The insufficiently documented Ngala aside, the two remaining Zandic languages are Barambu and Pambia, whose description are also not extensive but at least sufficient for

attempting a basic analysis for the present purpose. As they are closely related, they are treated together. Based on Tucker (1959: 184-92, 223-6), Santandrea (1965: 69, 77-9), and Tucker and Bryan (1966: 146-7), the pronoun system can be schematized as in Figure 11.

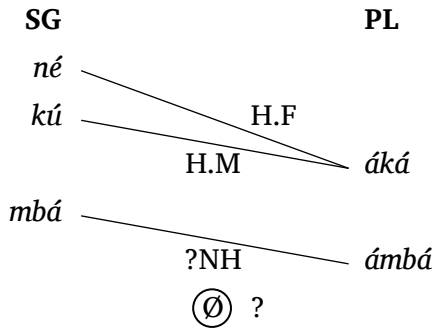


Figure 11: The pronoun system of Barambu-Pambia (after Tucker 1959)

The most striking difference to other Zandic languages is the absence of a clear distinction between an inanimate and a non-human animate gender, revolving around the meaning of *(á)mbá* and possible zero reference for inanimates. According to the available descriptions, reflected in Figure 11, there would thus be a pronominal system with a bipartite ±human gender distinction. However, given that the relevant empirical data are scarce and that Santandrea (1965: 78-9) reports zero reference for inanimate nouns and a plural "animal"~animate pronoun at least for Pambia, this analysis remains inconclusive.

The considerable differences across the Zandic family begs the question which profile the proto-system had. There are two assessable aspects pertinent to this problem. For one thing, there may exist elements that occur in all/most languages and are thus plausible to reconstruct in some form. The only uncontroversial candidate for this is *kO whose original plural counterpart was possibly formed by the addition of the general plural prefix *a-, since this is attested in both primary branches, but whose exact original meaning is not clear (either human masculine or some more general type of human/animate).

However, even reconstructible *kO is not necessarily old, which relates to the second historical aspect throwing light at the time depth of the pronominal systems in modern Zandic and the nature of the proto-system, namely the partial etymological transparency of forms as being derived from earlier noun lexemes. This question has been discussed extensively by Claudi (1985: §3.4) for Zande and partly the family as a whole. For *kO, she (p.132-4) proposes that it originates in a nominal lexeme 'male, man.' This idea is strongly supported in my ongoing historical-comparative research in that there is an etymon of this form and meaning that is widespread in Ubangi in general. If the most plausible Proto-Zandic reconstruction is etymologically still transparent, it is conceivable that other, more diverse modern forms are historically not deeply entrenched either. Claudi indeed makes a number of other proposals about the nominal origin of modern pronouns in Zandic, for which there is no space here to assess them all in detail (but see §2.2.3).

There is, however, one other form whose history informs the important question of whether the basic distinction in Proto-Zandic was ±animate as in Zande-Nzakara or ±human as in Barambu-Pambia, namely the semantically indeterminate pronoun *mba of the last branch. While it may be a form for non-human or even inanimate entities today, Claudi (p.132-4) assembles evidence that makes it more likely that *mba started out as an animate pronoun. Thus, it occurs as the second component of compounds of the form *'male/female'-mba, namely *ku-mba* 'male person' in Zande-Nzakara and similarly *kye-mba* 'male (animal)' vs. *na-mba* 'female (animal)' in Barambu-Pambia. Such structures only make sense if the second element once referred to an animate entity. The author even suggests from evidence outside Zandic that *mba ultimately derives from a noun with an original meaning 'body, skin'. All this indicates that the reported modern reference of *mba* in Barambu-Pambia to inanimate nouns is a secondary meaning. This in turn implies that the earlier gender distinction in this branch was also ±animate, which is also compatible with the existence of zero anaphor as well as the considerable diversity of overt pronouns for inanimate nouns across modern Zandic languages.

The following can be said when comparing the pronoun systems of Zandic with the systems in other neighboring Ubangi languages. While the former are without doubt more complex than the latter and their additional sex-gender distinction also makes them appear to be very different semantically, it must not be concluded that the modern picture reflects a very old difference between Zandic and other Ubangi languages. On the contrary, the profile of noun classification in Zandic is not only compatible with a late complexification of and differentiation between language-specific pronoun systems but also with the reconstruction of a simpler proto-system with a primary ±animate opposition (see also §2.2.5).

The last lineage subsumed under Non-Bantu Niger-Congo is Mbaic with four member languages. The situation regarding noun classification in this family is unique for several reasons, not just in the area but on the continent as a whole (cf. Heine 1982, Pasch 1986, Corbett 1991: 184-8). The most relevant fact, to be discussed here in more detail, is that all languages display pronominal gender systems, which are mostly animacy-based. All languages also have a system of agreement-based gender or at least classificatory noun suffixes of the Niger-Congo type. However, the Proto-Mbaic reconstruction by Pasch (1986), despite of being inspired by the system in the rest of the higher-order family, is not obviously cognate with it (nor can the Mbaic system be attributed to contact with Bantu), which represents a kind of historical puzzle. Finally, one language, Dongo, has an additional system of possessive classifiers, which is so far unique in Africa but not treated here. Mbaic thus seems to be the most complex family in Africa regarding noun classification.

The complex picture of noun classification in Mba, the largest Mbaic language, is summarized in Fiedler, Güldemann and Winkhart (2021). It possesses two largely independent gender systems, a semantically transparent pronominal one with animacy- and sex-based distinctions and another semantic-formal one of the Niger-Congo type with a basic

±human opposition. While there is interaction in some agreement constructions between the pronominal and the Niger-Congo type system, Mba is best seen as a case of so-called "concurrent noun classification" in terms of Fedden and Corbett (2017). Figure 12 gives the relevant pronominal gender system. It has a basic ±animate distinction, whereby the inanimate gender has zero exponence thus being insensitive to number and the animate gender shows a sex distinction between human masculine and all other animates.

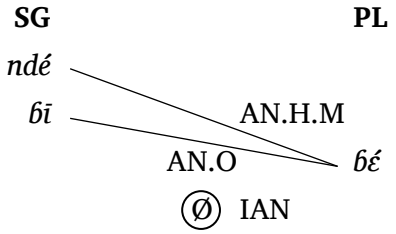
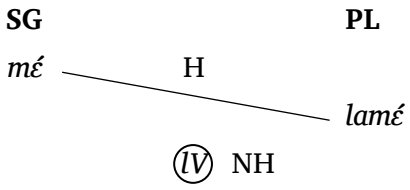


Figure 12: The animacy-based pronoun system of Mba (Fiedler, G. and W. 2021: 320)

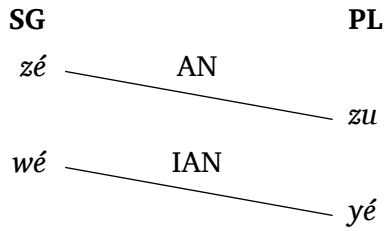
Ndunga is genealogically closest to Mba, which is among other things evident in its Niger-Congo type gender system. However, its pronominal gender system does not bear close resemblance to the one in Mba but only conforms in some structural aspects to wider areal trends. As seen in Figure 13, Ndunga has two genders (one without a number distinction), lacks the sex distinction found in Mba, and, most importantly, its macrogender opposition is based on humanness. This semantic feature is unique in Mbaic but streamlines, so to speak, the pronominal gender system according to the Niger-Congo-type one, making Ndunga look more similar to a canonical Bantu language (see also §2.2.4).



Note: non-human nouns are further sub-classified within the inherited "noun class" system

Figure 13: The human-based pronoun system of Ndunga (after De Boeck 1956: 31-3)

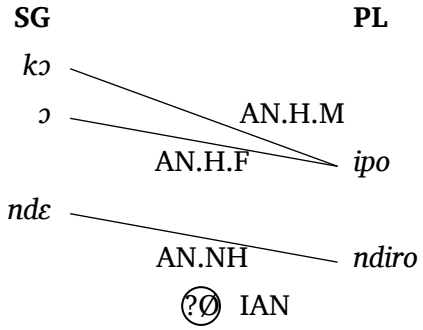
The pronominal system of Dongo presented in Figure 14 has resemblances to both Mba and Ndunga. In line with patterns entrenched in the area and the Mbaic family, the gender opposition is binary and based on animacy. Similar to Ndunga, the pronominal and the Niger-Congo type systems of Dongo have an identical macrogender distinction. However, Dongo dissolved the original concurrency still evident in Mba in the opposite direction. Taking the pronominal system as the semantic baseline, it has reorganized the Niger-Congo type system by reshaping its originally human to an animate gender resulting in a situation that is comparable to that in restructured Bantu languages of type II (cf. Table 2 in §2.1.2).



Note: inanimate nouns are further sub-classified within the inherited “noun class” system

Figure 14: The animacy-based pronoun system of Dongo (after Pasch 1986: 188-261)

The last language Ma has the most complex pronominal gender system in Mbaic presented in Figure 15 (cf. Junker 1888/9: 62, Dupont 1912: 24-5, Czekanowski 1924: 657-69, Pasch 1986: 339-51). The basic distinction is inanimate, presumably with zero anaphor and thus without number differentiation, as opposed to animate. The second higher macrogender domain is divided into non-human, human masculine, and human feminine, the latter two conflated into a single plural. In terms of systemic and semantic structure, this situation is exactly that of Zande - the major contact language of Ma.



Note: the two exponents are pronoun~agreement marker

Figure 15: The animacy-based pronoun system of Ma (after Pasch 1986)

Ma only retained the inherited Niger-Congo type classification system intact in the nominal inflection, while the relevant gender agreement has been largely lost. This trait makes it even more similar to Zande and other non-Mbaic Ubangi languages. However, Ma kept agreement in the noun phrase, which now follows semantically the binary ±animate distinction (Pasch 1986: 305-6, 309-13). The singular/plural pair, *ɓ/ɗ*, for all three animate genders is reminiscent of the exponents of the earlier genders 12/8 and 12/10 with a strong bias toward animate nouns, while the inanimate pair, *w/y*, displays the thematic consonants of the historically old inanimate gender 7/2, and is identical with the inanimate set in Dongo. These facts indicate that Ma went through a state similar to that existing still today in Dongo whereby agreement of the old non-pronominal gender system was partly recruited for a new unified classification system based purely on animacy.

Table 5 provides an overview of nominal gender classification in the Mbaic languages. I assume that the original situation in the family was that still existing in Mba

with two originally independent, aka concurrent, systems. The other three languages were subject to specific dynamics, so that each has today its own configuration regarding the treatment of the macrogender distinction. In short, Ndunga extended the Niger-Congo-type pattern to the pronouns, while the opposite happened in Dongo and Ma, the latter also losing agreement beyond the animacy-based dichotomy.

Language	Ndunga	Mba ?and Proto-Mbaic	Dongo	Ma
Niger-Congo type inflection	Yes	Yes	Yes	Yes
Niger-Congo type gender	±human	±human	±animate	-
Pronominal gender	±human	±animate	±animate	±animate

Note: frame = canonical for Niger-Congo,
shading = typical for the area but untypical for Niger-Congo

Table 5: Summary of gender-based noun classification in Mbaic

2.1.4 Central Sudanic

Compared to Ubangi languages, animacy-sensitive noun classification is far less salient in the Central Sudanic family. I have not found signs of animacy-based gender and/or noun behavior in Lenduic (Deleu 1934, Tucker 1940, Kutsch-Lojenga 1994) and Mangbetu-Asua (Larochette 1958). The languages of the Moru-Madi and Mangbutu-Efe groups also lack gender but occasionally show an asymmetric noun behavior due to animacy. Thus, Blackings and Fabb (2003: 363, 378, 399) report for Ma'di that some postpositions have a ±animacy restriction. For Lese, it is reported that genitive constructions interact with animacy features of the possessor (Vorbichler 1965; 1968: 410-footnote 2, 414) and the goal postposition has two forms shown in (12). In particular, *-ɓɔ* is reserved for animates, as in (12)c. and d., as opposed to *-ni* used for all inanimates, as in (12)a., and animates, provided the noun is extended by another locative suffix, as in (12)b. (Vorbichler 1965: 90-1).

(12)a. *mɛsà-ni*
table-IAN.DIR
to/away from the table

b. *àfɔ̀-**ba**-ni*
father-at-IAN.DIR
to/away from father

c. *àfa-ɓɔ*
father-AN.DIR
to my father

d. *u̲ra-ɓɔ*
animal-AN.DIR
to the animal (Vorbichler 1965: 90-1)

While the situation in the three central isolated languages Kresh, Aja, and Birri is insufficiently known, it seems to be somewhat different to the previous Central Sudanic groups. Santandrea's (1976: 98) description of Kresh is similar to Ubangi languages of the neighborhood in that the use of pronouns seems to point to a ±animate distinction:

> The following may be taken as general rules about the matter, with a great allowance for exceptions. "Our" neuter pronoun is normally left out in these languages, both as a subject and as an object. If stress is laid on it, a suitable demonstrative may replace it. When speaking of a particular object, the word "thing" is frequently heard, usually followed by a demonstrative. For the plural, the pers[onal] pron[oun] is employed when clarity of speech is required. This is always done when speaking of animals, unless there are other terms which replace it: e.g. a demonstrative.

An apparently similar situation potentially holds in geographically close Aja according to Santandrea (1976: 244-text 5, footnote 4). Only the short sketch of Birri does not provide any sign of an animacy-based noun distinction (Santandrea 1966: 203).

In Bongo-Bagirmi, the largest Central Sudanic group, the picture correlates with the geographical location of the languages. Virtually all languages are outside the zone at issue here and appear to lack animacy-based noun classification. Only Furu~Bagiro is spoken far to the south on the Ubangi River, in the vicinity of Bantu and Ubangi languages and, not surprisingly, behaves similar to its neighbors. At least 3rd-person singular possessive pronouns display an animacy-based distinction of a mid-tone suffix for animate vs. *ná* for inanimate possessors, as shown in (13)a. vs. (13)b. (Boyeldieu 2000: 74-5, 86-92, 98, 118-20). The element *ná* is also grammaticalized as a definite marker, which explains the ambiguity in (13)b. and the possibility that the mid-tone suffix for an animate possessor can co-occur with it, as in (13)c.

(13)a. *tàlā* < [*tàlà-¯*]
mouth:3SG.AN.POSSR
sa bouche [his/her mouth]

b. *tàlà* *ná*
mouth 3SG.IAN.POSSR~DEF
le/la/son bord, ouverture, tranchant [the/its edge]

c. *tàlā* *ná*
mouth:3SG.AN.POSSR DEF
sa bouche en question [his/her mouth (already referred to)] (Boyeldieu 2000: 91)

Furthermore, Furu~Bagiro is also similar to neighboring but genealogically unrelated languages in that animate and inanimate nouns display different grammatical behavior. Thus, there is no pronominal resumption of inanimate nouns as verbal objects in relative

clauses (Boyeldieu 2000: 111-3) and as subjects in clause chaining (Boyeldieu 2000: 151, 211), and nouns possibly select demonstratives partly according to their animacy feature (Boyeldieu 2000: 120-2).

2.1.5 Central African forager languages

As mentioned in §2.1, the language varieties spoken by Central African foragers are overall poorly documented. What can be discerned from the available descriptions is that there are three principal types of languages with respect to nominal classification.

The two forager varieties in the Central Sudanic family, namely Efe (Mangbutu-Efe) and Asua (Mangbetu-Asua), display no sign of grammatically entrenched noun classification, including animate gender or other marked behavior of animate nouns, according to Smith (1938) and Beltrame (1876-7), respectively.

The second type applies to the majority of Bantu languages spoken by foragers in the western and southern portions of the rainforest. They possess gender systems that are rather typical for the family. Thus, a large gender inventory and a basic ±human distinction can be discerned for Bongwe (B303, Walker 1937), Yaka (C104, Thomas and Bahuchet 1991), Nkundo Twa (C61, Hulstaert 1948), Foto (C611, Hulstaert 1978), and Jofe (C, Hulstaert 1986). A few languages have a typical Bantu system but non-human animate nouns can agree like human nouns in gender 1/2. Thus, according to Grimm (2015: 128-9), a number of animate nouns of Gyeli (A801) have shifted lexically to the human gender, often accompanied by a change in noun inflection. However, since this change also affects inanimate nouns but excludes other animate nouns, it does not seem to indicate the incipient development of a genuine animate gender. For Konda Twa (C61E), Motingea Mangulu (1994: 358-9) reports a recurrent contextual agreement shift of animate nouns to gender 1/2 without inflectional change:

> Il convient ainsi de faire remarquer que le fait que tout substantif appartenant à n'importe quelle classe affecté du trait [+animé] impose parfois dans l'accord du verbe le préfixe de cl.1 ou 2 n'est pas une irrégularité en soi. Il s'agit d'un phénomène très repandu dans les langues bantoues du Nord-Ouest.

(14) ***n****-jɔu* ***bá****-kó-yá* *ené* *n-goda*
10-elephant **2**-PST-come to 9-field
les élephants sont venus au champ. (Motingea Mangulu 1994: 358-9)

Finally, some forager groups speaking Bantu and Ubangi languages have a genuine bipartite distinction of nouns based on animacy. While no concrete documentation is available, it is reported explicitly by Vorbichler (e.g., 1968: 412-5) for Kango and Sua, which are spoken by so-called "Mbuti" groups of the Ituri in the vicinity of related farmer groups speaking Beeke and genealogically yet closer Bira-Komo languages (see §1 and §2.1.2). A similar alignment with close farmer relatives also holds for the Mundu-Baka forager variety Baka in

the Ubangi domain. Thus, Djoupée (2017: 96-9, 198, 274, 281, 283) describes the 3rd-person pronouns *ʔé/wó* of Baka to have default animate reference; the singular form *ʔé* can only refer to inanimates under specific conditions, and inanimate objects are generally characterized by zero pronominalization. The pronominal system of Baka can thus be represented as in Figure 16. A basic ±animacy distinction in the nominal system of Baka is supported by Djoupée's (2017: 140-1, 176-8) report that the genitive linker *-á* is restricted to animate possessors.

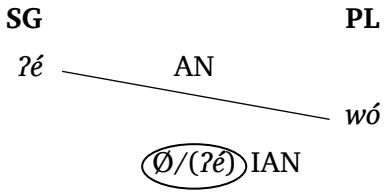


Figure 16: The animacy-based pronoun system of Baka (Djoupée 2017)

What can be summarized from the above observations is that all types of noun classification in forager varieties of Central Africa are inconspicuous vis-à-vis the relevant related farmer varieties - an observation that is important for the overall historical assessment of animacy-based gender in this geographical area to be discussed in §2.2.7.

2.2 Gender typology and diachrony in Central Africa

I have outlined above the diversity of nominal classification in Central Africa with a special focus on pronominal gender systems whose central semantic assignment feature is animacy, as opposed to the better-known Niger-Congo type systems that are historically and structurally distinct. In the following, I assess the diversity of the pronominal gender systems in Central Africa by identifying different subtypes and discussing their likely historical relationships according to a stepwise complexification scenario. This not only informs the synchrony and diachrony of the phenomenon in the focal area but also crucial questions regarding the cross-linguistic typology of gender systems involving such basic assignment features as animacy, humanness, and sex, including their ultimate emergence and subsequent development.

For the historically early stages, my classification concerns two parameters, namely the degree of grammaticalization of the differential grammatical treatment of classified nouns and the formal exponence of the classificatory distinction in pronouns. On this basis, I distinguish the three basic subtypes of asymmetric coding of animate nouns, the last two being instances of gender systems, to be treated below in the order of elaboration:

I preferential grammatical treatment of animate nouns, including overt pronominal anaphor but without clear paradigmatic grammaticalization (§2.2.1)
II obligatory pronominal anaphor for animate nouns vs. zero for inanimate nouns (§2.2.2)
III overt but distinct pronominal anaphor for animate and inanimate nouns (§2.2.3).

Further formal and functional change affecting these three basic types of animacy-based noun classification are discussed subsequently, namely:
a) different macrogender distinction of ±human (§2.2.4)
b) sex-gender elaboration of the higher macrogender value (§2.2.5)
c) conflation of gender encoding with nominal number (§2.2.6).

I close the section with a few considerations about areal and historical aspects of animacy-based noun classification in §2.2.7.

2.2.1 Language type I: Noun classification by grammatical asymmetry

An extensive amount of literature discusses the preferential treatment of nouns high on the nominal aka animacy hierarchy in a wide range of constructions (cf., e.g., Smith-Stark 1974; Comrie 1989: 185-200; Dahl and Fraurud 1996; Dahl 2000a, 2008; Croft 1994; Malchukov 2008; de Swart and de Hoop 2018; ??Igartua and Santazilia 2018). That is, the distinctive grammaticalized treatment of animate nouns does not just concern agreement-based gender but is a far more general cross-linguistic phenomenon in all kinds of structural domains involving nouns and their referents. This has also been observed already in such cross-linguistic studies on gender as Heine (1982: 190), Corbett (1991: 31-2), Nichols (1992: 133-4) under "covert animacy," and Dahl (2000a: 113) under "quasigender." The data presented in the previous sections amply confirm the existence of asymmetric grammatical treatment of groups of nouns in connection with their semantic properties, for Central Africa particularly animacy. In the following, I assemble some of the typical structural contexts and the relevant data concerning this area.

Smith-Stark (1974) already observed the relevance of the nominal hierarchy for number marking in that animate and similar nouns tend to be the first/only ones to develop and the last ones to lose overt morphological encoding of this feature. In §2.1.3, I have given numerous examples for this phenomenon in Central African languages, where it is even more salient against the background that number encoding on nouns is generally rare.

The nominal hierarchy has been discussed in particular in connection with differential case marking (see, e.g., Malchukov 2008). While in Central Africa case marking is hardly relevant, there is nevertheless similar evidence from the wider domain of nominal flagging in the form of adpositional constructions differentiated according to animacy, which may be due to the nominal grammaticalization source of the relevant functional element. This has been mentioned in §2.1.4 for Mad'i (Moru-Madi) and Lese (Mangbutu-Efe) from Central Sudanic.

Related to this is the possible differentiation of genitive constructions according to the semantics of the nouns involved. While inalienable possession steered toward the meaning of the possessum is a cross-linguistically widespread phenomenon, Güldemann (1999) also discusses structural differentiation that is sensitive to relevant semantic traits of the genitive modifier, that is, these splits are "possessor-centered". In §2.1, I have also

mentioned several cases in Central Africa for genitive constructions that are distinct according to the feature of animacy, namely in Pagibete (Bantu), Mono (Bandaic), Northern Ngbandi (Ngbandic), Baka (Mundu-Baka), and Lese (Mangbutu-Efe), coming from all major language groups of the area.

Another type of basic bipartite nominal classification is recognized commonly if only implicitly in the default distinction of the basic interrogative pronouns 'who' vs. 'what', which tends to be interpreted semantically as a ±human opposition. However, Idiatov's 2007: 28-9, 35-6, 95-??) extensive cross-linguistic study of such interrogatives shows that there are languages ??. It is unsurprising against this background, that in line with the salient local areal trend, the grammatical distinction in wh-questions in Ngbandi is aligned with the ±animate distinction (cf. §2.1.3). One may in fact wonder for languages that are sensitive to this semantic distinction whether a reported opposition of 'who' vs. 'what' in interrogative pronouns really refers to a ±human distinction.

Last, but not least, there is the important role of animacy for the crucial domain at issue here, namely reference tracking by means of overt pronouns potentially opposed to zero pronominalization, which the above data have so prominently brought to the fore. Pevious research by Dahl and Fraurud (1996: 56-60) and Fraurud (1996: 67) has referred in this respect to so-called "pronominalization propensity" of referents high on the nominal hierarchy, the last work stating:

> Another example of differences between human and non-human referents with regard to NP form is seen in data on what may be called 'pronominalization propensity', showing that human referents are more often referred to by pronouns than non-human referents. […] In general, it can be concluded that the animacy of the referent, and in particular whether or not it is human, is a factor that affects several phenomena at the discourse level as well as at the grammatical level. This is quite natural in the perspective of an anthropocentric cognitive ontology, which is structured around ourselves and our fellow human beings, and where everything else is described from the point of view of human beings.

Even though the above quote reflects to some extent a eurocentric bias by focussing on humans as opposed to non-human animates as a seemingly universal cutoff point underlying the general phenomenon, the logic behind the above observations aptly captures the mechanism by which pronominalization systems described above for Central African languages emerge.

Indeed, overt pronominal vs. zero anaphor along a ±animate distinction is a phenomenon widespread well beyond Central Africa. The following examples are from West African languages (thanks to Ines Fiedler for providing these data). Thus, in Akan from Potou-Akanic (Niger-Congo), discourse-given referents as objects are resumed in certain contexts only when animate, as shown in (15)d., as opposed to (15)b.

(15)a. *Kofi* *bɔ-tɔn* *dua* *no*
PN FUT-sell tree DEF
Kofi will sell the tree.
b. *Kofi* *bɔ-tɔn* ***Ø/ *no***
PN FUT-sell
Kofi will sell it (IAN).
c. *Kofi* *bɔ-tɔn* *abofra* *no*
PN FUT-sell child DEF
Kofi will sell the child.
d. *Kofi* *bɔ-tɔn* ***no/ *Ø***
PN FUT-sell 3SG
Kofi will sell it (AN). (Osam 1996: 160)

This principle carries over to the object position in the background clause of focus constructions: animate referents require pronominal resumption while inanimate referents do not allow it, as shown in (16)a. vs. b. (*-yɛ́* in the second example is an unrelated suffix required by the verb when in final position of a dependent clause).

(16)a. *nè* *krámán* *nà* *pàpá* *nò* *súà* ***nò***
3SG.POSSR dog FOC man DEF carry 3SG
The man carried his DOG. [lit.: It is his DOG the man carried it.]
b. *nè* *bágè* *nà* *ɔ̀-súà-yɛ́*
3SG.POSSR bag FOC 3SG-carry-FIN
He carried his BAG. [lit. It is his BAG he carried.] (Schwarz and Fiedler 2007: 270)

The above data as a whole make it clear that referents higher on the nominal hierarchy have a clear encoding bias toward the single strategy of overt pronominalization, while a range of strategies can take care of hierarchically lower referents. Inanimates are not only conveyed by zero anaphor but also various other expressions, including the opposite of zero, namely full noun phrases (cf., e.g., Dahl's (2000a: 113-4) metaphor of "noun-hungry" inanimate referents). At the same time, zero anaphor is a viable paradigmatic counterpart of overt pronouns for animates, which can lead to the emergence of a simple bipartite pronominal gender system (see §2.2.2-3). The problem in the empirical data for Central Africa is that many language descriptions leave the grammatical status of the opposition between pronouns and zero anaphor driven by different semantic noun types implicit, for which I give examples in the following.

One such case is the Mundu-Baka language Mundu. Vallaeys' (1991:) most extensive grammar lacks any reference to a differential treatment of nouns according to animacy; regarding pronoun use, he (p.25, 29) merely mentions in an unspecific way the recurrent

omission of 3rd-person pronouns and their possible replacement by the demonstrative *ngu*. Santandrea (1969: 111), however, who is generally alert to different kinds of pronoun-like anaphor or its absence in languages of the wider area, explicitly observes that normal 3rd-person pronouns in Mundu refer preferentially to animates. Inanimate nouns, on the other hand, are more often not pronominalized at all or referred to by a generic noun *'ɛ* 'thing' or a demonstrative like *nɛ*, as he exemplifies for object anaphor in (17).

(17)a.	*ma*	*mɛ̀rɛ̀*	**Ø**	*mɛ́-rá*
	1SG	make		self-1SG
b.	*ma*	*mɛrɛ*	***'ɛ***	*me-ra*
	1SG	make	thing	self-1SG
c.	*ma*	*mɛrɛ* =	***nɛ***	*me-ra*
	1SG	make = DEM		self-1SG

I did/made it myself. (Santandrea 1969: 111)

In the natural discourse data provided by Jeffreys (1984), the default 3rd-person singular pronouns *ah/(ngu)* are indeed used overwhelmingly for animate referents. In a corpus of five texts (pp.135-75), I found merely six tokens of *ah*, given in (18), that are translated into English as neuter 'it' and thus refer potentially to inanimate antecedents.

(18)a.	*te* ***ah*** *bala, …*	if **it** is like that	(p.105)
b.	***ah*** *reke me-ye?*	Isn't **this** good?	(p.117)
c.	***ah*** *mbi.*	[**it** is] good!	(p.157)
d.	***ah*** *'buru mbi.*	**it** will be alright	(p.157)
e.	*te* ***ah*** *bala, …*	if **it** is like that	(p.157)
f.	***ah*** *de bala.*	this is how **it** is	(p.161)

The examples are, however, unclear. All predicates involved refer to qualities (*bala* 'like this/that', *reke/mbi* 'good') and may come from a limited set of possibly partly fixed expressions, or alternatively, the reference of *ah* could be conceived of as relating more concretely to the animate entity involved in the relevant states of affairs.

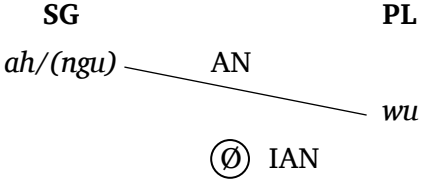


Figure 17: The apparent pronoun use in Mundu

Based on the available empirical information, the trend of using 3rd-person pronouns can be represented as in Figure 17: the overt forms with a number distinction tend to refer anaphorically to animate nouns while inanimate nouns involve the absence of anaphor. While it must remain open whether an analysis of this situation in terms of an animacy-based gender system is adequate, its historical implication is clear nevertheless. If a pronoun use as in Figure 17 is a preference vested in discourse routines, the language is better aligned with the cases of classificatory grammatical asymmetries in other nominal structures discussed previously. However, as soon as such pronoun use comes (close) to be a categorical distinction, the language possesses an incipient pronominal gender system.

The situation in Mayogo, a genealogically and geographically close Mundu-Baka language, appears to be very similar to Mundu, albeit even more implicit in the available description by Sawka (2001). The author (p.68) reports a simple pronoun system of two 3rd-person forms distinguished according to number without any reference to animacy. My survey of the data did not furnish a single example of these pronouns referring to an inanimate noun while they regularly resume human and non-human animates.

My search for any other grammatical distinction associated with a difference between animate and inanimate nouns yielded only one occurrence concerning locative expressions with pronominal possessors, about which Sawka (2001: 89) writes as follows:

> Locative case is indicated with locative prepositions. These locative prepositions can undergo reduplication of the first syllable to form locative nouns. […]
>
> Reduplicated locative nouns are only used to replace inanimate beings as shown in (153) [= (19)b. below] but not for animate beings as shown in (154) [= (19)a. below].

(19)a. *sa* ***ani***
under 3[AN.]SG
under him[/her = animate] (Sawka 2001: 89)

b. *sa* *ndula* > ***sa****-sa* [**sa* ***ani****, *sa-****Ø***]
under tree REDUP-under
under the tree under it

I argue here that this interesting grammatical detail is in fact a variant of the more general theme of inanimate zero anaphor, here in conjunction with another phenomenon in Mayogo concerning a certain class of nouns. An animate pronominal possessor is represented by the unmarked 3rd-person pronoun, as in (19)a. The only possible counterpart with an inanimate possessor is the reduplication in (19)b., which I venture to be a covert reflex of zero anaphor. That is, assuming this principle to be relevant in the language, the expected form for 'under it (= tree)' would just be *sa*. However, certain nouns and noun-like elements, including noun-derived prepositions like *sa*, never occur in their bare root form but either must be in construction with another associated (pro)nominal item or be morphologically extended, whereby reduplication is the default option. This is reported by Sawka (2001: 51-

4) himself but represents in fact a feature in the Mundu-Baka family as a whole (Winkhart 2015: 47-50). Hence, reduplication, as in (19)b., is the only option as soon as an inanimate referent is involved, and the "locative noun" *sasa* is possibly best translated as an adverb 'beneath, (t)hereunder', which in English, too, avoids a reference to an inanimate object. The Mayogo structure is thus the counterpart of such examples as (6)b. from Gbeya and (13)b. from Bagiro, where inanimate anaphor has recourse to overt pronominalization.

I thus venture to analyze Mayogo similar to Mundu as possessing an animacy-sensitive use of pronouns, as represented in Figure 18.

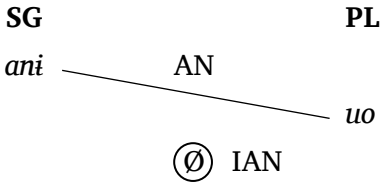


Figure 18: The apparent pronoun use in Mayogo

An equally ambiguous picture applies to languages from other families of the area. Thus, Boyd's (1997) description of the Gbayaic language Mbodomo deals with various intricacies of 3rd-person pronouns but does not report the relevance of animacy. The author only refers to this feature once when briefly observing (p.151-2) that certain anaphoric contexts strongly prefer the pronominal resumption of animate nouns, as illustrated in (20).

(20) ***kóé*** *ká* *mí* *há* ***nɛ̀*** *kpòó* ***à*** *ná* *àó* *bɔ̀ŋ*
woman REL 1SG give 3SG.AN meat 3SG.AN COP friend 1SG.POSSR
The woman to whom I gave meat, **she** is my friend. (Boyd 1997: 152)

Screening through the data of the entire study, including the small text corpus, it turns out that the pronominalization of animate referents is recurrent, albeit not obligatory, but that there is not a single clear case where the 3rd-person pronouns resume an inanimate noun. Moreover, all sentences, given completely in (21)-(23), where a neuter pronoun occurs in the English translation attest for zero anaphor in the Mbodomo counterpart.

(21) *mɛ̀* *tí* *kù* *mà* *gbàlà* *gɔ́χ* *kɛ̀* *láχ* *né* **Ø** *ná*
2SG must take IMP bone serpent DEM leave COM NEG
But you must not take **a bone of this serpent** and leave with **it**. (Boyd (1997: 199)

(22) *ɓérkìdî* *kpòó* *mbɔ̀ŋgá* *kɛ̀* *ɲɔ̂ŋ* **Ø**
break meat zebra DEM eat
… cut off some of **this zebra meat** and ate **it**. (Boyd 1997: 204)

(23) **Ø** *ná* *sɔ́nsí* *mɛ̀* …
COP chance 2SG.POSSR
it is your chance … [COP *ná* normally preceded by subject topic] (Boyd 1997: 204)

While Boyd's description may lack some important facts, the available data suggest that 3rd-person pronouns are effectively reserved for animate nouns, as shown in Figure 19, making Mbodomo another candidate for an animacy bias in the use of pronouns.

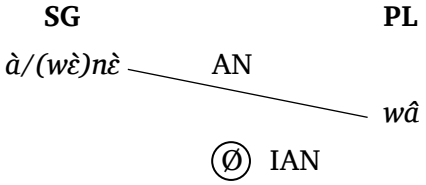


Figure 19: The apparent pronoun use in Mbodomo (after Boyd 1997: 66)

A last case mentioned here where sparse grammatical information raises the suspicion that overt pronominalization is opposed to zero involving a distinction between animate and inanimate referents is the Bantu language Komo (D23) of the Ituri forest. Thomas (2011: 4) reports that the language has completely lost the complex array of Bantu-typical agreement phenomena (see §1, §2.1.2, and §2.1.5 for similar Bantu languages in the area). At the same time, the author (2011: 24, 73-6, 129-30) provides the highly relevant three-way contrast in the verbal indexation of 3rd-person objects illustrated in (24)-(26).

(24)a. *ɓá-**m**-ɓɛ́ti*
3PL.SBJ-3SG.OBJ-hit:PFV
They hit him/her. [him/her = segmental object prefix *m*]
b. ***ɓɛ́**-ɓɛ́ti*
3PL.SBJ:3PL.OBJ-hit:PFV
They hit them. [them = vowel change on subject prefix] (Thomas 2011: 76)

(25)a. ***nɛ**-ɓɛ́ti*
1SG.SBJ-hit:PFV
I hit it. [it = Ø]
b. ***nɛ̌**-ɓɛ́ti*
1SG.SBJ:3PL.OBJ-hit:PFV
I hit them. [them = high tone imposed on subject prefix] (Thomas 2011: 74)

(26)a. ***u**-úbi*
2SG.SBJ-know:PFV
you know [it = Ø]

b. ***ǒɓ****-úbi*
2SG.SBJ:3PL.OBJ-know:PFV
you know them [them = *-Ɓ́ɓ-*] (Thomas 2011: 129-30)

The overt 3rd-person singular object index is a homorganic nasal immediately before the verb root, as in (24)a. Its plural counterpart is conveyed in a far more complex way, namely by suprasegmental traits on the initial subject index, namely a possible change in vowel quality, as in (24)b., and/or a high tone, as in (25)b., which are followed in addition by *ɓ* before vowel-initial verbs, as in (26)b. This overt pronominal marking is in paradigmatic opposition to zero, as in (25)a., which, in being translated as 'it', is likely to refer to an inanimate or non-human entity. This pattern of verbal object indexation, represented in Figure 20, turns out to be parallel to many pronominal systems described previously. It is particularly reminiscent of the gender system of genealogically close Beeke, as this language also possesses such object indexation including two potentially cognate exponents (cf. Table 1 and Figure 1 in §1).

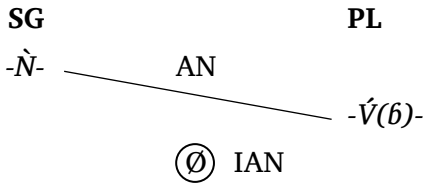


Figure 20: The verbal object-indexation system of Komo (after Thomas 2011)

Two further details indicate that the underlying semantic distinction is indeed ±animate. That is, Thomas (2011: 20) mentions in passing animacy-sensitive demonstratives, apparently instantiating canonical gender agreement, and Thomas (1994: 193) reports that the form of some adjectives also depends on the ±animacy feature of the modified noun.

Agreement class	Demonstrative		Agreement-sensitive adjective	Object on verb
	proximal	distal		
1 AN.SG	*ḿbé*	*ḿbɔ́*	Reduplicated	*-Ǹ-*
2 AN.PL			*bá* Reduplicated	*-Ɓ́(ɓ)-*
3 IAN	*ńdé*	*ńdɔ́*	PL only: Reduplicated	*Ø*

Table 6: Agreement classes across various targets in Komo

All agreement phenomena in Komo, summarized in Table 6, are thus quite similar to, if not as extensive and transparent as, those in Beeke. In spite of the scarce and partly inconclusive data,[8] the overall picture suggests that Komo not only has pronominalization with traits of a

[8] A short sketch of Komo by Harries (1958: 273-4, 283) provides largely similar grammatical

±animate (or ±human) opposition but possesses in fact a bipartite gender system just like Beeke and its other close relatives in the Bira-Komo group of Ituri Bantu.

Concluding from the classificatory phenomena described above, they are all captured by grammatical asymmetries that are associated with the cross-linguistically well-known nominal hierarchy. This involves a crucial role of animate referents in the narrow sense, as a possible target for a bias toward high discourse salience and topic worthiness. In line with Nichols' macrogender concept, such a basic semantically triggered differentiation of sets of nouns is recurrently binary. One of the two values is functionally marked and, concerning specifically the above type of animacy-sensitive pronominalization, possibly the only one encoded overtly. Nichols (1992: 133) aptly observes:

> A covert animacy system contains, in some sense, only one class: the closed or delimitable set of human or animate nouns. The nonhuman or inanimate nouns have the nature of a residual category rather than a positive class.

2.2.2 Language type II: Partly covert gender by overt pronoun(s) for animate vs. zero for inanimate nouns/referents

In §2.2.1, I have given cases of Central African languages that are uncertain with respect to the grammatical status of pronominalization strategies involving a contrast between overt pronouns and zero anaphor. In §2.1.3 and §2.1.5, however, I have argued variously that the same phenomenon points to the (likely) existence of a bipartite pronominal gender system based semantically on animacy. The relevant cases are Gbayaic and its proto-language, Ngbandi (Ngbandic), and to some extent Indri and Baka (Mundu-Baka); Mba (Mbaic) displays a parallel situation except that its more complex gender system also involves a sex distinction. In fact, all systems with inanimate zero anaphor are ambiguous due to an analytical approach that is not alert to the possible relevance of this phenomenon for gender-like noun classification and thus does not clarify whether it is a tendency in language use or a categorical grammaticalized distinction. Moreover, leakage seems to be inherent in such systems. Thus, there may well exist other, for example, syntactic conditions of pronoun use that counter a semantically steered tendency, as pointed out to me by R. Boyd (p.c.). It thus comes as no surprise that cross-linguistically oriented studies like Heine (1982) and Corbett (1991, 2013a, b), although taking pronominal gender systems into account, have not recognized any such system as an instance of gender (unless an additional sex distinction is involved, as is the case in Mba).

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information about object indexation and demonstratives but a semantic assessment of the differentiation that is even less conclusive than that by Thomas (2011).

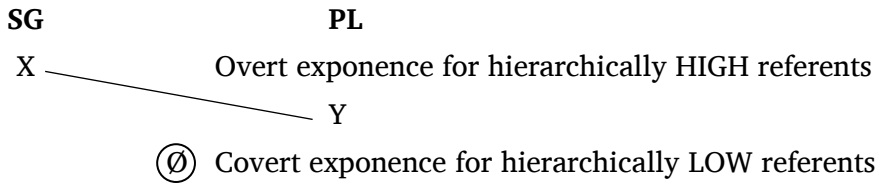


Figure 21: Partly covert pronoun system steered by the nominal hierarchy

I venture here that at least some of the above cases are adequately described as in Figure 21 in terms of a gender system, if partly covert. It is noteworthy that this basic pattern has precedents, as a very similar situation of overt encoding with animate vs. zero encoding with inanimate nouns, here regarding case agreement, is reconstructed for the earliest stage of the bipartite animacy-based gender system of Indo-European (see Luraghi 2011: 452).

The structure of the gender system in Figure 21 falls out naturally from the essence of the nominal hierarchy. The basic binary macrogender opposition entailed by the hierarchy motivates the very mechanism how such a system emerges and how it is organized in terms of encoding. With respect to diachrony, the first step proposed here is that a language makes a primary classificatory distinction on this hierarchy and that higher referents are preferably selected for certain grammatical phenomena. The crucial phenomenon relevant here is overt pronominal anaphor for nouns higher on the hierarchy as opposed to zero (or other non-pronominal anaphor) for nouns lower on the hierarchy. This specific use of pronouns would start out as a preference of language use but develop eventually to an opposition that is ideally contextually general, categorical and obligatory. The decisive step in this direction is the conversion of so-called “pronominalization propensity” - a statistical tendency in discourse grounded in the asymmetric behavior of different types of nouns/referents - into a grammaticalized distinction of the language system. Synchronically, it still complies with the hierarchy on two points, namely that lower entities are unmarked regarding anaphor and number encoding.

A few remarks of the paradigmatic status of zero in such a system are in order. Sanders (1988: 164-5) defines zero as an exponent of a grammatical distinction as follows:

> Zero, or the absence of form, is a member of a set of (meaningful) linguistic elements (only) if
>
> a. there are other elements in the set;
>
> b. at least one of the other elements is not a zero element; and
>
> c. zero is related to each of the other elements in the set in the same way that each of the other elements is related to each of the other elements in the set.

A divergence from Sander’s definition is that the present phenomenon merely involves a BINARY distinction that only requires two exponents conveying it. Accordingly, no larger set of overt non-zero elements is necessary but only one element (or element set varying for another feature like number) contrasting with zero. There is a good understanding of both the important role of zero anaphor in reference tracking (e.g., Givón 2017) and the possible

grammaticalization of zero within a feature opposition (e.g., Bybee 1990). Hence, the development of the system in Figure 21 involving zero as one member of a pronominal opposition is plausible from a theoretical perspective, even though its empirical identification has heretofore been largely opaque.

2.2.3 Language type III: Overt gender by pronoun(s) for animate and inanimate nouns/referents

I mentioned above on various occasions that inanimate referents are not only characterized by zero anaphor but are also taken up commonly by other, explicit linguistic expressions. Full or close repetition or paraphrase in the form of a noun phrase aside, the means observed for overt anaphoric resumption of inanimates are in particular semantically generic nouns, demonstratives, and other types of pronouns. If any such expression becomes grammaticalized, the shift toward a fully overt, and hence canonical, pronominal gender system is achieved. This development is schematized in Figure 22.

Figure 22: From a partly covert to an overt pronoun system steered by the nominal hierarchy

That such assumed grammaticalization is not just a theoretical possibility is supported by evidence arising from my Central African survey concerning sources of grammaticalized inanimate pronouns that are recurrent facultative alternatives of zero anaphor elsewhere. Thus, a generic noun meaning ‘thing’ is according to Claudi (1985: 127-31) the source for various inanimate pronouns in Zandic and Bandaic languages. According to Winkhart (p.c.), this also holds for the inanimate pronoun in the Mundu-Baka language Monzombo (cf. Figure 6, §2.1.3). In the Mbaic language Dongo (cf. Figure 14, §2.1.3), the inanimate pronouns *wé/yé* are identical with the demonstratives of the inanimate gender 1/2 in the Niger-Congo type gender system (Pasch 1986: 198-203, 234-6). According to R. Boyd (p.c.), the source for the inanimate pronoun given for Zande and Nzakara in Figures 9 and 10 (§2.1.3) is also a deictic element. Yet another possible case for a deictic origin is the inanimate possessor form *ná* in the Bongo-Bagirmi language Bagiro. Recall from the data of example (13) in §2.1.4 that this element is not only an inanimate pronoun but also a definite marker. While this complicates the synchronic picture, it makes sense diachronically considering that both modern uses may well originate in an earlier demonstrative. Finally, Moñino (2010a: 2, cf. 1995: 652) assumes that the inanimate pronoun *ma* in Eastern

Gbayaic languages has grammaticalized from the Proto-Gbayaic indefinite determiner/pronoun *(ŋ)mà ‘certain (one)’.

It is noteworthy that most of these reconstructed changes retain the number-insensitive status of the now overtly marked inanimate gender, so that the basic system remains unaffected. Thus, the change entertained here provides a clear connection between type II languages with inanimate zero, dealt with in §2.2.2, and type III languages with overt but historically opaque inanimate forms, as found in other Ubangi languages. The transition is also evident in a language like Indri (cf. Figure 5, §2.1.3), which appears to have inanimate zero and an incipient overt pronoun, seemingly deployed depending on the context. This state is expected as intermediate between type II and the fully developed type III where inanimate referents are overtly marked throughout.

The possible alternation between zero anaphor and some overt form for an inanimate referent is not random but at least partly tied to the grammatical context. Presumably due to the syntactic profile of the languages, a zero seems to be particularly unlikely in subject position, so that this context may be one of the first where an inanimate proform occurs and subsequently grammaticalizes. As soon as sufficiently detailed data become available, such variation in anaphoric patterns must be investigated systematically in the future.

When speaking concerning type III of a fully developed gender system, it should be taken into account that it is nevertheless structurally unstable, as it just involves a binary opposition that may be restricted to one type of exponent. Consider the situation described in the Mundu-Baka languages Baka (cf. Figure 16, §2.1.5) and presumably Mangaya of Feroge-Mangaya (§2.1.3). Inanimate referents are said to be characterized by zero anaphor but the normal pronoun typical for animate referents can step in under certain conditions. It is clear that with such a situation it does not take much to revert such an incipient animacy-based classification system to no classification at all. Against this background, it is also unclear whether type III with an overt inanimate pronoun is considerably more grammaticalized than type II with inanimate zero anaphor.

A more stable gender system is achieved by a structural expansion of the distinction to more contexts, either regarding diverse constructions employing pronouns or canonical agreement on nominal modifiers and the like. A few cases described above can be considered to have advanced further in this respect. Ngbandi (Ngbandic, cf. Table 4, §2.1.3), for example, is reported to not only have the distinction in basic pronouns but additionally in wh-interrogatives. The Bongo-Bagirmi language Bagiro is described by Boyeldieu (2000: 120-2) as having various demonstratives. While he states that the system is not fully understood, he gives series that are reserved for inanimate nouns and others that do not have this restriction. With a possible semantic consolidation of this incipient differentiation, the language would have animacy-sensitive oppositions in pronouns and demonstratives, the latter being a context that counts as canonical agreement (cf. also Luraghi (2011: 452) for the importance of demonstratives in the emergence of the animacy-based gender system in

Indo-European). The Ituri Bantu language Komo is not just similar to Bagiro but in fact much clearer regarding the flanking of differential animacy-sensitive pronominalization by a parallel distinction in demonstratives and adjective agreement (cf. Table 6, §2.2.1). That it is not described as having a bipartite animacy-based gender system thus appears to be an analytical oversight rather than a reflex of its transitional state to a gender language.

2.2.4 Animacy-based vs. human-based macrogender distinction

The large majority of languages discussed in §2.1 involve a ±animate distinction in noun categorization. However, as mentioned in §1, this is not the only major macrogender option, the other being ±human. There are indeed a few cases where humanness is described as the semantic criterion for dividing the nominal universe.

The first is the Mbaic language Ndunga (cf. Figure 13, §2.1.3) in which the pronominal gender system is semantically parallel to the Niger-Congo type system in having a ±human macrogender. Since this feature is opposed to all its relatives in the family, it is, however, plausible that this is an innovation motivated by Bantu influence. Ndunga is the southwesternmost Mbaic language most strongly exposed to contact with Bantu languages and Pasch (1987, 1988) has indeed shown convincingly that this had notable effects in particular on the nominal system related to the marking of number and classification. It is thus plausible that the modern situation is the result of contact-induced change from an earlier Mbaic-typical animacy-based to a Bantu-typical human-based gender system.

Another possible case is Barambu-Pambia (cf. Figure 11, §2.1.3) - possible because the empirical data are not conclusive. However, even if this is the modern situation, my discussion revolving around the history of the crucial pronoun *(á)mbá* and the profile of the entire Zandic family indicates that the semantic development in Barambu-Pambia, too, was from ±animate to ±human.

For the record, Zande, Nzakara, and Ma also display a ±human distinction (cf. Figures 9, 10, and 15, §2.1.3). However, these cases do not instantiate shifts between different macrogenders, as the primary ±animate opposition is retained.

Speaking in §2.2.3 about the structural instability of a bipartite pronominal gender system, it should be taken into account in this connection that such a simple opposition is also inherently unstable in semantic terms. It just takes a semantic shift of the formally marked gender to the other major cutoff point on the nominal hierarchy to create a different system. In fact, it may not be easy to distinguish an animacy-based system from a human-based one as soon as there is leakage because animates can facultatively agree like human nouns (cf. §2.1.3 on “animate concord” in Bantu) and/or language descriptions may not be alert to the important difference between the two macrogender options in the first place.

To mention one example of uncertain analysis, from the information by Boyd (1988: 44) on the Ngbandic language Gbayi, one can conclude that the structural organization of its pronoun system conforms to the areal canon, as shown in Figure 23. As opposed to the

semantic situation in the core of Ngbandic (cf. Figure 8, §2.1.3) and the general areal trend, the author explicitly reports that the overt pronouns are used restrictedly for human referents, and alternative means, including zero, are employed for non-human nouns.

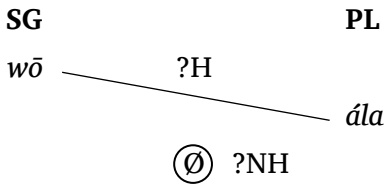


Figure 23: The pronoun system of Gbayi (after Boyd 1988: 44)

In personal communication, the author admits, however, that his brief description might well be misleading and the pronouns could in fact express a ±animacy distinction. Corpus-based data are needed to conclusively characterize the system of Gbayi and similar languages. Whatever the final analysis of such cases, these pertain if not in their semantic at least in their structural aspects to the larger phenomenon dealt with here.

Obviously, it is always a language-specific choice, not contingent on a single universal factor, as to which subclass of nominal expressions is treated preferentially, which can eventually develop to a full-grown gender system. From a cross-linguistic perspective, it remains an open question whether the scenario outlined here for the emergence of a bipartite pronominal gender system in line with the nominal hierarchy is specifically tied to a ±animate macrogender or whether it can also start out with a ±human distinction. Taking the overall profile of Central Africa into account, I conclude for this area that a gender system is most prone to develop from a ±animacy distinction and that the existence of the few human-based systems are more likely to be the result of a later trajectory from ±animate to ±human.

2.2.5 (Sex) gender elaboration within the higher macrogender

Central Africa adds a number of languages with gender systems that are most similar to the bipartite animacy-based systems best known from Algonquian languages of North America. While a systematic cross-linguistic survey of such systems is still pending, Dahl (2000a: 112) writes:

> It is perhaps not so common for gender systems to reflect the distinction between animate and inanimate referents directly in the sense that there is one animate and one inanimate gender.

Potential difficulties in the identification as well as a certain amount of inherent instability of such bipartite gender systems, particularly when historically young, may explain Dahl's impression. However, another factor also seems to contribute to their real rarity. That is, some languages undergo further elaboration of the simple binary opposition in the form of additional semantic distinctions. The case most relevant here is the addition of oppositions within the gender higher on the nominal hierarchy.

A unique and empirically uncertain case is Nzakara from Zandic (cf. Figure 10, §2.1.3) where according to Tucker's (1959: 126) description the gender distinction is between human, non-human animate, and inanimate. Dahl (2000b: 579) analyzes this system as having a ±human macrogender whose non-human gender is distinguished further into animate and inanimate. I prefer the opposite analysis in terms of a ±animate macrogender, motivated by the configuration in number marking and the areal and genealogical context of Nzakara. In any case, it is quite possible that this tripartite structure has not arisen historically from the expansion of a simpler bipartite system but rather the loss of the human feminine gender found in Zande. I thus refrain from discussing this problematic case from a more general perspective.

More prominent and empirically robust is the extension of the bipartite animacy-based system by sex-based gender for animates. The previous literature has already discussed the cases of the Zandic language Zande (cf. Figure 9, §2.1.3) and the Mbaic language Ma (cf. Figure 15, §2.1.3) in terms of sex-gender languages. Since their systems are structurally and semantically identical and the minority language Ma is completely surrounded by the major language Zande, it is hard to argue that the two cases are historically independent. However, Barambu-Pambia of Zandic (cf. Figure 11, §2.1.3) and Mba of Mbaic (cf. Figure 12, §2.1.3) also have sex genders and at least the last case is unlikely to be contact-induced, given its different structure and geographical distance.

I venture that all the above cases share that their gender assignment is not based primarily on sex but rather on animacy. Synchronically, the principal opposition is evident at the different number sensitivity of the two macrogenders, the lower one being conveyed by zero or a transnumeral pronoun. From a historical perspective within the relevant families, the sex distinction is more likely to be grafted on the diachronically earlier ±animate contrast. Finally, from the perspective of areal typology, animacy-based systems are widespread and the few languages with a sex distinction are restricted. Accordingly, I conclude that these cases reflect a historical development from an animacy-based gender system to a system that is still of this type but has been elaborated secondarily in the animate gender domain by sex genders. The case of Mba is particularly informative in this respect because the sex distinction is not neatly between masculine and feminine referents but rather between human masculine and all other animates. This suggests that the former gender was innovated, restricting the old animate gender semantically to a residue class that is still not specified fully with respect to the new sex feature.

It is also interesting to look at the synchronic and diachronic profile of the exponents used for the new genders. As they did not obviously play a role in the animacy-based system, these cases may be interesting counterexamples to Corbett's (1991: 313) generalization:

> Gender systems may expand by adding new genders; this is generally done using existing morphological material.

2.2.6 Gender (not) conflated with number

It is a recurrent cross-linguistic phenomenon that a single system of agreement formally conflates the encoding of gender and number. With pronouns, this conflation is normally implemented by suppletion in that the singular and plural forms within a gender are unrelated. This is also a frequent pattern in Central Africa in the realm of the hierarchically higher animate or human gender. At the same time, with the description of Beeke in §1, I have already reported a typologically underrated phenomenon, namely that agreement classes conveying gender and also involving pronouns can be insensitive to number. The survey in §2.1 has yielded many more such cases.

The by far predominant synchronic pattern in Central Africa is that a transnumeral form, or zero marking, encodes the inanimate or non-human gender. As mentioned above, the bias of number marking for nouns high on the nominal hierarchy and its absence in the opposite case complies in a typologically expected way with the nominal hierarchy.

There is, however, another diachronic reflex of number-insensitive gender marking, namely that morphology marking plural elsewhere in the language is also employed on a gender-sensitive singular pronoun and thus renders a number distinction in the relevant gender. Such a situation suggests that the gender-conveying element itself is number-neutral. As one can see at the cases shown below, this is no longer restricted to the hierarchically lower gender.

Two cases exist in the Zandic family where the normal nominal plural prefix *a-* applies to gender markers, particularly in the animate domain. Figure 24 repeats Figure 11 of Barambu-Pambia, and Figure 25 does the same for Figure 10 of Nzakara. The difference is that I represent the assumed basic gender-encoding pronoun form as transnumeral between the number values so that the singular and plural meaning of the pronouns more clearly arise from the absence or presence of the plural prefix.

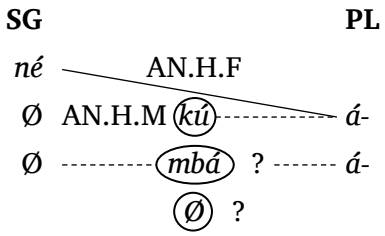


Figure 24: The pronoun system of Barambu-Pambia (after Tucker 1959)

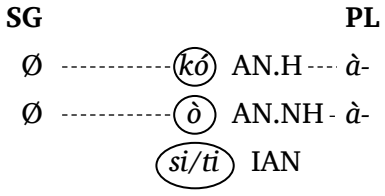


Figure 25: The pronoun system of Nzakara (after Tucker 1959)

That is, the Barambu-Pambia plural forms *áká* for animate human masculine and *ámbá* reported for non-human are assumed to derive from *á-kú* and *á-mbá*, respectively. In Nzakara, *àkó* for animate human and presumably also *à* for animate non-human originate in *à-kó* and *à-ò*, respectively. My analysis implies that the plural prefix can cause an assimilatory vowel change in the earlier number-neutral pronoun, if that has a different vowel.

Figure 26 recasts Figure 15 of the pronoun system of the Mbaic language Ma. Here, a more speculative hypothesis is that the animate non-human pronoun pair singular *ndɛ* and plural *ndiro* could result from the suffixation of *-ro* on the singular simplex form, as *-ro* is the plural marker on nouns of the gender 1/8 which hosts particularly, if by far not exclusively, animate nouns.

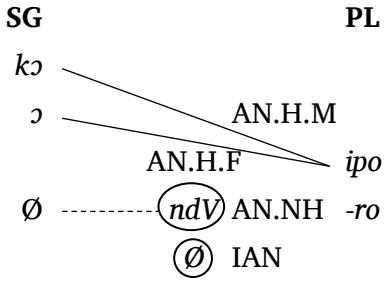


Figure 26: The pronoun system of Ma (after Pasch 1986)

The picture seen already in Figure 25 for Nzakara, where all gender-sensitive pronominal marking seems to be number-neutral also exists in two yet simpler systems. In Figure 27 of another Mbaic language Ndunga (cf. Figure 13, §2.1.3), the pronouns of the human gender employ a plural prefix, which is also used on kin terms, while the non-human gender is marked by a transnumeral pronoun form (recall from §2.2.4 that the semantic distinction in Pre-Ndunga may well have been based on animacy).

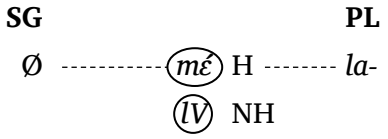


Figure 27: The pronoun system of Ndunga (after De Boeck 1956)

Finally, Northern Ngbandi from Ngbandic, as represented in Figure 28 (cf. Figure 8, §2.1.3) possibly reflects the most simple and formally transparent pattern in the entire area. Zero anaphor conveys the lower inanimate gender, while the higher animate gender has number-sensitive exponents but, assuming that plural *ála* derives from *á-lo*, number marking was added on a gender marker that was originally transnumeral. Under this hypothesis, the system of gender-number encoding involves just one gender and one number exponent.

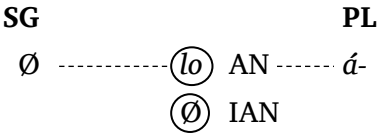


Figure 28: The pronoun system of Ngbandi (after Toronzoni 1989)

It can be summarized that the incidence in Central Africa of number-insensitive gender marking is yet higher than apparent from a superficial recognition of this phenomenon for inanimate nouns. At the same time, these cases, too, comply with the regularities induced by the nominal hierarchy in that number is distinguished preferentially and historically first for hierarchically higher nouns and their genders.

2.2.7 Areal and historical gender typology

In the following, I deal with the areal typology of animacy-based noun classification in Central Africa and its likely historical source as well as a wider geographical perspective regarding the continent as a whole.

Language (group) / Feature	*Proto-Bantu*	Local Bantu	Core Ubangi	Gbayaic	Central Sudanic	Modern forager	*Pre-shift forager*
Grammatical asymmetry	NO	(YES)	YES	YES	(YES)	(YES)	?
Gender	NO	(YES)	YES	YES	(YES)	(YES)	?

Table 7: Animacy-based noun classification in language groups of Central Africa

The above data have made it clear that languages in a large area around the northern rainforest-savannah transition have a notable bias toward classifying nouns according to the semantic feature of animacy. Table 7 summarizes the results of the language group surveys in §2.1 with respect to both animacy-based gender and asymmetric noun behavior. It reiterates that animacy-based noun classification is widely attested in the different language groups of this zone, if sometimes to a lower degree symbolized by (YES), and can thus be characterized as an areal feature of Central Africa. This data summary can also serve as a basis for assessing the historical source of the areal feature. Recall from §1 that Vorbichler (1963) was the first and so far only scholar who tried to tackle this problem for the smaller zone of the Ituri forest. He looked at Bantu languages spoken by both foragers and farmers but lacked relevant data on Central Sudanic and did not consider Ubangi languages, as they are not salient in the Ituri. Taking into account the different gender profile of Proto-Bantu and modern Ituri Bantu as well as the shift of rainforest foragers to languages spoken by later immigrants and the implied preceding language contact, the author surmised that animacy-based noun classification was an areal substrate feature of the pre-shift forager language(s).

The picture emerging from the more comprehensive data of Table 7 turns out to look different. In particular, Vorbichler's hypothesis of a forager substrate does not receive any concrete supporting evidence. As mentioned in §2.1.5, the profile of noun classification of modern forager languages, to the extent data are available, is regularly the same as that in the closest genealogical relative spoken by farming groups. Accordingly, while we cannot exclude that some foragers before the shift spoke languages with some form of animacy-based noun classification and thus may have contributed to the modern areal feature, we have no positive evidence in favor of this idea.

Two other language groups are even less likely sources of the areal trait. As assumed already by Vorbichler and briefly outlined in §2.1.2, animacy-based gender systems are clearly an innovation in local Bantu languages, because both Proto-Bantu as well as modern languages outside the area do not possess the feature (see Di Garbo and Verkerk 2021; Verkerk and Di Garbo 2021; Güldemann, Di Garbo and Verkerk 2021).

The other language group where the trait does not appear to be deeply entrenched historically is Central Sudanic, which was surveyed in §2.1.4, although the state of language documentation and description is not yet sufficient for giving a conclusive answer. In any case, in at least one language the grammatical distinction between animate and inanimate entities is innovative according to the same arguments brought forward for Bantu, namely for the southernmost Bongo-Bagirmi language Bagiro spoken in the neighborhood of Ubangi languages.

All the remaining language groups of the area are subsumed under Ubangi in the traditional sense of Greenberg (1963), including the more isolated Gbayaic family. According to the data presented in §2.1.3, §2.1.5, and §2.2.1, these display the feature regularly. In the majority of the close to ten relevant genealogical units, there is even the possibility of reconstructing the feature to some earlier language state. This implies that of the languages currently spoken in Central Africa Ubangi languages are the most likely donors for the various forms of animacy-based noun classification in the languages spoken by Bantu, Central Sudanic, and at least partly even forager groups. For the history of the area, this conclusion suggests that, the extinct unknown forager languages aside, Ubangi preceded all extant linguistic groups in the relevant parts of Central Africa.

The assumption that animacy-based noun classification is indeed a phenomenon induced to a considerable extent by language contact has different types of evidence in its favor. First, language groups that are not, or only very remotely, related genealogically, namely Central Sudanic, Core Ubangi, Gbayaic, and Bantu, participate in the feature, while their closest relatives outside the area do not display it. The relevant languages form a relatively compact geographical area and gaps are only created by languages which can be assumed reasonably to be the latest arrivals in the area, notably languages of Central Sudanic from the north(east) and even more so of Bantu from the south(west).

Likely contact-induced cases of animacy-based noun classification can be identified in Bagiro from Bongo-Bagirmi (cf. §2.1.4) and in a number of Bantu languages of different subgroups (cf. §1, §2.1.2 and §2.1.5). In the second case, this even involves a historical shift from another pre-existing to the local system type, namely from a human-based to an animacy-based one. The same change also applies in a slightly different way in the Mbaic family where at least Dongo (cf. Figure 14, §2.1.3) amalgamated its human-based Niger-Congo type gender system to its animacy-based pronoun system without any necessary contact. Ndunga in the Mbaic family (cf. Figure 13, §2.1.3 and 2.2.4) is interesting regarding this directionality of change in that its pronominal system seems to have shifted from the family-typical animacy-based to human-based gender assignment. But this turns out to be the exception that proves the rule as Bantu contact influence is very likely, proving the overall relevance of contact in this domain.

My proposal that the proliferation of animacy-based, and very rarely human-based, noun classification in Central Africa is partly contact-induced is fully compatible with Seifart's (2018: 28) general finding about so-called "differential diffusability of nominal classification." He concludes that contact interference in this domain is more likely if it involves semantically transparent rather than opaque systems, which indeed applies to the two macrogender distinctions.

The relevant area of Central Africa is part of a larger zone of linguistic convergence called Macro-Sudan Belt (cf. Güldemann 2008, 2018a) and the areal trait does not transgress its borders. Accordingly, animacy-based noun classification is another, at least sub-areal, feature of this macro-area. Hence, the question arises regarding the status of the feature with respect to the Macro-Sudan Belt as a whole.

The following can be said in this respect. As to be discussed in more detail in §2.3.1, there is one family in the western half of the macro-area that counts as a genealogically independent case of a pronominal gender system based semantically on animacy, namely Ijoid. Moreover, similarly to the picture in the east, animacy-based noun classification has also emerged in certain Niger-Congo languages. In all these cases, the change goes hand in hand with a reduction of a multiple-gender to a binary gender system. This applies to several languages in the Potou-Tano and Ghana-Togo-Mountain groups (see Güldemann and Fiedler 2019, submitted). According to Ines Fiedler (p.c.), a few languages of the Gur family further north like Moba and Dagbani from the Oti-Volta branch are further examples but there are also restructured bipartite systems that retained the ±human distinction like Pana and Kalamsé (Grusi), Konni (Oti-Volta), and Koromfe.

The exact distribution of animacy-based gender systems in West Africa is still unclear but it is certainly far more dispersed than in Central Africa. However, there is a possible more abstract parallel between these two portions of the Macro-Sudan Belt. With respect to Central Africa, the human-based gender system of Niger-Congo, represented here by Bantu, seems to have expanded from the south(west) (excluding the unique and possibly

independent case of the Mbaic family in Ubangi itself). Bantu gender systems are thus subject to change toward the locally entrenched ±animate pattern according to a south(west)-north(east) cline. In West Africa, gender systems of the Niger-Congo type are increasingly restructured and may eventually shift to a ±animate system according to a north-south cline, and with Ijoid remnants of animacy-based gender systems are still found in the south of Niger-Congo groups. This somewhat reversed areal pattern between the eastern and western half of the Macro-Sudan Belt could be explained in a unified way if assuming that animacy-based noun classification was a trait more deeply entrenched in rainforest regions on which Niger-Congo languages encroached from the savannahs - this from the south(west) in Central Africa and from the north in West Africa.

There is a consideration of a yet wider geographical proportion that can be made in connection with noun classification in Central Africa. Given that Zandic and Mbaic languages in the east have come to develop sex-based gender assignment, the question arises whether there is any historical connection toward northeastern Africa where the opposition of masculine vs. feminine is the areally predominant distinction. Various considerations make this a rather weak hypothesis, however. For one thing, there are no sex-gender donor languages in the vicinity of the relevant Zandic and Mbaic languages. Moreover, for the West African cases (dealt with in §2.3.1) that are quite similar to the sex-based systems in Ubangi, possible contact-induced interference from neighboring languages would appear to be even more speculative than in Central Africa. Instead, I substantiate in the next section my proposal made in §2.2.5 that a sex-gender elaboration in systems with a pre-existing macrogender opposition is a universally latent development in the historical dynamics of noun classification.

2.3 The general typology and diachrony of gender systems

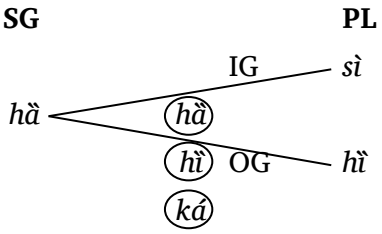
2.3.1 Macrogenders vs. sex genders from a typological perspective

I have argued in §2.2.5 above that the sex opposition in such Ubangi languages as Zande, Barambu-Pambia, Ma, and Mba is not the primary classificatory distinction but that it is rather superimposed on a simpler and more basic macrogender system with a ±animate contrast. This approach is parallel to Dahl's (2000b: 579-80, 590) concept of "serial combinations of elementary gender distinctions" creating "layered" structures (cf. also Croft (1994) for a parallel approach). This means in the present context that many non-binary systems are best analyzed as hierarchically organized resulting from the differentiation of one already existing macrogender, or possibly even both. My diachronic assumption is also in line with Dahl (2000a: 102) who expands his two basic typological generalizations (see §1) regarding the relation of animacy- and sex-based gender systems as follows:

> (3) All animates above the cutoff point [on the nominal hierarchy] may either be assigned to the same gender or there may be further divisions.

(4) If the principle referred to in (1) [see §1 above] distributes animate nouns among different genders, sex is the major criterion.

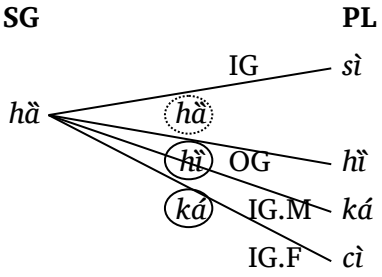
In the following, I show that several other cases of sex-based gender systems are equally compatible with my hypothesis, starting with African language groups outside the area at issue here. As a first example, Pratchett (2021: 297-9) reports an interesting case of sex genders grafted onto a pronominal animacy-based system in the Ju complex (Kx'a family) of the Kalahari Basin. Most varieties of the southern dialect cluster called Ju|'hoan, notably the best documented Tsumkwe variety (cf. Dickens 1994, 2005; Güldemann 2000), display a system with a basic ±animate contrast with two animate and three inanimate genders, as shown in Figure 29.



Note: agreement classes represented by default pronouns, only animate genders labeled

Figure 29: The pronominal gender system of Tsumkwe Ju|'hoan (Pratchett 2021: 290)

The animate genders distinguish in-group, which includes terms for the own and familiar ethnic groups as well as kinship, and out-group, which subsumes the remaining human and higher non-human animates. The inanimate genders with a less neat semantic differentiation follow the familiar pattern of being instantiated by agreement classes that are largely insensitive to number.



Note: agreement classes represented by default pronouns, only animate genders labeled

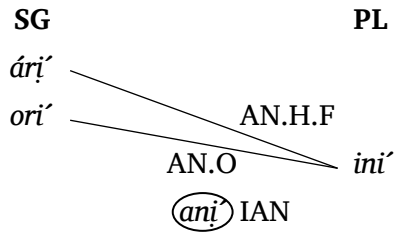
Figure 30: The pronominal gender system of Southern Ju|'hoan (Pratchett 2021: 298)

In southernmost Ju|'hoan, the original inventory was enlarged to seven genders through various formal and semantic changes, whereby the two new ones are related in the singular form to the inherited animate genders and encode in-group females and males, as shown in Figure 30. The author entertains language contact with sex-gender systems of neighboring Khoe languages as one factor for this innovation, so that this case is arguably of restricted

relevance for invoking a more general linguistic trend. Nevertheless, the mechanism of system elaboration uses language-internal principles and material. Moreover, the contact argument is hard to invoke for other cases in Africa, including the following.

As foreshadowed in §2.2.7, Ijoid in the Niger Delta of Nigeria is another relevant example. This family, which should not be viewed as a proven member of Niger-Congo (Güldemann 2018b: 174-7), is a widely recognized case of sex genders in Africa and it comes as no surprise that its languages have been analyzed heretofore as primarily sex-based, similarly to Zande (see, e.g., Corbett (2013a) for Defaka). However, a closer look at the available data reveals that this gender distinction is also superimposed on a more basic ±animate (or ±human) opposition. Jenewari (1989: 114-6) gives a survey of gender in Ijoid as a whole but since this treatment remains unclear on certain details, it is preferable to take recourse to available language-specific sources.

Kalabari, a language of the Eastern Ijo branch, has a pronominal gender system with three values, as shown in Figure 31. The three genders conveyed by pronouns and determiners are: a) human feminine animate, b) other animate, called “masculine” but in fact including also all non-human animates, and finally, c) inanimate, lacking differentiation for number (Jenewari 1977: 197-205, 245, 253, 265, 303-4). This picture turns out to be very similar to the system in Mba (Mbaic, Ubangi, cf. Figure 12 in §2.1.3), except that in Kalabari feminine rather than masculine human nouns are opposed to all other animates (Corbett (1991: 18) reports such a system for a restructured variety of the Australian language Dyirbal).



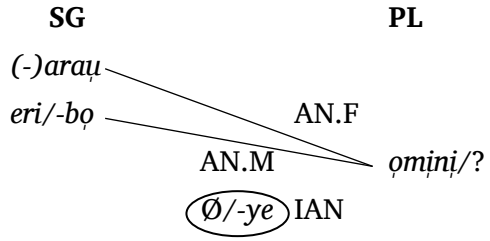
Note: agreement classes represented by clitic subject forms

Figure 31: The pronominal gender system of Kalabari (Jenewari 1977)

An apparently identical system is described by Tepowa (1904: 117-20) for Nembe, a language of the second subgroup of the Eastern Ijo branch. Ẹfẹbọ (1967: 3-4, 13-5), another source on this language, describes the same system except that an additional inanimate plural pronoun is listed. Jenewari’s (1989: 114) schematic figure of Nembe gender, for which he does not give a source, remains unclear, so that the apparent partial divergence to the previous information may well be due to mere differences in presentation.

The situation in a Western Ijo language can be recovered from Williamson’s (1965: 42, 62-3, 86-8, 114) description of Izon. Its gender system is largely parallel to that in Eastern Ijo except for two details. First, the sex-gender opposition for animates seems to be

simply feminine vs. masculine. Secondly, inanimate nouns are normally not taken up by pronouns and thus have overall zero anaphor. In fact, only one inanimate pronoun-like form *-ye* is given, and this is still transparent as being derived from a noun *iyé* 'thing' (see p.42, 62, 86). The resulting pronominal gender system is given in Figure 32. The variable encoding in the inanimate gender is parallel to the situation in such Ubangi languages as Indri (cf. Figure 5 in §2.1.3) and Baka (cf. Figure 16 in §2.1.5).



Note: if two exponents, they are "long" pronoun/bound "modified" pronoun

Figure 32: The pronominal gender system of Izon (Williamson 1965: 86, 114)

Jenewari (1983: 103-6) deals with Defaka, an isolated language and second primary branch of Ijoid. The systemic organization of genders is as in the previous figures for Ijo languages (including the pronominal insensitivity to number in the hierarchically lower gender) but the semantic assignment differs in that non-human animate nouns are treated like inanimates, which implies that the macrogender opposition is ±human (see also Corbett 1991: 12). However, even if sex genders apply to human nouns only, this distinction is secondary to a more basic macrogender opposition.

A third case outside Central Africa where the hierarchically higher macrogender is elaborated in some languages by a sex opposition is the Kru family, as reported by Marchese (1988). Its gender markers are largely thematic vowels, which regularly occur as simple pronouns. The mechanism behind their emergence on other parts of speech such as agreement targets and formally correlating noun endings has not been reconstructed conclusively nor have the forms been proven to be cognate with the Niger-Congo canon. This and other facts imply that, against standard and specialist perception, the Kru family can also not be viewed as a proven member of this larger lineage (cf. Güldemann 2018b: 177-9). Irrespective of this question, Kru is another case supporting my present argument that a sex-gender distinction is a secondary development from a previously existing macrogender opposition. Marchese (1988) proposes to reconstruct Proto-Kru with a basic ±human opposition, which is also found across modern languages. However, the two Western Kru languages Nyabwa and Wobe have innovated a feminine gender for human nouns (p.326-7).

The last example is the Kadu language Krongo from the Nuba Mountains of Sudan. According to the analysis of Reh's data (1985) by Güldemann and Junglas (in prep.), the language has a pronoun system based semantically on a primary ±animate distinction,

replicating several traits of parallel systems in Central Africa. Figure 33 shows that the inanimate gender lacks a number opposition and has partly zero exponence, while the animate domain is subclassified in the singular into masculine, feminine, and neuter. The use of neuter pronouns remains somewhat unclear but they do not seem to refer simply to non-human inanimates, in which case the system would have entailed a ±human opposition.

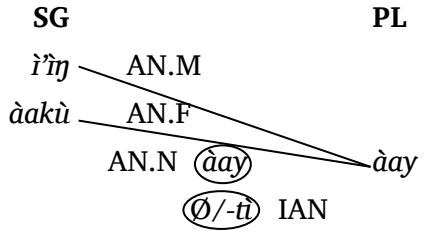


Figure 33: The pronominal gender system of Krongo (Güldemann and Jung. in prep.)

Krongo also has gender-number agreement on verbs and demonstratives. In this domain, the semantically based gender system of Figure 33 is replaced by a system that sheds the ±animate opposition but maintains the sex distinctions. In this second system, gender assignment is largely formal and arbitrary making it comparable to grammaticalized systems familiar from European languages involving canonical agreement, which is presumably behind the typologically oriented analyses of Krongo (Corbett 1991: 190) and its close relatives (e.g., Heine (1982: 212) on Katcha) as simply sex-based. It remains to be seen whether this trait is overall salient in the family as a whole. In any case, such an analysis ignores the semantically transparent pronominal system of Krongo in Figure 33 in which sex genders expand a basic ±animate macrogender opposition.

Finally, it is even conceivable that sex genders without an accompanying ±animate or ±human opposition are nevertheless historically secondary to such macrogenders. Consider in this respect the data of the Dajuic family as given by Heine (1982: 212-3) but based ultimately on Tucker and Bryan (1966: 236-7); this case merely serves as an illustration without claiming that the scenario entertained here is historically proven.

Branch	East		West
Language	Shatt	Liguri	Sila
Feminine	*c (j)*		*c*
Masculine	*m*	*m*	*m*
Neuter	*ny*	*ny*	

Table 8: Sex-based gender systems across Dajuic (Tucker and Bryan 1966: 236-7)

Table 8 provides the gender systems of three languages as encoded by thematic consonants in pronouns. While one is tempted to assume a primacy of the sex-based distinction in line

with common typological approaches such as Heine (1982), the available evidence is also compatible with a historical scenario according to which the basic distinction of the proto-system was ±human and the sex opposition is a secondary feature in the higher macrogender. This situation would be continued by the synchronic system in Shatt. Liguri, which lacks the feminine gender, has a plain bipartite ±human gender system. As opposed to the previous languages, the system in Sila as well as Daju of the same branch (Palayer 2011) is only sex-based but this could well be due to the loss of the "neuter" aka non-human gender, rather than giving evidence for the primacy of the sex distinction.

That is, various types of historical "maturation" including "opacitization" (cf. Seifart 2018: 20-3) may well be behind other modern systems in Africa and elsewhere where a ±animate or ±human macrogender opposition is synchronically only covert or does not exist. In particular, the existence of a third "neuter" gender in addition to masculine and feminine is perhaps more generally a likely modern reflex of an earlier inanimate or non-human gender in a macrogender opposition (but cf. Azeb (2006) on the role of animacy even in bipartite sex-gender systems in languages of the Ta-Ne Omotic family). Accordingly, the number of cases supporting my proposal would increase further inasmuch such scenarios can be entertained for other historically opaque situations.

Looking beyond Africa it is also not hard to find similar cases analyzed heretofore simply as instances of sex-based systems but compatible with the synchronic or diachronic analysis proposed here. A first well-known example is a frequent system type in Australian languages with a four- or five-way contrast of genders (called there "noun classes") that are number-insensitive throughout, as they are conveyed by transnumeral agreement classes. For example, Harvey's (1997: 48-62) representative survey shows that the close to ten languages he describes can all be accommodated in the present framework. While details differ, the general pattern is a primary macrogender opposition of ±animate and secondary distinctions that occur in both macrogender domains, notably sex in the hierarchically higher macrogender and ±plant.food in the lower one. Figure 34 shows the situation in the Gunwinyguan language Ngandi as given by the author after Heath (1978: 35-7).

(*ni-*) AN.H.M
(*na-*) AN.H.F
(*a-*) AN.NH
(*ma-*) IAN.PLANT.FOOD
(*gu-*) IAN.O

Figure 34: The gender system of Ngandi (Harvey 1997: 55)

Dravidian languages have been described by Corbett (1991: 8-11) as prototypical cases for gender systems with semantic assignment. Traditional descriptions identify the ±human macrogender opposition as the primary distinction (called philologically "high" vs. "low")

but sex is a further opposition for human referents, so that the family is normally recorded in typological surveys under the group of sex-based systems (cf., e.g., Corbett 2013a). Krishnamurti (2003) lists three system types, as given in Figures 35-37 for demonstrative pronouns as agreement targets, which have all been entertained as reflecting the situation in Proto-Dravidian. Whatever the final verdict, in no proto-system is sex obviously the basic let alone the only semantic opposition.

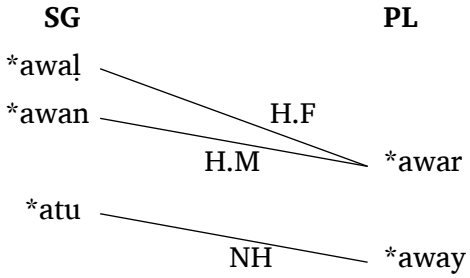


Figure 35: The demonstrative pronoun system of Dravidian - South I (after Krishnamurti 2003: 209)

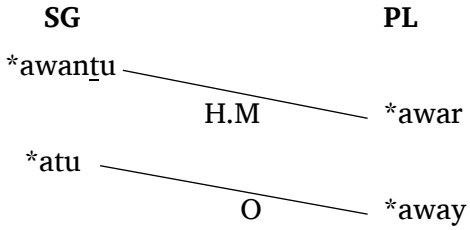


Figure 36: The demonstrative pronoun system of Dravidian - South II and Central (after Krishnamurti 2003: 209)

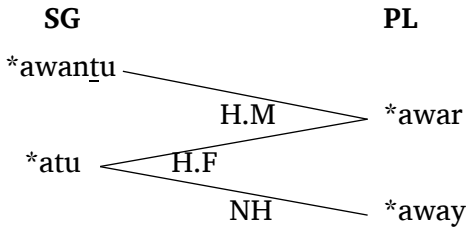
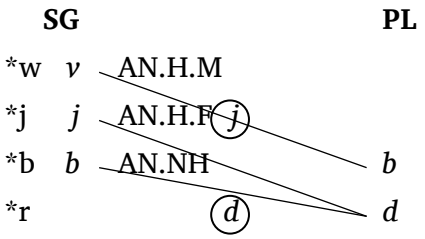


Figure 37: The demonstrative pronoun system of Dravidian - Telugu and North (after Krishnamurti 2003: 210)

A third relevant example outside Africa for gender systems combining macro- and sex genders is the Nakh-Daghestanian family in the Caucasus. In most languages, gender systems as a whole appear mature and involve a considerable amount of semantically opaque assignment. However, some recurring genders have a semantically transparent core and these seem to have existed already in an early historical stage. The central gender exponents are thematic prefixes occurring on a wide range of agreement targets. I provide here three representative systems, which have comparable gender inventories and semantics

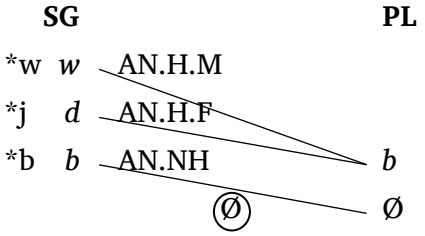
in spite of their considerable differences in systemic-formal terms (cf. the data in Corbett (1991) on a number of other languages of the family).



Note: inanimate genders represented by encircled transnumeral markers and unlabelled

Figure 38: The gender system of Bats (after Corbett 1991: 171-2)

Figure 38 displays the system of productive genders in the Nakh language Bats according to Corbett (1991: 171-2). Tsez from Avar-Andic-Tsezic in the Daghestanian branch seems to have a virtually identical system (cf. Corbett 1991: 190).



Note: inanimate gender represented by encircled transnumeral markers and unlabelled

Figure 39: The gender system of Archi (after Corbett 1991: 158)

Archi from Lezgic in the Daghestanian branch has a more complex agreement system in that prefixes are complemented by a partly independent set of in-/suffixes, increasing the number of formal agreement classes. I confine myself in Figure 39 to a representation of the four prefix classes because they are largely comparable to the system in Bats and yield the same gender system, when also including the other agreement set of Archi.

A comparison between Archi and Bats shows that their major differences are the number of productive inanimate genders and the distinct plural agreement class in the human feminine gender. According to my ongoing family survey, the Lezgic language Budukh and the Nakh language Ingush have a system largely identical with that of Archi.

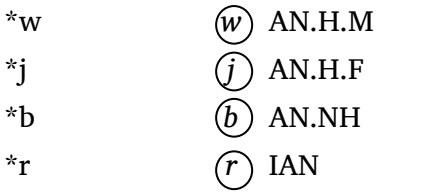


Figure 40: The gender system of conservative Andi (Corbett 1991: 198)

Finally, Figure 40 represents the gender system of the conservative dialect of Andi, another language of the Avar-Andic-Tsezic group, as discussed by Corbett (1991: 198-200). In comparison to Bats and Archi its agreement class system presents yet another profile in that the classes are all transnumeral, as in Australian languages like Ngandi (cf. Figure 34).

Inspite of the partly dramatic structural differences between the gender systems in the Figures 38-40, one can discern a unitary basic scheme, also relevant in variable form in other languages of the family. There is a core of four largely cognate agreement classes encoding a basic ±animate opposition. While the higher gender domain is differentiated according to sex, at least one transnumeral agreement class conveys the inanimate gender.

Last, but not least, a fourth case, particularly important from a historical perspective, is Indo-European, whose modern gender systems with a principal sex-based, albeit often non-semantic, assignment have so much influenced typological approaches. There is general agreement among historical linguists that the tripartite system of feminine vs. masculine vs. neuter had a precursor in a bipartite animacy-based gender system, whereby neuter and masculine continue the old inanimate and animate gender, respectively, and feminine was the innovation in the animate domain (see, e.g., Luraghi 2011 for a detailed discussion). In modern Indo-European languages, the early semantic assignment system has become largely opaque. In particular, many inanimate/non-human nouns receive their gender according to non-semantic assignment criteria, thus also being potentially masculine and feminine, so that they no longer form a coherent macrogender domain. However, this high degree of semantic opacity originates in a more transparent macrogender opposition.

The above data on languages with sex-based genders cast doubt on an analytical approach that accords to them some kind of primacy and views the opposition of sex-based vs. non-sex-based as typologically fundamental. In the early European linguistic tradition focusing on the situation in the Indo-European family, this approach is deeply entrenched because it tended to contrast sex-based gender systems so salient in Europe itself with systems based on other assignment criteria outside the continent (see, e.g., Fodor (1959) for a discussion of the research history). This eurocentric tradition played a particular role in Africa, as is evident from the role of sex gender as a crucial classification criterion for the continent's languages within the ideologically burdened Hamitic theory by Meinhof (1912) and other early scholars (cf. Pugach 2012, chapter 4 for a general discussion). Even without any ideological overtones, the bias toward sex distinction undoubtedly contributed also to shaping later typological approaches to gender.

For example, Heine's (1982: 190-3) contribution, which was restricted to African languages but influenced later global assessments, works with three principal system types according to semantic criteria for gender assignment. They are: a) "sex-based," b) "nature-based," subsuming bipartite animacy-based systems, the numerically important Niger-Congo type, and yet others, and c) "mixed," constituted by cases involving assignment criteria of the two, presumably "pure" types. Such a framework has drawbacks in view of the data

assembled here. Heine's label "nature-based" itself may just be an unfortunate terminological choice, as the relevant systems are not more (or less) grounded in features that human experience encounters in the natural environment. In fact, the term does not refer to any substantial semantic content but subsumes quite diverse systems that merely lack sex genders. That is, the essential problem is the contrast between sex-based assignment and the composite of all non-sex-based criteria. For the third "mixed" type, Heine only records Zande and Ma, to which I can add here Barambu-Pambia and Mba from Central Africa as well as additional African cases mentioned above. Since he observes that the type is "extremely limited", it is hard to avoid the conclusion that he only established it in order to accommodate this small residue against the background of a purportedly principal dichotomy between sex-based and non-sex-based assignment systems.

Corbett's (e.g., 2013a, 2014) approach follows Heine's basic typology on the global level, differing only in not recognizing a mixed type and thus assigning languages like Zande to the "sex-based" category, which is opposed to a "non-sex-based" one. This analysis ignores that the more basic assignment principle in Zande and similar languages is the ±animate contrast, still recognized by Heine, and hides the basic affinity of Zande with other geographically and genealogically close languages that are not sex-based. Such a misclassification would also arise in Corbett's approach for a number of other cases, for example, the above Kru languages with sex gender, which are equally aligned better with their relatives that have a ±human macrogender without a sex distinction. It also nourishes questionable generalizations like the following, which only applies to sex-based systems without an accompanying macrogender opposition.

> In most sex-based grammatical gender systems, the gender of inanimate nouns transcends natural gender in that some inanimate nouns are treated in the same way as nouns referring to female beings, while other inanimate nouns are treated parallel to nouns referring to male beings. (Azeb 2006: 705)

I therefore advance a different approach building on Nichols' (1992, see §1) macrogender concept, for which she (p.129) proposes that "probably a human or animate macrogender is operant to some extent in all class [aka gender] systems, although not all grammatical descriptions allow this fact to be established." In particular, against the basicness of the dichotomies of ±animate and ±human, I reiterate that a semantic sex distinction is often not on a par with them, let alone more basic, but rather a further differentiation within their hierarchically higher gender domain. This is parallel to the elaboration some languages make within the opposite lower domain, for example, the large inventory of non-human genders in canonical Niger-Congo languages, including Bantu (cf. §2.1.2). Hence, noun categorization motivated by the nominal hierarchy and sex gender are not only semantically orthogonal to each other, as already observed, for example, by Luraghi (2011: 245-6), but the last is recurrently secondary to the first in both synchronic and diachronic terms.

The present findings neither exclude that the emergence of a sex opposition can be the result of a historically primary origin nor do they prove the strong opposite hypothesis that a sex opposition implies a pre-existing simpler macrogender dichotomy. The relative importance of both possible scenarios for the rise of sex-based gender assignment remains to be investigated with a cross-linguistically wide and representative scope. As exemplified above, supporting evidence for the proposal entertained here would be of two kinds. First, there are synchronic cases where a sex distinction is accompanied by other genders, such as animate, non-human, and inanimate, as these can be reanalyzed as reflecting one or the other macrogender opposition. Second, there is historical-comparative reconstruction, for which the development from the previous pattern toward a "mature" sex-gender system without a transparent macrogender distinction must not be underestimated.

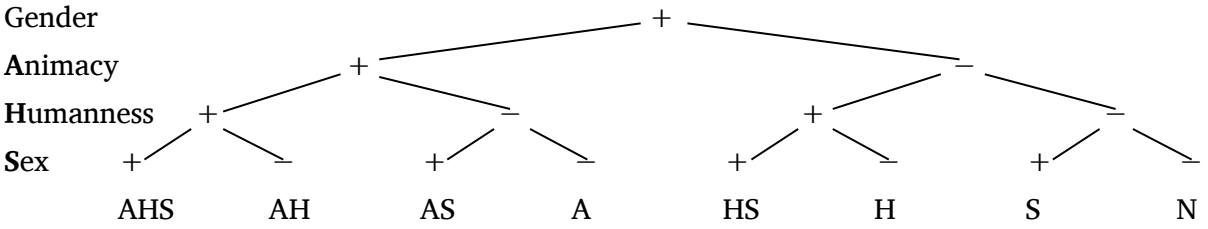


Figure 41: Assignment-based typology considering the two basic macrogender types

There are repercussions for a synchronic typology, which should be "liberated" from the analytical bias toward sex-based gender. I venture that it is more useful to not only carefully record the presence of macrogender distinctions but to even prioritize them in the typology over sex-gender distinctions. The resulting typological grid could look as in Figure 41, which entails eight basic types. I venture that compared to the simple dichotomy of sex-based vs. non-sex-based such a typology has inherent advantages far beyond the fact that languages like Zande etc. with macrogender and sex-gender oppositions turn up closer to their semantically as well as historically related languages. That is, the scheme in Figure 41 inherently poses typological questions that are partly new and interesting.

Type	AHS	AH	AS	A	HS	H	S	N
Mbaic	Ma, (Mba)			Dongo		Ndunga		
Zandic	Zande, Geme	Nzakara A		Nzakara B	Barambu-P.			
Ijoid	(Kalabari)		Izon		Defaka			
Dajuic					Shatt	Liguri	Sila	

Note: Nzakara A after Tucker (1959), Nzakara B after Foulou-Bazouma (2006)

Table 9: Gender-system types across four African language families

One question arising immediately is whether all theoretically possible types of Figure 41 are attested and how they are distributed, notably in numerical terms but also in other ways, for

example, geographically. In order to get some first impression, Table 9 surveys four African families, Mbaic, Zandic, Ijoid, and Dajuic, discussed in §2.2.5 and §2.3.1. All groups, the last one at least potentially, possess languages with both macro- and sex genders. Already in this small sample, all but one column in Table 9 are populated, which suggests that the types of Figure 41 are natural options except for the right-most feature setting, which lacks both macro- and sex gender and is labelled accordingly N(one). This absence appears intuitively unsurprising but requires systematic cross-linguistic testing.

Less expected is that the introduction of a sex-gender distinction is not necessarily articulated by two dedicated sex genders in that only one is specific for either of the two relevant values and intertwines it with a macrogender value. Thus, in Mba (Figure 12, §2.1.3), human masculine referents are opposed to all other animates; the inverse case where a human feminine gender is opposed to an animate residue holds in the Eastern Ijo languages Kalabari (Figure 31) and Nembe. The result is that the semantically more general gender subsumes referents of different macrogender domains, here non-human and some human animates. Even more surprising is that such a situation also arises in a number of bipartite sex-based systems. Animate feminine is opposed to a single residue subsuming animate and inanimate nouns in Diyari from Pama-Nyungan and Dizi from Maji Omotic (Corbett 1991: 11) as well as in Wolaitta from Ta-Ne Omotic (Azeb 2006: 706-7). An opposition of animate masculine vs. other holds in Kala Lagaw Ya from Pama-Nyungan (Corbett 1991: 11) as well as in Zayse and Zargulla from Ta-Ne Omotic (Azeb 2006: 707). Finally, the Salishan language Halkomelem displays a distinction of human feminine vs. other (Corbett 1991: 11), while a human masculine vs. other opposition is reconstructed for one group of South and all Central Dravidian languages (Krishnamurti 2003: 209, cf. Figure 36) and by some scholars even for Proto-Dravidian (see the discussion in Subramanyam 1976). In the latter type of language, one gender subsumes human, non-human animate, and inanimate nouns!

Against a typology as in Figure 41, it is also worth testing systematically whether there are qualitative differences between languages that share sex genders but are distinct regarding the presence and absence of an active macrogender. That is, the above discussion suggests that sex-gender assignment tends to be semantically more transparent in languages with active macrogenders, and inversely, that sex-gender languages on the right-most node of Figure 41 without any macrogender have a bias toward historically old “mature” systems as found, for example, in modern Indo-European. This leads to the hypothesis raised above that type-S languages commonly or even only emerge as a result of grammaticalization in languages of the types AHS, AS, and HS, which entail some macrogender opposition. Finally, the question arises whether there are systematic differences in the degree of gender-number conflation. As observed in §2.2.6, the possible absence of number marking in a gender system correlates with its semantic transparency with respect to the nominal hierarchy and the resulting trend to number insensitivity, particularly in but not restricted to lower

genders. Since semantic transparency is more restricted in systems without a macrogender distinction, they may display a larger amount of conflation with number marking than those with a macrogender, in spite of sharing the trait of sex gender.

2.3.2 Emergence of gender systems

Several studies have dealt with or even been dedicated to the question of how gender systems ultimately emerge. From the outset, when speaking of the source of gender marking, one should distinguish between the origin of the linguistic material used in gender systems on the one hand and the diachronic mechanisms whereby gender systems originate within concrete morphosyntactic contexts on the other hand. While the two are intimately intertwined, they can be separated and my following discussion is primarily concerned with the second question. In this regard, it is useful to go back to the present definition of gender as the intersection of two in principle distinct linguistic domains, namely nominal classification and morphosyntactic agreement and try to conceptualize how the two could merge in a single system. In the following, I review the previous literature with particular reference to the scenario I developed here on the basis of the Central African data.

Fodor (1959) is a comprehensive and useful summary of relevant work until the middle of the last century, when research was still biased considerably toward the Indo-European family and its prominent sex-gender distinction. The discussion of the problem only gained momentum with later studies that were based on wider cross-linguistic data.

A first influential contribution is Greenberg (1978) who argued with a diverse range of data that classifying determiner elements develop to gender markers on both agreement targets and nominal agreement controllers. He provides no real answer regarding the ultimate origin of the classificatory function already present in such determiners. He only proposes briefly (p.78-9) that this function could have been inherited from a pre-existing system of (numeral) classifiers or is simply there when stating the following:

> The fundamental bases of contrast, animate and inanimate, human and non-human, male and female, tend to occur in demonstratives, third person pronouns and interrogatives as a guide to identification.

Heine's (1982: 214-5) informative cross-African survey of gender systems also provides a few remarks on the topic, notably on the possible nominal origin of gender markers and, more importantly, the crucial role of pronouns in the early development of gender systems:

> Although it is conceivable that African noun class systems developed under varying conditions, the evidence available suggests that it is the pronominal system in general and the person pronoun in particular which was the most common starting point …

Given the cross-linguistic breadth of his study, Corbett (1991: 310-2) offers diverse and more detailed scenarios how gender systems may arise. He repeats the scenario adumbrated by Greenberg (1978) from classifiers over classifying demonstratives to agreement-based

gender marking and adds the idea from other studies that classifiers themselves originate in nouns with classificatory possibilities. He (p.311) also elaborates on Greenberg's brief remark regarding basic binary distinctions in pronominal elements with the following pertinent point:

> There is, however, a second possible source for the distinction [in classifying demonstratives], which is hinted at by Greenberg (1978: 78-9) and which has been taken further more recently (Greenberg, personal communication). He observes that in a number of languages we find an anaphoric pronoun (derived from a demonstrative) which is restricted to animates or persons, while another demonstrative fills the remaining gap […] the specialization of a personal pronoun (originally a demonstrative) could give rise to an animate/inanimate (or personal/non-personal) gender system. In this scenario the distinction between two sets of nouns arises at the stage when a demonstrative extends to being used as a third person pronoun (an earlier personal pronoun having become specialized for use with persons or animates).

It may come as no surprise that the study originally proposing the crucial macrogender concept also most clearly outlines conceptually the mechanism entertained here. Thus, Nichols (1992: 141) writes on the relation between binary macrogenders and the origin of noun classification as follows:

> Since minimal class [aka gender] systems always seem to focus on oppositions like animate/inanimate, human/nonhuman, and masculine/feminine, it makes the most sense to seek the origin of gender in the grammaticalization of covert animacy subsystems. Since these involve a universal cognitive hierarchy always available for potential implementation (and thus exploited in other grammatical domains as well […] If a covert animacy system or other covert classification were somehow picked up by agreement rules, the language would thereby have noun classes. It follows that all that is needed in order for noun classes to arise is a covert animacy system, a potentially recruitable formal distinction, and preexistent agreement patterns.

Aikhenvald (2000) is another yet more comprehensive survey of noun categorization on the globe as it also covers diverse classifier systems. In chapter 13 (pp.352-79), she takes up the diachronic ideas of previous studies, and adds numerous examples, namely the recurrent nominal origin of classifiers and gender markers, the developmental chain from classifiers to gender markers used both in agreement and adnominally, and finally Corbett's (1991) and Nichols' (1992) scenario involving a binary asymmetric pronominalization pattern steered by a macrogender distinction.

I finally need to mention here Luraghi's (2011) detailed historical study of the genesis of the Indo-European gender system, which also involves a discussion of more general cross-linguistic issues of the history of noun classification systems. With regard to the latter, she (p.459) concludes as follows:

> I examined the possible origin of gender systems, and argued that gender systems can arise in two quite different ways, either from the grammaticalization of classifiers (gender from above), or from the establishment of agreement following different morpho(syntactic) behavior of groups of nouns (gender from below). Crucially, non-sex based gender systems with more than two genders seem to possibly arise only from former systems of classifiers. I argued that gender systems also have different primary functions depending on their origin: while genders 'from above' serve a classificatory function in the first place, genders 'from below' primarily fulfill the function of providing a means for referent tracking. For this reason, they tend to be sex-based, since male and female humans are equally discourse-prominent and topic-worthy entities.

More research is needed in order to evaluate whether all her statements are borne out by representative cross-linguistic data.[9] It should be intuitively clear, however, that her two types of gender origin from "above" and "below" relate, if in an abstract way, to the interrelation of the two definitional criteria of gender, namely noun classification and agreement (being functionally related to anaphor and reference tracking). In fact, they match to a large extent the two major scenarios of gender origin in the previous research.

Her gender from "above" is the scenario in which overt nominal categorization by means of a classifier system precedes the establishment of canonical agreement. This idea was conceived early on and has since then been more and more substantiated. This is evident by such general works as Westermann (1947), Fodor (1959: 186-93), Greenberg (1978), Corbett (1991: 139-41, 311-2), and Passer (2016) as well as concrete language-specific studies, for example, by Reid (1997) on the Ngan'gityemerri dialect of Nangikurrunggurr (Southern Daly) in Australia and by Seifart (2005) on the Miraña dialect of Bora (Boran) in South America. Recent research by Kießling (2013), Güldemann and Fiedler (2021), and Güldemann and Merrill (in prep.), which takes the full diversity of the dominant Niger-Congo noun classification system into account, proposes that this scenario also applies in this family.

Luraghi's gender from "below" in emerging "from the establishment of agreement following different morpho(syntactic) behavior of groups of nouns" can be conceived of as the inverse trajectory, namely that anaphoric agreement precedes and eventually leads to overt noun classification. It thus relates directly to the second scenario of gender origin, which seems to have been invoked already by Greenberg and was adumbrated later by

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[9] For example, it is questionable whether more complex non-sex based gender systems universally emerge from classifier systems conceived traditionally to have multiple distinctions. For example, nothing hints at this scenario for the emergence of the gender systems in common Ju of Kx'a (cf. Figure 29, §2.3.1), in the Taa language complex of Tuu in the same area (Güldemann 2000), or in Proto-Kru, unless one follows the still unproven hypothesis of a Niger-Congo affiliation of this family (cf. §2.3.1). It is also unclear whether the different functional bias Luraghi assumes for her two scenarios of "gender from above" and "gender from below" hold up. In this connection and in view of the present survey, it is also doubtful that gender from "below" tends to be sex-based.

Corbett (1991: 311), Nichols (1992: 141), and Aikhenvald (2000: 369). However, the full mechanism of this type of gender emergence has to my knowledge not yet been fleshed out let alone been argued to be the possible starting point for the origin of gender systems that have for a long time been the main staple of research on gender. The historical scenario I have proposed for animacy-based and sex-based gender systems in Central Africa covers the full development from their ultimate emergence to the establishment of more complex systems. The major stages are repeated here from §2.2 above:

(I) asymmetric grammatical behavior of nouns, notably concerning pronominalization, according to the ±animate distinction of the nominal hierarchy (type I)

(II) partly covert bipartite pronominal gender system involving animate pronoun(s) vs. inanimate zero anaphor (type II)

(III) overt bipartite pronominal gender system with animacy-based assignment (type III)

(IV) complex animacy-based pronominal gender system involving sex gender distinctions

Compared to previous ideas, there are several new components in this account. First, there is the crucial role of zero anaphor, complemented by other proforms, in the partly covert system of stage II as a precursor of a dedicated inanimate pronoun in stage III. Second, as opposed to earlier hypotheses that accord a key role to demonstratives, their involvement is possible but not necessary; they are just one among other possible sources for proforms that assume a classificatory function in a pre-established system. Last, but not least, more complex systems arise naturally by way of introducing additional distinctions in either of the two basic values of simple bipartite structures, notably a sex opposition in the higher macrogender. A sex-gender system of this kind, which is semantically still considerably transparent, can further evolve into one with arbitrary and formal assignment (cf. Corbett 1991, 2013b). This means that the new scenario even accounts potentially for the ultimate origin of mature sex-based gender systems, as evidenced by the case of Indo-European.

My scenario also supports Heine's (1982: 215) conclusion about the important role of pronouns in young (and for that matter semantically transparent) gender systems, at least of the type at issue here, and accordingly the general heuristic potential of gender systems based on just such exponents. Recall that virtually all cases in Central Africa discussed above are pronominal gender systems without any or only limited canonical agreement but that the few systems in the area WITH canonical agreement like Beeke (cf. Figure 1, §1) and Komo (cf. Figure 20, §2.2.1) have exactly the same systemic structure. This reiterates that the organization of systems based only on pronouns and systems involving only or also canonical agreement is not intrinsically different. Non-pronominal agreement appears to be an orthogonal trait that can be a subsequent development without any change in the previous system. Moreover, in tending to involve historical maturation, non-pronominal agreement seems to have a bias toward formal and arbitrary rather than semantic assignment.

3 Conclusions

At the beginning of his study “The origin of grammatical gender,” Fodor (1959: 1) wrote:

> From a general linguistic standpoint the origin of gender cannot be accounted for by universal causes that would apply to all existing and extinct languages and language families of the world. Future research should be concentrated on the concrete material and evidence of particular languages, and the result will have validity only in so far as the language family under scrutiny is concerned.

In the meantime, enough evidence has accumulated that certainly qualifies his statement. While each gender system certainly has its language-specific synchronic and diachronic aspects and there is not a single universal path to gender, more cross-linguistic regularities exist than Fodor anticipated. One of the universal causes for gender that has been dealt with here in detail is a principle that relates both to human cognition and discourse practices. Dahl and Fraurud (1996: 60) aptly write as follows:

> In order to understand the role of animacy in discourse, however, it may be most profitable to focus on what has in the literature been variously referred to as 'perspective', 'empathy' and 'point of view'. The notions 'Agent' and 'Experiencer', discussed in terms of semantic roles in the preceding section, can also be seen as general characterizations of the typical roles of animates in general. We tend to think of the world as organized around animate beings which perceive and act upon their inanimate environment. Correspondingly, the world as depicted or narrated in a discourse tends to be seen from the point of view of animates.

When Fodor (1959: 12) demands that a theory dealing with the provenance of gender needs to “explain how the reflection came into existence, in what manner, by what grammatical means, through what stages of development,” the above principle embedded in the concrete scenario I propose here provides, I argue, such an account.

Moreover, the primacy of macrogender choices induced by the nominal hierarchy vis-à-vis sex gender is another important result of this study. Macrogender distinctions are entailed in many complex sex- and non-sex-based systems and are also the target of their possible simplification. Corbett (2013a) concludes with respect to his cross-linguistic survey:

> The wide [geographical] scatter of these [animacy-based] languages shows that animacy is a viable basis for gender systems. Nevertheless, it is overshadowed by sex-based-systems.

However, his conclusion is based on a typology biased toward sex gender and thus inherently hides cases of the purported non-sex-based opposite. It is thus necessary to carry out a fresh survey according to a typology like the one in Figure 41 of §2.3.1 controlled for genealogical and geographical biases. Furthermore, if, as I suggest, sex-based assignment is often grafted on a more basic macrogender dichotomy, Corbett’s term “overshadowed” possibly makes most sense when understood first of all in historical terms.

With respect to Luraghi’s dichotomy between gender from “below” and “above” or more concretely between the present scenario and that starting out with a classifier system,

it is worth looking for any correlations with the character of the gender systems thus emerging. Cross-linguistic surveys indicate that the nominal hierarchy is equally important in the early history of classifier systems (cf., e.g., Croft 1994). According to Kießling (2018) on the Macro-Sudan Belt and Stilo (2018) on the Araxes-Iran linguistic area, incipient and young classifier systems indeed also emerge with the binary macrogender distinctions ±animate and ±human (provided there is no interference of another classification system like, e.g., Niger-Congo genders in some Gur and Benue-Kwa languages of the Macro-Sudan Belt).

At least in Africa, one is, however, tempted to diagnose a gender system correlation between ±animate macrogender and pronoun origin as opposed to ±human macrogender and classifier origin, the second associated with the Niger-Congo type. Given that Croft (1994: 152) suggests a cross-linguistic bias of numeral classifier systems toward a ±human opposition, it needs to be investigated whether the broad African picture results from a more general difference or merely reflects a geographical bias owing to the importance of a single language family.

Last, but not least, I would like to make a point relevant for typological research in general. The conclusions drawn here arose from empirical data attempting an exhaustive survey of a language set that is geographically coherent and involves some kind of historical relationship, be it genealogical or contact-mediated. Moreover, the range of language types comprised cases where the relevant phenomenon is in the making or at least historically young as well as cases displaying later developments and thus a higher degree of maturation. I venture that it is the fine-grained analysis of such a data profile that enables a conclusive model of more general historical dynamics, which in turn allows the assessment of modern cross-linguistic data. In other words, diachronic can crucially inform synchronic typology.

Abbreviations

AGR agreement, AN animate, CAUS causative, COM comitative, COP copula, DEF definite, DEM demonstrative, DIR direction, F feminine, FIN final, FOC focus, FUT future, GEN genitive, H human, IAN inanimate, IG in-group, IMP imperative, INTERR interrogative, M masculine, N neuter (or none), NEG negation, NH non-human, O other, OBJ object, OG out-group, PFV perfective, PL plural, PN personal name, POSSR possessor, PST past, REDUP reduplication, REL relative, S sex, SBJ subject, SG singular, TN transnumeral

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