Chapter 5

Niger-Congo "noun classes" conflate gender with deriflection

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This paper reviews the treatment of gender systems in Niger-Congo languages. Our discussion is based on a consistent methodological approach, to be presented in §1, which employs four analytical concepts, namely agreement class, gender, nominal form class, and deriflection and which, as we argue, are applicable within Niger-Congo and beyond. Due to the strong bias toward the reconstruction of Bantu and wider Benue-Congo, Niger-Congo gender systems tend to be analyzed by means of a philologically biased and partly inadequate approach that is outlined in §2. This framework assumes in particular a consistent alliterative one-to-one mapping of agreement and nominal form classes conflated under the philological concept of "noun class". One result of this is that gender systems are recurrently deduced merely from the number-mapping of nominal form classes in the nominal deriflection system rather than from the agreement behavior of noun lexemes. We show, however, that gender and deriflection systems are in principle different, illustrating this in §3 with data from such Niger-Congo subgroups as Potou-Akanic and Ghana-Togo-Mountain. Our conclusions given in §4 are not only relevant for the historical-comparative and typological assessment of Niger-Congo systems but also for the general approach to grammatical gender.

Keywords: gender, Niger-Congo languages, agreement, noun classes, deriflection.

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1 The cross-linguistic approach to gender

Gender is understood here in terms of Corbett (1991), namely as systems of nominal classification (also called categorization) that are reflected by agreement. "With about two thirds of all African languages [being] gender languages" (Heine 1982: 190), Africa is rightly identified by Nichols (1992: 131) as a global hotbed of this phenomenon. At the same time, the majority of African languages belong to a single language family, Niger-Congo,[1] which displays a cross-linguistically unusual type of nominal classification described in a particular philological tradition. The existing research bias toward this large family keeps influencing the treatment of noun classification not only in African linguistics but also in typology in general. This contribution approaches the typical gender systems of Niger-Congo from a cross-linguistic perspective by subjecting them to an analysis that is universally applicable rather than one that is biased toward the special characteristics of this language group.

As mentioned above, according to the typologically most widespread approach, gender is the intersection of two domains, namely nominal classification and syntactic agreement, as the overt expression of a feature of a "trigger" (also called controller), usually a noun, on another word as the "target". Several complications for the analysis of gender arise from Corbett's (2006) extensive cross-linguistic survey of agreement. Notably, a language may have more than one agreement system and, more importantly for our discussion, a system sensitive to gender need not be restricted to this feature but most often also concerns others like number, person, case, etc. The features that a noun trigger transfers to a target not only relate to properties of an abstract lexical item, which are recurrently semantic. They can also concern the formal properties of the concrete word form of a given noun in the agreement context. A sound understanding of a gender system thus presupposes an exhaustive analysis of the language's agreement system regarding all its agreement features and the subsequent "subtraction" of all factors but gender. If gender is only conflated with number, which is cross-linguistically frequent, it can be conceptualized as "agreement minus number." This also holds for the Niger-Congo systems at issue here.

[1]We will not deal here with the still controversial question of the exact composition of this language family. That there is a substantial core group of genealogically related languages has been shown by Westermann (1935) with reference to gender, the very feature at issue, and the present discussion is concerned with languages that are robust members of this lineage (see Güldemann (2018) for a detailed recent discussion of the genealogical classification of African languages and the status of Niger-Congo in particular). While the discussion is also relevant for uncertain members of the group, we will not deal with them here.

The present contribution provides a novel analytical approach to gender. That is, we apply a strict distinction of four concepts, which are necessary whenever gender is reflected by syntactic agreement as well as nominal morpho-phonology, the latter implying some amount of what Corbett (1991) calls formal class assignment. The four notions are:[2]

a. AGREEMENT CLASS (to be abbreviated as AGR and numbered by Arabic numbers),

b. GENDER (to be occasionally labeled semantically or numbered by Roman numbers),

c. NOMINAL FORM CLASS (to be abbreviated as NF and represented by the capitalized exponent), and

d. DERIFLECTION (see p. 99 for the definition of the term, to be represented by the relevant NF set).

This approach is illustrated with the following example from the Bantu language Swahili, where agreement and nominal form classes are bold-faced in both vernacular and annotation line.

(1) Swahili (personal knowledge)

a. ***m****-toto* ***yu****-le* ***m****-moja* ***a****-me-anguka*
M(W)-child(**1**) **1**-D.DEM **1**-one **1**-PERF-fall
'that one child has fallen'

b. ***wa****-toto* ***wa****-le* ***wa****-wili* ***wa****-me-anguka*
W(A)-child(**2**) **2**-D.DEM **2**-two **2**-PERF-fall
'those two children have fallen'

The subject nouns in (1) trigger agreement on three targets: the demonstrative modifier *-le*, the numeral modifiers *-moja* and *-wili*, and the verb *-anguka* in the form of subject cross-reference. There are two different AGREEMENT CLASSES, AGR1 and AGR2, that are associated with the noun forms *m.toto* 'child (SG)' in (1a) and *wa.toto* 'children (PL)' in (1b), respectively, and they are evident from two different sets of exponents across the three relevant agreement targets, namely *yu-/m-/a-* vs. *wa-/wa-/wa-*. An agreement class in the present conceptualization

[2]Since genders and deriflections also establish sets of nouns, they could also be called "gender CLASSES" and "deriflection CLASSES", respectively. We use here the short versions.

is thus a set of noun forms that share an identical behavior across all agreement contexts of a given system and thus equals what Corbett (1991, 2006) calls a "consistent agreement pattern" (see this author's detailed discussion of the possible problems in establishing such an agreement class). (For schematic presentation, an agreement class is represented conventionally by the set of exponents of a single agreement target that involves the maximal class differentiation.) A crucial feature of our approach is that it is of no concern whether noun forms of one agreement class are of the same gender, number or any other feature, which differs from Corbett's approach inspired by Zaliznjak (1964). An agreement class in the present terms is thus an overt but normally conflated reflex of diverse grammatical features – in Swahili, concretely of gender and number (see below for more details about our analytical and terminological differences to Corbett's approach).

Gender (classes) are defined in line with Corbett's (1991) cross-linguistic approach. Analytically, they are derived by abstracting from all other agreement features, which in the Swahili system is only number. The majority of Swahili nouns have a singular and a plural form so that a gender is instantiated by a particular pairing of the respective agreement classes. In (1), these are singular AGR1 and plural AGR2, which is the regular agreement behavior for count nouns of the "human" gender, which includes the nominal lexeme *-toto* 'child'. The gender of transnumeral[3] nouns outside the systems of number distinctions is accordingly discernible from a single agreement class.[4] Normally, genders as the ultimate goal of analysis here are thus classes of nouns in the lexicon. However, gender often transcends the lexicon and applies to a language's reference world more generally. That is, relevant systems can entail in addition such phenomena as nominal derivation and even the expression of grammatical relations. Swahili, for instance, also has agreement patterns (and noun prefixes) for derivational diminutives, infinitives, and various locative notions. The nominal lexeme *-toto*

[3]The term "transnumeral" is used here neutrally to refer to nouns that do not partake in the normal number oppositions of a language. It must not be confused with "general number" in terms of Corbett (2000: 9–19), which refers to a feature value in the number system as opposed to the more common singular and plural. Typically, transnumeral nouns like infinitives, locatives and non-count nouns for masses, liquids, abstracts etc. do not have different number forms, while general number is a number value that applies to nouns that have an alternative singular and/or plural variant.

[4]In general, any agreement class that only encodes gender and no other agreement feature does not require a distinction between gender and agreement class. An entire system of this kind would represent "ideal" functionally transparent gender marking, because there is a straightforward relation between one form and one meaning. However, such cases turn out to be rare cross-linguistically; they are found, for example, in Australian languages.

'child', for example, can also occur in the gender AGR7/AGR8 for diminutives, then appearing accordingly as *ki-toto/vi-toto* 'baby/babies'.

Example (1) also shows the intimate interaction between nominal morphology and gender in Swahili. The subject nouns as the agreement triggers again exhibit two morphologically distinct word forms rendered by prefixes, namely *m-* and *wa-*, which characterize NF *M(W)-* and NF *W(A)-*, respectively. This direct morphological reflex of gender on the noun is conventionally subsumed under "overt gender" (cf. Corbett 1991: 44, 62–63, 117–118). That is, NOMINAL FORM CLASSES are established in the present approach by word forms with identical morphological or phonological properties; they represent the counterpart of agreement classes in the realm of morpho(phono)logy. As shown in the important work by Evans (1997) and Evans et al. (1998), nominal form classes (called there "head classes") can have an intricate relationship to agreement classes well beyond serving potentially as their triggers.

What is called here DERIFLECTION (CLASSES) is the morpho(phono)logical counterpart of genders. They are classes of form paradigms operating over nominal lexemes and established on account of identical formal variation that does not need but often does interact with such features as gender, number, etc. Our newly coined term "deriflection" (a blend of "inflection" and "derivation") thus refers here in a more narrow sense to relevant morphology or phonology that interacts with gender. In (1) of Swahili the two prefixes on *-toto* 'child' establish a specific type of number inflection typical for human nouns, namely *M(W)-/W(A)-*, which is the pairing of a singular and a plural nominal form class exponent. As with genders, deriflections in this context also entail other morpho(phono)logical phenomena to the extent these interact with the relevant nominal system.

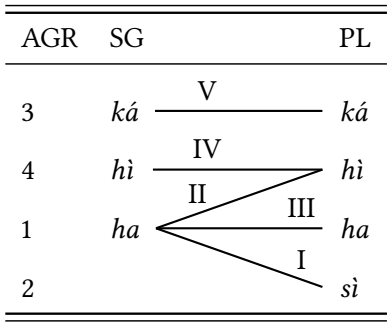
In general, agreement class and nominal form class are concepts that relate to a noun as a word form in a concrete morphosyntactic context, while gender and deriflection refer primarily to the more abstract domain of the nominal lexicon in a given language. At the same time, agreement class and gender are both syntactically defined phenomena and thus opposed to nominal form class and deriflection pertaining to the domain of morpho(phono)logy, so that the two concept pairs, although intimately related, are in principle independent from each other. The various interrelations between the four concepts are summarized in Table 1, which also repeats the different notation principles applied for them here.

Corbett's (1991; 2000; 2006) work has served as the primary reference point for the previous typological analyses of gender and related phenomena. As is to be discussed shortly, however, our framework also departs in some important respects from this author in order to better capture aspects that have subsequently emerged regarding the cross-linguistic diversity in this domain.

Table 1: The four concepts used for analyzing gender

Relates to	Concrete noun in a morpho-syntactic context = word form	Abstract noun in the lexicon = lexeme
Syntax	a. AGREEMENT CLASS (abbreviated as AGR and numbered by Arabic numbers)	b. GENDER (numbered by Roman numbers)
Morpho(phono)logy	c. NOMINAL FORM CLASS (abbreviated as NF)	d. DERIFLECTION

The framework outlined here draws on Güldemann (2000), which dealt with gender systems in Southern African languages of the two non-Khoe families Tuu and Kx'a (both traditionally attributed to a spurious Khoisan lineage). The most important typological contribution of this work is that agreement classes in these languages are often multiply ambiguous regarding their gender and number value, unlike in many European languages, whose analysis has set the stage for the cross-linguistic research on gender and agreement.



Note: agreement classes represented by anaphoric pronouns.

Figure 1: Agreement classes and genders in Ju|'hoan (based on Güldemann 2000)

This can be observed in Figure 1, which displays the gender system of the Ju|'hoan dialect of Ju, a member of the Kx'a family. The schema shows how the four agreement classes 1–4 pattern across the two number categories singular

(SG) and plural (PL) to yield five genders I–V. The numbering of classes and genders as well as their ordering in the schema are of no concern to the system: the former is an artifact of research history and the latter merely serves to yield a maximally simple representation of the system. The reader is referred to Güldemann (2000) for more details, for example, on the semantics of the genders. The only important point for the present discussion is the behavior of the agreement classes, for example, that AGR1 occurs in both number values, singular and plural, as well as in the three genders I-III. The non-sensitivity of an agreement class to number holds in Ju|'hoan for AGR1, AGR3, and AGR4. The majority of nouns falling into these classes are not transnumeral but possess different singular and plural forms. Recall from above that a system where the gender marking of nouns only involves one agreement class is as such functionally transparent (albeit typologically rare) in that agreement is here a "non-conflated" *direct* reflex of gender.

The phenomenon that agreement classes are not dedicated to a single gender and/or number is also recurrent outside these Southern African languages, including Niger-Congo. This justifies the strict descriptive and analytical separation of agreement class from any particular value of gender, number etc. This is opposed to Corbett's (1991) approach, which, moreover, features more analytical concepts than our framework. He distinguishes on the one hand between "controller gender" and "target gender" (see his Section 6.3) and on the other hand between "agreement class" and "consistent agreement pattern" (see his Sections 6.2 and 6.4.5). Our approach, as we argue here, does not need all these notions, because it captures the same data by ascertaining just agreement class (= Corbett's "consistent agreement pattern") and gender (= Corbett's "controller gender") (our two additional concepts, nominal form class and deriflection, are irrelevant here, because they concern the form of nouns rather than agreement and gender).

Figure 2 takes up Corbett's (1991: 150–152) example of Romanian adjective agreement, which he uses to illustrate the necessity of his target gender notion. He states about this case that there are "three agreement classes, and there is no reason not to recognize each as a gender [= the lines labeled semantically as masculine, neuter, and feminine]"[5] as well as "two target genders in both singular and plural … [*-Ø*, *-ă* and *-i*, *-e*]". Corbett's fourth concept, consistent agreement pattern, which we would call agreement class, is not dealt with in his discussion that concerns the exponents of only one agreement context; the notion is,

[5] Although Corbett's identification of agreement class and gender is surprising, a detailed critical discussion would require a general assessment of his approach, which is beyond the purpose and limits of this paper.

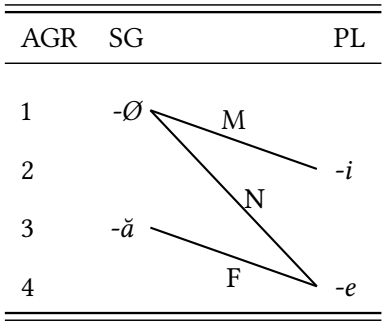


Figure 2: Agreement of adjectives and genders in Romanian (based on Corbett 1991: 152)

however, relevant for a full description, because Romanian has more than one agreement target (see Corbett 1991: 213–214 for further complications in Romanian neuter agreement forms). In any case, Corbett's problem is that two of the four gender-number markers on adjectives are not dedicated to a single gender, *-Ø* encoding the singular of both masculine and neuter gender and *-e* marking the plural of both neuter and feminine gender; the target gender concept seems to be invoked to solve this problem. However, applying the framework proposed here to the situation in Romanian, we only need to recognize three genders and four agreement classes (representing them here by the four suffixal exponents on adjectives but assuming that other agreement targets do not contradict this picture).

A picture like Figure 2 is nothing special and even in a more extreme case, such as Jul'hoan in Figure 1, it does not require more elaborate analytical machinery. In the Jul'hoan system, comprising five genders across two number values, *three of four* agreement classes are unspecific regarding *both* gender and/or number. As far as we can see, an additional concept like target gender restricted to a specific number category does not furnish any new and useful insight for the description of this and other gender systems. Since the present approach has also been applied with coherent results to a number of other languages with quite different and notoriously intricate gender systems (cf., e.g., Neuhaus 2008 on Krongo of the Kadu family, Güldemann & Maniscalco 2015 on Somali of the Cushitic family), we assume its wider applicability. The rest of the paper attempts to show its usefulness for the languages of Niger-Congo, the world's largest language family featuring a historically deeply entrenched gender system.

2 Niger-Congo gender systems and the philological "noun class" concept

While the noun classification systems in Niger-Congo have long been recognized as instances of grammatical gender, their special structural profile poses particular challenges to a cross-linguistically oriented analysis. To a large extent, this is due to the special morphological characteristics of gender systems in Bantu, the resulting philological tradition of analyzing them, and the considerable research bias within Niger-Congo studies toward this important subgroup (see Güldemann (2018, Chapter 5) for more discussion).

The situation presented in §1 above with example (1) from Swahili is quite typical in Bantu and many other Niger-Congo languages and thus has crucially determined the philological tradition of describing their gender systems as a whole. In particular, it shows a one-to-one relationship between corresponding agreement classes and nominal form classes. As seen in (1b), even the markers can be formally identical: *wa-* (or an allomorph) is the formal exponent in both NF *W(A)-* and all agreement contexts of AGR2. Such a biunique (and often even alliterative) relation between the form of the noun (representing the trigger) and any agreeing element (representing the target) is epitomized by the philological concept of "noun class". The notion of "noun class" is also behind the philological convention of a single class label by means of Arabic numbers, in opposition to our proposed distinction between agreement class and nominal form class (accordingly, in (1) and subsequent Swahili examples, the nominal form classes are not glossed by Arabic numbers, even in cases of biuniqueness and alliteration).

The conflation of nominal form classes and agreement classes is, as we argue, the reason for a major problem in the analysis of Niger-Congo gender systems. The conceptually overloaded concept of "noun class" may account in many languages for a good portion of the relevant nominal domain, to the extent that the situation is as in (1) of Swahili. However, the concept cannot completely and adequately capture an entire system, because the characteristics implied in it are not universal. Example (1a) with NF *M(W)-* and AGR1 involving *yu-/m-/a-* as its set of exponents has already shown alliteration not to be absolute. More importantly, however, the implied one-to-one relation between agreement classes and nominal form classes also has crucial exceptions so that one type of class is not always predictable from the other, which is shown in the following representative examples.

(2) Swahili (personal knowledge)

a. *rafiki* ***yu****-le* ***m****-moja* ***a****-me-anguka*
Ø:friend(**1**) **1**-D.DEM **1**-one **1**-PERF-fall
'that one friend has fallen'

b. ***ma****-rafiki* ***wa****-le* ***wa****-wili* ***wa****-me-anguka*
MA-friend(**2**) **2**-D.DEM **2**-two **2**-PERF-fall
'those two friends have fallen'

Example (2) shows that Swahili nouns of the human gender, as defined by the pairing AGR1/AGR2, can also appear with other number inflections, here *Ø/MA* with *rafiki* 'friend' (see below for more discussion on prefixless nouns). That is, one agreement class goes with more than one nominal form class.

(3) Swahili (personal knowledge)

a. ***m****-ti* ***u****-le* ***m****-moja* ***u****-me-anguka*
M(W)-tree(**3**) **3**-D.DEM **3**-one **3**-PERF-fall
'that one tree has fallen'

b. ***mi****-ti* ***i****-le* ***mi****-wili* ***i****-me-anguka*
MI-tree(**4**) **4**-D.DEM **4**-two **4**-PERF-fall
'those two trees have fallen'

Example (3) illustrates that one nominal form class can also be associated with more than one agreement class – the reverse case of the situation illustrated in (2). As shown in (3a), NF *M(W)-* is not exclusively tied to AGR1 in the human gender AGR1/AGR2, as in (1a), but is also relevant for singular forms of lexemes like *-ti* 'tree' in AGR3 belonging to the gender AGR3/AGR4. The matching of one nominal form class with more than one agreement class equally holds for NF *MA-* in (2b), because it is also found with plural count nouns of the gender AGR5/AGR6 and with transnumeral nouns for masses and liquids.

To reiterate the point, the philological "noun class" notion inadequately implies the universality of a one-to-one trigger-target mapping, thereby silently conflating the categories of agreement class and nominal form class that are in principle independent. Counterfeiting an ideal system, this concept recurrently decoys scholars into the analytical shortcut illustrated in the following.

Assume a language with gender and nominal deriflection where agreement and nominal form classes display a biunique mapping. Such a situation is represented in Figure 3 (which differs from figures focusing on gender and deriflection

systems such as 1 and 2 above or 4 below). In both domains, the classes are further assumed to map over number such that two apply to singular nouns and one to plural nouns. Such a system would allow one to predict AGR1, AGR2 and AGR3 from NF A, NF B and NF C, respectively, and vice versa – a situation that implies a strong formal assignment of agreement (see Corbett 1991: Chapter 3).

AGR		NF	Number
1	——	A	SG
2	——	B	SG
3	——	C	PL

Figure 3: Full one-to-one mapping of agreement classes and nominal form classes

Figure 4 shows the resulting agreement-based gender system (left side) and the deriflection system based on nominal form classes (right side), which can also be inferred from each other. Here, both show convergence from two singular classes to one plural class. This predictability holds irrespective of whether the exponents in the system of agreement and nominal morphology display alliteration of the type recurrent in Niger-Congo (cf. (1b) from Swahili).

Figure 4: Gender system (left) vs. deriflection system (right) of the case in Figure 3

In reality, however, an "ideal" trigger-target mapping as in Figure 3 is never universal in a language so that the "noun class" approach harbors the risk of misleading analysis. This can be illustrated by means of a rather well-behaved attested system, like that of Ikaan (Benue-Kwa). Figure 5 shows that there is only a single exception to a complete one-to-one mapping between agreement classes and prefixal nominal form classes, namely NF *O-* that is associated with AGR1 *and* AGR6. Hence, the system appears to be overall well described in terms of the

canonical unitary concept of "noun class" involving both the forms of nominal prefixes and concords on agreement targets.

With such a neat mapping one may be tempted to proceed according to the discussion revolving around Figures 3 and 4 and infer the agreement-based gender system from the morphological deriflection system based on nominal form classes (or vice versa). Figure 6 shows the two systems side by side for a better comparison. For the record, the two schemas also display a class of transnumeral (TN) nouns marked by circles, which cannot be assigned clearly to a single paired pattern and thus should be recognized as a separate gender. The nature of the various genders and deriflections, including their possible semantics, is largely irrelevant for the present topic and they are therefore not labeled or numbered – a practice also relevant later on, especially in system schemas like those in Figure 6.

The important observation from Figure 6 is that the single exception to a bi-unique class mapping in Figure 5 causes a clear structural divergence between the gender and deriflection systems, as marked by the two thick lines. The difference can be explained in terms of the typology for the mapping of classes across number categories originally proposed by Heine (1982: 196–198) and elaborated by Corbett (1991: 154–158). There are three major types in the order of increasing complexity:

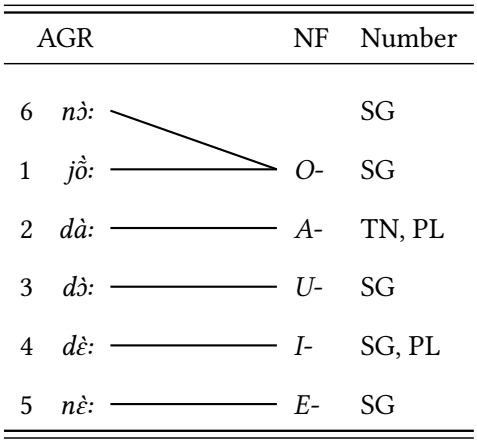
a. PARALLEL: Singular and plural classes only show one-to-one mapping.

b. CONVERGENT: At least two agreement classes in one number converge to one class in the other number.

c. CROSSED: Class convergence exists in both directions.

According to this typology, Ikaan's real gender system based on agreement is of the convergent type in that the conflation of classes only goes from singular to plural, while its deriflection system based on nominal form classes shows class convergence in both directions and is thus of the more complex crossed type.

In fact, the divergence between gender and deriflection system in Ikaan is almost certainly greater, because the language will have prefixless nouns (e.g., proper names, loans), which are unfortunately not treated in the available sources. These establish an additional nominal form class that does not have a unique counterpart in the agreement system. Since such an additional unmarked Ø-nominal form class can be expected to be virtually universal, this phenomenon alone excludes the one-to-one class mapping and hence the identity of the gender and deriflection system from a general perspective.



Note: agreement classes represented by proximal demonstratives

Figure 5: Mapping of agreement and nominal form classes in Ikaan (based on Borchardt 2011: 75–78)

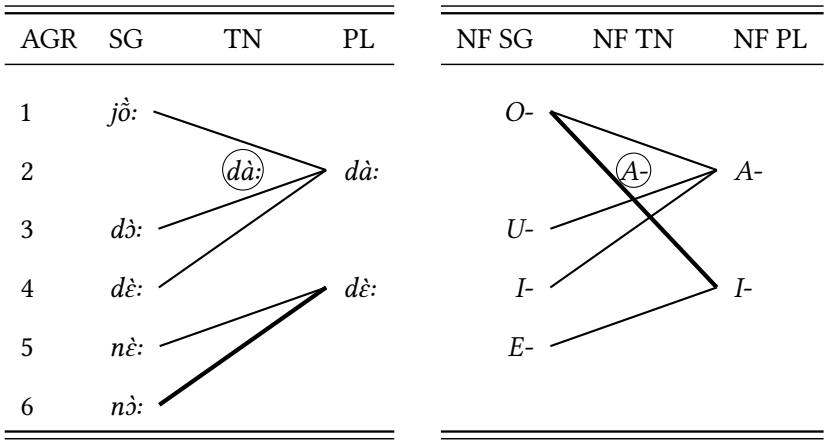


Figure 6: Gender system (left) vs. deriflection system (right) of Ikaan (based on Borchardt 2011: 75–78)

The divergence between gender system and "gender-like" deriflection system holds to an even greater extent in Bantu – the very language group in which the problematic "noun class" concept was developed and from where it assumed its model role for the larger family. This can be illustrated by means of Proto-Bantu for which there exists an elaborate reconstruction. Irrespective of its full historical adequacy, the detailed information of this proto-system allows a good approximation to the original situation regarding (a) the mapping of agreement classes and nominal form classes, (b) the gender system based on agreement classes, and (c) the deriflection system based on nominal form classes.

Excluding an uncertain proto-class *24, Table 2 presents Meeussen's (1967: 96–99) full reconstruction of the Proto-Bantu "noun classes", which, as mentioned,

Table 2: Proto-Bantu "noun classes" (conflating agreement classes and nominal form classes) (based on Meeussen 1967: 96–99)

"Noun class"	Number	AGR	Different agreement targets				NF
			CONC	NUM	SBJ	OBJ	
*2	PL	2	ba-	ba-	ba-	ba-	ba-
*1	SG	1	ju-	u- ?	u-, a-	mu-	
*18	TN	18	mu-	mu-	mu-	mu-	mu-
*3	SG	3	gu-	u- ?	gu-	gu-	
*4	PL	4	gi-	i- ?	gi-	gi-	mi-
*5	SG	5	di-	di-	di-	di-	ɨ-
*6	TN, PL	6	ga-	a- ?	ga-	ga-	ma-
*7	SG	7	ki-	ki-	ki-	ki-	ki-
*8	PL	8	bɨ-	bɨ-	bɨ-	bɨ-	bɨ-
*9	SG	9	ji-	i- ?	ji-	ji-	N-
*10	PL	10	jɨ-	ɨ-	jɨ-	jɨ-	
*11	SG	11	du-	du-	du-	du-	du-
*12	SG	12	ka-	ka-	ka-	ka-	ka-
*13	PL	13	tu-	tu-	tu-	tu-	tu-
*14	TN, SG	14	bu-	bu-	bu-	bu-	bu-
*15	TN, SG	15/17	ku-	ku-	ku-	ku-	ku-
*17	TN						
*16	TN	16	pa-	pa-	pa-	pa-	pa-
*19	SG	19	pɨ-	pɨ-	pɨ-	pɨ-	pɨ-

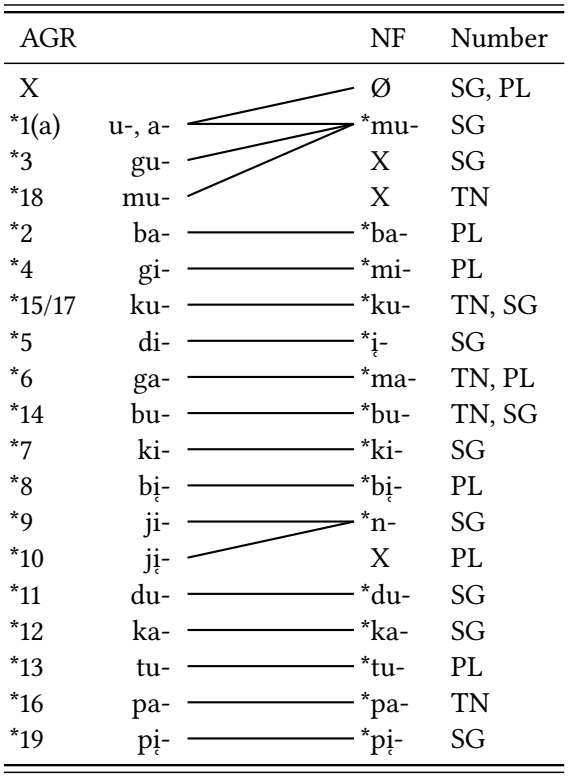
conflate agreement and noun form. This framework is the outcome of specific developments in Bantu philology, without much consideration of the typological treatment of gender. Hence, it comes as no surprise that it is multiply incompatible with the cross-linguistic approach proposed here.

The divergence between the above Bantu reconstruction and our approach concerns in particular various mismatches between the philological "noun class" inventory in the leftmost column and our analysis that involves the agreement classes in the third column (followed by four columns displaying the exponents of major targets) and the nominal form classes in the rightmost column (we take over the philological class numbering 1–19 for our agreement classes, while nominal form classes are simply referred to by their reconstructed prefix).

The major differences between the Bantu reconstruction and the present analysis, marked in Table 2 by shaded cells, are as follows. First, two nominal form classes, namely those established by the noun prefixes *mu- and *N- have a multiple affiliation with agreement classes, the former occurring with nouns of the agreement classes *1, *3, and *18 (cf. the above discussion in connection with (1a) and (3a) from Swahili) and the latter with nouns of the classes *9 and *10. Second, two "noun classes" of the Bantu tradition that establish single-class sets of transnumeral nominals should be subsumed under a single noun form and agreement class, because they do not diverge in either nominal prefix or concord. Their difference only concerns the syntactic occurrence of the respective nominal in that "noun class" *15 comprises infinitives, while "noun class" *17 is established by the class of general locatives.[6] In general one can conclude that the traditional identification and numbering of "noun classes" in Bantu predominantly target agreement classes. As will be shown in §3, this situation no longer holds for the application of the approach to many other Niger-Congo languages, where the analysis of "noun classes" often, if implicitly, refers to nominal form classes.

Later approaches to Bantu gender systems have introduced yet other conventions that may have enhanced philological comparability but blur cross-linguistic transparency. In particular, Bantuists (and some scholars like Welmers 1973: 166 dealing with other Niger-Congo languages) make an additional "noun class" distinction of *1 vs. *1a (and possibly *2 vs. *2a). The first class of each pair comprises human nouns with the expected prefix and the latter contains prefixless kinship nouns and proper names. While descriptively adequate, this class differentiation is irrelevant for the inventory of agreement classes but more importantly hides

[6]For the record, class *15 is most likely a grammaticalization from class *17 via the path locative > purposive > infinitive (cf. Haspelmath 1989).



AGR		NF	Number
X		Ø	SG, PL
*1(a)	u-, a-	*mu-	SG
*3	gu-	X	SG
*18	mu-	X	TN
*2	ba-	*ba-	PL
*4	gi-	*mi-	PL
*15/17	ku-	*ku-	TN, SG
*5	di-	*ị-	SG
*6	ga-	*ma-	TN, PL
*14	bu-	*bu-	TN, SG
*7	ki-	*ki-	SG
*8	bị-	*bị-	PL
*9	ji-	*n-	SG
*10	jị-	X	PL
*11	du-	*du-	SG
*12	ka-	*ka-	SG
*13	tu-	*tu-	PL
*16	pa-	*pa-	TN
*19	pị-	*pị-	SG

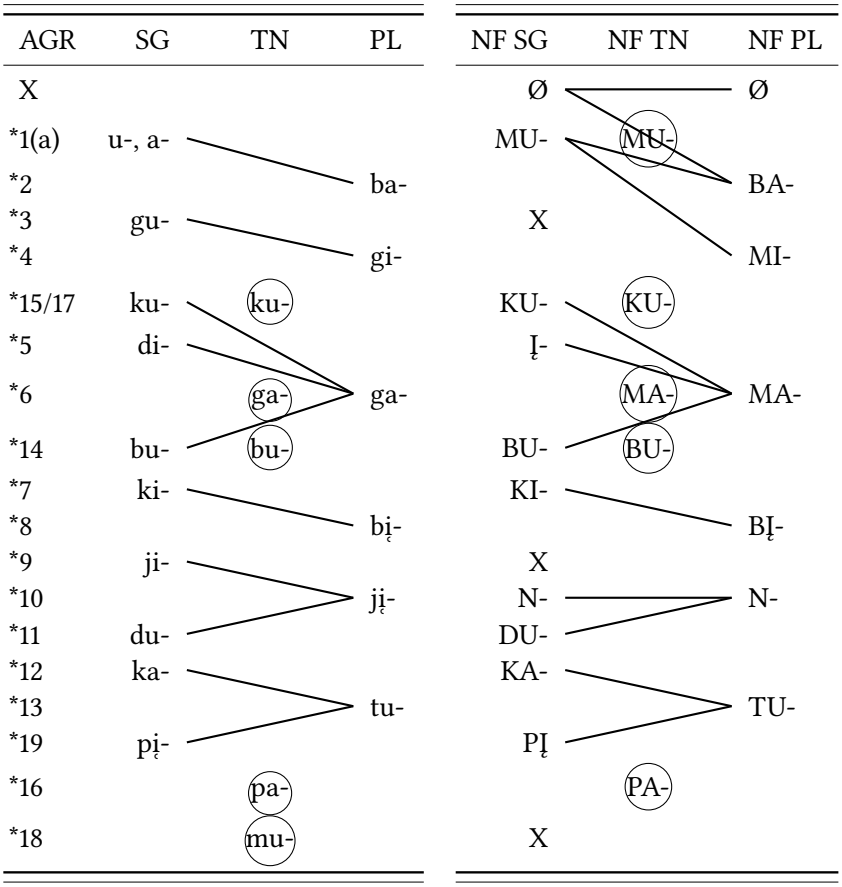
Note: X = no independent class counterpart in the other class type.

Figure 7: Mapping of agreement and nominal form classes in Proto-Bantu

the necessity of taking into account an additional nominal form class Ø that has no unique counterpart in the agreement system (cf. the above discussion in connection with (1a) and (2a) from Swahili).[7]

Figure 7 shows the mapping of agreement and nominal form classes in Proto-Bantu arising from Table 2 (including the additional "noun class" *1a). Overall, one-to-one trigger-target mapping as well as alliteration are salient but also have important exceptions. The different number of agreement classes and nominal form classes alone, namely 18 vs. 16, implies that the gender system and the deriflection system of Proto-Bantu cannot turn out to be completely parallel. In this

[7]See Van de Velde (2006) for an extensive recent discussion of such nouns in Eton and Bantu in general. We do not follow his proposal of considering them as "genderless" nouns, because gender is defined here by agreement and their predominant behavior in this respect clearly assigns them to the human gender.



Note: X = no independent counterpart in the other class type.

Figure 8: Gender system (left) vs. deriflection system (right) of Proto-Bantu

context, the symbol X in this and later schemas stands for the case where no unique counterpart exists for a class in the opposite class type. (The alignment between classes of different type by a horizontal or a sloping line is arbitrary in Figure 7; in the case of historically rooted alliteration, it is useful to connect such etymologically “proper” counterparts by the horizontal line, which will be done in appropriate cases later on.)

A full comparison of the gender and the deriflection systems in Proto-Bantu as reconstructed from the hypothesized “noun class” behavior is shown in Figure 8, which follows the presentation in Figures 4 and 6. In the gender system

on the left side of Figure 8, at least some transnumeral noun groups marked by circles must be analyzed as establishing genders in their own right, because the respective agreement classes cannot be unambiguously associated with a single paired gender, as is the case for AGR6, AGR16, and AGR18 (AGR15/17 and AGR14 are arguably singularia tantum of two paired genders with AGR6 in the plural).

As can be expected, Figure 8 demonstrates considerable differences between the gender and the deriflection system, even more extensively than in Ikaan, despite the still considerable one-to-one alliterative mapping shown in Figure 7. While the gender system with 18 agreement classes is convergent in the above terms and comprises 10 paired genders and at least 3 single-class genders, the deriflection system with 16 nominal form classes is crossed and involves 12 types of morphological number alternations besides 5 types of transnumeral nouns.

Similar or even more dramatic cases of divergence between the gender system and the "gender-like" deriflection system are normal in Niger-Congo, and the problems associated with the traditional "noun class" concept have been recognized in both language-specific and comparative research. The reader is referred to the revealing theoretical and methodological discussion in such studies as Guthrie (1948) for Bantu, and Voorhoeve & de Wolf (1969) and de Wolf (1971) for Benue-Congo. As a consequence, Miehe (forthcoming: 33f) explicitly states that "the marking of nouns and the concord (agreement) systems in their formal and semantic multiplicity should be considered as independent paradigms with regard to their evolution."

Nevertheless, the philological tradition is so strong that even the only approach known to us that uses the very same analytical concepts as ours yields an analysis that is far from being transparent, namely that by Sterk (1978) for the Nupoid language Gade.

Table 3 betrays hardly any difference to our outline of analytical concepts in Table 1 of §1. The only point is Sterk's overgeneralization of the singular-plural

Table 3: Sterk's (1978: 25) concepts for analyzing Gade "noun classes"

	"Prefix" = nominal form class	"Declension" = deriflection	"Class" = agreement class	"Gender"
"form"	+	+	–	–
"concord"	–	–	+	+
"pairing"	–	+	–	+

Note: "…" = Sterk's (1978) term.

pairing of classes with count nouns in that his last line of the table prescribes the feature "pairing" for "declension" (a.k.a. deriflection) and gender, thus excluding single class patterns with transnumeral nouns.

The real drawback in his description is his complex numbering of "classes", which aims to cater simultaneously for their morphological shape and their agreement behavior. He writes (ibid.: 27):

> We are now faced with the practical problem of how to classify Gade nouns. Noun stems will have to be specified both for declension and for gender, since the one cannot always be predicted from the other. Rather than list noun stems in the lexicon with the double marking however, it is more convenient to devise a system which classifies them unambiguously, both for declension and for gender, with a *single marker*. This will be done by assigning numbers to prefixes, with the proviso: not only will prefixes of differing phonological shape be assigned a different number, but even prefixes of the same shape will be given a different number if the nouns they form part of belong to different [agreement] classes. (emphasis and additions ours).

The single-marker convention proposed by Sterk, which appears to be motivated by the equally conflating "noun class" concept, is the major reason that his presentation falls short of providing a transparent picture of Gade's nominal system (cf. also Sterk's (1976) similarly complicated treatment of the Upper Cross language Humono). Our analysis concludes that Gade has a complex deriflection system of more than 30 patterns (albeit many restricted to very few if not a single noun lexeme) based on 13 nominal form classes but a relatively simple system of three productive (and two inquorate) genders based on four regular agreement classes.

Comparing the situation in Ikaan, Proto-Bantu, and Gade a potential generalization emerges: in all cases, the agreement-based gender system is simpler (or at least not more complex) than the deriflection system in size and structure – this even if the basic inventory of agreement and nominal form classes shows the opposite picture, as is the case in Proto-Bantu. More data supporting this observation follow in §3 regarding other Niger-Congo languages.

The previous discussion has argued that the Niger-Congo concept and term "noun class" is highly problematic. This is compounded by the fact that the term has come to bear different meanings in Niger-Congo studies, depending on diverse language-specific situations. Thus, in languages that lost (most of) the inherited agreement, "noun class" may just refer to nominal form classes, as in

some Gur languages, for example, Moore (Canu 1976), or in the Idomoid language Igede (Abiodun 1989) (see also Good 2012: §4.2). In a parallel fashion, in the apparently rarer case of the loss of transparent noun affixes with retention of agreement, the term "noun class" tends to mean merely agreement class, as is the case to varying degrees in Wolof from Atlantic (Babou & Loporcaro 2016) and Mundabli from Bantoid (Voll 2017) (see also Good 2012: §4.3). Finally, the discussion in §3.2 below about Akan shows that some authors even use "noun class" for deriflection (class). From a global typological perspective, yet another complication arises from the terminological tradition in other geographical areas: in Caucasian and partly Australian languages, the term "noun class" refers to gender. The same usage has been proposed by Aikhenvald (2000) for typological investigation in general, the term "gender" being restricted to sex-based systems. We consider this proposal to be unfortunate because it not only diverges from Corbett's (1991) earlier and widely accepted terminology but also disregards the fact that in Niger-Congo, the largest language family on the globe where "noun class" plays a central role, it does conventionally not refer to gender (pace the statement in some relevant studies, e.g., Kilarski 2013: 1). In view of the multiple ambiguity of the term "noun class", covering in fact all the four analytical concepts outlined in §1, we do not use the term in any other meaning than the original philological one in Niger-Congo and employ it in quotation marks for the sake of clarity.

3 Examples for the treatment of individual Niger-Congo groups

3.1 Introduction

As was said above, the approach to Niger-Congo gender and deriflection systems in terms of "noun classes" has been and still is the rule. In the following we show that as a result analyses of individual languages and attempted reconstructions of language groups[8] often deal predominantly or exclusively with the

[8]Until now, (partial) reconstructions of gender and deriflection systems exist for relatively few of the numerous Niger-Congo groups. In addition to Bantu, we are aware of those for Gur (Manessy 1967, 1975; Miehe et al. 2012), Ghana-Togo-Mountain (Heine 1968, see §3.3), Benue-Congo (de Wolf 1971), Mbaic (Bokula 1971, Pasch 1986), Atlantic (Doneux 1975), Non-Bantu Bantoid (Hyman 1980), Edoid (Elugbe 1983), Lower Cross (Connell 1987), and Guang (Manessy 1987, Snider 1988, see §3.4). In addition, comparative treatments exist on groups that are uncertain members of Niger-Congo (see Güldemann 2018) but have typologically similar nominal systems such as Heibanic (Schadeberg 1981a), Talodic (Schadeberg 1981b), and Kru (Marchese 1988).

system of number inflection rather than gender. We demonstrate and elucidate this mistaken approach with data from Akan (§3.2), Guang (§3.3), and Ghana-Togo-Mountain (§3.4). These geographically close but structurally sufficiently diverse Niger-Congo groups in West Africa that are commonly subsumed under the ambiguous concept of Kwa (see Güldemann 2018 for more discussion on the problematic genealogical classification) represent a convenience choice. The discussion would hardly differ by using other Niger-Congo groups and our approach has indeed been applied with the same results to other relevant languages, for example, Kisi, Wolof, Fula, and Laala from Atlantic, Miyobe from Gur, C'lela and Gade from Benue-Kwa, and Mbane from Ubangi.

We will proceed in our analysis according to the framework outlined in §1. For each language (or proto-language), we first present the agreement class system in the form of a table. This table represents each class by means of exponents in the most important agreement targets, records its behavior regarding number, and, if applicable, gives the default nominal form class. We number the language-specific classes by Arabic numbers either according to the source or our own arbitrary choice; these numbers are preceded by an acronym of the language in order to avoid any facile association with the comparative Bantu~Niger-Congo system. The gender system is established on the basis of the attested mapping of these agreement classes over the relevant number categories and presented in the form of a figure. Agreement classes are represented by one maximally distinct agreement target, similar to previous schemas; genders only receive a label in systems with few distinctions and reasonable clear semantics. Salient sets of transnumeral nouns are marked as usual by circles in the structural schemas; those that cannot be assigned to a paired-class gender in a straightforward way would establish separate single-class genders. Doubtful genders, including "inquorate" ones in terms of Corbett (1991: 170–175), that is, agreement-based sets of nouns whose small size is arguably insufficient to merit incorporation into the grammatical gender system, may be marked by broken lines or circles. This practice is at best approximate, as the available data are insufficient; notably because they usually do not give a full picture about lexical frequencies. In general, the following overviews of gender (and deriflection) patterns are "structural" systems that may have to be changed with more comprehensive information about the entire nominal lexicon of a language.

The description of the agreement and gender systems is followed by the investigation of nominal form classes and the resulting deriflection system. Nominal form classes, which are represented by an abstract thematic element in capital letters, are also given in a table that includes their number behavior and representative sample nouns. As far as possible, we take the Ø-marked class (e.g.,

loans, personal names, kinship terms) into account. The deriflection system is represented in a parallel fashion to the gender system.

Finally, in order to elucidate the relationship between gender and deriflection system, we discuss the discernible correspondences and mismatches between agreement and nominal form classes. These are schematized in figures similar to those given above. In doing so, we try to reflect, if appropriate, the original (alliterative) match between agreement and nominal form class, which is assumed to originate in an older Niger-Congo state and whose best proxy at the present is still the relatively coherent Proto-Bantu system.

The following discussion involves at several places an assessment of Niger-Congo systems regarding a notion of complexity that differs from that focussed on in §2, which was concerned with systemic organization. In line with Di Garbo's (2014: 41, 179) first principle of absolute complexity, the characterization here ascertains a system's number of genders (and deriflections). Our evaluation is done against the background of the widely assumed Proto-Niger-Congo state, which, when modeled on Bantu, would have involved around ten or even more distinctions in both domains, as well as Corbett's (2013) typological approach, which assigns the label "complex" to gender systems with five or more distinctions. That is, we consider a Niger-Congo system as reduced (or no longer as complex), if its inventory has been decreased to a value lower than Corbett's typological threshold for his highest degree of complexity. Note the partly misleading bias toward this typological standard, because a system with five genders like in Logba (Ghana-Togo-Mountain) is certainly reduced vis-à-vis the proto-state but still counts here as complex.

3.2 Akan

Akan is the first linguistic entity to be discussed. It is a large language complex that is the core of a group of closely related languages called Akanic, which in turn is classified under the Potou-Akanic family (Stewart 2002). Akan's most important dialects in Ghana are Akuapem, Fante and Asante (Dolphyne & Dakubu 1988: 57).

The evaluation of the synchronic nominal system of Akan undertaken by various authors differs considerably, and none transparently captures the full picture of a system with complex number inflection and, in some dialects, a simple animacy-based gender system. We argue that this is due to a large extent to the problematic philological Niger-Congo tradition outlined in §2.

Earlier authors like Christaller (1875), Dolphyne & Dakubu (1988), etc. recognize nominal prefixes in Akan but do not relate these to a nominal system of

the Niger-Congo type, thus failing to identify any possible grammatical aspect of "noun classes". Following Welmers' (1971: 4–5) short notes, Osam (1993) is possibly the first author who analyzes the nominal prefixes as vestiges of a formerly complex "noun class" system. Equally important is that the author also discusses agreement phenomena that are arguably remnants of the inherited Niger-Congo gender system. Given the focus of this paper, these need to be outlined in more detail.

For one thing, there is number agreement between nouns and a sub-group of attributive adjectives in that the latter receive a prefix in the plural. The nasal prefixes on both the trigger and the target in example (4b) suggest that there is correspondence in gender and number between the pluralized noun and the modifying adjective.

(4) Akan (Osam 1993: 98, 87)

a. ***a****-bofra kakramba*
A-child small
'small child'

b. ***m****-bofra* ***n****-kakramba*
N-child **PL**-small
'small children'

The author's explanations and additional examples as that in (5) make it clear, however, that formal prefix identity as in (4b) is coincidental. Although this is not stated explicitly, the available data suggest that plural marking on adjectives is lexicalized and thus independent of the noun, so that synchronically this phenomenon does not entail gender.

(5) Akan (Osam 1993: 98)

a. ***a****-kyen* ***n****-kakramba*
A-drum **PL**-small
'small drums'

b. ***n****-tar* ***e****-tuntum*
N-dress **PL**-black
'black dresses'

However, some Akan dialects like Fante and Bron also display verbal subject cross-reference in which the agreement with the relevant nominal referent operates according to the feature of animacy, as shown in (6) for singular number and systematized in the full picture of Table 4.

(6) Akan (Osam 1993: 93)

a. *ɔ-bɛ-yera*
1-FUT-be.lost
's/he will be lost'

b. *ɛ-bɛ-yera*
3-FUT-be.lost
'it will be lost'

Table 4: Agreement system of some Akan dialects (based on Osam 1993)

AGR	Number	Verb prefix	Semantics
AK1	SG	*ɔ-, o- = O-*	animate
AK2	PL	*wɔ-, wo- = wO-*	animate
AK3	SG, PL	*ɛ-, e- = E-*	inanimate

Note: multiple forms due to vowel harmony.

Despite the data presented, Osam's (1993: 99–100, 102) major conclusions are that modern Akan "does not have a functioning noun class system" nor "a concordial system", whereby he presumably refers to such elaborate and productive ones as in Bantu and similar Niger-Congo groups. From a typological perspective, however, Akan dialects like Fante and Bron must be analyzed as having a gender system that is structurally of the parallel type and semantically driven by a distinction of animate vs. inanimate nouns, as shown in Figure 9.

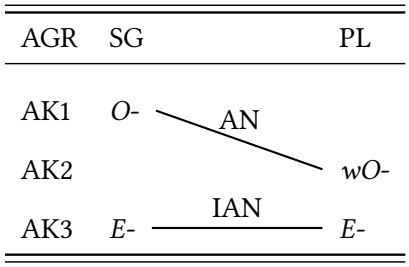


Figure 9: Gender system of some Akan dialects (based on Osam 1993)

Bodomo & Marfo (2006) is another study dealing with the nominal system of Akan. These authors explicitly contradict one of Osam's conclusions in identifying a functional "noun class system" on account of nominal affixation, which

not only involves prefixes but also suffixes. As just another token of the theoretical and terminological confusion in Niger-Congo studies, "noun classes" in their terms are sets of nouns showing the same singular/plural affix pairing, that is, classes of number inflection or deriflection in the above, and for that matter common typological, approach. The authors describe a complex system of 9 "noun classes" a.k.a. deriflections, which partly involve class pairs and subclasses. This is schematized in Figure 10 (restricted to prefixes) and exemplified fully in Table 5.

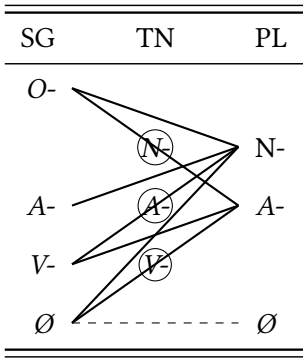


Figure 10: Deriflection system of Akan (based on Bodomo & Marfo 2006)

As can be seen in Table 5, some of the authors' "noun classes" a.k.a. deriflections, namely 5, 6 and 7, which all relate to various types of human nouns, involve suffixes in addition to prefixes. Except for the pattern 5b, these suffixes do not create deriflection types that do not already exist on account of the 5 prefix-based nominal form classes. For this reason we only integrate the new Ø/Ø prefix pattern (see the broken line) in our analysis of the deriflection system in Figure 10. This system involves 8 patterns for count nouns and three for transnumeral nouns. From a structural perspective, it is a complex crossed system because all types of singular noun forms except for the *A*-class combine with the two productive plural form classes *N*- and *A*-.

As discussed above, only some varieties of Akan have a parallel system of two genders. Here, the inventory of three agreement classes is so reduced that any correspondence between these and the numerous nominal form classes can only be limited. In fact, the only clear match in both form and meaning exists between AK1 with the exponent *O*- and NF *O*-; both mark (predominantly) animate singular nouns. Obviously, this situation diverges considerably from the picture involving "noun classes" of Bantu-type languages, which involve both agreement and morphological form.

Table 5: Deriflection system of Akan (based on Bodomo & Marfo 2006: 214–217)

"Noun Class" a.k.a. deriflection	Example(s) Meaning	SG	TN	PL
1: *V-/N-*	–			
a: *O-/N-*	'female'	*ɔ̀-bàà*		*m̀-máá*
b: *A-/N-*	'cloth'	*à-tààdé*		*ǹ-tààdé*
c: *(V)-/N-*	'time'	*è-bré*		*m̀-mré*
2: *Ø-/N-*	–			
	'mountain'	*bépɔ́*		*m-mépɔ́*
3: *V-/A-*	–			
a: *O-/A-*	'elephant'	*ɔ̀-sɔ́nɔ́*		*à-sɔ́nɔ́*
b: *(V-)-/A-*	'house'	*è-fíé*		*à-fie*
4: *Ø-/A-*	–			
	'veranda'	*bámá*		*à-bámá*
5: *(V-)/(A-)_-nʊm*	**Kinship**			
a: *V-/A-_-nʊm*	'father'	*à-gyá*		*à-gyá-nʊ́m*
	'wife'	*ɔ̀-yírí*		*à-yírí-nɔ́m*
b: *Ø-/Ø-_-nʊm*	'aunt'	*sèwáá*		*sèwáá-nɔ́m*
6: *(O)-_-ni/A-_-fʊɔ*	**Identity/occupation**			
a: *O-_-ni/A-_-fʊɔ*	'Christian'	*ò-krĭstò-ní*		*à-krĭstò-fúɔ́*
b: *Ø-_-ni/A-_-fʊɔ*	'teacher'	*tíkyà-ní*		*a-tíkyà-fɔ́ɔ́*
7: *(O)-_(-ni)/N-_-fʊɔ*	**Identity**			
a: *O-_-ni/N-_-fʊɔ*	'Muslim'	*ò-krɛ̀mò-ni*		*ǹ-krɛ̀mò-fɔ́ɔ́*
b: *O-_-Ø/N-_-fʊɔ*	'ghost'	*ɔ̀-sámáń*		*ǹ-sàmàǹ-fɔ́ɔ́*
8: *A-*	**Deverbal derivation**			
	'farming'		*à-dɔ́*	
9: *N-~V-*	**Mass**			
a: *N-*	'water'		*n-su*	
b: *V-*	'fire'		*è-gyá*	

In summary, the Niger-Congo tradition clearly fails to capture the structures encountered in Akan. Its conceptual framework has even misled descriptive linguists, although the picture as such is not hard to understand as involving a complex, semantically sensitive deriflection system and in some dialects a far simpler agreement-based gender system steered by animacy. As for Osam (1993), he fails to clearly identify both phenomena in spite of providing most of the relevant empirical data. Bodomo & Marfo (2006: 206), in turn, state that "[a]n overview of … nominal morphology shows that the most appropriate criterion that can be used to set up noun classes is number – i.e. singular and plural – categorization", while "concord marking … is not a very sufficient criterion". They thus acknowledge that mainstream Akan has a system of overt noun classification by means of nominal morphology but fail to observe explicitly that this type of nominal categorization is crucially different from gender in general and the original Niger-Congo system in particular (this apart from not dealing with the animacy-based gender system in some dialects).

3.3 Guang

3.3.1 Introduction

The second language group we deal with is the Guang family, which like Akanic belongs to the larger Potou-Akanic lineage within Benue-Kwa. Guang languages are known for their elaborate nominal prefix system but are said to show little in the way of agreement.

> In all the Guang languages, singular and plural of nouns is [sic] indicated by prefixes. None exhibit concord systems, such as are found in many of the Central Togo languages [= Ghana-Togo-Mountain, cf. §3.4]. There is, however, at least a trace of number agreement between the noun and some types of adjectives in South Guang, Gichode, Krachi, and some dialects of Nchumburu … (Dolphyne & Dakubu 1988: 82)

Most attempts to define Guang "class" systems are thus restricted to nominal form classes and disregard concord (and the potentially resulting genders). Our ongoing research aimed at a typologically informed survey of the Guang family reveals that the picture, summarized in Table 6, is in fact far more diverse.

Table 6 shows that gender agreement is indeed strongly reduced in several Guang languages, largely to an animacy differentiation illustrated in Figure 11 with the case of Gonja, which is parallel to the situation in the relevant Akan dialects treated in §3.2. However, several languages still possess quite complex gender systems, for example, Chumburung, which we illustrate in §3.3.2.

Table 6: Overview over gender systems in Guang

Languages	Gender agreement	Number inflection
Chumburung, Foodo, Gichode, Ginyanga, Nawuri	complex	complex
Awutu, Dwang, Gonja, Gua, Krache, Larteh, Nkami, Nkonya	reduced	complex
Cherepon, Dompo, Nterato, Kplang, Nchumbulu, Tchumbuli	insufficient information	insufficient information

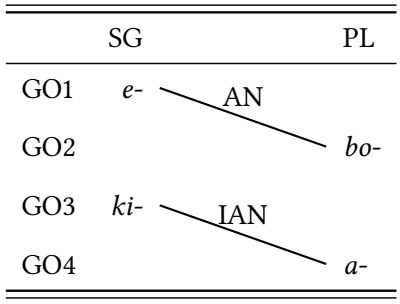


Figure 11: Gender system of Gonja (based on Painter 1970)

3.3.2 Chumburung

Chumburung, according to the description by Hansford (1990: 266ff), is a Guang language with a more canonical nominal system. Its agreement system concerns both the noun phrase in the form of quantifier agreement, as in (7), and a variety of other morpho-syntactic contexts with anaphoric pronominal agreement, for example, the conjoined noun phrase in (8). Other targets of the second type of concord are pronominal forms for 'certain', 'one of', 'each, any', 'which' and demonstratives (Hansford 1990: 184); when these are used as modifiers within a noun phrase, they do not agree with their head. A similar situation holds for verbal subject and object cross-reference and relative clauses, as in (9) (Hansford 1990: 450). The full system of seven agreement classes is provided in Table 7.

(7) Chumburung (Hansford 1990: 270, 201)

a. ***à****-wààgyà dìdáá* ***á****-nyɔ́ mɔ̀*
A-cloth(**6**) old **6**-two DEM
'these two old cloths'

b. ***ì****-wórí* ***í****-nyɔ́* ***í****-nyɔ̀*
I-book(**4**) **4**-two **4**-two
'pairs of two books' (distributive)

(8) Chumburung (Hansford 1990: 266)
wààgyà gyígyíí nà ***ó****-pípéé*
Ø:cloth(**1**) black and **1**-red
'a black and red cloth [lit.: a black cloth and a red one]'

(9) Chumburung (Hansford 1990: 267, 451)
kì-bígyá ní kí í gyí sí ó
KV-side(**3**) REL **3** IPFV eat on REL
'… the side that will win'

Table 7: Agreement class system of Chumburung (based on Hansford 1990)

AGR	Number	SBJ	OBJ	Pronominal	NF default
CH1	TN, SG	*ɔ-/o-*	*`-*	*ɔ-/o-*	–
CH2	TN, PL	*bʊ-/ba-*	*bá-*	*bʊ-/ba-*	–
CH3	TN, SG	*kV-*	*kí-*	*kʊ-/kɪ-*	*KV-*
CH4	TN, PL	*i-/ɪ-*	*í-*	*ɪ-*	*I-*
CH5	TN, SG	*ka-*	*ká-*	*ka-*	*KA-*
CH6	TN, PL	*a-*	*á-*	*a-*	*A-*
CH7	TN, PL	*N-*	*ḿ-*	*ŋ-/m-*	*N-*

While Hansford does not give a schematic overview of the gender system, his description of the mapping of agreement classes over number categories allows one to establish the system in Figure 12 with six paired and at least four single-class genders.

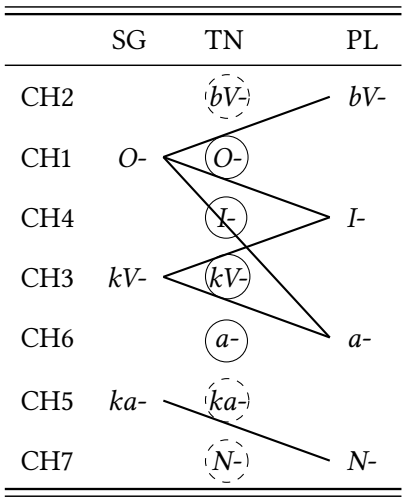


Figure 12: Gender system of Chumburung (based on Hansford 1990)

When compared to the widely assumed Niger-Congo proto-type, this complex crossed system is in several respects remarkable, which is largely due to the nature of agreement classes in Chumburung. For one thing, all agreement classes occur with transnumeral nouns, so that at least some are not dedicated to a single number feature. For CH2, CH5, and CH7, one may avoid positing separate single-class genders by arguing that these nouns represent special transnumeral cases, namely singularia tantum or pluralia tantum that can be associated uniquely with particular paired genders, namely CH1/CH2 and CH5/CH7. However, this solution is not possible for similar nouns in the remaining four agreement classes, because it would be an ad-hoc decision at this stage to assign these nouns to one of the two or even three paired genders the relevant class partakes in. The last fact is another non-canonical finding in the present philological context, namely that only the three aforementioned classes, CH2, CH5, and CH7, have a unique counterpart in their opposite number feature and are thus dedicated to a paired gender. Overall, Chumburung agreement classes only poorly meet the Niger-Congo expectation that "noun classes" only have one number and one gender value.

The system of seven nominal form classes described for Chumburung, including the group of prefixless nouns, are exemplified in Table 8, while Figure 13 displays their mapping over number categories in the deriflection system.

The deriflection system, presented by Hansford with example nouns, comprises 7 types of singular-plural pairings, and all nominal form classes also occur with transnumeral nouns. Although this crossed system is overall similar in

Table 8: Nominal form class system of Chumburung

NF	Form		Examples
Ø	–	SG	*dáá* ‘elder brother’, *bʊ́rí* ‘voice’
		TN	*gyàbwíí* ‘honey’, *sáŋ* ‘time’
O-	*o-/ɔ-*	SG	*ó-wúrè* ‘chief’, *ɔ̀-dɔ̀ɔ́* ‘fishing net’
		TN	*ɔ̀-tɔ̀rí* ‘morning star’
I-	*i-/ɪ-*	TN	*í-bírísí* ‘evil spirit(s)’
		PL	*í-bʊ́rí* ‘voices’, *ì-dɔ̀ɔ́* ‘fishing net’, *ì-síbɔ́* ‘ears’, *í-bá* ‘coming (PL)’
KV-	*ki-/kɪ-/*	SG	*kì-yéé* ‘meat’, *kì-síbɔ́* ‘ear’, *kí-bá* ‘coming’
	ku-/kʊ-	TN	*kì-tìrì* ‘poverty’
A-	*a-*	TN	*à-bání* ‘government’
		PL	*á-dáá* ‘elder brothers’, *á-wúrè* ‘chiefs’, *à-yéé* ‘meats’
KA-	*ka-*	SG	*ká-mé* ‘stomach’
		TN	*ká-nyíté* ‘patience’, *ká-kyínà* ‘life’
N-	*n-/m-/*	TN	*m̀-bʊ̀gyà* ‘blood’, *m̀-bèráá* ‘law’
	ɲ-/ŋ-	PL	*ḿ-mé* ‘stomachs’

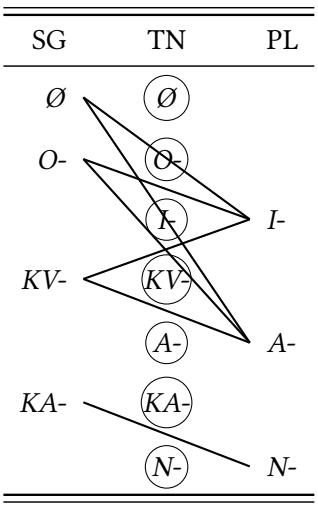


Figure 13: Deriflection system of Chumburung (based on Hansford 1990: 156–161)

structure and size to the gender system in Figure 12 with 6 paired and 4 single-class patterns, it is more complex than the latter on account of having 7 paired deriflections.

	AGR	NF	Number
	X	*Ø*	TN, SG
CH1	*O-*	*O-*	TN, SG
CH3	*kV-*	*kV-*	TN, SG
CH5	*ka-*	*kA-*	TN, SG
CH4	*I-*	*I-*	TN, PL
CH6	*a-*	*A-*	TN, PL
CH7	*N-*	*N-*	TN, PL
CH2	*bV-*	X	PL

Note: X = no independent class counterpart in the other class type.

Figure 14: Mapping of agreement and nominal form classes in Chumburung (based on Hansford 1990: 156–161)

The concrete differences between the systems of genders and deriflections are due to a number of mismatches between agreement and nominal form classes, as shown in Figure 14. These exist in spite of the still considerable formal correspondence between the two sets that is expected from the inherited one-to-one alliterative mapping. A predictable mismatch is the existence of the Ø-nominal form class that has no independent match in the agreement system. Another difference arises from the loss of the reconstructable nominal form class counterpart of CH2; the relevant nouns are found today in two other nominal form classes in *A-* (a potential reflex of the expected prefix *ba- through loss of the initial consonant) and *N-*. Both points are related to another important phenomenon also found in other Guang languages; namely that the semantic criterion of animacy overrides the inherited, more elaborate formal gender assignment. That is, all human nouns irrespective of their form class prompt agreement according to singular CH1 and plural CH2 (the nominal form class in *I-* is the only one without human nouns). The power of this semantic criterion can also be seen when analyzing the agreement triggered by proper nouns: all singulars agree according to CH1; all plurals referring to humans, personified animals and supernatural beings belong to CH2 while the rest follows CH4 or CH6 (Hansford 1990: 166).

3.3.3 Proto-Guang

The "noun class" system of the Guang family has been subject to historical-comparative reconstruction independently but roughly at the same time by Manessy (1987) and Snider (1988). We discuss their results in the following before the background and in accordance with the presentation of our Chumburung analysis in the Figures 12 and 13.

As already suggested by Manessy's term "système classificatoire" (instead of "gender system"), this author takes both nominal form classes and agreement in the pronominal system of some languages into account, although the latter was at his time only available for two languages, namely Nkonya (Westermann 1922, Reineke 1966) and Gonja (Painter 1970). For all other languages, he merely had access to wordlists that only rarely contained information on agreement. A yet greater problem of his analysis is that he follows the philological approach in explicitly (ibid.: 42) conflating noun form and agreement classes into a single Guang reconstruction, given in the left schema of Figure 15.

Snider (1988) deduced the "noun class" system of Proto-Guang by looking at the noun prefixes of nine of the 18 attested family members without mentioning at all possible agreement forms. He observed a major difference between Northern and Southern Guang, the former being richer in nominal form classes, and concluded (ibid.: 138):

> … that proto-Guang had a system at least as complex as the most complex present day Guang languages and that the southern Guang languages represent a collapsing of classes.

The system he established for Proto-Guang is displayed in the middle of Figure 15; we have added the three single-class patterns mentioned by him when discussing the individual nominal form classes.

We briefly show in the following that both Proto-Guang systems in Figure 15 are biased toward the situation in other West African class languages and/or the authors' assumptions about Proto-Niger-Congo. Moreover, nominal form classes are the primary source for the analysis, even though agreement classes are taken into account to some extent. This bias and the conflation of all data into a single "noun class" system causes serious errors in their reconstruction results, so that they not only differ from each other but also both fail to yield a likely approximation to either the gender or the deriflection system of Proto-Guang. The last point is evident from an inspection of the gender system in such modern languages as Chumburung (repeated from §3.3.2 on the right side of Figure 15).

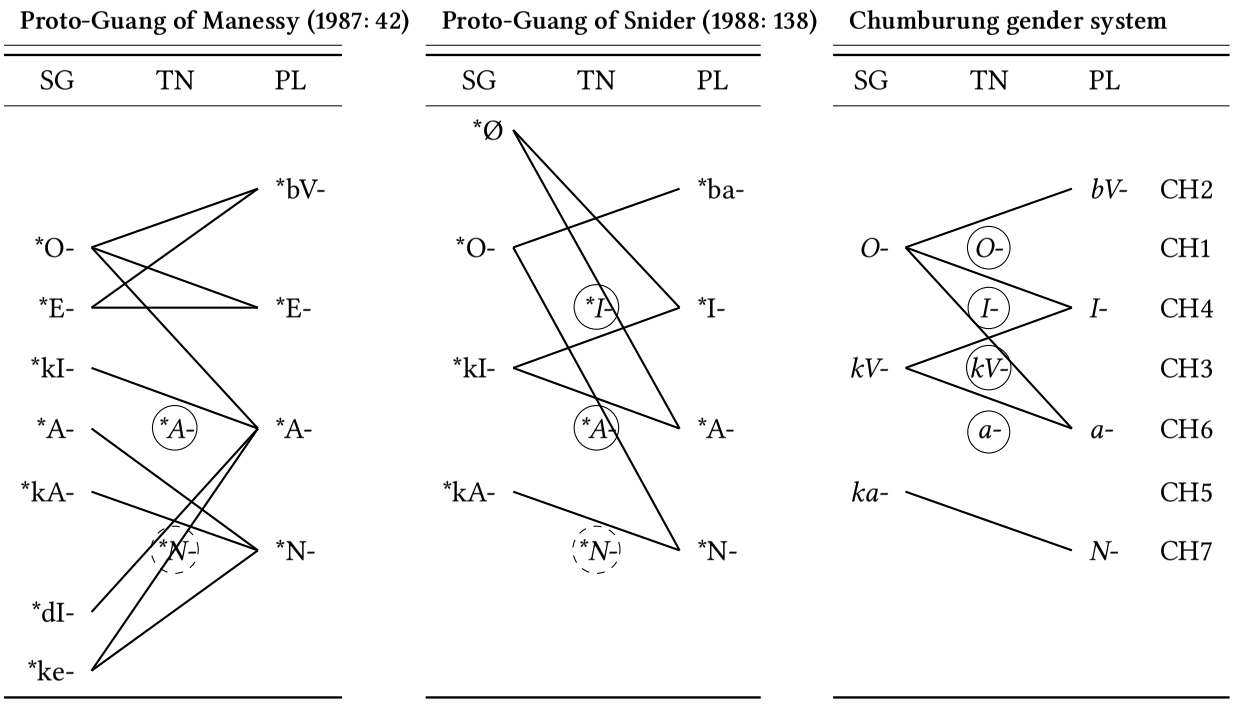


Figure 15: Noun classification systems of Proto-Guang and Chumburung

The following can be observed regarding the (non)overlap between the two proto-systems. Manessy and Snider only agree on the three class pairs *kI-/A-, *ka-/N-, and *O-/bV-, all of which are also attested as genders in modern Chumburung. Both Manessy (1987: 27) and Snider (1988: 141) reconstruct a plural prefix *bV- or *ba-, although they observe its exceptional status in that it only occurs as such in Gonja; they claim it to belong to the proto-language because of its wide distribution in Niger-Congo as well as its attestation as an agreement form for third-person plural (animate) in a range of Guang languages.

Snider reconstructs a Ø-class but merely as part of the number inflection patterns *Ø/I- and *Ø/A- without noting that these reflect agreement-based genders that in the singular involve the old Niger-Congo class *1, as can be observed in modern Chumburung (his additional nominal prefix pairing *O-/N- is so far not attested as involving a separate gender). Although Manessy (1987) appears to capture well the behavior of the old Niger-Congo class *1, he does not posit a Ø-class for nouns. According to him, most prefixless nouns in one language show a *kV*-prefix in another language, concluding that in the proto-language such nouns did not form a "noun class" (Manessy 1987: 20); in our view this seems to be adequate with respect to agreement while not being the case for noun forms.

Another major divergence between the two reconstructions concerns all forms in *kV*-. Snider (1988: 147–148) reconstructs the prefixes *kA- and *kI- (representing *ki*-, *kɪ*-, *ku*-, and *kʊ*-). Manessy (1987: 12) additionally posits *ke- (representing *ke*-, *kɛ*-, *ko*-, and *kɔ*-), assumed by Snider to be due to phonetically inaccurate data. All Guang languages only have a binary distinction of *kV*-forms in the agreement system but, due to the complexity of the vowel phonology, dispose of a wider range of relevant forms on nouns. Thus, Manessy's two class pairs based on a third *ke- do not seem to be warranted, because they are only attested in Gichode (and probably Ginyanga) as genders and deriflections in opposition to a *gI*-class, so that putative *ke- may merely be a reflex of *kA-.

Manessy's Proto-Guang reconstruction is problematic in several other respects. His pair *E-/bV- only exists as a gender and deriflection in Gonja (see Figure 11). He also posits a singular prefix *dI- (paired with plural *A-), although it is only attested in such a gender in Foodo (which was not part of Snider's language sample). Manessy includes *dI- for Proto-Guang, because there are nouns with a purported *lV*-prefix in some other Guang languages and the prefix is "fort commune dans les langues à classes d'Afrique occidentale et que pour cette raison nous tenons pour ancienne [very common in the class languages of West Africa and for that reason we consider to be old]" (Manessy 1987: 41). His reconstructions *E-/E- and *A-/N- are not attested genders in any language and are also

questionable as reconstructable deriflections. Finally, he fails to identify the pairing *kI-/E-.

A general conclusion about Manessy's and Snider's historical-comparative work on Guang is that their philological approach generates reconstructions that reflect the agreement and resulting gender system inadequately. In particular, their focus on nominal form classes seems to result in proto-systems that are overly complex for the domain of genders.

3.4 Ghana-Togo-Mountain

3.4.1 Introduction

The Ghana-Togo-Mountain languages (formerly known as Togo Remnant) are spoken in Ghana, Togo and Benin. Besides the relevant Guang languages, they are well known within Kwa for class systems that retain both rich agreement and noun prefix patterns. Historical comparisons across these languages are complicated by their unresolved genealogical classification in that they are viewed either as a single lineage according to the traditional view or as forming at least two families according to more recent research (cf. Blench 2009 for a relevant discussion). Table 9 shows the subclassification of the languages after Hammarström et al. (2018) and the profile of their noun categorization systems according to Güldemann & Fiedler (2016).

Table 9: Inventory, classification and noun categorization profile of Ghana-Togo-Mountain languages

	Language(s)	Gender agreement	Number inflection
Na-Togo	Anii, Adele, Lelemi, Siwu, Sekpele, Selee, Logba	complex	complex
	Boro (†)	no information	no information
Ka-Togo	Avatime, Nyangbo, Tafi, Tuwuli, Akebu	complex	complex
	Igo, Animere	reduced	complex
	Ikposo	absent	absent

As with Guang in §3.3, we will first present the synchronic gender system of one modern Ghana-Togo-Mountain language before turning to historical approaches to the entire group.

3.4.2 Lelemi

We have chosen the Na-Togo language Lelemi (as described by Allan 1973 with a focus on the Baglo variety) as an example, because it possesses a complex gender system and it has also been included in the typological gender survey by Corbett (1991).

Lelemi nouns prompt agreement on a variety of targets such as determiners, as in (11), ordinal numerals, the cardinal numeral 'one', participles, as in (10), and relative pronouns, as well as anaphoric subject cross-reference, as in (11). As opposed to Heine (1968: 115), Allan's data do not provide evidence for adjectival agreement.

(10) Lelemi (Allan 1973: 178)
kɔ̀*-làkpi* ***kɔ̀****-dun-di*
KO-snake(**6**) **6**-kill-PART
'a killed snake'

(11) Lelemi (Allan 1973: 240–241)

ɔ̀*-nànà*	***ɔ́****-mɛ̀*	***ɔ̀****-dìa*	'this man	
bà*-nànà*	***bá****-mɛ̀*	***bà****-dìa*	'these men	
lɛ*-tɔ*	***lɛ́****-mɛ̀*	***lɛ̀****-dìa*	'these houses	
a*-nimì*	***á****-mɛ̀*	***à****-dìa*	'this rice	
kɔ*-di*	***kɔ́****-mɛ̀*	***kɔ̀****-dìa*	'this cloth	
ke*-mo*	***ká****-mɛ̀*	***kà****-dìa*	'this farm	
n*-tɛ*	***bɔ́****-mɛ̀*	***bɔ̀****-dìa*	'this palm wine	
NF-x	**AGR**-this	**AGR**-be.good	…	is/are good'

Table 10 summarizes the agreement system of Lelemi. Different from Allan (1973) we posit one more agreement class, LE4, for plural nouns with a prefix *LE-*, because these display a distinct set of concord exponents, which is intermediate between that of LE3 and LE5 (cf. bold-faced elements in the table).

The gender system is not given by Allan (1973) but can be deduced from the relevant behavior of agreement classes. Figure 16 shows that it comprises 9 paired and 7 single-class patterns.

Table 10: Agreement class system of Lelemi (based on Allan 1973)

AGR	Number	DEM/REL SBJ/PART*	POSS	OBJ	PRO	NF default
LE1	TN, SG	*ɔ-/u-*	*ŋwa*	*ŋ̀*	*àŋu*	–
LE2	PL	*ba-/be-*	*Bana*	*mà*	*àma*	–
LE3	SG	***lɛ-/li-***	***anya***	*nì*	*àni*	*LE-*
LE4	TN, PL	***lɛ-/li-***	***anya***	***nyà***	***ànya***	*LE-*
LE5	TN, PL	*a-/e-*	*ana*	***nyà***	***ànya***	*A-*
LE6	all	*kɔ-/ku-*	*kuna*	*kù*	*àku*	*KO-*
LE7	TN, SG	*ka-/ke-*	*kana*	*kà*	*àka*	*KA-*
LE8	TN, PL	*bɔ-/bu-*	*anya*	*mù*	*àmu*	–

Note: * forms vary tonally according to grammatical context.

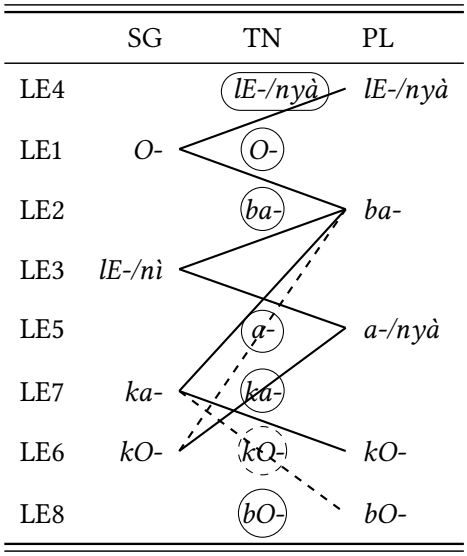


Figure 16: Gender system of Lelemi (based on Allan 1973)

Heine (1968: 114–115, 1982: 197–198) has also presented an analysis of the noun classification system of Lelemi with a focus on the Tetemang variety, which in turn has been reanalyzed by Corbett (1991: 173–175) from his typological perspective on gender. Figure 17 summarizes the results, including Corbett's argument that some agreement class pairs should be viewed as inquorate genders.

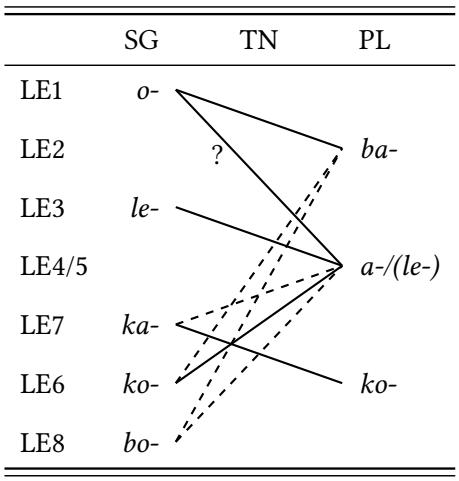


Figure 17: Gender system of Lelemi (based on Heine 1968 and Corbett 1991)

The considerable divergence between the gender systems in the Figures 16 and 17 may be partly accounted for by dialect differences, given that Allan and Heine focused on Baglo and Tetemang, respectively. It is clear, however, that some differences are due to diverse analytical approaches. One crucial point is the identification of the additional plural LE4 for which Heine (1968: 115) also appears to present evidence with the demonstrative *-mɛ* but which Corbett (1991: 173) discards as a case of an overdifferentiated target. Another major difference in Heine's analysis of Lelemi (albeit not in his family reconstruction, see §3.4.3) is the non-recognition of single-class genders, although there are some likely candidates, notably with LE8.

A final but important point regarding the previous analyses of Lelemi relates to the typologically oriented interpretation of the philological framework to Niger-Congo noun classification. That is, the description of Lelemi, couched by Heine (1968, 1982) in this tradition, misled Corbett (1991: 173–175) to a confusing analysis in that he calls the language's genders inappropriately "agreement classes". That the presentation of Niger-Congo data in particular causes such problem appears to be significant, because in general this author has applied his cross-linguistic approach successfully to a wide range of structurally diverse and complex gender systems.

[9]The tone marking in the table follows Allan's (1973) transcription: V́ high tone, V mid tone, V̀ low tone.

Table 11: Nominal form class system of Lelemi (based on Allan 1973: 97–124)[9]

NF	Form(s)		Example(s)
Ø	–	SG	*wɛwɛ* 'dog'
		TN	*sìka* 'money'; *twifɔ* 'Twi speaking person/people'
O-	*ɔ-/u-*	SG	*ù-culi* 'person'; *ɔ̀-gbà* 'foot'
		TN	*ù-bòja* 'blood'
BA-	*ba-/be-*	PL	*bà-wɛwɛ* 'dogs'; *bè-culi* 'people'; *bè-kùkù* 'owls'; *bè-se* 'goats'; *bà-làkpi* 'snakes'; *be-yu* 'monkeys'
LE-	*lɛ-/li-*	SG	*lì-kùkù* 'owl'; *lɛ-nimì* 'eye'
		TN	*lɛ-na* 'meat'
		PL	*lɛ̀-gbà* 'feet'
A-	*a-/e-*	SG	*è-se* 'goat'
		TN	*a-ba* 'mud'
		PL	*a-nimì* 'eyes'; *e-ji* 'trees'
KO-	*kɔ-/ku-*	SG	*kɔ̀-làkpi* 'snake'; *ku-ji* 'tree'
		TN	*ku-tu* 'soup'
		PL	*kɔ̀-bwa* 'hats'
KA-	*ka-/ke-*	SG	*ke-yu* 'monkey'; *kà-bwa* 'hat'; *ke-mo* 'farm'
		TN	*ka-na* 'porridge'
N-	*m-/n-/ŋ-*	TN	*n-tu* 'water'; *ŋ̀-kpa* 'life'
		PL	*m-mo* 'farms', *ǹ-culi* 'people (with NUM)'
BO-	*bɔ-/bu-*	TN	*bɔ-ŋwa* 'cooking'

Turning to Lelemi's system of noun form and deriflection classes, Allan's information can be summarized as in Table 11 and Figure 18.

Although Lelemi's crossed gender system is already complex, its deriflection system is yet more elaborate, due notably to an additional prefixless nominal form class and another one in *N-*. It comprises 11 singular-plural affix pairings, albeit three of them inquorate. Nominal form classes are remarkable regarding their number behavior in that most of them are attested with more than one number value (only *BA-* and *BO-* are restricted to plural animates and transnumeral infinitives, respectively), and three of them are even attested in both singular and plural. Most of the discrepancies between gender and deriflection are thus due to the fact that agreement and nominal form classes show numerous patterns diverging from the expected biunique Niger-Congo canon, as shown in Figure 19.

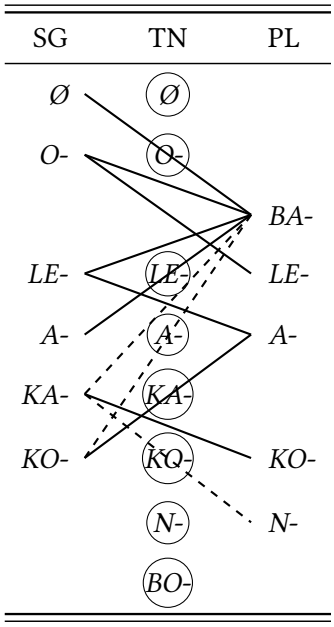


Figure 18: Deriflection system of Lelemi (based on Allan 1973: 100)

	AGR	NF	Number*
LE2	*ba-*	*BA-*	PL
	X	*Ø*	TN, SG, PL
LE1	*O-*	*O-*	TN, SG
LE5	*a-*	*A-*	TN, SG, PL
LE3	*lE-*	*LE-*	SG
LE4	*lE-*	X	TN, PL
LE6	*kO-*	*KO-*	TN, SG, PL
LE7	*ka-*	*KA-*	TN, SG
LE8	*bO-*	*BO-*	TN, (PL)
	X	*N-*	TN, PL

Note: X = no independent class counterpart in the other class type.
* may join behavior for both AGR and NF

Figure 19: Mapping of agreement and nominal form classes in Lelemi (based on Allan 1973: 128)

3.4.3 Proto-Ghana-Togo-Mountain

The noun classification systems of Ghana-Togo-Mountain languages have been subject to historical-comparative analysis by Heine (1968). Since the very genealogical unity of the group is disputed, Heine's results are in principle controversial. In this context, however, we focus on another problem of his reconstruction, namely that he closely follows the problematic philological approach to Niger-Congo "noun classes", which obscures a transparent treatment of gender and nominal deriflection. Heine (1968: 112) writes:

> Ein Nominalklassensystem liegt vor, wenn
> a) Nominalklassen bestehen, d.h. die Nomina durch Affixe in Klassen eingeteilt werden,
> b) Paarigkeit der Klassenaffixe vorhanden ist, d.h. einem sg-Affix ein bestimmtes pl-Affix entspricht bzw. umgekehrt, und wenn
> c) nach einer Nominalklassenkonkordanz verfahren wird, d.h. wenn den Nominalklassenaffixen an verschiedenen grammatischen Kategorien regelmäßig zugeordnete Klassen-Zeichen entsprechen.
> [We speak of a noun class system if a) there are noun classes, that is, nouns are sorted by affixes into different classes; b) the class affixes occur in pairs, that is, a certain singular affix corresponds to a certain plural affix and vice versa; and if c) there is noun class concord, that is, if the noun class affixes correlate regularly with class exponents on different grammatical categories.]

Heine's awareness of the importance of agreement is reflected in his data presentation for single languages (ibid.: 113–123) as well as the exclusion of three languages from the reconstruction that according to him (ibid.: 276–277) no longer display class concord, namely Ikposo, Igo, and Animere (it turns out that this holds in fact only for the first language). Nevertheless, he focuses predominantly on the nominal affix system and often conflates agreement and noun forms, which makes it hard to distinguish the two. Finally, when reconstructing the "noun class" system of the entire group (ibid.: 187–211), he almost exclusively discusses the noun affixes; only in rare, unclear cases does he resort to the role of agreement forms.

A final point, which has also been made in §3.3 regarding the comparative work on Guang, concerns the reconstruction bias toward Proto-Bantu. Heine's proto-system, schematized in Figure 20, demonstrates that the inventory and numbering of the majority of his "noun classes" are, to the extent possible, clearly

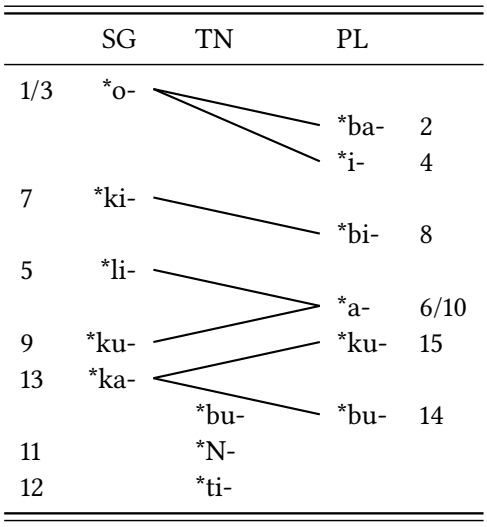


Figure 20: “Noun class” system of Proto-Ghana-Togo-Mountain by Heine (1968: 187)

modeled on and also implicitly justified (ibid.: 187) by the conflated Proto-Bantu system, whose two components were shown in Figure 8 of §2.

Since Heine’s (1968) work many studies dealing to different degrees with the noun classification systems of individual Ghana-Togo-Mountain languages have appeared. Despite the much more complete data available today it remains hard to reconstruct a robust proto-system, irrespective of the classificatory status of the group. This is because most language-specific treatments are still biased toward nominal form classes and deriflections and neglect agreement, which is crucial for determining the gender system. That is, we have come across studies for only three of the 16 languages where the agreement and resulting gender systems receive primary attention by the respective authors, namely Zaske (2007) on Anii, Essegbey (2009) on Nyangbo, and Agbetsoamedo (2014a, 2014b) on Selee, while in all other descriptions this domain plays a secondary role, is overly conflated with nominal form classes, or is lacking altogether.

4 Summary

We have outlined the traditional approach to the noun categorization systems of the Niger-Congo type found in a large number of African languages and argued that it is in need of revision for the sake of better language-specific synchronic as

well as historical-comparative analyses. This holds in addition to the comparative bias toward the Bantu system, which tends to conceal a large part of the existing diversity across Niger-Congo languages.

One bias in the "noun class" framework is the strong focus on the affix status of class exponents. One consequence in the realm of nominal form classes is the overall analytical neglect of nouns without class affixes despite their important and partly diagnostic role in the nominal system.

Another crucial problem of the current Niger-Congo approach is the stereotypical view about agreement and nominal form classes in that the large majority of "noun classes" are assumed to be functionally dedicated to a specific gender and number value. As shown in the discussion of Proto-Bantu in §2, this situation is not even universal in the group that was the inspiration for this assumption. However, the degree of deviation from this hypothetical prototype can be much higher, so that this overgeneralized view should give way to a more neutral approach. In particular, this phenomenon throws a different light on the underlying number system in that the overall importance of transnumeral nouns seems to be higher than commonly assumed. That is, the data should no longer be dealt with according to a simple and universal singular-plural distinction.

The last and most important drawback of the traditional Niger-Congo framework is that its central concept of "noun class" conflates two independent linguistic phenomena associated with nouns: gender agreement between a nominal trigger and its target and deriflection reflected in morphological and/or phonological regularities of nouns. Their unified treatment has several negative effects for the current investigation of this domain. These are in particular an inappropriate focus on deriflection systems, a resulting neglect of a transparent and comprehensive analysis of agreement-based gender, and finally an impeded investigation of the exact relationship between the two distinct components, including their complex interdependency.

The disadvantages of the "noun class" concept negatively impact the transparency and even adequacy of language-specific descriptions. In the worst case, it may be impossible to establish the inventory of a language's gender distinctions and its semantic and formal basis in spite of a lengthy treatment of "noun classes". As discussed above, this is not restricted to a case like the heavily restructured Akan treated in §3.2, for which scholars go into great detail about its classificatory morphology on nouns but fail to explicitly identify the occasional existence of an animacy-based gender system.

Synchronic descriptive problems inevitably carry over to the historical reconstruction of noun classification in Niger-Congo, as shown for the Guang and Ghana-Togo-Mountain groups in §3.3 and §3.4, respectively. The general bias

toward the Bantu family aside, available proto-systems are not only unrealistic vis-à-vis the attested modern data but simply difficult to interpret linguistically in mixing distinct grammatical phenomena in a single paradigm.

Last but not least, it is hard to impossible for typologists to integrate a considerable amount of Niger-Congo data, in particular on complex systems, in cross-linguistic surveys on gender due to the intractable amalgamation of gender and deriflection. The typological incompatibility and thus "opaqueness" of many Niger-Congo descriptions deprives this research domain of interesting cases the analysis of which is necessary in order to arrive at meaningful cross-linguistic generalizations.

We venture that the cross-linguistic framework outlined in §1 is universally viable for language-specific, historical-comparative, and typological analyses. The restricted data presented here suggest several generalizations that are worth testing against a wider range of data. For example, the observation made in Güldemann (2000) that agreement classes need not be dedicated to specific gender and number values is demonstrably relevant for a much larger number of languages, and it can also be extended in Niger-Congo to nominal form classes. As proposed in Güldemann (2000), the degree of this functional insensitivity of classes is reflected in the ratio between genders and agreement classes (or, for that matter, between deriflections and nominal form classes). In typological comparison, this promises to serve as a good proxy for assessing basic structural differences between systems.

There is another conclusion that may turn out to be cross-linguistically significant, even though the data presented here are admittedly limited. That is, in languages with gender-sensitive noun morphology these deriflection systems are regularly more complex, or at least not simpler, than the associated gender systems in terms of inventory as well as systemic structure as per Heine (1982) and Corbett (1991).

For Niger-Congo languages, one can assume that the two subsystems of this nominal domain were originally very similar. This suggests for this group that deriflection systems tend to be more conservative than gender systems. With respect to the former, the transfer of individual or entire groups of nouns from one to another nominal form class, the merger of nominal form classes, and the resulting effects on deriflections are certainly rampant in the family. However, the changes in agreement-based gender marking are recurrently even more frequent and drastic, up to the reorganization, or even loss, of the entire system.

As long as the divergences between the two subsystems of gender and deriflection are minor, they will not differ dramatically in terms of their classification of nouns into sets. However, quite a few cases in Niger-Congo are differ-

ent. For example, Akan, dealt with in §3.2, possesses a binary system of animate vs. inanimate gender but an elaborate deriflection system with more and different categorizing distinctions. Languages of this type inform the new topic of so-called "concurrent systems" of noun classification, as investigated recently by Fedden & Corbett (2017) but for which the authors failed to recognize the relevance of Niger-Congo. Thus, a more detailed and typologically sound investigation of some of its languages where deriflection and gender have grown apart is a very worthwhile undertaking for the future.

In summary, this paper attempts to make two major contributions to the treatment of gender. First, the linguistic analysis of Niger-Congo-type noun classification systems should be better aligned with a sound cross-linguistic perspective. The detrimental philological approach, which is of a substantial rather than merely terminological nature, is not necessitated by any linguistic structures in Niger-Congo, however quirky they may appear from a cross-linguistic view. Second, we make a new proposal for a universally applicable framework for gender systems, especially useful if gender interacts intimately with the morpho(phono)logy of nouns. The approach based on the four analytical concepts outlined in §1 could not be fully expounded here by means of a wider language sample. However, its viability has been shown for the specific gender-system profile of the important group of Niger-Congo languages. It has also been applied successfully to structurally quite different languages from such families as Kx'a and Tuu in southern Africa, Kadu and Cushitic in northeastern Africa, and yet others. Hence, we venture to review the approach to gender from a wider typological perspective in line with the present framework.

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Special abbreviations

The following abbreviations are not found in the Leipzig Glossing Rules:

AGR	agreement class	NUM	numeral
AN	animate	PART	participle
CONC	pronominal concord	PERF	perfect
D	distal	PRO	pronoun
IAN	inanimate	TN	transnumeral
NF	nominal form class		

Arabic numbers represent agreement classes while Roman numbers represent genders.

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