Noun Class Agreement in Niger-Congo Languages

Denis Creissels

University of Lyon, France

1   Introduction

The present entry is a survey of gender–number agreement in the Niger-Congo
languages commonly characterized as having a noun class system.

The name Niger-Congo, introduced in 1955 by Joseph H. Greenberg, later
became the name usually given to the putative language phylum designated by
Greenberg himself as Niger-Kordofanian – see Greenberg (1955, 1963), Williamson
(1989). The Niger-Congo phylum is commonly presented as including the fol-
lowing branches: Mande, Kordofanian, Atlantic, Ijoid, Kru, Kwa, Benue-Congo
(including Bantu), Dogon, Gur, Adamawa, and Ubangian, with a total of approxi-
mately 1500 languages. However, according to Dimmendaal (2008, 2011), whose
views have gained some acceptance among scholars of African languages, core
Niger-Congo, whose validity as a genetic grouping relies on solid evidence,
should be distinguished from language groups whose Niger-Congo affiliation
cannot be considered as established (such as Mande, Dogon, Ubangian or Ijoid).

Be that as it may, the decision to include or not include Mande, Ijoid, Dogon or
Ubangian into Niger-Congo has no impact on the scope of this entry, since the main
reason for questioning their Niger-Congo affiliation is that core Niger-Congo
languages show particularly clear evidence of a genetic relationship in two
morphological subsystems: the so-called noun-class system (i.e. the particular

type of relationship between number inflection of nouns and gender–number agreement that constitutes the topic of the present entry), and the so-called verb extensions (i.e. a particular type of verb-to-verb derivation system), whereas in Mande, Ijoid, Dogon and Ubangian, cognates of the noun classes and verb extensions found in core Niger-Congo languages have not been identified with certainty.

Not all (core) Niger-Congo languages have systems of number inflection of nouns and gender–number agreement of the type commonly termed *noun class system*. The proportion of languages having neither number inflection of nouns nor gender is particularly high among Western Benue-Congo languages (Igbo, Yoruba) and Kwa languages (Ewe). However, systems of the type discussed in the present entry are found in all the groups of languages that constitute the core of the Niger-Congo phylum, and across core Niger-Congo, the languages that do not have a synchronically active noun class system show at least vestiges of a former system of this kind. Moreover, the noun class systems found in the various branches of core Niger-Congo show not only striking structural similarities, but also similarities in the form of semantically comparable number markers, agreement markers, or both, which constitutes evidence of a common historical origin.

Traditionally, Niger-Congo languages are not characterized as having *genders*, but rather noun *classes*. However, as argued by Corbett (1991), among others, in a general typology of nominal classification, the systems traditionally labelled noun class systems (in particular those found in Niger-Congo languages) do not belong to a type different from those traditionally designated as gender systems.

Gender is a polysemous term, and this may be a source of confusion. However, if gender as a morphosyntactic notion (grammatical gender) is defined as a particular type of nominal classification in which a partition of the set of nominal lexemes into subsets manifests itself in agreement mechanisms controlled by nouns, then it is clear that Niger-Congo 'noun class systems' are gender systems.[1]

In Niger-Congo languages, the agreement mechanisms that reflect the division of nouns into genders operate in noun-modifier constructions, in the relationship between pronouns and their antecedents, and in the indexation of arguments on verbs.

Niger-Congo gender systems typically show a number of properties that distinguish them from the various types of gender systems found elsewhere in the world, but have no particular affinity with systems found in other language families (such as the Nakh-Daghestanian family) for the description of which the same term noun class is traditionally used.

The most salient particularity of Niger-Congo gender is that, as a rule, genders and inflectional types are closely related.[2] The nouns that have two distinct singular and plural forms constitute the overwhelming majority of the nominal lexicon, and they divide into inflectional types characterized by a particular pair of obligatory number markers each.[3] As a rule, nouns show overt number markers both in the singular and the plural, and the stem to which number markers attach

does not exist by itself as a word.[4] In some branches of Niger-Congo, the number markers are prefixed to noun stems; in some others they are suffixed, but this does not affect the organization of the system.

For example, in Tswana (Bantu), the nouns that take the pair of prefixes *lì-* (SG) / *mà-* (PL) trigger the agreement pattern traditionally labelled 'class 5' in the singular, and the agreement pattern traditionally labelled 'class 6' in the plural, whereas the nouns taking the pair of prefixes *sì-* (SG) / *dì-* (PL) trigger 'class 7' agreement in the singular, and 'class 10' agreement in the plural.[5]

(1)   Tswana (Bantu)[6]

   a. *lì-kàù*   *lé*   *lì-léèlé*   *[!]lé*   *lí-ǹtsʰò*   *lé*   *[!]lí-ɔ́pélà-ŋ́*   *[!]lé-lé*
       SG-boy(5)   cl5.LK   cl5-tall   cl5.LK   cl5-black   cl5.LK   SI:cl5-sing-REL   cl5.DEM-DIST
       'that tall boy with dark complexion who is singing'

   b. *mà-kàù*   *á*   *mà-léèlé*   *[!]á*   *má-ǹtsʰò*   *á*   *[!]á-ɔ́pélà-ŋ́*   *[!]á-lé*
       PL-boy(6)   cl6.LK   cl6-tall   cl6.LK   cl6-black   cl6.LK   SI:cl6-sing-REL   cl6.DEM-DIST
       'those tall boys with dark complexion who are singing'

   c. *sì-fòfù*   *sé*   *sì-léèlé*   *[!]sé*   *sí-ǹtsʰò*   *sé*   *[!]sí-ɔ́pélà-ŋ́*   *[!]sé-lé*
       SG-blind(7)   cl7.LK   cl7-tall   cl7.LK   cl7-black   cl7.LK   SI:cl7-sing-REL   cl7.DEM-DIST
       'that tall blind person with dark complexion who is singing'

   d. *dì-fòfù*   *tsé*   *dì-léèlé*   *[!]tsé*   *dí-ǹtsʰò*   *tsé*   *[!]dí-ɔ́pélà-ŋ́*   *[!]tsé-lé*
       PL-blind(10) cl10.LK cl10-tall cl10.LK cl10-black cl10.LK SI:cl10-sing-REL cl10.DEM-DIST
       'those tall blind people with dark complexion who are singing'

Another essential feature of Niger-Congo gender systems, also illustrated in (1), is that gender agreement and number agreement are expressed by etymologically opaque portmanteau markers (conventionally referred to as *classes*) that may be more or less similar to the number markers of nouns, but in no case can be decomposed into a number agreement marker and a gender agreement marker. There is not the slightest evidence that, in the history of the Niger-Congo phylum, gender–number agreement markers might have resulted from the fusion of originally distinct number agreement markers and gender agreement markers. Moreover, one may speculate about plausible scenarios accounting for the emergence of the Proto-Niger-Congo system of number marking and gender–number agreement (see for example Kiessling 2013), but there is general agreement that Niger-Congo languages provide no concrete evidence of a possible lexical origin of the markers involved in number marking and gender–number agreement.[7]

Other typical features of Niger-Congo gender systems are the relatively high number of possible agreement patterns governed by noun forms (12 in Tswana, up to 30 or so in some Atlantic languages), and the fact that sex (male vs. female) plays no role in gender assignment. For example, in Tswana, as illustrated by example (2), *mònná* 'man (in the sense of Latin *vir*)' and *mòsádí* 'woman' belong not only

to the same inflectional type (singular *mὸ-* contrasting with plural *bὰ-*), but also to the same gender, since they equally govern 'class 1' agreement in the singular, and 'class 2' agreement in the plural.

(2) Tswana (Bantu)

a. *mὸ-ńnà*   *jó*   *mὸ-léèlé*   *ˈjó*   *mó-ǹtsʰò*   *jó*   *ˈ ́-ɔ́pélà- ́ŋ*   *ˈjó-lé*
   sɢ-man(1)   cl1.ʟᴋ   cl1-tall   cl1.ʟᴋ   cl1-black   cl1.ʟᴋ   sɪ:cl1-sing-ʀᴇʟ   cl1.ᴅᴇᴍ-ᴅɪsᴛ
   'that tall man with dark complexion who is singing'

b. *mὸ-sádì*   *jó*   *mὸ-léèlé*   *ˈjó*   *mó-ǹtsʰò*   *jó*   *ˈ ́-ɔ́pélà- ́ŋ*   *ˈjó-lé*
   sɢ-woman(1)   cl1.ʟᴋ   cl1-tall   cl1.ʟᴋ   cl1-black   cl1.ʟᴋ   sɪ:cl1-sing-ʀᴇʟ   cl1.ᴅᴇᴍ-ᴅɪsᴛ
   'that tall woman with dark complexion who is singing'

c. *bὰ-ńnà*   *bá*   *bὰ-léèlé*   *ˈbá*   *bá-ǹtsʰò*   *bá*   *ˈbá-ɔ́pélà- ́ŋ*   *ˈbá-lé*
   ᴘʟ-man(2)   cl2.ʟᴋ   cl2-tall   cl2.ʟᴋ   cl2-black   cl2.ʟᴋ   sɪ:cl2-sing-ʀᴇʟ   cl2.ᴅᴇᴍ-ᴅɪsᴛ
   'those tall men with dark complexion who are singing'

d. *bὰ-sádì*   *bá*   *bὰ-léèlé*   *ˈbá*   *bá-ǹtsʰò*   *bá*   *ˈbá-ɔ́pélà- ́ŋ*   *ˈbá-lé*
   ᴘʟ-woman(2)   cl2.ʟᴋ   cl2-tall   cl2.ʟᴋ   cl2-black   cl2.ʟᴋ   sɪ:cl2-sing-ʀᴇʟ   cl2.ᴅᴇᴍ-ᴅɪsᴛ
   'those tall women with dark complexion who are singing'

In Niger-Congo languages, the involvement of categories other than gender and number in agreement mechanisms is quite exceptional. Case agreement is not attested, which comes as no surprise, since morphological case is exceptional across Niger-Congo. Definiteness agreement between nouns and adjectives is only sporadically attested, for example in Jóola Fóoñi (Atlantic), with a morphological slot for definiteness markers distinct from that dedicated to gender–number agreement – example (3).[8]

(3) Jóola Fóoñi (Atlantic)

a. *ɛ-yɛn*   pl. *sɪ-yɛn*
   sɢ-dog(E)   ᴘʟ-dog(S)
   'dog(s)'

b. *ɛ-yɛn*   *y-ɐɐmɐk*   pl. *sɪ-yɛn*   *s-ɐɐmɐk*
   sɢ-dog(E)   clE-big   ᴘʟ-dog(S)   clS-big
   'big(s) dog(s)'

c. *ɛ-yɛn-ɛ-y*   pl. *sɪ-yɛn-a-s*
   sɢ-dog(E)-D-clE   ᴘʟ-dog(S)-D-clS
   'the dog(s)'

d. *ɛ-yɛn-ɛ-y*   *y-ɐɐmɐk-e-y*   pl. *sɪ-yɛn-a-s*   *s-ɐɐmɐk-ɐ-s*
   sɢ-dog(E)   clE-big-D-clE   ᴘʟ-dog(S)-D-clS   clS-big-D-clS
   'the big(s) dog(s)'

The proportion of languages with systems of this kind in their most typical form is particularly high among Bantu languages on the one hand, and among the languages spoken in the extreme north-west of the area occupied by Niger-Congo languages on the other hand,[9] in other words in two groups of languages spoken in areas very far from each other and only distantly related genetically.

Readers will probably notice that Atlantic languages are over-represented in the present entry, in comparison with the remainder of Niger-Congo. The reason is that the Atlantic systems of gender–number agreement are at the same time particularly typical in the broad lines of their organization, and extremely diverse in the details, and are consequently of particular interest for a typology of gender–number agreement in Niger-Congo.[10]

The entry is organized as follows. After some conceptual and terminological clarifications (Section 2), Section 3 describes the most typical aspects of Niger-Congo gender systems. Section 4 discusses the cross-linguistic variation in the domains of gender–number agreement. Section 5 discusses possible uses of classes that cannot be explained in terms of agreement triggered by a noun. Section 6 describes the gender resolution rules in NP coordination. Section 7 analyses semantic agreement. Section 8 addresses the question of whether agreement in Niger-Congo languages can be characterized as *alliterative*. Section 9 examines possible evolutions of the Niger-Congo gender–number agreement systems resulting in radical departures from the prototype. Section 10 summarizes the main conclusions.

2   Conceptual and terminological clarifications

2.1   The shortcomings of the traditional notion of 'class'

One of the major characteristics of the Niger-Congo gender systems is a close relationship between the division of nouns into genders (based on their agreement properties) and their division into inflectional types (based on the particular pairs of singular/plural markers they select, at least for the nouns that have distinct singular and plural forms). However, exact coincidence between inflectional types and genders hardly ever occurs, and a major shortcoming of the traditional notion of *noun class* is that it only makes sense in an idealized situation which is never found in real languages, and is consequently not suited for the description of various types of intricacies in the relationship between number inflection and gender that are pervasive in Niger-Congo gender systems.

As discussed in detail by Güldemann and Fiedler (2017), the traditional notion of noun class is characterized by the lack of a clear distinction between inflection and agreement. Crucially, in this tradition, the number markers in the inflection of nouns and the gender–number agreement markers in the inflection of the words acting as targets of gender–number agreement are indiscriminately called *noun class markers*, and it is not clear whether *class* refers primarily to inflectional types or to genders. This impedes consistent treatment of the frequent

mismatches between the inflectional characteristics and the agreement properties of nouns, resulting in endless (and meaningless) discussions about the exact number of *classes* that should be distinguished in individual languages, which constitutes a typical point of controversy among scholars of Niger-Congo languages.

2.2 Classes as cells in the inflectional paradigm of words that can act as targets of agreement mechanisms

In order to clarify the situation, in the remainder of this entry, *class* is not used to designate sets of nouns, be it with reference to their agreement properties or inflectional characteristics. In the terminology proposed in this entry, *class* is used exclusively with the meaning of CELL IN THE INFLECTION OF THE WORDS THAT CAN ACT AS TARGETS OF AGREEMENT MECHANISMS CONTROLLED BY NOUNS. This definition implies that:

- if a noun combines with a modifier inflected for class, the class value expressed by the modifier is determined by the noun; for example, in Jóola Fóoñi (Atlantic), the indefinite determiner 'some' can only be *a-cɛɛ* (class A) if its head is *a-ñɪɪl* 'child', *kʊ-cɛɛ* (class K) if its head is *ka-laak* 'field', and so on;
- if a pronoun inflected for class refers to an antecedent present in the context, it is the antecedent that determines the class value expressed by the pronoun; for example, in Jóola Fóoñi, the third-person pronoun can only be *k-ɔɔ* (class K) if its antecedent is *ka-laak* 'field', *b-ɔɔ* (class B) if its antecedent is *bʊ-rʊŋ* 'road', and so on.

However, this definition does not necessarily imply that the choice between the classes that constitute the inflection of the words acting as agreement targets is always determined by agreement. This is indeed crucial, since some of the inflected forms of the words in question may have *non-contextual* uses implying no reference to a controller – see Section 5.2.

By definition, classes (with the exception of the *orphan classes* – see Section 5.3) are related to the partition of noun forms into subsets according to their agreement properties. However, the relationship between classes in the technical sense of the term and subsets of nouns may show some complexity, in the languages that have the phenomenon known as semantic agreement – see Section 7.

2.3 Noun forms and nominal lexemes in the analysis of gender–number agreement

Another important point on which the author agrees with Güldemann and Fiedler (2017) is that, in the analysis of Niger-Congo gender systems, before establishing genders in the sense of subsets of nominal LEXEMES, it is useful to consider a

division of the set of noun FORMS into subsets based exclusively on their agreement properties and abstracting from any other property, in particular their number value. The point is that, in Niger-Congo languages, it is not uncommon that a given agreement pattern is shared by a set of singular forms and a set of plural forms. Example (4) shows that, in Jóola Fóoñi (Atlantic) *k-ɔɔl* 'bone' (plural *w-ɔɔl*) and *k-al* 'rivers' (plural of *f-al*), in spite of their different number value, have identical prefixes and govern the same agreement pattern.

(4)   Jóola Fóoñi (Atlantic)

    a. *k-ɔɔl*   *k-ɐɐmɐk*   'big bone'
        SG-bone(K)   clK-big
        cf. pl. *w-ɔɔl w-ɐɐmɐk* 'big bones'

    b. *k-al*   *k-ɐɐmɐk*   'big rivers'
        PL-river(K)   clK-big
        cf. sg. *f-al f-ɐɐmɐk* 'big river'

This phenomenon is particularly widespread among Kru languages. For example, Neyo has five possible agreement patterns for noun forms, manifested mainly in the choice between five possible forms of the third-person pronoun: *ɔ, ɪ, a, ɛ*, and *ʋ*. Among these five forms, *ɔ* can only represent singular noun forms, *ɪ* can only represent plural noun forms, but each of the remaining three forms (*a, ɛ*, and *ʋ*) may have both singular and plural noun forms as its antecedents (Grah 1983, 144).

   The situation described by Van de Velde and Idiatov (2017) in Bena-Yungur (Adamawa) is even more extreme, with three possible agreement patterns for singular noun forms (WA, YA and ƁA) and exactly the same three agreement patterns for plural forms. As regards singular-plural pairings, every logically possible gender is attested, except ƁA–ƁA. Note that, contrary to Neyo (characterized by a straightforward correspondence between nominal markers and agreement patterns), the Bena-Yungur system of singular-plural pairings in noun inflection is much more complex than the gender system, and structurally very different. As rightly emphasized by Van de Velde and Idiatov, Bena-Yungur is typically a system that can only be described consistently on the basis of a strict distinction, on the one hand, between genders and inflectional types, and on the other hand, between genders and agreement patterns triggered by noun forms.

2.4   Illustrations: three examples of class paradigms

In Balant Ganja (Atlantic) the words that have the ability to express agreement with a noun have an inflectional paradigm consisting of seven classes, each of which being able to occur in contexts in which it expresses agreement with a particular subset of noun forms in the role of head or antecedent. Example (5) illustrates the class inflection of some adnominals in Balant Ganja.

(5) Class inflection of some adnominals in Balant Ganja (Atlantic)

	-ílà 'which'	*-ndâŋ* 'big'	*-ɔ́* 'this'	*-ɔ́lɔ̀* 'other'
class HA	*h-ílà*	*à-ndâŋ*	*h-ɔ́*	*h-ɔ́lɔ̀*
class BI	*bìg-ílà*	*bì-ndâŋ*	*b-ɔ́-gì*	*bìg-ɔ́lɔ̀*
class B	*b-ílà*	*m-ndâŋ*	*b-ɔ́*	*b-ɔ́lɔ̀*
class U	*w-ílà*	*ɔ̀-ndâŋ*	*w-ɔ́*	*w-ɔ́lɔ̀*
class GI	*g-ílà*	*gì-ndâŋ*	*g-ɔ́*	*g-ɔ́lɔ̀*
class F	*f-ílà*	*f-ndâŋ*	*f-ɔ́*	*f-ɔ́lɔ̀*
class G	*g-ílà*	*ŋ-ndâŋ*	*g-ɔ́*	*g-ɔ́lɔ̀*

As illustrated in (6) with the adjective *-ndâŋ* 'big, great', four of the seven classes (HA, GI, B and F) express agreement with singular noun forms, two (BI and G) express agreement with plural noun forms, and one (U) is found with both singular and plural controllers.

(6) Balant Ganja (Atlantic)

class HA	*à-ndàantí*	*à-ndâŋ*	'great hunter'
	sɢ-hunter(HA)	clHA-great	
class GI	*gì-gbél*	*gì-ndâŋ*	'big spoon'
	sɢ-spoon(GI)	clGI-big	
class B	*b-sǎay*	*m-ndâŋ*	'big silk-cotton tree'
	sɢ-silk.cotton.tree(B)	clB-big	
class F	*f-dùngí*	*f-ndâŋ*	'big pot'
	sɢ-pot(F)	clF-big	
class BI	*bì-ndàantí*	*bì-ndâŋ*	'great hunters'
	pʟ-hunter(BI)	clBI-great	
class G	*g-dùngí*	*ŋ-ndâŋ*	'big pots'
	pʟ-pot(G)	clG-big	
	g-bàlá	*ŋ-ndâŋ*	'big xylophones'
	pʟ-xylophone(G)	clG-big	
class U	*Ø-bàlá*	*ɔ̀-ndâŋ*	'big xylophone'
	sɢ-xylophone(U)	clU-big	
	Ø-gbél	*ɔ̀-ndâŋ*	'big spoons'
	pʟ-spoon(U)	clU-big	
	Ø-sǎay	*ɔ̀-ndâŋ*	'big silk-cotton trees'
	pʟ-silk.cotton.tree(U)	clU-big	

Guñaamolo (Atlantic; Bao Diop 2015) illustrates a much more diversified class paradigm, with 26 distinct cells, each of which expressing agreement with a particular subset of noun forms.

(7)   Class inflection of some adnominals in Guñaamolo (Atlantic)

	-de 'big'	*-lɪɪh* 'first'	*-mɐr* 'that'	relativizer
class A	*ɐ-de*	*a-lɪɪh*	*no-mɐr*	*nɔ*
class BA	*bɐ-de*	*ba-lɪɪh*	*bɐ-mɐr*	*ba*
class BI	*bi-de*	*bɪ-lɪɪh*	*bi-mɐr*	*bɪ*
class BU	*bu-de*	*bʊ-lɪɪh*	*bu-mɐr*	*bʊ*
class DA	*dɐ-de*	*da-lɪɪh*	*dɐ-mɐr*	*da*
class DI	*di-de*	*dɪ-lɪɪh*	*di-mɐr*	*dɪ*
class DIN	*din-de*	*dɪn-lɪɪh*	*dim-mɐr*	*dɪŋ*
class FA	*fɐ-de*	*fa-lɪɪh*	*fɐ-mɐr*	*fa*
class FU	*fu-de*	*fʊ-lɪɪh*	*fu-mɐr*	*fʊ*
class GU	*gu-de*	*gʊ-lɪɪh*	*gu-mɐr*	*gʊ*
class HA	*hɐ-de*	*ha-lɪɪh*	*hɐ-mɐr*	*ha*
class HO	*ho-de*	*hɔ-lɪɪh*	*ho-mɐr*	*hɔ*
class IN	*in-de*	*ɪn-lɪɪh*	*im-mɐr*	*mɪ*
class JA	*jɐ-de*	*ja-lɪɪh*	*jɐ-mɐr*	*ja*
class JI	*ji-de*	*jɪ-lɪɪh*	*ji-mɐr*	*jɪ*
class KA	*kɐ-de*	*ka-lɪɪh*	*kɐ-mɐr*	*ka*
class KO	*ko-de*	*kɔ-lɪɪh*	*ko-mɐr*	*kɔ*
class KUN	*kun-de*	*kʊn-lɪɪh*	*kum-mɐr*	*kʊ*
class MUN	*mun-de*	*mʊn-lɪɪh*	*mum-mɐr*	*mʊ*
class ÑAN	*ñɐn-de*	*ñan-lɪɪh*	*ñam-mɐr*	*ña*
class ÑO	*ño-de*	*ñɔ-lɪɪh*	*ño-mɐr*	*ñɔ*
class RAN	*rɐn-de*	*ran-lɪɪh*	*rɐm-mɐr*	*ra*
class SI	*si-de*	*sɪ-lɪɪh*	*si-mɐr*	*sɪ*
class TA	*tɐ-de*	*ta-lɪɪh*	*tɐ-mɐr*	*ta*
class TI	*ti-de*	*tɪ-lɪɪh*	*ti-mɐr*	*tɪ*
class U	*u-de*	*ʊ-lɪɪh*	*u-mɐr*	*Mʊ*

The class paradigm of Tswana (Bantu), with 12 cells, is average compared to the other Niger-Congo languages having a system of gender–number agreement.

(8)   Class inflection of some adnominals in Tswana (Bantu)[11]

	-ʃǎ 'new'	*-fí* 'which?'	relativizer	*-ótɬʰé* 'all'
class 1	*mò-ʃǎ*	*ó-fí*	*jó*	–
class 2	*bà-ʃǎ*	*bá-fí*	*bá*	*b-ótɬʰé*
class 3	*mò-ʃǎ*	*ó-fí*	*ó*	*Ø-ótɬʰé*
class 4	*mì-ʃǎ*	*í-fí*	*é*	*j-ótɬʰé*
class 5	*lì-ʃǎ*	*lí-fí*	*lé*	*l-ótɬʰé*
class 6	*mà-ʃǎ*	*á-fí*	*á*	*Ø-ótɬʰé*
class 7	*sì-ʃǎ*	*sí-fí*	*sé*	*s-ótɬʰé*
class 9	*ǹ-tʃʰá*	*í-fí*	*é*	*j-ótɬʰé*
class 10	*dìǹ-tʃʰá*	*dí-fí*	*tsé*	*ts-ótɬʰé*
class 11	*lò-ʃǎ*	*ló-fí*	*ló*	*l-ótɬʰé*
class 14	*bò-ʃǎ*	*bó-fí*	*dʒó*	*dʒ-ótɬʰé*
class 17	*χò-ʃǎ*	*χó-fí*	*mó*	*χ-ótɬʰé*

2.5   The labelling of classes

As regards the labels identifying the different classes that constitute the class paradigms of individual languages, a distinction must be made between Bantu and non-Bantu languages, for purely practical reasons.

For Bantu languages, there is no reason not to use the traditional system relying on an arbitrary numbering of the reconstructed Proto-Bantu classes, the general principle being that the number used to label a given class in a present-day Bantu language identifies it as the reflex of a reconstructed Proto-Bantu class.

Unfortunately, this convention cannot be extended to the remainder of Niger-Congo, since the Proto-Niger-Congo class system is only reconstructed in a fragmented manner. On the other hand, semantically motivated labels would be impossible to deal with consistently, given that, in Niger-Congo languages, most of the subsets of nouns established on the basis of their behaviour as agreement controllers are semantically heterogeneous to a large extent. In fact, the only practical and non-confusing solution is the use of language-specific and phonetically motivated labels that simply evoke the phonological shape of the markers involved in a given agreement pattern.

3   Typical aspects of Niger-Congo gender systems

3.1   Singular versus plural in noun inflection and agreement

The close (but not necessarily straightforward) relationship between genders and inflectional types of nouns and the total impossibility of dissociating gender marking from number marking have already been mentioned as essential characteristics of Niger-Congo gender systems. The complexity of the relationship between singular and plural, both in nominal inflection and agreement patterns, is another typical feature of the Niger-Congo languages having a gender system.

- The same singular marker may correspond to two or more different plural markers, and vice-versa.
- The same affix may express singular with some nouns, and plural with some others.
- Nouns triggering the same agreement pattern in the singular do not necessarily trigger the same agreement pattern in the plural, and vice-versa.
- A given agreement pattern may be shared by a subset of singular forms and a subset of plural forms.
- Not all nouns have distinct singular and plural forms.
- Some agreement patterns may be triggered exclusively by nouns that do not have distinct forms for singular and plural.

These particularities explain why most descriptions of Niger-Congo gender systems adopt a strategy different from that followed in descriptions of Indo-European or Afroasiatic gender systems:

- NOUN FORMS (not nominal lexemes!)[12] are first divided into subsets according to their agreement properties. At this stage, the singular form and the plural

form of a given noun are treated as two distinct units. The subsets of nominal forms established at this stage are related to classes in the sense of cells in the inflectional paradigm of words acting as agreement targets.

- The second step is to establish the division of NOMINAL LEXEMES into genders on the basis of the possible correspondences between the agreement patterns governed by the singular and plural forms of the same noun.

For example, in Jóola Banjal (Atlantic), as illustrated in (9), the singular form *fʊ-mangɔ* 'mango' governs agreement pattern F, characterized among others by the class prefix *f(ʊ~u)-* for qualifying modifiers. The corresponding plural *gʊ-mangɔ* 'mangoes' governs agreement pattern G, concretized by the class prefix *g(ʊ~u)-* for qualifying modifiers. Similarly, *e-be* 'cow' as a noun form governs agreement pattern E, concretized by the class prefix *e~ɛ~y-* for qualifying modifiers, while *si-be* 'cows' governs agreement pattern S, concretized by the class prefix *s(ɪ~i)-* for qualifying modifiers. In terms of lexemes, *fʊ-mangɔ* is also the quotation form of a lexeme with two inflected forms *fʊ/gʊ-mangɔ* belonging to a gender that can conveniently be designated as gender F–G, whereas *e-be* 'cow' is the citation form of a lexeme with two inflected forms *e/si-be* belonging to gender E–S.

(9) Jóola Banjal (Atlantic; Bassène 2007)

　a. *fʊ-mangɔ*　　　*f-ɛmɛk*
　　　sɢ-mango(ꜰ)　　clF-big
　　　'big mango'

　b. *gʊ-mangɔ*　　　*g-ɛmɛk*
　　　ᴘʟ-mango(ɢ)　　clG-big
　　　'big mangoes'

　c. *e-be*　　　*y-ɛmɛk*
　　　sɢ-cow(ᴇ)　　clE-big
　　　'big cow'

　d. *si-be*　　　*s-ɛmɛk*
　　　ᴘʟ-cow(s)　　clS-big
　　　'big cows'

Outside Niger-Congo, it is common practice to use simple labels (such as *masculine* or *feminine*) for genders, and to add the specification *singular* or *plural* when referring to the agreement patterns governed by noun forms. However, given the specificities of the Niger-Congo systems, simpler descriptions can be achieved if simple labels are used for the agreement patterns governed by noun forms and for the classes through which the agreement patterns materialize, genders being referred to by means of complex labels that identify them as pairings of agreement patterns governed by noun forms. This is a matter of descriptive strategy, not a theoretical choice, since logically, both procedures are equivalent. The point is that the intricacies of Niger-Congo gender are easier to deal with if gender is not taken as a primitive notion, but as derived from the notion of agreement pattern governed by noun forms. Crucially, in Niger-Congo languages, it is normally easy

to establish the inventory of distinct agreement patterns available for noun forms; by contrast, the variation in singular-plural pairings is such that it is often difficult if not impossible to establish the exact number of distinct genders that should be recognized in a given language.

It is symptomatic that closely related languages, for example Jóola Fóoñi and Jóola Keeraak (Atlantic), may have identical inventories of agreement patterns for noun forms, but very different inventories of genders. Based on identical inventories of 13 possible agreement patterns for noun forms, Jóola Fóoñi has six major genders and five statistically marginal genders (see Section 3.3 below), whereas eight major genders and 14 statistically marginal genders can be identified in the data provided by Segerer (2015) for Jóola Keeraak. In such situations, in the perspective of language comparison, the advantages of using simple labels for the agreement patterns available for noun forms and complex labels for genders, rather than the other way round, are particularly obvious.

There may also be problems with the status of some classes with respect to the singular versus plural contrast. For example, in Wolof, the ten classes that constitute the paradigm of the adnominals inflected for class are commonly divided into eight singular classes (K, B, W, M, G, J, L and S) and two plural classes (K and Y). However, according to Babou and Loporcaro (2016), some of the noun forms triggering J or S agreement, traditionally analysed as collectives, are in fact plural forms, which leads to the recognition of two genders (B–J and B–S) that are not mentioned in previous descriptions of Wolof.

In fact, historically, there is evidence that a possible source of complexification of the singular-plural correspondences in Niger-Congo languages, both for inflectional markers and agreement patterns, is the reanalysis of collective nouns as plural forms that replace the original plural form of the noun from which they derive. One may imagine that such a phenomenon is responsible for the controversy about Wolof genders.

The relationship between singular and plural in Niger-Congo gender systems can be captured by means of diagrams such as (10), in which the left column lists the agreement patterns available for singular noun forms, the right column lists the agreement patterns available for plural noun forms, and the lines between the two columns indicate the possible pairings (i.e. genders). The dotted lines mark pairings that concern a relatively limited number of lexemes.

(10)   Singular-plural pairings in the gender system of Balant Ganja (Atlantic)
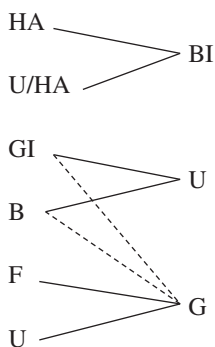
The repetition of U in the left and right columns is due to the fact that agreement pattern U is triggered by two sets of noun forms, a set of singular forms corresponding to plural forms triggering G agreement (such as *Ø-bójà* 'village', plural *g-bójà*), and a set of plural forms corresponding to singular forms governing GI agreement (such as *Ø-hájɛ̀*, plural of *gì-hájɛ̀* 'well') or B agreement (such as *Ø-sǎay*, plural of *b-sǎay* 'silk-cotton tree').

Similar diagrams can be used to represent the possible pairings of number markers.

3.2   Nouns that do not have distinct singular and plural forms

The typical situation among the Niger-Congo languages that have gender is that the minimal form of the overwhelming majority of nouns consists of a stem and an obligatory number marker, either singular or plural. However, there is always a non-negligible minority of nouns that do not have distinct singular and plural forms, such as Jóola Fóoñi *mʊl* 'breast milk', *mɔf* 'earth', *jɐkuut* 'thievery' or *sambɔn* 'fire'.

In most cases, comparison with semantically related lexemes (either nouns or verbs) makes it possible to identify an affix occupying the same position as the obligatory number marker in the nouns that have distinct singular and plural forms.

For example, in Jóola Fóoñi, comparison with *f-ʊl* pl. *k-ʊl* 'breast (of a woman)' makes it possible to decompose *mʊl* 'breast milk' as *m-ʊl*, and comparison with the verb stem *-kuut* 'steal' makes it possible to decompose *jɐkuut* 'thievery' as *jɐ-kuut*.

Crucially, although clearly derivational, such prefixes are related to the agreement system exactly like the number markers of the nouns that have distinct singular and plural forms, and are most of the time homonymous with number markers associated to the same agreement pattern. In Jóola Fóoñi, *m-* is the plural prefix of the nouns of gender J–M, such as *j-ʊɔl* pl. *m-ʊɔl* 'fanpalm'. Since *m-ʊl* 'breast milk' triggers agreement pattern M, analysing it as a *plurale tantum* of gender J–M greatly simplifies the description.

In the case of *jɐ-kuut*, *jɐ-* does not coincide with a number prefix, but all the invariable nouns in which a prefix *jɐ-* can be isolated trigger J agreement, and consequently can be analysed as *singularia tantum* of gender J–M, although their prefix is different from the singular prefix of the nouns of gender J–M that have a plural form.

There may also be a small minority of nouns for which there is no direct proof of a segmentation into a stem and an affix related to the agreement system, but whose initial segment (in languages having prefixed number markers) or final segment (in languages having suffixed number markers) is identical to a marker that can be isolated in other nouns triggering the same agreement pattern. For example, in Jóola Fóoñi, *m-ɔf* 'earth' differs from *m-ʊl* 'breast milk' in that no other word confirms the existence of a stem *-ɔf*. However, *m-ɔf* triggers the same agreement pattern M as *m-ʊl*, and consequently, identifying its initial as the plural prefix of the nouns of gender J–M simplifies the description. Similarly, *s-ambɔn* 'fire' triggers the same agreement pattern S as for example *s-aan* 'branches' (plural of *y-aan* 'branch'),

and consequently can be analysed as a *plurale tantum* of gender E–S whose initial is the plural prefix *s-*, in spite of the fact that there is no direct confirmation of the existence of a stem *-ambɔn*.

To summarize, in the Niger-Congo languages that have genders related to the division of nouns into inflectional types, a simple description of the relationship between genders and noun morphology can only be achieved by positing that all common nouns include an OBLIGATORY NOUN MARKER (henceforth ONM), even if, for a limited number of nouns, this marker cannot be isolated by means of the classical procedures of morphological analysis. In this entry, the ONMs found in nouns that do not have distinct singular and plural forms are glossed SG or PL if they are also found in nouns having distinct forms for singular and plural, NN ('number neutral') if they are only found in nouns that do not have distinct singular and plural forms.

At this point, it is important to emphasize that the nouns that do not have distinct singular and plural forms are not necessarily incompatible with the expression of number, since there may be nouns that do not express number in their morphology but are compatible with two distinct agreement patterns whose choice expresses the singular versus plural distinction. For example, Swahili (Bantu) has an inflectional type of nouns with a nasal prefix both in the singular and in the plural.[13] The nouns in question are, however, compatible with two distinct agreement patterns, 9 (triggering a singular reading) and 10 (triggering a plural reading).

(11) Swahili (Bantu)

   a. *ny-umba*
       NN-house(9/10)
       'house(s)'

   b. *ny-umba*   *i-le*
       NN-house(9/10)   cl9-DEM
       'that house'

   c. *ny-umba*   *zi-le*
       NN-house(9/10)   cl10-DEM
       'those houses'

3.3 Inflectional types of nouns and genders: an illustration

The relationship between inflectional types of nouns and genders in Jóola Fóóñi (Atlantic) is representative of the situation found in Niger-Congo languages having complex systems of number inflection and gender.

Jóola Fóóñi has 13 distinct agreement patterns for noun forms, but as regards noun inflection, 19 prefixes whose combination with nominal stems yields the minimal form of nouns can be distinguished.[14]

The 17 prefixes listed in (12a) unequivocally determine the agreement pattern and number value of the noun forms they mark, whereas each of the two prefixes

presented in (12b) is found in two sets of noun forms differing in their agreement pattern. A dash in the 'number value' column indicates number-neutral prefixes. The forms noted in (12) are underlying forms whose realization is subject to morphophonological rules.

(12)   The ONMs of Jóola Fóoñi (Atlantic)

    a. ONMs compatible with a single agreement pattern

ONM	agreement pattern	number value
a-	A	SG
ɛ-	E	SG
f-	F	SG
fa-	F	–
ka-	K	SG
b-	B	SG
ba-	B	SG
ñ-	Ñ	SG
j-	J	SG
ja-	J	–
bʊk-	BK	PL
s-	S	PL
ʊ-	U	PL
m-	M	PL
ma-	M	–
t-	T	–
d'-	D'	–

    b. ONMs compatible with two agreement patterns

ONM	agreement pattern	number value
Ø-	A or E	SG
k-	BK or K	PL

The plural prefix *bʊk-* is found with just one noun (*Ø-an* 'person' plural *bʊk-an*). All the other (non-diminutive) human nouns share their plural prefix (*k-*) with the non-human nouns whose singular prefix is *f-*, although the agreement patterns are different.

Five of the 19 ONMs (*fa-*, *ja-*, *ma-*, *t-*, and *d'-*) are intrinsically number neutral, but, with the exception of those only found with human nouns (singular *a-* and plural *bʊk-*), all the other ONMs can also be found in nouns that do not have distinct singular and plural forms. For example, *ɛ-manıŋ* 'Mandinka people' (a collective noun corresponding to *a-manıŋ* 'Mandinka person' pl. *kʊ-manıŋ*) is a *singulare tantum*, since *ɛ-* is in principle a singular prefix, whereas *w-aaf* 'thing' is a *plurale tantum*, since *w-* (variant of *ʊ-* with vowel-initial stems) is in principle a plural prefix.

Interestingly, some of the nouns that do not vary in number (but not all) may nevertheless be modified by numerals, without any change in their prefix and agreement pattern, as for example *s-ʋuut* 'dream', whose prefix is in principle a plural prefix: *s-ʋuut s-ɐkon* 'one dream', *s-ʋuut sı-gaba* 'two dreams' (compare with

y-ɔn y-ɐkon 'one crocodile', *s-ɔn sɪ-gaba* 'two crocodiles'). The same behaviour is found with the prefixes *t-* and *d'-*, to which no number value can be attributed: *t-ɪn t-ɐkon* 'one place', *t-ɪn tɪ-gaba* 'two places'.

For the nouns that have distinct singular and plural forms, taking into account both number marking and agreement patterns, 14 singular-plural pairings, listed in (13), can be established.

(13)   Singular-plural pairings in Jóola Fóoñi

singular		plural		examples			
Ø-	(A)	bʊk-	(BK)	Ø-an	pl. *bʊk-an*	'person'	
Ø-	(A)	k-	(BK)	Ø-ɪñaay	pl. *k-ɪñaay*	'mother'	
a-	(A)	k-	(BK)	a-sɛɛk	pl. *kʊ-sɛɛk*	'woman'	
a-	(A)	s-	(S)	a-mpa	pl. *sʊ-mpa*	'father'	
Ø-	(A)	s-	(S)	Ø-ɪñaay	pl. *s-ɪñaay*	'mother'	
ɛ-	(E)	s-	(S)	e-suk	pl. *si-suk*	'village'	
Ø-	(E)	s-	(S)	Ø-sindo	pl. *si-sindo*	'home'	
b-	(B)	ʊ-	(U)	bʊ-rʊŋ	pl. *ʊ-rʊŋ*	'road'	
ba-	(B)	ʊ-	(U)	ba-caac	pl. *ʊ-caac*	'bed'	
f-	(F)	k-	(K)	fʊ-lɛɛŋ	pl. *kʊ-lɛɛŋ*	'moon, month'	
ka-	(K)	ʊ-	(U)	ka-sɔnd	pl. *ʊ-sɔnd*	'roof'	
j-	(J)	m-	(M)	jɪ-bɛcɛl	pl. *mʊ-bɛcɛl*	'palm tree'	
j-	(J)	k-	(K)	ji-cil	pl. *ku-cil*	'eye'	
ñ-	(Ñ)	ʊ-	(U)	ñɪ-wʊj	pl. *ʊ-wʊj*	'chain'	

Taking into account agreement patterns only, nine genders can be recognized (A–BK, A–S, E–S, B–U, F–K, K–U, J–M, J–K, and Ñ–U). However, three of them (A–S, J–K and Ñ–U) are statistically marginal.

In addition to the nine binary genders illustrated in (13), the agreement patterns T and D' constitute a distinct gender each, since they are only found with the following nouns, none of which shows variation in number: *t-ɪn ~ t-an* 'place delimited with some precision' for gender T, *d-in ~ d-ɐn* 'place conceived as a closed space' for gender D'.

3.4   Human gender versus non-human genders

3.4.1   *General remarks on the semantic content of genders*

As a rule, Niger-Congo genders are semantically heterogeneous, although concentrations of nouns with a given type of lexical meaning in particular genders can often been observed. For example, a very common semantic regularity in Niger-Congo gender systems is the concentration of names of trees in a particular gender (3–4 in Bantu languages, B–U in Jóola languages, G–B in Wolof, etc.). However, the reverse is not true, since the genders in question also include nouns with very different types of lexical meaning. In Jóola Fóoñi, gender B–U also includes the nouns for 'road', spirit', 'rice field', 'shadow', 'face', 'nest', 'custom', 'hole', 'corpse', 'chest', and so on. In Tswana, gender 3–4 also includes the names

of snakes and the nouns for 'village', 'tribe', 'fault', 'mouth', 'dress', 'fire', 'pot' and so on.

Given that the present entry focuses on agreement, the discussion of the semantic regularities in gender assignment will be limited to the semantic distinctions having a direct impact on agreement mechanisms. For detailed discussion of the semantic regularities in gender assignment, interested readers may consult (among many others) Breedveld (1995), Contini-Morava (1996), Demuth (2000), Dingemanse (2006), Palmer and Woodman (2000), Selvik (2001).

3.4.2   The human gender
Niger-Congo gender systems are not sensitive to the male versus female distinction, but typically include a gender (in Bantu languages, gender 1–2) that can be characterized as the *human gender*. In the most typical cases:

- all of the nouns that belong to the human gender denote humans;[15]
- most nouns denoting humans if not all (in particular, basic terms such as 'human being', 'man', 'woman', 'child', 'old person', and all agent nouns derived from verbs) are found in the human gender;
- as agreement controllers, personal names behave like the singular form of common nouns belonging to the human gender, and coordinations of human names, or human names combined with an associative plural marker, behave like the plural form of common nouns belonging to the human gender;
- the human singular and human plural forms of adnominals used pronominally may be used, independently of any contextual conditioning, as referring to humans in general.

For example, in Balant Ganja (Atlantic), all the nouns belonging to gender HA−BI denote humans, and the HA-form *h-ílà* of the interrogative determiner *-ílà* 'which?' can be used pronominally, not only with reference to gender HA−BI nouns suggested by the context ('which one (gender HA−BI)?'), but also without reference to a particular antecedent, namely as the equivalent of English 'who?'

Across Niger-Congo languages, the human gender typically differs from the others by a particular morphological complexity.

3.4.3   Languages in which the identification of a human gender is problematic
The lack of a gender combining all the properties that characterize the human gender in the most typical Niger-Congo gender systems is relatively common among the languages of the North Atlantic branch of the Atlantic family. In the languages in question, the characteristic properties of human genders are distributed across different genders, so that none of them can be selected as having an exclusive relationship to the feature [human].

For example, in Wolof, *nit* 'human being' belongs to gender K−Ñ, and the K and Ñ forms of adnominals used pronominally lend themselves to a non-contextual interpretation as encoding [human] without reference to any particular antecedent (14b). This is an important property of human genders in Niger-Congo languages. However, *nit* is the only noun belonging to gender K−Ñ, and human nouns are

distributed across the other genders, without a particular concentration in any of them (14c). Moreover, personal pronouns and personal names control class M agreement (14d–e), which is somewhat unexpected because of the relative low proportion of human common nouns in gender M–Y.

(14) Wolof (Atlantic)

    a. *nit* (K–Ñ)   'human being'

    b. *k-an?*   'who?'
        k-enn   'someone'
        k-eneen   'another person'
        ñ-eneen   'other persons'

    c. *ndaw* (S–Y)   'girl'
        coro (L–Y)   'girl-friend'
        jigéen (J–Y)   'woman'
        far (W–Y)   'boy-friend'
        góor (G–Y)   'man'
        xale (B–Y)   'child'
        morom (M–Y) 'peer, companion'

    d. *yow*   *m-i*   *fa*   *dem*
        2SG   clM-REL there go
        'you who went there'

    e. *Faatu*   *m-an?*
        Fatou   clM-which
        'which Fatou?'

3.5 N > N derivation and gender

The Niger-Congo languages that have gender systems tend to mark semantic relationships between nominal lexemes by mere alternation of their inflectional type and gender, rather than by means of the addition of derivational affixes or by means of N + N compounds. In other words, it is very common that semantically and formally related nominal lexemes share a common stem, and differ only in their ONMs and gender assignment.

The semantic relationships commonly encoded in this way typically include tree versus fruit, individual versus collective, concrete versus abstract, person(s) versus behaviour (people versus language, etc.), and evaluation (diminutive, augmentative).

For example, in Tswana, the stem *-rétłwá* is shared by the following three lexemes:

- *mò-rétłwá* pl. *mì-rétłwá* (3–4) 'tree of the species *Moretlwa*';
- *Ø-tʰétłwá* pl. *dì-tʰétłwá* (9–10) 'fruit of the *Moretlwa* tree';[16]
- *lò-rétłwá* pl. *mà-rétłwá* (11–6) 'thicket of *Moretlwa* trees'.

3.6   Evaluative genders

Among the semantic relationships commonly encoded by inflectional type and gender alternation in Niger-Congo languages, evaluation deserves special mention, since it may interfere with some agreement mechanisms.

Many Niger-Congo gender systems include evaluative genders, defined as genders including nouns that can be characterized as diminutives or augmentatives in relation to nouns of other genders having the same stem, as Jóola Fóoñi *a-ñɪɪl* pl. *kʊ-ñɪɪl* (A−BK) 'child' > *jɪ-ñɪɪl* pl. *mʊ-ñɪɪl* (J−M) 'baby', or Fula (Atlantic) *laam-ɗo* pl. *laam-ɓe* (O−ƁE) 'chief' > *laam-ŋga* pl. *laam-ko* (ŊGA−KO) 'mighty chief'. However, not all Niger-Congo gender systems include genders meeting this definition, and productive diminutive genders are more commonly found than productive augmentative genders.

The notion of evaluative gender does not imply that all the nouns belonging to an evaluative gender can be characterized as augmentatives or diminutives. Quite on the contrary, the function of evaluative gender is often fulfilled by genders including a large number of nouns carrying no diminutive or augmentative connotation for which this is the primary gender assignment. This is for example the case of Bantu gender 7−8, which fulfils the function of diminutive gender in Swahili and other Bantu languages that have lost the dedicated diminutive gender 12−13. In Jóola Fooñi, the function of diminutive gender is fulfilled by gender J−M, which, however, also includes non-diminutive nouns such as *j-ʊʊl* pl. *m-ʊʊl* 'fanpalm'.

3.7   Personal names

In the Niger-Congo gender systems, all personal names in a given language, regardless of sex or of any other feature, behave in the same way as agreement controllers. In the languages where a human gender can be identified unequivocally, the general rule is that the agreement pattern triggered by personal names is that triggered by the singular of common nouns belonging to the human gender.

In many languages, the use of common nouns as personal names is widespread, and common nouns used as proper names invariably trigger the same agreement pattern as the proper names that have no discernible etymology, irrespective of the gender to which they belong as common nouns. For example, in Tswana, *lò-rátɔ́* 'love' and *Ø-kítsɔ́* 'knowledge' trigger class 11 agreement and class 9 agreement, respectively, but when used as personal names, they trigger class 1 agreement.

(15)   Tswana (Bantu)

    a.   *Ø-kítsɔ́*   *ˈí-á-tɬʰɔ́kàfàːlà.*
        sɢ-knowledge(9)   sɪ:cl9-ᴅᴊ-be.necessary
        'Knowledge is necessary.'

    b.   *lò-rátɔ́*   *ˈló-á-tɬʰɔ́kàfàːlà.*
        sɢ-love(11)   sɪ:cl11-ᴅᴊ-be.necessary
        'Love is necessary.'

    c. *kítsɔ́*   *ʊ́-à-bɛ́rɛ̂ːkà*.
        Kitso(1)   sɪ:cl1-ᴅᴊ-work
        'Kitso is working.'

    d. *lòrátɔ́*   *ʊ́-à-bɛ́rɛ̂ːkà*.
        Lorato(1)   sɪ:cl1-ᴅᴊ-work
        'Lorato is working.'

As discussed by Van de Velde (2009) for Rundi (Bantu), in the languages that have evaluative genders, it may happen that proper names trigger evaluative gender agreement (instead of default human gender agreement) to express emotive connotations.

3.8 Toponyms

In the languages for which the author was able to find the relevant data, like personal names, toponyms trigger uniform agreement patterns, regardless of their etymology. However, there is cross-linguistic variation in that, in some languages (for example, Tswana), toponyms govern the same agreement pattern as personal names, whereas in some others (for example, Balant Ganja, Wolof, Jóola Fóoñi), the agreement pattern governed by toponyms is distinct from that governed by personal names. However, the only possible generalization suggested by the (scarce) data at the author's disposal is that, somewhat surprisingly, toponyms show no tendency towards triggering the same agreement pattern as the common nouns for 'place'.

3.9 Locative agreement

In central Bantu languages, locative marking (i.e. the morphological characteristics of phrases specifying the location of an event, or the direction or source of movement with movement verbs) interferes with the gender–number agreement system, which constitutes a rare typological feature. In the languages in question, the class inflection of adnominals and pronouns typically includes three classes, referred to as locative classes (16, 17, 18), with the following particularities (Grégoire 1975, 1998):

- locative agreement is inherently triggered by very small sets of nouns with inherent spatial semantics (including the hypernym 'place'), whose minimal form is marked by prefixes that are reflexes of Proto-Bantu **pà-* (16), *kò-* (17), and *mò-* (18); the nouns in question do not have distinct singular and plural forms, so that each of the locative classes constitutes a gender of its own;
- the prefixes that attach directly to the stem of the nouns that inherently trigger locative agreement can also be used as secondary *locative prefixes* added to noun forms including other prefixes, as in Luba-Kasai *bu-dimi* (class 14) 'field' > *mu-bu-dimi* 'in the field', where *bu* is the regular prefix of noun forms governing

class 14 agreement, whereas *mu* is the prefix of the nouns that inherently govern class 18 agreement (here in secondary locative prefix function);

- the noun forms taking a secondary locative prefix project phrases acting as spatial adjuncts or as complements of motion verbs, but also, in certain conditions, as subjects;

- the modifiers of nouns with a stacked locative prefix may be in the class normally required by the noun, or in the locative class corresponding to the stacked prefix.

For example, in (16), the numeral 'one' shows class 3 agreement (i.e. the regular agreement for modifiers of the singular form of 'village'), whereas the possessive shows class 18 agreement triggered by the stacked locative prefix.

(16)   Lega (Bantu; Grégoire 1998)

mù-mw-ĭnò	*gú-mòzị̀*	*mw-ăbò*
LOC(18)-SG-village(3)	cl3-one	cl18-their

'in one of their villages'

Within the Bantu family, this phenomenon is not general (it is not found in Southern Bantu languages), and to the best of my knowledge, it is not found elsewhere in Niger-Congo.

4   The domains of gender–number agreement

4.1   Gender–number agreement within the noun phrase

4.1.1   *Agreeing noun modifiers and linkers*

In some Niger-Congo languages, gender–number agreement operates in all noun-modifier constructions without exception. Gender–number agreement of noun modifiers with their head may involve the inflection of the modifier or the inflection of an obligatory linker (or both).

For example, in Tswana (Bantu), all noun-modifier constructions involve agreement, and the only variation between the possible types of noun modifiers is that some of them are inflected for class, others are not inflected for class but are obligatorily introduced by a linker inflected for class, and yet others are at the same time inflected for class and introduced by a linker inflected for class, so that agreement is expressed twice in the same noun-modifier construction. Example (17) illustrates the 12 classes that constitute the inflection of the interrogative determiner *-fi* 'which?' The nouns in this example and the following two have been selected to illustrate the regular singular-plural pairings of Tswana: 1−2 (*mò-sádí / bà-sádí*), 3−4 (*mò-lìmɔ̀ / mì-lìmɔ̀*), 5−6 (*lì-sàká / mà-ràká*), 7−10 (*sì-kóló / dì-kóló*), 9−10 (*Ø-qʰósí / dì-qʰósí*), 11−6 (*lò-lwàpá / mà-lwàpá*), 11−10 (*lò-kwálɔ́ / dì-kwálɔ́*) and 14−6 (*bò-dʒàŋ́ / mà-dʒàŋ́*).[17]

(17)   Tswana (Bantu)

     a. *mò-sádì*   **ó-fí?**
         sᴳ-woman(1)   Cl1-which
         'which woman?'

     b. *ba-sádì*   **bá-fí?**
         ᴘʟ-woman(2)   Cl2-which
         'which women?'

     c. *mò-lìmɔ̀*   **ó-fí?**
         sᴳ-medicine(3)   Cl3-which
         'which medicine?'

     d. *mì-lìmɔ̀*   **í-fí?**
         ᴘʟ-medicine(4)   Cl4-which
         'which medicines?'

     e. *lì-sàká*   **lì-fí?**
         sᴳ-cattle.kraal(5)   Cl5-which
         'which cattle kraal?'

     f. *mà-ràká*   **à-fí?**
         ᴘʟ-cattle.kraal(6)   Cl6-which
         'which cattle kraals?'

     f'. *mà-lwàpá*   **à-fí?**
         ᴘʟ-courtyard(6)   Cl6-which
         'which-courtyards'

     f". *mà-dʒàŋ*   **à-fí?**
         ᴘʟ-grass(6)   Cl6-which
         'which grasses?'

     g. *sì-kólò*   **sí-fí?**
         sᴳ-school(7)   Cl7-which
         'which school?'

     h. *dì-kólò*   **dí-fí?**
         ᴘʟ-school(10)   Cl10-which
         'which schools?'

     h'. *dì-qʰósì*   **dí-fí?**
         ᴘʟ-chief(10)   Cl10-which
         'which chiefs?'

    h″   *dì-kwálɔ̀*   ***dí**-fì?*
           PL-book(10)   Cl10-which
           'which books?'

    i.   *Ø-qʰósì*   ***í**-fì?*
           SG-chief(9)   Cl1-which
           'which chief?'

    j.   *lʊ̀-kwálɔ̀*   ***lʊ́**-fì?*
           SG-book(11)   Cl11-which
           'which book?'

    j′.   *lʊ̀-lwàpá*   ***lʊ̀**-fì?*
           SG-courtyard(11)   Cl11-which
           'which courtyard?'

    k.   *bʊ̀-dʒàŋ*   ***bʊ̀**-fì?*
           SG-grass(14)   Cl14-which
           'which grass?'

    l.   *χʊ̀-lìmà*   ***χʊ́**-fì?*
           NN-cultivate(17)   Cl17-which
           'which way of cultivating?'

Example (18) illustrates the class inflection of the linker *-á-* (glossed GEN) prefixed to the first word of NPs in the role of genitival modifier.

(18)   Tswana (Bantu)

    a.   *mʊ̀-sádì*   ***w-á**-qʰósí*
           SG-woman(1)   cl1-GEN-SG.chief(9)
           'the chief's wife'

    b.   *bà-sádì*   ***b-á**-mʊ́-tsí*
           PL-woman(2)   cl2-GEN-SG-village(3)
           'the women of the village'

    c.   *mʊ̀-lòmʊ̀*   ***w-á**-tàú*
           SG-mouth(3)   cl3-GEN-SG.lion(9)
           'the mouth of the lion'

    d.   *mì-qʰwá*   ***j-á**-bà-tswáná*
           PL-custom(4)   cl4-GEN-PL-Tswana(2)
           'the customs of the Tswana people'

    e.   *lì-sàká*   *ꜛ**l-á**-qʰósí*
           SG-cattle.kraal(5)   cl5-GEN-SG.chief(9)
           'the cattle kraal of the chief'

f.   *mà-ràká*   **Ø-ꜜá-qʰósí**
     PL-cattle.kraal(6)   cl6-GEN-SG.chief(9)
     'the cattle kraals of the chief'

f′.   *mà-síà*   **Ø-á-mó-tsí**
     PL-baby(6)   cl6-GEN-SG-village(3)
     'the babies of the village'

f″.   *mà-láʊ̀*   **Ø-á-b-àná**
     PL-bed(6)   cl6-GEN-PL-child(2)
     'the beds of the children'

g.   *sì-dìbà*   **s-á-mó-tsí**
     SG-well(7)   cl7-GEN-SG-village(3)
     'the well of the village'

h.   *dì-lépè*   **ts-á-bà-ńná**
     PL-ax(10)   cl10-GEN-PL-man(2)
     'the axes of the men'

i.   *dì-qʰòmɔ́*   **ts-á-mò-sádí**
     PL-cow(10)   cl10-GEN-SG-woman(1)
     'the woman's cows'

j.   *dì-kwálɔ̀*   **ts-á-b-àná**
     PL-book(10)   cl10-GEN-PL-child(1)
     'the books of the children'

k.   *Ø-qʰòmɔ́*   **j-á-mò-sádí**
     SG-cow(9)   cl9-GEN-SG.woman(1)
     'the woman's cow'

l.   *lʊ̀-síà*   **lw-á-mò-sádí**
     SG-baby(11)   cl11-GEN-SG-woman(1)
     'the woman's baby'

m.   *lʊ̀-kwálɔ̀*   **lw-á-ŋw-àná**
     SG-book(11)   cl11-GEN-SG-child(1)
     'the book of the child'

n.   *bʊ̀-láʊ̀*   **dʒw-á-ŋw-àná**
     SG-bed(14)   cl14-GEN-SG-child(1)
     'the child's bed'

o.   *Ø-fìlɔ̀*   **χ-á-bà-ńná**
     NN-place(17)   cl17-GEN-PL-man(2)
     'the place of the men'

Example (19) illustrates the class inflection of the adjective *-ʃǎ* 'new' and of the obligatory linker that introduces adjectives in attributive function (and also relative clauses).

(19)   Tswana (Bantu)

   a.   *mʊ̀-sádì*   ***jó***   ***mʊ̀-ʃǎ***
         sɢ-woman(1)   cl1.ʟᴋ   cl1-new
         'new woman'

   b.   *bà-sádì*   ***bá***   ***bà-ʃǎ***
         ᴘʟ-woman(2)   cl2.ʟᴋ   cl2-new
         'new women'

   c.   *mʊ̀-lìmɔ̀*   ***ó***   ***mʊ̀-ʃǎ***
         sɢ-medicine(3)   cl3.ʟᴋ   cl3-new
         'new medicine'

   d.   *mì-lìmɔ̀*   ***é***   ***mì-ʃǎ***
         ᴘʟ-medicine(4)   cl4.ʟᴋ   cl4-new
         'new medicines'

   e.   *lì-sàká*   ***lé***   ***lì-ʃǎ***
         sɢ-cattle.kraal(5) cl5.ʟᴋ   cl5-new
         'new cattle kraal'

   f.   *mà-ràká*   ***á***   ***mà-ʃǎ***
         ᴘʟ-cattle.kraal(6) cl6.ʟᴋ   cl6-new
         'new cattle kraals'

   f'. *mà-lwàpá*   ***á***   ***mà-ʃǎ***
         ᴘʟ-courtyard(6)   cl6.ʟᴋ   cl6-new
         'new courtyards'

   f''. *mà-dʒàŋ́*   ***á***   ***mà-ʃǎ***
         ᴘʟ-grass(6)   cl6.ʟᴋ   cl6-new
         'new grasses'

   g.   *sì-kólò*   ***sé***   ***sì-ʃǎ***
         sɢ-school(7)   cl7.ʟᴋ   cl7-new
         'new school'

   h.   *dì-kólò*   ***tsé***   ***díǹ-tʃʰá***
         ᴘʟ-school(10)   cl10.ʟᴋ   cl10-new
         'new schools'

h'.   *dì-qʰósì*   **tsé**   ***díɲ̀-tʃʰá***
     PL-chief(10)   cl10.LK   cl10-new
     'new chiefs'

h''.   *dì-kwálɔ̀*   **tsé**   ***díɲ̀-tʃʰá***
     PL-book(10)   cl10.LK   cl10-new
     'new books'

i.   *Ø-qʰósì*   **é**   *ɲ̀-tʃʰá*
     SG-chief(9)   cl9.LK   cl9-new
     'new chief'

j.   *lʊ̀-lwàpá*   **ló**   *lʊ̀-ʃã́*
     SG-courtyard(11)   cl11.LK   cl11-new
     'new courtyard'

j'.   *lʊ̀-kwálɔ̀*   **ló**   *lʊ̀-ʃã́*
     SG-book(11)   cl11.LK   cl11-new
     'new book'

k.   *bʊ̀-dʒàŋ́*   **dʒó**   **bʊ̀-ʃã́**
     SG-grass(14)   cl14.LK   cl14-new
     'new grass'

l.   *χʊ̀-lìmà*   **mó**   *χʊ̀-ʃã́*
     NN-cultivate(17)   cl17.LK   cl17-new
     'new way of cultivating'

Basari (Atlantic) is also a language with pervasive gender–number agreement within NPs, due to the systematic use of linkers. In Basari, the article, the demonstratives, the adjectives and some numerals are the only noun modifiers containing a prefixed class marker, but the modifiers that do not have class inflection are obligatorily introduced by a linker inflected for class, as illustrated in (20) for genitival modifiers.

(20)   Basari (Atlantic; Perrin 2015)

a.   *a-cíw*   *a-tɔ́m*   *a-nd*   *fabá*   *aŋ*
     SG-room(AƊ₃)   clAƊ₃-big   clAƊ₃-LK   my.father   clAƊ₃.D
     'the large room of my father'

b.   *ɓa-cíw*   *ɓa-tɔ́m*   *ɓa-nd*   *fabá*   *ɓaŋ*
     PL-room(ƁAƊ₃)   clƁAƊ₃-big   clƁAƊ₃-LK   my.father   clƁAƊ₃.D
     'the large rooms of my father'

4.1.2   Noun-modifier constructions without gender–number agreement

In the languages having a relatively limited range of noun-modifier constructions involving gender–number agreement, the following types of noun modifiers are those that, cross-linguistically, most commonly agree with their head:

- the demonstratives,
- the interrogative determiner ('which?'),
- the numeral 'one',
- the adjectives.

By contrast, lack of agreement in the noun-relative clause construction, or in the noun-genitival modifier construction, is relatively common. As regards the noun-numeral modifier construction, depending on the individual languages, it may involve an obligatory linker inflected for class, but class inflection is always limited to a subset of the numerals that denote units.

4.2   Gender–number agreement and pronouns

4.2.1   Pronominal uses of determiners

When determiners inflected for class have the ability to be used pronominally, as is normally the case in Niger-Congo languages, class inflection expresses agreement with the antecedent. In (21b), depending on the context, the understood antecedent of the interrogative determiner used pronominally may be any noun triggering class 11 agreement in the singular (*lʊ̀-kwálɔ́* 'book', *lʊ̀-bɔ̀nɛ̀* 'lamp', *lʊ̀-sɔ̀* 'spoon', etc.).

(21)   Tswana (Bantu)

   a.   *ʊ̀-rékílé*   *lʊ̀-kwálɔ̀*   *lô:fì?*
        si:2sg-buy.prf   sg-book(11)   cl11-which
        'Which book did you buy?'

   b.   *ʊ̀-rékílè*   *lô:fì?*
        si:2sg-buy.prf   cl11-which
        'Which one(11) did you buy?'

However, in the pronominal use of adnominals inflected for class, there is also the possibility of a non-contextual reading of some classes (see Section 5).

4.2.2   Third-person pronouns

As a rule, in addition to the pronominal use of determiners, the Niger-Congo languages that have a gender system also have a third-person pronoun inflected for class, representing discursively salient referents that the speaker considers identifiable from the mere mention of the gender of a noun that could designate

them. For example, in Balant Ganja (Atlantic), the seven classes that constitute the class paradigm of adnominals (illustrated in (5) and (6) above) also account for the inflection of the third-person pronoun. Note that the class BI form (human plural) is the only one that cannot be decomposed into a class prefix and a stem -*i*.

(22) Class inflection of the third-person pronoun in Balant Ganja (Atlantic)

class HA	*h-í*
class BI	*bá*
class B	*b-í*
class U	*w-í*
class GI	*g-í*
class F	*f-í*
class G	*g-í*

However, some of the Niger-Congo languages that have gender–number agreement within NPs have third-person pronouns devoid of class inflection. For example, Wolof (Atlantic) has a third-person pronoun with only two forms, singular *moom* 'he, she, it' and plural *ñoom* 'they', regardless of the gender of its antecedent. Originally, *moom* and *ñoom* were probably the forms of class M and class Ñ of a third-person pronoun inflected for class, but synchronically, the third-person pronoun of Wolof expresses only number and does not mark the gender of its antecedent.

4.3   Gender–number agreement in subject and object indexation

In general, as illustrated in (23), the Niger-Congo languages that have gender–number agreement systems have paradigms of subject and object indexes attached to verbs and expressing class distinctions in the third person.

(23) Balant Ganja (Atlantic)

a. *Ĥ-góbù.ạ*   sɪ:1sɢ-fall   'I fell down.'
    Bâ-góbù.   sɪ:1ᴘʟ.ᴇxᴄʟ-fall   'We (excl.) fell down.'
    Bân-góbù.   sɪ:1ᴘʟ.ɪɴᴄʟ-fall   'We (incl.) fell down.'
    Ú-góbù.   sɪ:2sɢ-fall   'You (sing.) fell down.'
    Bà-góbù.   sɪ:2ᴘʟ-fall   'You (pl.) fell down.'

    À-góbù.   sɪ:clHA-fall   'He/she(HA) fell down.'
    B-góbù.   sɪ:clB-fall   'It(B) fell down.'
    Gì-góbù.   sɪ:clGI-fall   'It(GI) fell down.'
    F-góbù.   sɪ:clF-fall   'It (F) fell down.'
    Ù-góbù.   sɪ:clU-fall   'It (U) or they(U) fell down.'
    Bì-góbù.   sɪ:clBI-fall   'They(BI) fell down.'
    G-góbù.   sɪ:clG-fall   'They(G) fell down.'

b.	*Bì-bíɩθâ-nì.*	SI:clBI-see-OI:1SG	'They saw me.'
	Bì-bíɩθâ-báa.	SI:clBI-see-OI:1PL.EXCL	'They saw us (excl.).'
	Bì-bíɩθâ-bân.	SI:clBI-see-OI:1PL.INCL	'They saw us (incl.).'
	Bì-bíɩθá-nà.	SI:clBI-see-OI:2SG	'They saw you (sing.).'
	Bì-bíɩθâ-bǎa.	SI:clBI-see-OI:2PL	'They saw you (pl.).'
	Bì-bíɩθá-mà.	SI:clBI-see-OI:clHA	'They saw him/her(HA).'
	Bì-bíɩθâ-bí.	SI:clBI-see-OI:clB	'They saw it(B).'
	Bì-bíɩθâ-gí.	SI:clBI-see-OI:clGI/G	'They saw it(GI)' or 'They saw them(G).'
	Bì-bíɩθâ-fí.	SI:clBI-see-OI:clF	'They saw it(F).'
	Bì-bíɩθâ-wí.	SI:clBI-see-OI:clU	'They saw it/them(U).'
	Bì-bíɩθâ-bá.	SI:clBI-see-OI:clBI	'They saw them(BI).'

The syntactic distribution of subject and object indexes varies from one language to another. In Ganja, neither subject nor object indexes are obligatory components of verb forms, and the arguments expressed as NPs or pronouns occupying the syntactic slot for subjects or objects are not indexed on the verb. Subject indexes are obligatory, however, in the absence of a subject NP or pronoun referring to the same participant. In other words, the subject and object indexes of Ganja share with personal pronouns the function of representing participants whose precise identity can be retrieved from the context; they only differ from them in that they are bound forms.

(24)   Balant Ganja (Atlantic)

   a.   *F-lìmbírè   mà   góbù.*
        SG-orange(F)   D   fall.CPL
        'The orange fell down.'

   b.   *F-góbù.*
        SI:clF-fall.CPL
        'It(F) fell down.'

   c.   *Mbágì-jêd   f-lìmbírè   mà!*
        PROH-take   SG-orange(F)   D
        'Don't take the orange!'

   d.   *Mbágì-f-jêd!*
        PROH-OI:clF-take
        'Don't take it(F)!'

In other languages, subject indexes are obligatory even in the presence of a subject NP, as in (25). This is in fact the commonest situation among the Niger-Congo languages that have a system of gender–number agreement.

(25)   Tswana (Bantu)

   a.   *mò-sádí   ꜝó-tsî:lè.*
        SG-woman(1)   SI:cl1-come.PRF
        'The woman has come.'

b. **mò-sádí   tsî:lè.*
    SG-woman(1)   come.PRF

c. *ó-tsî:lè.*
   SI:cl1-come.PRF
   '(S)he has come.'

As regards object indexes, the author is aware of no Niger-Congo language in which transitive verb forms would invariably include object indexes. Obligatory indexation of objects is attested in some Bantu languages, but it is always restricted to particular types of objects. For example, in Swahili, indexation is obligatory for proper names and definite NPs in object role.

(26)   Swahili (Bantu)

a. *Hamisi   a-li-soma   ki-tabu.*
    Hamisi(1)   SI:cl1-CPL-read   SG-book(7)
    'Hamisi read a book.'

b. *Hamisi   a-li-ki-soma   ki-tabu.*
    Hamisi(1)   SI:cl1-CPL-OI:cl7-read   SG-book(7)
    'Hamisi read the book.'

Some Bantu languages, for example Cuwabo (Guérois 2015), have paradigms of object indexes restricted to first person, second person, class 1 and class 2. In such languages, object indexation is obligatory for objects of first or second person or of gender 1–2, impossible for objects of genders other than 1–2. The rationale underlying this distribution is that gender 1–2 is the human gender.

However, paradigms of subject and object indexes expressing class distinctions are not found in all the languages that have gender–number agreement within the NP. Wolof (Atlantic), already mentioned for having third-person pronouns devoid of class inflection, also has subject and object indexes expressing only person and number. For example, a third-person singular form such as *daanu na* 'he/she/it fell down' is compatible with subjects triggering any of the agreement patterns available for singular noun forms, and the corresponding plural form *daanu nañu* 'they fell down' is compatible with subjects triggering any of the agreement patterns available for plural noun forms.

This situation is relatively common in the Northern branch of the Atlantic family – see Perrin (2015) on Basari, Renaudier (2015) on Seereer, Bao Diop (2015) on Gunyaamolo.

4.4   Other constructions involving gender–number agreement

The grammaticalization of words expressing gender–number agreement may extend the range of constructions involving gender–number agreement.

For example, Jóola languages have a non-verbal locational copula expressing gender–number agreement with the argument of the locative phrase in predicate function, and the form of this copula suggests that it has grammaticalized from a demonstrative.

Similarly, Balant Ganja has an enclitic identification marker, analysable as resulting from the grammaticalization of the third-person pronoun, used as a focalizer in verbal predication, and as a copula in nominal predication. In both cases, as illustrated in (27), it attaches to the right edge of an NP with which it agrees in gender and number.

(27)   Balant Ganja (Atlantic)

    a.   *B-tá*   *b-ɔ́mbɔ́*   *=b-í*   *bà-m-búujì.*
       SG-tree(B)   clB-DEM   =clB-FOC   SI:2PL-ICPL-fell
       'It is this tree that you are going to fell.'

    b.   *B-tá*   *b-díŋmɛ̀*   *=b-í.*
       SG-tree(B)   clB-small   =clB-COP
       'It is a small tree.'

In some languages, indexes expressing gender–number agreement attach not only to verbs in verbal predication, but also to non-verbal predicates.

(28)   Tswana (Bantu)

    a.   *lʊ̀-bɔ̀nɛ̀*   *lʊ́-mó*   *χʊ̀dímʊ̀*   *χá-Ø-táfʊ̀ːlí.*
       SG-lamp(11)   SI:cl11-LOC   on.top[18]   cl17.GEN-SG-table(9)
       'The lamp is on the table.'

    b.   *dì-qʰòmʊ́*   *ˈdîː-fà.*
       PL-cow(10)   SI:cl10-here
       'The cows are here.'

5   Non-contextual uses of classes and orphan classes

5.1   The contextual use of classes

By contextual use of classes, the canonical situation is meant where either a form inflected for class can be related to an overtly expressed controller, or a sentence including a form inflected for class can only be interpreted with reference to a particular controller suggested by the context of utterance.

The possibility of analysing forms inflected for class as targets of agreement with a noun in the role of controller is not limited to situations in which the controller and the target are in a particular type of syntactic relationship, or even to situations in which the controller is present in the context without having a particular type of syntactic relationship with the target. The controller may also be a noun that

the speaker leaves unexpressed because the context makes it possible to select it among the potential controllers of the class in question.

For example, (29a) has been extracted from a context including no potential controller of class F, but the meaning would not change if *fʊ-nak* 'day' were introduced in the role of head, as in (29b). The possibility of dropping the controller is conditioned by the presence of *kajɔm* 'tomorrow' in the role of modifier, and also by the fact that temporal indications are expected in the description of a sequence of events.

(29) Jóola Fóoñi (Atlantic)

    a. … *f-atɪ*   *kajɔm,*   *dɪ*   *kʊ-laañ.*
        clF-GEN   tomorrow   SEQ   SI:clBK-return
        ' … and the following day, they returned.'
        lit. ' … that(F) of tomorrow, they returned.'

    b. … *fʊ-nak*   *f-atɪ*   *kajɔm,*   *dɪ*   *kʊ-laañ.*
        SG-day(F)   clF-GEN   tomorrow   SEQ   SI:clBK-return
        same meaning as (a)

5.2   The non-contextual use of classes

Forms inflected for class are not always analysable as agreeing with a noun present in the context or suggested by the context. They may also have *non-contextual* uses in which no controller is present, and *the context of utterance plays no role in their interpretation.*

For example, Jóola Fooñi (Atlantic) has a relativizer CL-*an* expressing agreement with the head noun in the construction 'head noun + relativizer + relative clause'. However, 11 out of the 15 forms of the relativizer can also be found with free relatives for which the context plays no role in the identification of the domain within which the property expressed by the relative clause delimits a sub-domain. In the non-contextual use of the relativizer, free relatives are interpreted as indicated in (30).

(30) Jóola Fóoñi (Atlantic): Non-contextual uses of the relativizer

Ø-an	(clA)	'the person that … '
k-an	(clBK)	'the people that … '
y-an	(clE)	'the thing that … '
s-an	(clS)	'the things that … '
b-an	(clB)	'where … '
w-an	(clU)	'the thing that … '
m-an	(clM)	'how … '
t-an	(clT)	'where … '
d-an	(clD)	'the thing that … '
d-ɐn	(clD′)	'where … '
n-an	(clN)	'when...'

The 11 classes listed in (30) have the same non-contextual uses with a variety of adnominals and pronouns. See Creissels et al. (2021) for a detailed analysis of the non-contextual uses of classes in Jóola Fóoñi.

In the Niger-Congo languages that have gender systems, it is common that some classes lend themselves to non-contextual uses in which, regardless of the context, a word inflected for class is interpreted as referring to notions such as 'person', 'thing', 'place', 'manner', or 'time'.

For example, in Wolof, the class L forms of adnominals used pronominally can encode vague reference to inanimate entities without any contextual conditioning. In their contextual use, *l-ii* (class L form of the proximal demonstrative *-ii*) and *l-an* (class L form of the interrogative *-an*) are interpreted as, respectively, 'this one' and 'which one?' (in reference to a noun governing L agreement, such as *lin* 'pot'), but in (31), the context plays no role in the interpretation of *l-ii* as 'this (thing)', and of *l-an* as 'what?'

(31) Wolof (Atlantic)

  L-ii   *l-an*   *la?*
  ClL-DEM clL-which COP
  'What is this?'

Similarly, in Tswana, the class 7 form *sí-pé* of the negative determiner can be used pronominally with the meaning 'no X' (X an antecedent of gender 7–10 to be retrieved from the context), but it can also be used, regardless of the context, as the equivalent of English 'nothing'.

Historically, controller elision in configurations involving a hypernymous noun in the role of controller is a plausible source of the non-contextual use of classes. For example, in Tswana, *sí-pé* 'nothing' can be analysed as the reduced form of *sì-lɔ̀ sí-pé* |SG-thing(7)|cl7-no.one|. However, synchronically, such an explanation only makes sense if the set of potential controllers of the class in question includes a noun whose lexical meaning coincides with the meaning expressed by the class in its non-contextual use, which is not always the case. For example, in Jóola Fóoñi, as indicated in (30), the class S form of the relativizer (*s-an*) can introduce free relatives interpreted as 'the things that …', although gender E–S includes no noun that could be glossed as 'thing'.

The impossibility of a synchronic treatment in terms of controller elision is particularly obvious for the *orphan classes* discussed in Section 5.3, unless one accepts positing *ghost controllers* that have no possible materialization in the lexicon of the language.

5.3 Orphan classes

In some languages, the inflectional paradigm of the words that can act as agreement targets includes cells that do not correspond to any potential controller, and consequently never mark agreement with a noun. Such classes, designated here as *orphan classes,* can only have non-contextual uses.

This phenomenon is exceptional in Bantu languages, but quite widespread among Atlantic languages.

In Jóola Fóoñi, the class paradigm of adnominals and pronouns includes two orphan classes, D ('thing') and N ('time'). For example, in the classes other than D and N, the forms of the indefinite determiner *-cɛɛ* 'some' can modify a noun, as in *f-al fʊ-cɛɛ* 'some river'; they can also be used pronominally with reference to an antecedent, as in *fʊ-cɛɛ* 'some X' (X a noun of gender F–K to be retrieved from the context). By contrast, *dɪ-cɛɛ* can only be used pronominally as the equivalent of English 'something', and *nɪ-cɛɛ* can only be used adverbially as the equivalent of English 'sometimes'.

Wolof has two orphan classes, F ('place') and N ('manner'). For example, in the classes other than F and N, the forms of the interrogative *-an* 'which?' can modify a noun, as in *fas w-an* 'which horse?', or act as pronouns referring to an antecedent, as for example *w-an* 'which X?' (X a noun of gender W–Y to be retrieved from the context). By contrast, *f-an* can only be used adverbially as the equivalent of English 'where?', and *n-an* can only be used adverbially as the equivalent of English 'how?'

6   Gender resolution rules in noun phrase coordination

In the languages that have subject and object indexes expressing class distinctions, the choice of a particular class for subject or object indexes referring to coordinated NPs is determined by gender resolution rules. When the coordinands do not belong to the same gender, the general tendency across Niger-Congo is as follows:

- if both coordinands have human referents, regardless of their gender, the corresponding index is the plural index of the gender used non-contextually with reference to the notion of 'human being' (in Bantu languages, the class 2 index);
- if both coordinands have non-human referents, regardless of their gender, the corresponding index is the plural index of the gender used non-contextually with reference to the notion of 'thing' (in Bantu languages, the class 8 index).

When both coordinands belong to the same gender, this rule is in conflict with the selection of the plural index of the gender in question, but in many languages, the semantic rule tends to be applied even with coordinands belonging to the same gender, as in (32), where two human coordinands of gender 5–6 are resumed by a class 2 index.

(32)   Tswana (Bantu)

lì-búrú	*lí-lì-kúlá*	*bá-tsàmáílé*	*m̀mɔ́ːχɔ̀.*
sɢ-Afrikaner(5)	and-sɢ-Indian(5)	sɪ:cl2-leave.ᴘʀꜰ	together

'The Afrikaner and the Indian left together.'

The same tendency can be observed in Jóola Fóoñi. In (33), a coordination of two nouns of gender B–U is resumed by the subject index of class S, plural of the gender used non-contextually with reference to the notion of 'thing'.

(33)   Jóola Fooñi (Atlantic)

> *bʊ-manga-a-b*   *dɪ*   *bu-lolonk-ɐ-b*   *sɪ-wɔ-wɔl.*
> sɢ-mango (B)-ᴅ-clB   and   sɢ-soursop(B)-ᴅ-clB   sɪ:clS-bear.fruit-ʀᴅᴘʟ
> 'The mango and the soursop bore fruit.'

The rules/tendencies formulated above say nothing about gender resolution when a human NP and a non-human NP are coordinated, but in fact, the prevailing tendency is simply to avoid such coordinations. When speakers are asked to give an equivalent of 'The hunter and his dog got lost in the bush', they generally suggest translations whose literal meaning is 'The hunter got lost in the bush with his dog').

7   Semantic agreement

In gender systems characterized by regular associations between genders and obligatory markers included in the minimal form of nouns, *semantic agreement* (as opposed to *morphological agreement*) refers to situations where an agreement rule conditioned by semantic properties of the controller overrides the regular associations between ONMs and agreement.

7.1   Semantic agreement conditioned by animacy

Semantic agreement conditioned by animacy is very common across Niger-Congo. For example, in Jóola Fóoñi (Atlantic), *e-suk* 'village' belongs to gender E–S, but when *e-suk* in subject function is used metonymically with the meaning 'the villagers', it may optionally be resumed by the class BK index normally used for the plural of human nouns.[19]

(34)   Jóola Fooñi (Atlantic)

> *E-suk-e-y*   *tuu*   *pan*   *kʊ-jɔk-ɪ.*
> sɢ-village(E)-ᴅ-clE   all   ꜰᴜᴛ   sɪ:clBK-see-ᴏɪ:2sɢ
> 'The whole village will see you.'

There is, however, important cross-linguistic variation in the regulation of the competition between morphological agreement and semantic agreement. In Tswana (Bantu), whenever the controller is found in the same sentence as the target, morphological agreement is the only possible option, and semantic agreement can only be observed with pronouns or indexes whose antecedent does not belong to the same sentence. By contrast, in Swahili (Bantu) semantic agreement is the general

rule with animate controllers. As illustrated in (35), in Swahili, with most types of modifiers, animate nouns govern 1–2 agreement (regularly associated to the inflectional type *mu- / wa-*) irrespective of their inflectional type.

(35)   Swahili (Bantu)

    a.   *ki-boko*   *m-kubwa*   'a big hippo'
        sg-hippo(7)   cl1-big

    b.   *Ø-nyoka*   *wa-refu*   'long snakes'
        nn-snake(9/10) cl2-long

    c.   *Ø-ndugu*   *wa-wili*   'two brothers'
        nn-brother(9/10) cl2-two

    d.   *ma-fundi*   *wa-baya*   'bad craftsmen'
        pl-craftsman(6) cl2-bad

Unsurprisingly, when the agreement behaviour of a given noun shows variation between morphological and semantic agreement, the tendency towards selecting semantic rather than morphological agreement is stronger in argument indexation and in antecedent-pronoun agreement than in head-modifier agreement within NPs, and within NPs, the tendency towards maintaining morphological agreement is stronger for modifiers that regularly occur in contact with their head. For example, in Swahili, possessive determiners precede the other modifiers, and this is certainly the reason why the rule of semantic agreement illustrated in (35) with other types of modifiers applies to possessive determiners only to a limited extent.

7.2   Animacy-driven agreement and evaluative derivation

In the languages that have both a productive mechanism of animacy-driven semantic agreement and the possibility of deriving diminutives and augmentatives by inflectional type and gender alternation, it is common that animacy-driven agreement is blocked for evaluative derivates with animate reference. In Swahili, it may even happen that, with animate nouns of inflectional type *ki- / vi-*, agreement alone signals whether the noun must be understood as a diminutive or not.

(36)   Swahili (Bantu; Gregersen 1967, 19)

    a.   *Yu-le*   *ki-pofu,*   *ni-li-mw-ona.*
        cl1-dem sg-blind(7) si:1sg-cpl-oi:cl1-see
        'That blind person, I saw him/her.'

    b.   *Ki-le*   *ki-pofu,*   *ni-li-ki-ona.*
        cl7-dem sg-blind(7) si:1sg-cpl-oi:cl7-see
        'That tiny blind person, I saw him/her.'

The explanation is that *ki-pofu* 'blind person' is an animate noun belonging to an inflectional type normally associated with gender 7–8, and gender 7–8 also acts as the diminutive gender. As an animate noun, in (36a), *ki-pofu* triggers class 1 rather than class 7 agreement. Diminutive derivation cannot be marked morphologically, since *ki-pofu* already includes the prefixes associated to the gender acting as the diminutive gender, but diminutive derivation manifests itself in the blocking of animacy-driven agreement, as in (36b).

7.3   Semantic agreement conditioned by genericity

In Jóola languages and Bijogo (Atlantic), genericity in the sense of reference to kinds (as opposed to reference to individuals) conditions gender–number agreement of third-person subject indexes.

   In Bijogo, class ŊO, which includes the noun *ŋoo* 'thing' among its potential controllers, is also the class used non-contextually to express vague reference to things; as illustrated in (37), the subject index of class ŊO can also resume nouns that normally do not trigger ŊO agreement, and this departure from morphological agreement indicates that the subject NP must not be understood as referring to an individual, but to a kind.

(37)   Bijogo (Atlantic; Segerer 2002)

   a.   *Kɔ-kpɛñ*   *kɔ-tɔnɔŋ.*
        sɢ-silk.cotton.tree(KO)   sɪ:clKO.cᴘʟ-be.tall
        'The silk-cotton tree (specific) is tall.'

   b.   *Kɔ-kpɛñ*   *ŋɔ-tɔnɔŋ.*
        sɢ-silk.cotton.tree(KO)   sɪ:clŊO.cᴘʟ-be.tall
        'Silk-cotton trees (generic) are tall.'

In Jóola languages, when non-human singular nouns are used in subject function with specific reference, they can only be resumed by the index corresponding to their ONM. When they carry generic reference, it is still possible to have morphological agreement (in which case there is no overt indication that the subject must be understood as generic), but it is also possible to use the human singular index, and this deviation from morphological agreement unambiguously indicates that the subject does not refer to an individual, but to a kind (Bassène 2015a). In (38), the subject index could also be *ɛ-* (subject index of class E) instead of *na-*, but then, the sentence would be ambiguous between a specific and a generic reading.

(38)   Jóola Fóoñi (Atlantic)

      Y-ɛntaam-ɛ-y   *na-rɔŋɛn-ɛ-ɪ-rɔŋɛn.*
      sɢ-land(E)-ᴅ-clE   sɪ:clA-care.for-ɪcᴘʟ-ᴘᴀss-ʀᴅᴘʟ
      'Land must be cared for.'

8 The question of alliterative agreement

According to a tenacious legend, the Niger-Congo *noun class systems* differ from the gender systems found in other language families in that they involve 'alliterative agreement'.

As discussed by Corbett (2006, 87–90), *alliterative agreement* can be understood in two different ways.

Alliterative agreement may refer to situations where agreement markers on targets are phonologically identical to the corresponding inflectional markers on controllers. In this sense, Niger-Congo systems can be characterized as partially alliterative, since they involve both class markers phonologically identical to the inflectional markers of nouns, and class markers showing no similarity with the corresponding inflectional markers of nouns. However, there is nothing particularly 'exotic' in that, since Indo-European and Afroasiatic systems show a similar mix or alliterative and non-alliterative agreement. Moreover, a thorough description of the Niger-Congo systems often leads to the conclusion that they are much less alliterative than they may look at first sight, because class markers roughly similar to the corresponding inflectional markers of nouns may differ from them in an unpredictable way in details such as vowel quality or tone.

There is another possible view of *alliterative agreement*, characterized by Corbett as *radical alliterative agreement*, referring to situations where targets systematically take agreement markers copying the initial or the ending of their controller, regardless of the status of the copied material in a morphological analysis.

In the general literature on gender, partial and wrongly interpreted data from Guñaamolo (Ñun, Atlantic) provided by Sauvageot (1967) have played a prominent role in discussions of radical alliterative agreement (see in particular Dobrin 1995), but the recent descriptions of Guñaamolo and other Ñun languages (Bao Diop 2015; Quint 2015; Cobbinah 2013; Goudiaby 2017) have put an end to this myth. To take just one example from Bao Diop (2015), in Guñaamolo, the modifiers of *reeŋ* 'earth', *pɔrɔr* 'kitchen', *jɪh* 'dog', or *duluur* 'rice' do not show the **r(V)-*, **p(V)-*, **j(V)-*, or **d(V)-* agreement prefixes that would be expected in a radical alliterative agreement system. These four nouns all trigger class A agreement, whose markers may be *a ∼ ɐ* (as in *pɔrɔr ɐ-duk* 'another kitchen') or *nɔ ∼ no* (as in *pɔrɔr-ɔ nɔ-ŋɔɔn* 'that kitchen'), depending on the nature of the agreement target. Guñaamolo has just the kind of partially alliterative system commonly found across Niger-Congo (and elsewhere).

To the best of my knowledge, Landuma (Mel) is the only Niger-Congo language for which, on the basis of the available data, the hypothesis of a radical alliterative agreement system deserves consideration, at least for inanimate nouns (Sumbat-ova 2016).

9 Radical changes in the evolution of Niger-Congo gender–number agreement systems

As mentioned in the introduction, the type of gender system presented in the previous sections is certainly ancient, and is attested in all the major language

groups that constitute core Niger-Congo. However, a significant proportion of Niger-Congo languages (variable from one group to another) do not have a synchronically active gender system. There are also languages whose gender system, although still active, has undergone changes making it very different, typologically, from the Niger-Congo prototype.

9.1   Loss of the nominal inflection related to gender

In some of the Niger-Congo languages that have a gender–number agreement system, number inflection of nouns is considerably reduced, or even inexistent. In all cases, there is language-internal or comparative evidence that this results from the attrition of an ancient system of obligatory noun markers related to the gender system.[20]

Wolof (Atlantic) is a typical example. In Wolof, as a rule, the minimal form of nouns cannot be segmented in a synchronic analysis, and NPs can only be identified as singular or plural if they include modifiers expressing gender–number agreement. For example, *fas* ('horse'), unspecified for number, is compatible with two agreement patterns, W and Y; class W forms of modifiers trigger a singular reading, whereas class Y forms trigger a plural reading.

(39)   Wolof (Atlantic)

    a. *Gis*   *naa*   *fas*.
        See   PRF.SI:1SG   horse(W/Y)
        'I saw a horse.' Or 'I saw horses.'

    b. *Gis*   *naa*   *fas*   *w-u*   *ñuul*.
        See   PRF.SI:1SG   horse(W/Y)   clW-REL   be.black
        'I saw a black horse.'

    c. *Gis*   *naa*   *fas*   *y-u*   *ñuul*.
        See   PRF.SI:1SG   horse(W/Y)   clY-REL   be.black
        'I saw black horses.'

Laalaa (Atlantic) shows a mixed situation, with five genders in which nouns cannot be segmented into a stem and an ONM, whereas the nouns belonging to the remaining three genders have distinct singular and plural forms (Dieye 2015).

(40)   Variable and invariable nouns in Laalaa (Atlantic)

Y–Ɓ	*ɓɔʔ*	'human being'
Y–C	*ɔñ*	'thing'
W–C	*yɔɔn*	'field'
F–C	*caasɛ*	'porcupine'
M–C	*mɔɔn*	'tear'
K–T	*k-ʋas* pl. *t-ʋas*	'eye'
P–T	*p-isil* pl. *t-isil*	'vein'
J–T	*j-ɔkɔn* pl. *t-ɔkɔn*	'finger'

9.2 Reduction of the gender system to a binary human versus non-human or animate versus inanimate distinction

In some Niger-Congo languages, nouns divide into inflectional types involving number markers cognate with those found in the languages that have a gender system related to number inflection, but the gender system has been restructured in such a way that, synchronically, genders are not related to noun inflection anymore. The languages in question have generalized semantic agreement to the point where the only agreement patterns that subsist are those that initially characterized a gender used non-contextually with reference to 'person' and a gender used non-contextually with reference to 'thing', resulting in binary gender systems (human vs. non-human or animate vs. inanimate) that can be characterized as semantically transparent and devoid of any relationship to noun morphology.

In the languages that have restructured the gender system along these lines, four agreement patterns that are semantically transparent and disconnected from noun morphology are available for noun forms: either *human singular / human plural / non-human singular / non-human plural* or *animate singular / animate plural / inanimate singular / inanimate plural*. This restructuration of the gender–number agreement system has been documented in the following languages, among others: Saafi (Atlantic: Pouye 2015), Igo (Kwa: Gblem 1995), Gonja (Kwa: Güldemann and Fiedler 2017), Akan (Kwa: Güldemann and Fiedler 2017). Kulango (Gur: Kra 2016), Koromfe (Gur: Rennison 1997), Nzadi (Bantu: Crane et al. 2011).

In Kinshasa Lingala (Bantu), the Bantu system of nominal inflection is maintained, but the morphological characteristics of nouns are totally irrelevant for the agreement they trigger. Like the languages mentioned above, Kinshasa Lingala has two semantically transparent genders (animate vs. inanimate). The difference is that, in Kinshasa Lingala, the inanimate agreement markers make no distinction between singular and plural (Meeuwis 2010).

9.3 Emergence of number marking dissociated from the gender system

The phenomenon described in this section can be observed in Ñun-Buy languages (Atlantic: Voisin 2015a) and Biafada (Atlantic: Bassène 2015b).

In Ñun languages, most nouns follow the typical Niger-Congo pattern according to which the singular versus plural distinction is expressed by a change in the number prefix of the noun and in its agreement properties, but there is also a significant minority of nouns whose plural is formed by the addition of a dedicated plural marker not related to the gender system. As a rule, the modifiers of such nouns show the same agreement marks in the singular and in the plural, but in the plural, they take an additional mark of plural agreement, as in (41). In such cases, the former singular prefix can still be analysed as an ONM, but it has lost its function of number marker.

(41) Guñaamolo (Ñun, Atlantic; Bao Diop 2015)

    a.   *ka-taama*   *kɐ-denn*
        NN-river(KA)   clKA-big
        'big river'

    b.   *ka-taama-aŋ*   *kɐ-denn-eŋ*
        NN-river(KA)-PL   clKA-big-PL
        'big rivers'

Example (42) illustrates the possibility that a given singular prefix is still found as a singular prefix contrasting with a plural prefix with some nouns (42a, b), whereas with others it has lost its function of number marker (42c, d), the plural being marked by the suffixation of the dedicated plural marker.

(42) Guñaamolo (Ñun, Atlantic; Bao Diop 2015)

    a.   *fa-tɔnɔ*   *fɐ-denn*
        SG-bird(FA)   clFA-big
        'big bird'

    b.   *ja-tɔnɔ*   *jɐ-denn*
        PL-bird(JA)   clJA-big
        'big birds'

    c.   *fɐ-kkir*   *fɐ-denn*
        NN-monkey(FA)   clFA-big
        'big monkey'

    d.   *fɐ-kkir-eŋ*   *fɐ-denn-eŋ*
        NN-monkey(FA)-PL   clFA-big-PL
        'big monkeys'

Ñun languages also have nouns with doubly marked plurals, differing from the corresponding singulars both by prefix alternation and the addition of the dedicated plural marker.

(43) Guñaamolo (Ñun, Atlantic; Bao Diop 2015)

    a.   *bi-giir*   *bi-denn*
        SG-face(BI)   clBI-big
        'big face'

    b.   *ɐ-giir-eŋ*   *ɐ-denn-eŋ*
        PL-face(A)-PL   clA-big-PL
        'big faces'

Historically, there is evidence that plural markers dissociated from the gender system result from the reanalysis of associative plural markers (i.e. markers that typically combine with personal names to express 'X and associates') as ordinary additive plural markers. In particular, the dedicated plural marker of Ñun languages is a plausible reflex of a Proto-Atlantic associative plural marker whose reconstruction is discussed by Pozdniakov (2015), and whose most obvious reflex is the Fulfulde associative plural marker *-en*.

10   Conclusion

In this entry, the most salient characteristics of the systems of gender–number agreement typically found in Niger-Congo languages have been presented, and also the types of deviations from this prototype most commonly encountered across Niger-Congo. The complex relationship between genders and inflectional types of nouns that characterizes Niger-Congo gender systems in their most typical form is certainly very ancient, and Niger-Congo data are of little help in reconstructing the scenario according to which such systems may emerge in the history of languages. By contrast, Niger-Congo languages provide abundant data about the possible evolutions of complex gender systems related to noun morphology, including the generalization of animacy-driven semantic agreement leading to the possible replacement of complex gender systems of the Niger-Congo type by two-gender systems devoid of any relationship to noun morphology and transparently based on humanness or animacy.

SEE ALSO: Evaluative Morphology: Universals and Variation; Gender and Its Morphological Effects; Inflection Class Systems; Multiple and Cumulative Exponence; *Pluralia tantum* and *singularia tantum*; Polysemy of Affixes: A Slavic Perspective.

Abbreviations

Numbers or capital letters between parentheses immediately after the lexical gloss of a noun form indicate the agreement pattern associated to the form in question.

The other abbreviations are as follows: clX = class X, COP = copula, CPL = completive, D = definite, DEM = demonstrative, DIST = distal, DJ = disjoint, EXCL = exclusive, FOC = focalizer, FUT = future, GEN = genitive, ICPL = incomplete, INCL = inclusive, LK = linker, LOC = locative, NN = number neutral, OI = object index, PASS = passive, PL = plural, PRF = perfect, PROH = prohibitive, RDPL = reduplicative affix, REL = relativizer, SEQ = sequential, SG = singular, SI = subject index.

Notes

1. It is, of course, always possible to restrict the definition of 'gender' so as to exclude Niger-Congo systems (for example, by adding conditions on the number of genders, or on their semantic content). But beyond more or less arbitrary terminological decisions, what really matters in a typological perspective is that systems such as Indo-European or Afroasiatic gender and Niger-Congo *noun classes* share an

essential property that distinguishes them from the classifier systems found for example in East Asian languages. Adopting a more restrictive definition of 'gender' would therefore necessitate coining a new term for the general notion of *noun classification system manifested through agreement*, and it is simpler to follow the already widespread practice of using gender as a cover term for all systems meeting this broad definition.

2. In this entry, *inflectional type* is used instead of the more usual term *inflectional class* in order to prevent any risk of confusion between *class* as a mere synonym of *subset* and *class* in the technical sense given to this term in the description of the Niger-Congo type of gender–number agreement systems.

3. The extension of the notion of inflectional type to the nouns that do not have distinct singular and plural forms is discussed in Section 3.3.

4. In languages in which equipollent marking of number is the general rule, the singular form of nouns such as Tswana *qʰósí* pl. *dì-qʰósí* 'chief' can be analysed as including a phonologically null singular prefix, and the plural form of nouns such as Balant Ganja *b-tá* pl. *tá* 'tree' can be analysed as including a phonologically null plural prefix.

5. In the examples quoted in this entry, contrary to the mainstream practice in Niger-Congo studies, the inflectional affixes of nouns are not glossed as *class* markers, but as number markers (singular vs. plural), the agreement pattern governed by noun forms being indicated between parentheses immediately after the lexical gloss of the noun. For example, *lì-kàù* /sg-boy(5)/ means that *lì-* marks singular, and the noun form *lì-kàù* governs the agreement pattern traditionally labelled '*class 5*'. The reasons for this departure from mainstream practice will be discussed in Section 2.

6. The examples quoted without the indication of a source are either examples taken from the author's own field notes, or examples taken from various types of sources other than scientific descriptions and checked with native speakers.

7. However, Merrill (2018) defends the view according to which the Atlantic languages that have particularly large inventories of genders and phonologically larger shapes for number markers and gender–number agreement markers provide evidence for reconstructing a less grammaticalized system at early Niger-Congo level, including evidence of lexical origin for some markers.

8. In Jóola Fóoñi, definiteness marking implies the addition of a suffix expressing the agreement pattern governed by the noun form. The explanation is that the suffixed definite article of Jóola Fóoñi results from the grammaticalization of a former demonstrative expressing gender–number agreement.

9. This includes Atlantic languages, Mel languages, plus a few languages spoken in the same area whose Niger-Congo affiliation is uncontroversial, but whose affiliation to a particular branch of Niger-Congo is unclear. Greenberg (1963) treated all those languages as constituting a single branch of Niger-Congo (the West-Atlantic branch, subsequently renamed 'Atlantic'), but the opinion that prevails now is that, although uncontroversial members of core Niger-Congo, the languages included in Greenbergian (West-)Atlantic do not constitute a genetically valid grouping within Niger-Congo (Pozdniakov 2015). In the present entry, in accordance with Pozdniakov's views on the genetic relationships between the languages in question, 'Atlantic' refers to a proper subset of Greenbergian (West-)Atlantic.

10. Among the major branches of Niger-Congo, Gur also includes quite a few languages with systems of noun inflection and gender–number agreement close to the Niger-Congo prototype – see among others Ouoba (1982) on Gulmancema, Fiedler (2012a) on Yom, Fiedler (2012b) on Nawdm, Coulibaly (2020) on Minyanka. However, the proportion of languages in which the Niger-Congo system of noun inflection

and gender agreement subsists in reduced form or has disappeared altogether is much higher among Gur languages than among Atlantic or Bantu languages. Miehe et al. (2007, 2012) is a major reference on Gur systems of noun inflection and gender–number agreement.

11. The gaps in the numbering of classes are due to the fact that some Proto-Bantu classes have no direct reflex in Tswana. For example, class 8 (the plural class corresponding to the singular class 7) has been lost in Tswana, and the plural noun forms that originally triggered class 8 agreement have been assigned to agreement pattern 10 (and their number prefix has changed accordingly).

12. In this entry, *lexeme* refers to abstract units corresponding to dictionary entries.

13. Swahili also has an inflectional type of nouns, illustrated by *w-embe* pl. *ny-embe* 'razor', in which the nasal prefix marks plural.

14. This count relies on analytical decisions that are not always obvious. The analysis presented here is the one considered to be the simplest and most consistent one, but a discussion of the problematic points would necessitate more space than available.

15. A variant of this situation, found for example in Tswana, is that the human gender conflates two inflectional types (*mʊ-*/*ba-* and *Ø-*/*bo-*), one of them (*mʊ-*/*ba-*) consisting exclusively of human nouns.

16. In quite a few Niger-Congo languages, including Tswana, some ONMs trigger automatic stem-initial alternation.

17. Agreement pattern 17 (etymologically, one of the Proto-Bantu locative classes) is only found with nouns that are unspecified for number.

18. *χòdímó* 'on top' belongs to a class of Tswana words that are historically nouns, but act synchronically as adverbs or prepositions; in their prepositional use, they take a complement introduced by the genitival linker of class 17.

19. The notation (X) immediately after the lexical gloss of nouns means that semantic agreement may override the agreement pattern X regularly associated to the ONM.

20. In fact, in the Niger-Congo languages that have the usual kind of relationship between inflectional types of nouns and genders, the attrition of the ONMs is a common historical evolution, which, however, does not necessarily lead to the collapse of the relationship between noun inflection and gender, since it may be compensated by the renewal of noun inflection via grammaticalization of definite articles inflected for class. Across Niger-Congo, there is abundant evidence that definite articles resulting from the grammaticalization of demonstrative determiners (and consequently, inflected for class) tend to lose their function of definiteness/specificity markers and their morphological independence, being thus converted into ONMs having a close relationship with the gender system.

References

Babou, Cheikh Anta, and Michele Loporcaro. 2016. 'Noun Classes and Grammatical Gender in Wolof'. *Journal of African Languages and Linguistics*, 37 (1): 1–57.

Bao Diop, Sokhna. 2015. 'Les classes nominales en nyun gunyamolo'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 371–405. Cologne: Rüdiger Köppe.

Bassène, Alain Christian. 2007. *Morphosyntaxe du jóola banjal, langue atlantique du Sénégal*. Cologne: Rüdiger Köppe Verlag.

Bassène, Alain Christian. 2015a. 'Accords de classe et référence générique dans les parlers joola'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 171–182. Cologne: Rüdiger Köppe.

Bassène, Alain Christian. 2015b. 'Les Classes nominales en Biafada'. In *Les classes nominales dans les langues atlantiques,* edited by Denis Creissels and Konstantin Pozdniakov, 443–468. Cologne: Rüdiger Köppe.

Breedveld, Johanna O. 1995. *Form and Meaning in Fulfulde*. Leiden: CNWS.

Cobbinah, Alexander. 2013. 'Nominal Classification and Verbal Nouns in Baïnouk Gubëeher'. PhD diss., University of London.

Contini-Morava, Ellen. 1996. '"Things" in a Noun-Class Language. Semantic Functions of Agreement in Swahili'. In *Towards a Calculus of Meaning. Studies in Markedness, Distinctive Features and Deixis*, edited by Edna Andrews and Yishai Tobin, 251–290. Amsterdam: John Benjamins.

Corbett, Greville. 1991. *Gender*. Cambridge: Cambridge University Press.

Corbett, Greville. 2006. *Agreement*. Cambridge: Cambridge University Press.

Coulibaly, Sékou. 2020. 'Le minyanka parlé dans le cercle de Bla'. PhD diss., University of Paris.

Crane, Thera M., Larry M. Hyman and Simon N. Tukumu. 2011. *A Grammar of Nzadi (B865): A Bantu Language of the Democratic Republic of Congo*. Berkeley: University of California Press.

Creissels, Denis, Bassène, Alain Christian and Boubacar Sambou. 2021. 'Orphan Classes, Chameleon Stems, Ghost Controllers, Adverbial Classes, and Versatile Relativizers in Jóola Fóoñi (Atlantic)'. *Faits de Langues*, 52 (2).

Demuth, Katherine. 2000. 'Bantu Noun Class Systems: Loanword and Acquisition Evidence of Semantic Productivity'. In *Systems of Nominal Classification*, edited by Sunter Senft, 270–292. Cambridge: Cambridge University Press.

Diagne, Anna Marie. 2015. 'Le palor et le ndut: deux langues atlantiques sans classes nominales'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 261–290. Cologne: Rüdiger Köppe.

Dieye, El Hadji. 2015. 'Les classes nominales en laalaa (léhar)'. In *Les Classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 291–316. Cologne: Rüdiger Köppe.

Dimmendaal, Gerrit. 2008. 'Language Ecology and Linguistic Diversity on the African Continent'. *Language and Linguistics Compass,* 2 (5): 840–858.

Dimmendaal, Gerrit. 2011. *Historical Linguistics and the Comparative Study of African Languages*. Amsterdam: John Benjamins.

Dingemanse, Mark. 2006. 'The Semantics of Bantu noun Classification: A Review and Comparison of Three Approaches'. MA diss., University of Leiden.

Dobrin, Lise M. 1995. 'Theoretical Consequences of Literal Alliterative Concord'. In *Papers from the 31st Regional Meeting of the Chicago Linguistic Society*, edited by Audra Dainora, Rachel Hemphill, Barbara Luka, Barbara Need and Sheri Pargman, 127–142. Chicago: Chicago Linguistic Society.

Fiedler, Ines. 2012a. 'Yom'. In *Noun Class Systems in Gur Languages. Vol. II: Southwestern Gur Languages (Without Gurunsi)*, edited by Gudrun Miehe, Brigitte Reineke and Kerstin Winkelmann, 533–565. Cologne: Rüdiger Köppe.

Fiedler, Ines. 2012b. 'Nawdm'. In *Noun Class Systems in Gur Languages. Vol. II: Southwestern Gur Languages (Without Gurunsi)*, edited by Gudrun Miehe, Brigitte Reineke and Kerstin Winkelmann, 566–601. Cologne: Rüdiger Köppe.

Gblem, Honorine. 1995. 'Description systématique de l'igo, langue du Sud-Ouest du Togo'. PhD diss., University of Grenoble.

Goudiaby, Arame. 2017. 'Eléments de grammaire du gújáahár, parler baïnounck de Niaguis'. PhD diss., University of Dakar.

Grah, Claire. 1983. 'Approche systématique du nɪwɔlɪ'. PhD diss., University of Paris.

Greenberg, Joseph. 1955. *African Linguistic Classification*. New Haven, CT: Compass Press.

Greenberg, Joseph. 1963. *The Languages of Africa*. Bloomington: Indiana University Press.

Gregersen, Edgar A. 1967. *Prefix and Pronoun in Bantu*. Bloomington: Indiana University Press.

Grégoire, Claire. 1975. *Les locatifs en bantou*. Tervuren: Musée Royal de l'Afrique Centrale.

Grégoire, Claire. 1998. 'L'expression du lieu dans les langues africaines'. *Faits de Langues,* 6: 285–303.

Guérois, R. 2015. 'A Grammar of Cuwabo (Mozambique, P34)'. PhD diss., University of Lyon.

Güldemann, Tom, and Ines Fiedler. 2017. 'Niger-Congo "Noun Classes" Conflate Gender with Declension'. In *Grammatical Gender and Linguistic Complexity*, edited by Francesca di Garbo and Bernhard Wälchli, 85–135. Berlin: Language Science Press.

Kiessling, Roland. 2013. 'On the Origin of Niger-Congo Nominal Classification'. In *Historical Linguistics 2011. Selected papers from the 20th International Conference on Historical Linguistics, Osaka, 25–30 July 2011*, edited by Ritsuko Kikusawa and Lawrence A. Reid, 43–65. Amsterdam: John Benjamins.

Kra, Kouakou Appoh Enoc. 2016. *Le koulango, langue gur de la Côte d'Ivoire et du Ghana*. Paris: L'Harmattan.

Meeuwis, Michael. 2010. *Grammaire descriptive du lingála*. Munich: LINCOM.

Merrill, J. 2018. 'Evidence from Atlantic for a Recently Grammaticalized Classifier System in Early Niger-Congo'. Paper delivered at the workshop *Gender across Niger-Congo*. Humboldt-Universität zu Berlin, 30 November 2018.

Miehe, Gudrun, Brigitte Reineke and Kerstin Winkelmann, eds. 2007. *Noun Class Systems in Gur Languages,* vol. I: *Southwestern Gur Languages (Without Gurunsi)*. Cologne: Rüdiger Köppe.

Miehe, Gudrun, Brigitte Reineke and Kerstin Winkelmann, eds. 2012. *Noun Class Systems in Gur Languages,* vol. II: *North Central Gur Languages*. Cologne: Rüdiger Köppe.

Ouoba, B.B. 1982. 'Description systématique du gulmancema'. PhD diss., University of Paris.

Palmer, Gary B., and Claudia Woodman. 2000. 'Ontological Classifiers as Polycentric Categories, as Seen in Shona Class 3 Nouns'. In *Explorations in Linguistics Relativity*, edited by Martin Pütz and Marjolijn H. Verspoor, 225–249. Amsterdam: John Benjamins.

Perrin, Loïc-Michel. 2015. 'Les classes nominales en basari'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 501–544. Cologne: Rüdiger Köppe.

Pouye, Abdoulaye. 2015. *Pour une sauvegarde des langues en danger au Sénégal: description synchronique du saafi-saafi*. Saint-Denis: Edilivre.

Pozdniakov, Konstantin. 2015. 'Diachronie des classes nominales atlantiques: morphophonologie, morphologie, sémantique'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 57–102. Cologne: Rüdiger Köppe.

Quint, Nicolas. 2015. 'Les classes nominales en nyun de Djifanghor'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 407–443. Cologne: Rüdiger Köppe.

Renaudier, Marie. 2015. 'Les classes nominales en sereer'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 469–500. Cologne: Rüdiger Köppe.

Rennison, John R. 1997. *Koromfe*. London: Routledge.

Sauvageot, Serge. 1967. 'Sur la classification nominale en Baïnouk'. In *La classification nominale dans les langues négro-africaines,* edited by Gabriel Manessy, 225–235. Paris: CNRS.

Segerer, Guillaume. 2002. *La langue bijogo de Bubaque (Guinée Bissau)*. Louvain: Peeters.

Segerer, Guillaume. 2015. 'Les classes nominales en keerak (joola de Kabrousse)'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 103–146. Cologne: Rüdiger Köppe Verlag.

Selvik, Kari-Anne. 2001. 'When a Dance Resembles a Tree: A Polysemy Analysis of Three Setswana Noun Classes'. In *Polysemy in Cognitive Linguistics: Selected Papers from the Fifth International Cognitive Linguistics Conference*, edited by Hubert Cuykens and Britta Zawada, 161–184. Amsterdam: John Benjamins.

Sumbatova, Nina. 2016. 'Alliterative agreement in Landuma'. Paper presented at *Syntax of the World's Languages 7*, Mexico, August 2016.

Velde, Mark van de. 2009. 'Agreement as a Grammatical Criterion for Proper Name Status in Kirundi'. *Onoma*, 44: 219–241.

Velde Mark van de, and Dmitry Idiatov. 2017. 'Morphological Classes and Gender in Bena-Yungur'. In *Proceedings of the 8th World Congress of African Linguistics*, edited by Shigeki Kaji, 53–65. Tokyo: Research Institute for Languages and Cultures of Asia and Africa.

Voisin, Sylvie. 2015a. 'Sur l'origine du suffixe de pluriel dans le groupe Nyun-Buy'. *Linguistique et langues africaines*, 1: 13–42.

Voisin, Sylvie. 2015b. 'Les classes nominales en kobiana'. In *Les classes nominales dans les langues atlantiques*, edited by Denis Creissels and Konstantin Pozdniakov, 317–370. Cologne: Rüdiger Köppe.

Williamson, Kay. 1989. 'Niger-Congo overview'. In *The Niger-Congo Languages*, edited by John Bendor-Samuel, 3–45. Lanham, MD: University Press of America.