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# Noun class systems in Atlantic languages

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## 1. Introduction

This chapter aims at giving a typological overview of noun class systems in the two groups of languages that constitute the Atlantic family as tentatively delimited by Pozdniakov and Segerer (this volume), with an emphasis on characteristics particularly relevant in the perspective of a general typology of Niger-Congo noun classes. In addition to the already available literature, it is based on descriptions of the noun class systems of individual languages elaborated within the frame of the collaborative project 'Sénélangues' on the languages of Senegal and published in Creissels & Pozdniakov (2015).[1]

The chapter is organized as follows. Section 2 presents the languages dealt with and their genetic affiliation. Section 3 summarizes the main features that distinguish the noun class systems typically found across the Niger-Congo macro-family from other types of gender systems. Section 4 provides an overview of characteristics typical for Niger-Congo class systems, illustrating them by data from Atlantic languages. Section 5 discusses the main types of deviations from the Niger-Congo prototype found in Atlantic languages. Section 6 is about the noun classification system of the Atlantic languages in which class agreement has been lost. Section 7 summarizes the conclusions.

## 2. The languages, their genetic affiliation, and the sources

According to Konstantin Pozdniakov and Guillaume Segerer (this volume), the Atlantic family as it was delimited by Greenberg (1963) and Sapir (1971) does not constitute a genetically valid grouping within Niger-Congo, and must rather be viewed as an areal grouping of several independent branches of Niger-Congo. The two groups of languages dealt with in this paper (North Atlantic and Bak) constitute the two branches of an 'Atlantic' family more restricted than Greenbergian Atlantic. Mel (Temne, Landuma, Baga Koba, Baga Maduri, Baga Sitemu, Sherbro, Krim, and Kisi) is considered a distinct family, and Limba, Sua, and Gola are considered Niger-Congo isolates.

For the following languages, the analysis proposed in this chapter relies on studies carried out within the collaborative project 'Sénélangues' and published in Creissels & Pozdniakov (2015):

[1] This project (ANR-09-BLAN-0326) has been funded with support from the French National Research Agency (ANR).

– Basari (North-Atlantic, Loïc Perrin)
– Bayot (Bak, Mbacké Diagne)
– Biafada (North-Atlantic, Alain-Christian Bassène)
– Ganja (Bak, Séckou Biaye and Denis Creissels)
– Joola Keerak (Bak, Guillaume Segerer)
– Kobiana (North-Atlantic, Sylvie Nouguier-Voisin)
– Laalaa (aka Lehar) (North-Atlantic, El Hadji Dièye)
– Manjaku (Bak, Guillaume Segerer)
– Djifanghor Ñun (North-Atlantic, Nicolas Quint)
– Niamone Ñun (aka Guñaamolo) (North-Atlantic, Sokhna Bao-Diop)
– Palor and Ndut (North-Atlantic, Anna Marie Diagne)
– Sereer (North-Atlantic, Marie Renaudier)
– Wolof (North-Atlantic, Konstantin Pozdniakov and Stéphane Robert)

As regards the languages not represented in Creissels & Pozdniakov (2015), there is a particularly abundant literature on Fula (North-Atlantic) – see among others Arnott (1970) on the Gombe variety, McIntosh (1984) on the Southern Zaria variety, Paradis (1992) on the Futa Toro variety, Breedveld (1995) on the Maasina variety. On the other North Atlantic and Bak languages, the following sources have been used:

– Tenda (North-Atlantic): Ferry (1991), Ferry & Pozdniakov (2001), Sachot (Santos) (1996) on Konyagi;
– Jaad (North-Atlantic): Ducos (1971), Meyer (2001);
– Ñun Gubëeher (North-Atlantic): Cobbinah (2013);
– Cangin languages (North-Atlantic): Lopis-Sylla (2010a & 2010b) on Noon, Mbodj (1983) on Saafen;
– Joola languages (Bak): Bassène (2007) and Sagna (2008) on Banjal, Sambou (2007) on Karon, Sapir (1965) on Fooñi, Watson (2015) on Kujireray;
– Mankanya (Bak): Trifkovič (1969);
– Kentohe (Bak): Doneux (1984);
– Bijogo (Bak): Segerer (2002).

Of the eleven languages or groups of closely related languages listed by Pozdniakov and Segerer (this volume) as members of the (New) Atlantic family, the group constituted by Nalu, Baga Fore, and Baga Mboteni is the only one left aside in this typological sketch of Atlantic noun classes, for lack of sufficient data.[2] The other languages have synchronically active gender systems of the type commonly designated as 'noun class systems' in the Africanist tradition, with the only exception of Jaad and three of the five Cangin languages (Palor, Ndut, and Saafen).

[2] In Nalu and its closest relatives, nouns have prefixes probably cognate with the CMM's found in other Atlantic languages. The class agreement system seems to be well-preserved in Baga Fore (Konstantin Pozdniakov, personal communication), but is largely decayed in Nalu (Seidel, this volume), to the point that a more detailed description of Nalu would be necessary to decide whether this language is still to be considered as having a synchronically active noun class system, or should rather be added to the list of the Atlantic languages in which the vestiges of the former noun class system have been reorganized into another type of noun classification (see Section 6).

# 3. Niger-Congo noun class systems and nominal classification typology

## 3.1. Niger-Congo noun class systems as gender systems

As argued among others by Corbett (1991), in the perspective of a general typology of nominal classification systems, the systems of nominal classification traditionally labeled 'noun class systems' (in particular those found in Niger-Congo languages) do not belong to a type different from the systems traditionally designated as gender systems.

Gender is a polysemous term, and this may be a source of confusions and misunderstandings. However, if gender as a morphosyntactic notion 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 in which nouns act as controllers, then it is clear that Niger-Congo noun class systems are gender systems.[3]

The agreement mechanisms that reflect the division of nouns into classes in the sense given to this term in descriptions of Niger-Congo languages operate in the combination of head nouns with various types of modifiers, in the relationship between pronouns and their antecedents, and in the indexation of arguments on verbs.

Niger-Congo noun class 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 (for example, in the Nakh-Daghestanian family) in the description of which the same term of noun class is traditionally used.

## 3.2. Some methodological and terminological clarifications

As will be described in more detail below, an essential feature of typical Niger-Congo noun class systems is the absence of dedicated number markers, the exclusive use of class alternation to encode the singular vs. plural distinction, and a many-to-many relationship between singular classes and plural classes. This particularity explains why most descriptions of Niger-Congo noun class systems adopt a strategy different from that followed in descriptions of Indo-European or Afro-Asiatic gender systems:

– As a first step, *noun forms* (not *nominal lexemes*!) [4] are divided into subsets according to the relationship between their morphological characteristics and their agreement properties. At this stage, the singular and the plural of the same noun are treated as two

[3] It is of course always possible to restrict the definition of 'gender' so as to exclude Niger-Congo noun class systems from the notion of gender (for example by adding conditions on the number of genders, or on their semantic content). But beyond more or less arbitrary terminological decisions, what is really important in typological perspective is that systems such as Indo-European or Afro-Asiatic gender and Niger-Congo noun classes share an essential property that distinguishes them from classifier systems as 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 mechanisms', and it is certainly simpler to follow the already widespread pratice of using gender as a cover term for all systems meeting this broad definition.

[4] In my use of 'lexeme', this term refers to abstract units corresponding to dictionary entries.

distinct units. In descriptions of Niger-Congo languages, 'class' is the term most commonly used for sets of *noun forms* established without taking into consideration the other forms of the same lexeme. Note that this notion that has no equivalent in traditional descriptions of Indo-European gender systems, for which the basic units are nominal lexemes.

– The second step consists in establishing the possible relationships between the classes to which the singular form of a noun and the plural form of the same noun belong. The division of nominal lexemes into subsets according to the class pairings established at this second step are analogous to the genders into which nominal lexemes are divided in traditional descriptions of Indo-European languages. [5]

For example, in Banjal, as illustrated in (1), the form **fʊ-mangɔ** 'mango' belongs to a class labeled class F,[6] whose characteristics include a prefix **fʊ-** ~ **fu-** ~ **f-** for nouns (depending on the presence/absence of a consonantal onset, and on vowel harmony), and the same prefix **fʊ-** ~ **fu-** ~ **f-** for attributive adjectives. The form **gʊ-mangɔ** 'mangoes' belongs to another class, labeled class G, whose characteristics include a nominal prefix **gʊ-** ~ **gu-** ~ **g-** (or for some nouns the lexically conditioned variant **ga-**), and the same prefix **gʊ-** ~ **gu-** ~ **g-** for attributive adjectives. Similarly, **e-be** 'cow' as a noun form belongs to class E, whose characteristics include a prefix **e-** ~ **ɛ-** ~ **y-** for nouns and the same prefix for attributive adjectives, and **si-be** 'cows' belong to class S, whose characteristics include a prefix **sɪ** ~ **si-** ~ **s-** for nouns and the same prefix for attributive adjectives. As regards lexemes, **fʊ-mangɔ** is also the quotation form of a lexeme with two inflected forms **fʊ/gʊ-mangɔ** belonging to pairing (or gender) F–G, whereas **e-be** 'cow' is also the quotation form of a lexeme with two inflected forms **e/si-be** belonging to pairing E–S.

(1) Banjal (Joola)[7]

(1a) **fʊ-mangɔ** **f-ɐmɐk**
CLf-mango CLf-big
'big mango'

(1b) **gʊ-mangɔ** **g-ɐmɐk**
CLg-mango CLg-big
'big mangoes'

[5] For some Atlantic languages at least, it can be argued that the notion of class pairing is not sufficient, since the languages in question have not only nouns occuring in singular-plural pairs and nouns having no number distinction, but also nouns occurring in triads with respect to number. This question is briefly discussed in Section 4.4.3. See also Cobbinah (this volume).

[6] In the present state of the reconstruction of the Proto-Atlantic noun class system, it is not possible to use a unified system of labels for the noun classes of Atlantic languages comparable to the numbering system used for the noun classes of Bantu languages, since such a system relies on the possibility of identifying the noun classes found in present-day languages as reflexes of reconstructed classes, which in the Atlantic context is only possible to a relatively limited extent. The labels used in this chapter (mostly reproduced from Creissels & Pozdniakov (to appear)) have a mainly mnemotechnic motivation: they must be viewed as arbitrary labels that simply evoke the form of (some of) the corresponding class markers.

[7] In this chapter, the examples for which no source is explicitly indicated are taken either from the corresponding chapters of Creissels & Pozdniakov (2015), or from the following sources: Cobbinah (2013) for Gubëeher, Bassène (2007) for Banjal, Segerer (2002) for Bijogo.

(1c) **e-be** **y-ɛmɛk**
CLe-cow CLe-big
'big cow'

(1d) **si-be** **s-ɛmɛk**
CLs-cow CLs-big
'big cows'

According to its etymology, 'classifier' would be a possible term to designate the affixes involved in such agreement mechanisms. However, this term must be avoided, and the term of 'class marker' must be preferred, since 'classifier' is conventionally used in the description of nominal classification systems of a different type.

# 4. Typical features of Niger-Congo noun class systems in North Atlantic and Bak languages

## 4.1. Constructions involving class agreement

### *4.1.1. Class agreement within the noun phrase*

In typical Niger-Congo noun class systems, all noun dependents undergo class agreement manifested either through the inflection of the noun dependent itself, or through the inflection of an obligatory linker.

Among the languages belonging to the North Atlantic and Bak groups, Basari illustrates the extreme case of a language in which class agreement is pervasive within noun phrases, due to the systematic use of attributive linkers. In Basari, the article, the demonstratives, the adjectives, and some numerals, are the only noun modifiers including a prefixed CAM, but the modifiers that do not include a morphological slot for class agreement are obligatorily introduced by a linker expressing class agreement with the head noun. The use of the linker is illustrated in (2) for genitival modifiers.

(2) Basari (Tenda)

(2a) **a-cíw** **a-tɔ́m** **a-nd** **fabá** **aŋ**
CLaŋ3 CLaŋ3-big CLaŋ3-LK my.father CLaŋ3.DEF
'the large room of my father'

(2b) **ɓa-cíw** **ɓa-tɔ́m** **ɓa-nd** **fabá** **ɓaŋ**
CLɓaŋ3 CLɓaŋ3-big CLɓaŋ3-LK my.father CLɓaŋ3.DEF
'the large rooms of my father'

### *4.1.2. Class agreement and pronouns*

When an adnominal expressing class agreement has the ability to be used pronominally (which is in particular the common situation for demonstratives), agreement morphology can express agreement with an antecedent in the same way as it expresses agreement with the head noun in the adnominal use of the same word. There is however also the possibility of an 'absolute' use of the class inflection of adnominals used pronominally – see 4.6.

In addition to the pronominal use of adnominals, typical Niger-Congo noun class systems include a paradigm of dedicated *class pronouns* whose discursive function is similar to that of third person pronouns: they are used to represent discursively salient referents that the speaker considers retrievable from the mere mention of the class of a noun that could be used to designate them. Paradigms of class pronouns are also commonly found in Atlantic languages. For example, Ganja has six class pronouns corresponding to the seven 'primary' classes that constitute the core of the Ganja noun class system:[8] **hí** (class HA), **bí** (class B), **gí** (class G or class GI), **fí** (class F), **bá** (class BI), and **wí** (class U).

### *4.1.3. Class agreement in argument indexation*

Niger-Congo languages with typical noun class systems have paradigms of subject indexes and object indexes bound to the verb that in the third person express class distinctions. As illustrated in (3), paradigms of subject and object indexes expressing class distinctions are common among Atlantic languages too.[9]

(3) Ganja (Balant)

| | | | |
|---|---|---|---|
| (3a) | **Ḿ-góbù.** | 1SG-fall | 'I fell down.' |
| | **Bâ-góbù.** | 1PL-fall | 'We (excl.) fell down.' |
| | **Bân-góbù.** | INCL-fall | 'We (excl.) fell down.' |
| | **Ú-góbù.** | 2SG-fall | 'You (sing.) fell down.' |
| | **Bà-góbù.** | 2PL-fall | 'You (pl.) fell down.' |
| | **À-góbù.** | CLha-fall | 'He/she (class HA) fell down.' |
| | **B-góbù.** | CLb-fall | 'It (class B) fell down.' |
| | **Gì-góbù.** | CLgi-fall | 'It (class GI) fell down.' |
| | **F-góbù.** | CLf-fall | 'It (class F) fell down.' |
| | **Ù-góbù.** | CLu-fall | 'It (class U) or they (class U) fell down.' |
| | **Bì-góbù.** | CLbi-fall | 'They (class BI) fell down.' |
| | **G-góbù.** | CLg-fall | 'They (class G) fell down.' |

(3b) **Bì-búɯθâ-nì.** CLbi-see-1SG 'They saw me.'

[8] On the notion of primary class, see 5.7.2.

[9] In Ganja, neither subject indexes nor object indexes are obligatory components of verb forms. The rule is that arguments expressed as NPs in the syntactic slot for subjects or objects are not indexed on the verb. Subject indexes are however obligatory in the absence of a subject NP. In other Atlantic languages (for example Joola languages) subject indexes are obligatory even in the presence of a subject NP. As regards object indexes, I am not aware of any Atlantic language with a mechanism of obligatory indexation of objects.

| | | |
|---|---|---|
| **Bì-bíuθâ-báa.** | CLbi-see-1PL | 'They saw us (excl.).' |
| **Bì-bíuθâ-bân.** | CLbi-see-INCL | 'They saw us (incl.).' |
| **Bì-bíuθá-nà.** | CLbi-see-2SG | 'They saw you (sing.).' |
| **Bì-bíuθâ-bǎa.** | CLbi-see-2PL | 'They saw you (pl.).' |
| | | |
| **Bì-bíuθá-mà.** | CLbi-see-CLha | 'They saw him/her (class HA).' |
| **Bì-bíuθâ-bí.** | CLbi-see-CLb | 'They saw it (class B).' |
| **Bì-bíuθâ-gí.** | CLbi-see-CLgi | 'They saw it (class GI).' |
| | or CLbi-see-CLg | or 'They saw them (class G).' |
| **Bì-bíuθâ-fĩ.** | CLbi-see-CLf | 'They saw it (class F).' |
| **Bì-bíuθâ-wí.** | CLbi-see-CLu | 'They saw it/them (class U).' |
| **Bì-bíuθâ-bá.** | CLbi-see-CLbi | 'They saw them (class BI).' |

*4.1.4. Other constructions involving class agreement*

Demonstratives can be the source of a wide array or grammaticalization processes. Consequently, in languages with gender systems of the Niger-Congo type, the grammaticalization of demonstratives may not only reinforce class agreement in constructions typically involving class agreement (for example, when demonstratives grammaticalize as attributive linkers) but also extend class agreement to other types of syntactic contexts, and the same possibility exists with the grammaticalization of other types of units expressing class agreement.

A first example is provided by the non-verbal copulas of Joola Banjal (Bassène 2007: 137): the copulas in question express class agreement, and their form supports the hypothesis that they have grammaticalized from demonstratives.

A second example is that of the enclitic identification marker of Ganja (Creissels, this volume). This identification marker, which can be analyzed as resulting from the grammaticalization of class pronouns, is used to express focalization in verbal predication, and as an identificational copula – ex. (4). In both cases, it attaches to the right edge of a noun phrase and agrees with it in class.

(4) Ganja (Balant)[10]

(4a) **Ø-Fàafá à-mfáná ˈh-í**
CLu-father CLha-kind CLha-ID
'This is a kind father.'

(4b) **Ŋ-mbùutá bì-dìndímè bá**
CLg-child CLbi-stubborn CLbi.ID
'These are stubborn children.'

[10] In this example, the discrepancy between CMM's and CAM's is due to the fact that 'father' and 'child', like other human nouns with CMM's markers other than those of the human class pairing HA–BI, trigger semantic agreement (see Section 5.7.2).

## 4.2. Agreement properties of nouns and class membership markers

### *4.2.1. Class membership markers included in noun forms and class agreement markers*

In typical Niger-Congo noun class systems, noun forms include an obligatory class membership marker (CMM) whose characteristic property is that its modification or deletion triggers a change in the agreement properties of the noun form. Note that this definition has two important consequences:

(a) It implies identifying a zero CMM in noun forms whose agreement properties are modified by the addition of an overt CMM.
(b) It excludes analyzing affixes whose presence/absence has consequences for the referential status of nouns as CMM's; in the terminological system used in this chapter, such affixes can only be designated as morphologically bound determiners expressing class distinctions.

Systems in which noun forms include obligatory CMM's are common among North Atlantic and Bak languages. As illustrated in (5), the CMM's attached to nouns are often (but not always) phonologically more or less similar to the corresponding class agreement markers (CAM).

(5) Guñaamolo (Ñun)

(5a) **ʊ-dɪkaam** **u-duk**
CLu-woman CLu-other
'another woman'

(5b) **ʊ-dɪkaam-ɔ** **mɔ-ŋɔɔn**
CLu-woman-DEF CLu-that
'that woman'

(5a) **a-jɔm** **ɐ-duk**
CLa-be CLa-other
'another bee'

(5b) **a-jɔm** **nɔ-ŋɔɔn**
CLa-bee CLa-that
'that bee'

### *4.2.2. The position of CMM's within noun forms*

Among North Atlantic and Bak languages, Fula is the only language having obligatory CMM's suffixed to nouns. The CMM's are prefixed in all the other North Atlantic and Bak languages in which noun forms include an obligatory CMM. Some Atlantic languages (in particular Wolof and Sereer) are sometimes described as having class markers suffixed to nouns, but this analysis is not correct, since the class markers in question are not part of the

noun form, but of an enclitic article.[11] For example, in Sereer, **o-ɓox ol-e** 'the dog' and **a-cek al-e** 'the hen' have been analyzed as involving 'circumfixes' **o-...-ol** and **a-...-al** respectively, but this analysis is unsustainable, since **o-ɓox** 'dog' and **a-cek** 'hen' are perfectly viable noun phrases. Only **o-** and **a-** are morphologically obligatory, whereas the presence of **ol** and **al** is conditioned by the addition of a syntactically optional determiner. Consequently, **ol** in **o-ɓox ol-e** and **al** in **a-cek al-e** cannot be analyzed as the second element of circumfixed CMM's, and can only be analyzed as CAM's prefixed to the stem of the definite article **-e**.

*4.2.3. The relationship between CMM's and the agreement properties of nouns*

The definition of 'class membership marker' does not imply that the relationship between the CMM's included in noun forms and the agreement classes to which they belong must be a one-to-one relationship. This definition implies that a modification of the CMM included in a noun form triggers a change in its agreement properties, but logically, this leaves open the possibility for nouns showing the same CMM to divide into two or more agreement classes, and for nouns belonging to the same agreement class to divide into two or more subsets with respect to their CMM's, and many-to-many relationships between the CMM's of nouns and the agreement patterns they control are not uncommon in Atlantic languages. This is illustrated in (6) by the agreement of the definite article with nouns in the Sine variety of Sereer: this Sereer variety has 7 phonologically distinct forms for CMM's, 11 phonologically distinct CAM's for the definite article **CL-e**, and they can combine in 15 possible ways.

(6) Seerer (Sine variety)

| CL-noun | CL-DEF | |
|---|---|---|
| **o-kiin** | **ox-e** | 'person' |
| **o-ngoor** | **onq-e** | 'child' |
| **o-ɓox** | **ol-e** | 'dog' |
| **a-cek** | **al-e** | 'hen' |
| **Ø-japil** | **f-e** | 'knife' |
| **Ø-ɓil** | **l-e** | 'stone' |
| **Ø-liɸ** | **n-e** | 'fish' |
| **fa-noox** | **f-e** | 'crocodile' |
| **fo-soow** | **ol-e** | 'sour milk' |
| **Ø-rew** | **w-e** | 'women' |
| **Ø-pis** | **k-e** | 'horses' |
| **a-cek** | **ak-e** | 'hens' |
| **xa-ɓox** | **ax-e** | 'dogs' |
| **fo-mbaal** | **n-e** | 'lambs' |
| **pa-ñiig** | **k-e** | 'elephants' |

[11] Diachronically, it is easy to imagine how the generalization of the use of such enclitic articles expressing class distinctions may convert them into class membership markers suffixed to nouns, and this is probably the explanation of the presence of CMM's suffixed to nouns in Fula. However, in spite of the fact that enclitic articles are common across Atlantic languages, Fula is so far the only North Atlantic or Bak language in which this process has resulted in the creation of suffixed CMM's.

### 4.3. CMM inventories and agreement pattern inventories

In Niger-Congo noun class systems, the number of possible CMM's attached to nouns and of possible agreement patterns is generally comprised between 10 and 20, and this generalization applies to Atlantic languages too. However, Atlantic noun class systems with a number of CMM's or agreement classes close to 30 are not exceptional. Among North Atlantic and Bak languages, particularly large inventories of CMM's and/or agreement patterns (more than 25) are found in Fula, Ñun, Kobiana, and Biafada, whereas relatively small inventories (with less than 10 CMM's and/or agreement patterns) are found in Wolof, Cangin, and Balant. The smallest inventory is found in Balant, with 7 CMM's and 7 primary agreement patterns.[12]

### 4.4. Noun classes and number

*4.4.1. Class alternations as the only exponent of the* singular *vs.* plural *distinction*

In languages with typical Niger-Congo noun class systems, it is impossible to isolate morphological elements whose sole function would be the expression of number. Most nominal lexemes are compatible with two or more classes, and one of the functions of the choice between the possible classes for a given nominal lexeme is the expression of number. As illustrated in (1), repeated here as (7), this situation is common among Atlantic languages too, in particular those of the Bak branch.

(7) Banjal (Joola)

(7a) **fʊ-mangɔ** **f-ɐmɐk**
CLf-mango CLf-big
'big mango'

(7b) **gʊ-mangɔ** **g-ɐmɐk**
CLg-mango CLg-big
'big mangoes'

(7c) **e-be** **ɣ-ɐmɐk**
CLe-cow CLe-big
'big cow'

(7d) **si-be** **s-ɐmɐk**
CLs-cow CLs-big
'big cows'

As illustrated in (8), it is even possible (and not uncommon, in particular among Atlantic languages), that the selection of a given CMM and/or agreement pattern marks singular with some nouns, and plural with some others: in Ganja, class U expresses singular with nouns

[12] By 'primary agreement patterns' I mean agreement patterns that cannot be analyzed as resulting from the hybridization of two other agreement patterns – see 5.7.2.

lending themselves to the class U / class G alternation, and plural with nouns lending themselves to the class B / class U alternation.

(8) Ganja (Balant)

(8a) **Ø-Bɔ̀ɔtɔ́ ɔ̀-ndâŋ w-í.**
CLu-bag CLu-big CLu-ID
'This is a big bag.'

(8b) **G-bɔ̀ɔtɔ́ ⁺ŋ-ndâŋ g-í.**
CLg-bag CLg-big CLg-ID
'These are big bags.'

(8c) **B-săay ⁺m-ndâŋ b-í.**
CLb-silk_cotton_tree CLb-big CLb-ID
'This is a big silk-cotton tree.'

(8d) **Ø-Săay ɔ̀-ndâŋ w-í.**
CLu-silk_cotton_tree CLu-big CLu-ID
'These are big silk-cotton trees.'

*4.4.2. Singular/plural correspondences*

In Niger-Congo noun class systems, there is rarely, if ever, a one-to-one correspondence between singular classes and plural classes, but the complexity of the singular/plural correspondences greatly varies from one language to another, and Atlantic languages are not uniform in this respect. The only constant is that the singular classes always outnumber the plural ones. In some Atlantic languages (Fula, Cangin languages, Balant), with very few exceptions the plural class of a noun can be predicted from its singular class. On the contrary, in some others (Joola Keerak, Bayot, Manjaku, Ñun, Kobiana), there is a proliferation of pairings, with several plural classes corresponding to a given singular class, and vice-versa.

*4.4.3. Singular/plural, collective, and the question of 'uncountable plurals'*

Many descriptions of Niger-Congo noun class systems rightly emphasize the difficulty in distinguishing class alternations expressing a true singular/plural distinction from others that could be rather characterized as expressing individual/collective or massive/singulative distinctions. The point is that these notions are particularly difficult to pin down in systems devoid of dedicated plural markers, in which consequently it is not possible to apply the usual definition of collective nouns as morphologically singular nouns referring to collections of individuals.

As regards Atlantic languages, it has been observed that in several of them, and more particularly in Ñun languages, many nouns have two forms belonging to two distinct classes referring to groups of individuals, and it has been proposed to characterize them as *count plural* (compatible with numerals) and *uncountable plural* (incompatible with numerals) – Cobbinah & Lüpke (2014). The nouns in question typically include nouns referring to fruits,

small objects such as pearls, feathers, seeds, and small animals (such as insects or rodents) – see Cobbinah (this volume) for more details. What remains however unclear is to what extent 'uncountable plurals' are really different from the collective nouns traditionally recognized in other languages.

In languages (such as Wolof or Sereer – see Section 5.2.4) in which subject-verb agreement in the 3rd person abstracts from class distinctions and expresses a binary singular vs. plural distinction, subject-verb agreement can be used as a criterion for distinguishing collectives (which are expected to trigger singular agreement) from plural (which are expected to trigger plural agreement), but this does not solve the problem for the languages in which subject-verb agreement is sensitive to class distinctions.

As pointed to me by Friederike Lüpke (pers.com.) the precise analysis of such triads is in several respects an issue for further research, since in particular new data from Gujaher suggest relating the distinction between collective and uncountable plural to the animacy scale.

## 4.5. Other functions of class alternations

### *4.5.1. General observations on class alternations*

As explained in 4.4, in typical Niger-Congo noun class systems, an important function of class alternations is the expression of the number distinction. However, this is not their only possible function. Class alternations are also commonly used to express various notions expressed by the addition of dedicated derivational affixes in other languages. This phenomenon, also found in Atlantic noun class systems, is an argument for a paradigm approach as explicitly posited by Sagna (2008), Cobbinah (2013, and Watson (2015).

For example, in Gubëeher (and in most other Atlantic languages, if not all), the same noun stems refer to trees or to their fruits, depending on the class pairings (or triads) they enter.

(9) Gubëeher (Ñun)

| | | | |
|---|---|---|---|
| **si-/mun-dóóma** | 'kaba tree(s)' | **bu-/i-/di-dóóma** | 'kaba fruit(s)' |
| **si-/mun-taat** | 'annona tree(s)' | **bu-/i-/di-taat** | 'annona fruit(s)' |

Another productive class alternation found in many Atlantic languages (illustrated in Ex. (10) by Ganja) concerns stems found as human nouns in the human class pairing, but also found in another class with a meaning of abstract quality.

(10) Ganja (Balant)

| | | | | |
|---|---|---|---|---|
| **gì-láantɛ̀** | 'masculinity' | cf. **à-láantɛ̀** | 'man' | pl. **bì-láantɛ̀** |
| **gì-nîn** | 'femininity' | cf. **à-nîn** | 'woman' | pl. **bì-nîn** |
| **gì-fúlá** | 'maidenhood' | cf. **à-fúlá** | 'young woman' | pl. **bì-fúlá** |
| **gì-mbùutá** | 'childhood' | cf. **mbùutá** | 'child' | pl. **ŋ-mbùutá** |

As illustrated by Ex. (11), class alternations are a common way of expressing augmentative and diminutive meanings in many Atlantic languages.

(11) Keerak (Joola)

| | | | | | |
|---|---|---|---|---|---|
| **ɛ-ɔj** | 'stone' | **jɪ-ɔj** | 'small stone' | **hʊ-ɔj** | 'big stone' |
| pl. **sɪ-ɔj** | | pl. **ba-ɔj** | | pl. **kʊ-ɔj** | |

The following two sections are devoted to possible functions of class alternations that to the best of my knowledge have not been discussed in the general literature on noun classes, but are attested in some Atlantic languages.

*4.5.2. Class alternation expressing 'type of individual'*

This type of class alternation is found in Ganja. In this language, nouns referring to concrete entities whose singular form does not belong to class B can take the meaning 'a particular kind of ...' by simply shifting to class B. For example, **b-láantɛ̀** 'kind of man' (< **à-láantɛ̀** 'man' pl. **bì-láantɛ̀**) or **b-gbáalɛ̀** 'kind of house' (<**gbáalɛ̀** 'house' pl. **g-gbáalɛ̀**) are used in contexts in which English would use for example sentences like 'I don't like this kind of man', or 'This kind of house cannot be found here'.

*4.5.3. Class alternation expressing generic reference*

'Generic' is used by linguists in two different meanings. It may refer to a hierarchy of nouns according to the greater or lesser extension of their lexical meaning (in this sense, *animal* is a generic (or superordinate) term in comparison with *dog*, *cat*, *lion*, etc.). But 'generic' may also refer to the referential status of nouns in discourse. In this second meaning of 'generic', nouns are said to be used generically when they carry reference to kinds, as illustrated by *lion* and *human* in *Lions can be dangerous to humans* (as opposed for example to *The lions attacked the herd yesterday*) In this sense of 'generic', no noun is intrinsically generic, and generic reference can be carried by any common noun in appropriate contexts, irrespective of its status with respect to the hierarchical relationship of lexical meanings.

A class alternation expressing genericity in this latter sense of reference to kinds can be found in Fouta-Djalon Fula (but apparently not in other Fula varieties). The rule is that genericity is expressed by the combination of a zero suffix and the agreement pattern of class ON (which as a class lexically assigned to a subset of nouns is the human singular class):[13]

« In addition to the singular and plural noun forms, there is often a generic noun form that is neither singular nor plural. [...] The following table gives some examples of nouns with generic, singular, and plural forms:

| SINGULAR | PLURAL | GENERIC | MEANING |
|---|---|---|---|
| **bareeru ndun** | **bareeji dĩn** | **bare on** | dog |

[13] In the examples provided in this extract from Caudill & Diallo (2000), noun forms are not segmented into a stem and a class suffix, but the forms in the third column consist of the bare stem, and the agreement class to which noun forms belong is unambiguously indicated by the postposed article.

| | | | |
|---|---|---|---|
| **biiniiri ndin** | **biiniije ɗen** | **biini on** | bottle |
| **otowal ngal** | **otoje ɗen** | **oto on** | car |
| **ñariiru ndun** | **ñariiji ɗin** | **ñari on** | cat |
| **bareeru ndun** | **bareeji ɗin** | **bare on** | dog |
| **saabiwal ngal** | **caabiije ɗen** | **saabi on** | key |
| **kotiraawo on** | **kotiraaɓe ɓen** | **koto on** | older brother |
| **leemunneere nden** | **leemunneeje ɗen** | **leemunne on** | orange |
| **bireediwal ngal** | **bireediije ɗen** | **bireedi on** | bread |

Often the generic form is the most commonly heard, and the singular is only used to emphasize that a single item is being referred to. The generic always takes the **on** article (leemunne **on**) regardless of the class of the singular (leemunneere **nden**). » (Caudill & Diallo (2000 : 25))

### 4.6. Human vs. non-human classes

On the general question of the semantic motivation for noun classification, the reader is referred to Cobbinah (this volume). Given the topic of this chapter, the distinction will concentrate on the human vs. non-human distinction, since this distinction is the only one playing a crucial role in the structuration of Niger-Congo noun class systems.

It is a well-known fact that Niger-Congo noun-class systems are not sensitive to the male vs. female distinction, but typically include a singular-plural class pairing showing the following characteristics, which are in particular those of classes 1 (human singular) and 2 (human plural) in many Bantu languages:

- all of the nouns that fall into this pair of classes denote human beings;
- most nouns denoting humans (in particular, basic terms such as ‘human being’, ‘man’, ‘woman’, and all agent nouns derived from verbs) are found in this pair of classes;
- personal names do not show CMM’s, but as agreement controllers they behave like common nouns belonging to this pair of classes;
- when adnominals showing agreement markers of the classes in question are used pronominally, they can refer to an antecedent belonging to this class pairing given or suggested by the context, but they may also have an ‘absolute’ use, independent of any contextual conditioning, in which they are simply interpreted as meaning [+human].

Classes showing these properties are commonly referred to as human singular class and human plural class.

Pairs of classes meeting this characterization are found in many Atlantic languages. For example, in Ganja, class HA (singular) and class BI (plural) can only be assigned to human nouns, most human nouns (including all agent nouns derived from verbs) are found in this class pairing, personal names behave as agreement controllers like common nouns belonging to this class pairing, although they do not show the corresponding prefixes, and for example the HA-form **h-ílà** of the interrogative determiner **-ílà** ‘which?’ is used pronominally not only with reference to class-HA nouns suggested by the context (‘which one (class HA)?’) but also as the equivalent of English ‘who?’.

Across Niger-Congo languages, human classes often differ from the other classes by a particular morphological complexity, and this generalization applies to Atlantic languages too. For example, in Ganja, the human singular class HA is only one in which the object index has two entirely different allomorphs (**-mà** and **-hí**), and the human plural class BI is the only one in which the class pronoun has an irregular form **bá** not segmentable as 'class prefix + **-í**' as in the other classes. Class BI is also the only one in which demonstratives include a second agreement marker (**-gV-**) in addition to the regular class agreement prefix (**b-**).

In Niger-Congo noun class systems, no other semantic feature has a status comparable to [±human]. It is often possible to observe a tendency for nouns expressing a given type of meaning to concentrate in particular class pairings, but the question of the semantic homogeneity/heterogeneity of non-human classes, and of possible semantic regularities in the assignment of classes to nominal lexemes referring to non-humans, is a particularly tricky issue in the study of Niger-Congo noun class systems, and Atlantic noun class systems are no exception.

It is however interesting to observe that 'absolute' interpretations of class forms of adnominals used pronominally are not restricted to human classes, which provides some evidence of an inherent meaning attached at least to the classes in which this phenomenon can be observed. For example, in Wolof, L-forms of adnominals used pronominally can be interpreted as referring to a class L antecedent, but as illustrated in (12), they can also encode vague reference to inanimate entities without any contextual conditioning.

(12) Wolof

| **L-ii** | **l-an** | **la?** |
|---|---|---|
| CLl-DEM | CLl-INTERR | EQCOP |

'What is this?'

### 4.7. Deverbal nouns in noun class systems

In Niger-Congo languages with typical noun class systems, it may happen that the stem of deverbal nouns simply coincides with the corresponding verb stem not affected by any morphological operation, or its formation may involve the addition of a derivational affix or other morphological operation, but in both cases a class must be assigned to them (or a class pairing, if their meaning is compatible with the singular vs. plural distinction).

Abstract deverbal nouns referring to the event itself must be distinguished from concrete deverbal nouns referring to participants in the event or to the circumstances of the event (agent, instrument, place, etc.). As a rule, concrete deverbal nouns are straightforwardly assigned to particular class pairings, and consequently contribute to shaping the semantic profile of the class pairings in which they are found. For example, as a rule, agent nouns are found in the human class pairing.

Things are often different for deverbal nouns referring to the event: they can often be found in several classes, and semantic explanations are not easy to bring to light. This is in particular the case in some Atlantic languages – see Sagna (2008), Banjal (Joola) and Cobbinah (2013) on Gubëeher (Ñun), Watson (2015) on Kujireraay (Joola). For example, in Kujireray, most verbs have a verbal noun in class E, but verbal nouns can be found in other classes: **-kofen** 'sleep' > **ka-kofen**, **-li** 'build dam' > **ba-li**, **-oto** 'dream' > **si-oto**, **-rem** 'drink

> **ma-rem**, etc. See Watson (2015: 295-318) for an analysis of the possible semantic correlates of this variation.

## 5. Variation and deviations from the Niger-Congo prototype in Atlantic noun class systems

The previous sections have been devoted to the discussion of properties typical for Niger-Congo noun class systems that are also commonly found across Atlantic languages, and of types of variation across Atlantic noun class systems that do not put into question their compliance with the Niger-Congo prototype of nominal classification, in particular:

- in the position of class markers (suffixed in Fula, prefixed in all the other languages),
- in the inventories of available CMM's and/or agreement patterns (from 7 to 30 or so),
- in the greater or lesser complexity of the relationship between CMM's and the agreement properties of nouns,
- in the greater or lesser complexity of the relationship between singular classes and plural classes,
- in the development of additional functions of class alternations.

We now turn to types of variation constituting more or less important deviations from the Niger-Congo prototype.

### 5.1. Class marking and non-concatenative morphology

In most Niger-Congo noun class systems, class marking typically involves affixes, and the intervention of non-concatenative morphology is relatively marginal. An important characteristic of several languages belonging to various subgroups of the North Atlantic branch (Fula, Sereer, Buy (Kobiana and Kasanga), Tenda languages, Biafada) is that class marking on nouns and class agreement marking crucially involves not only affixes, but also stem-initial alternations, as illustrated in (13).

(13) Sereer (Mar Lodj variety)

| | |
|---|---|
| **go-faam** | 'donkey' |
| **a-paam** | 'donkeys' |
| **ga-mbaam** | 'big donkey' |

As illustrated by this example, as a rule, stem-initial alternations contributing to the expression of class distinctions in Atlantic languages typically involve a division of stem-initial consonants into three series, do not affect the place of articulation of the stem-initial consonant, and operate on features such as ±stop, ±fortis, or ±prenasalized. However, they are morphologized to a considerable extent, and the analysis of the underlying processes (be it in synchronic or diachronic perspective) is not an easy task.

### 5.2. Reduction in the range of class agreement

### *5.2.1. Introductory remarks*

Reduction in the range of class agreement is a very common phenomenon whose generalization may lead to the decay of noun class systems. However, historically, it is not irreversible. As far as class distinctions are maintained by demonstratives, the grammaticalization of demonstratives (which is universally a particularly common phenomenon) may take various forms which all contribute to revitalizing the class agreement system.

Demonstratives inflected for class may grammaticalize as class pronouns, and the cliticization of class pronouns may create or renew a system of argument indexation. Demonstratives may also lose their deictic value and become purely formal elements (linkers) whose presence is necessary to introduce some types of noun modifiers. In both cases, if the indexes or linkers resulting from the grammaticalization of demonstratives maintain the class distinctions expressed by the demonstratives they originate from, such evolutions automatically lead to the reinforcement of class agreement, or even to an extension of its domain.

Among the languages of the North Atlantic and Bak groups, Basari illustrates the case of a language in which the pervasiveness of class agreement in the internal structure of noun phrases is due to the systematic use of attributive linkers (see 4.1.1).

### *5.2.2. Non-agreeing noun modifiers*

In the most typical Niger-Congo noun class systems, all noun modifiers undergo class agreement, but among the languages of the North Atlantic and Bak groups, there is variation in the range of noun modifiers involved in class agreement. The only types of noun modifiers that invariably express class agreement in the North Atlantic and Bak languages that have a synchronically active system of class agreement are as follows:

- the adjectival modifiers (either primary adjectives of attributive forms of stative verbs),
- the demonstratives,
- the numeral ‘one’,
- the interrogative determiner (‘which?’).

The definite articles illustrate the variation found with other types of noun modifiers. Many Atlantic languages have definite articles, and most of the time they express class agreement, as illustrated by ex. (6) in section 4.2.3. This is the obvious consequence of the fact that, in most cases, definite articles result from the evolution of demonstratives, which invariably express class agreement in Atlantic languages. The invariable definite article **mà** found in Ganja constitutes however an exception, and the explanation is that this definite article does not result from the grammaticalization of a demonstrative, but of a pronoun in genitive function originally referring to a possessor.

### *5.2.3 Third person pronouns neutralizing class distinctions*

As has already been seen in 4.1.2, in addition to noun modifiers used pronominally, most Atlantic languages have a set of *class pronouns* specialized in pronominal use and picking up referents identifiable in a given context by the mere mention of the class of a noun that could be used to designate them more explicitly. However, this kind of pronouns is not found in all Atlantic languages. For example, Wolof has 10 classes (8 singular classes and 2 plural classes) reflected in the agreement of the definite article and other noun modifiers, but the pronouns available in Wolof to represent salient referents other than speech act participants do not express class distinctions. Wolof has just a third person singular pronoun **moom** 'he, she, it' and a third person plural pronoun **ñoom** 'they' that neutralize class distinctions. Originally, it is plausible that **moom** and **ñoom** referred specifically to class M and class Ñ respectively, but synchronically, they are third person pronouns specified for number only and carrying no information about the class to which their antecedent may belong.

*5.2.4. Lack of class distinctions in argument indexation*

As has already been seen in 4.1.3, many Atlantic languages have subject indexes and object indexes expressing class distinctions in the third person. However, some others have paradigms of subject and object indexes that do not express class distinctions. For example, Wolof, already mentioned above for lacking class pronouns, has obligatory subject indexation, but as illustrated in (14), subject indexation in Wolof is restricted to person and number, and no class distinction is reflected in the subject indexes. In **daanu na**, the understood subject may belong to any of the eight singular classes of wolof: K (**nit k-i** 'the person'), B (**xaj b-i** 'the dog'), W (**fas w-i** 'the horse'), X (**xar m-i** 'the sheep'), G (**kuddu g-i** 'the spoon'), J (**jigéen j-i** 'the woman'), L (**cin l-i** 'the pot'), or S (**xorom s-i** 'the salt'). In **daanu nañu**, the understood subject may belong to any of the two plural classes: Ñ (**nit ñ-i** 'the people') or Y (**xaj y-i** 'the dogs', **fas y-i** 'the horses', etc.).

(14) Wolof

| | | |
|---|---|---|
| **Daanu naa.** | fall PRF.1SG | 'I fell down.' |
| **Daanu nga.** | fall PRF.2SG | 'You (sg.) fell down.' |
| **Daanu na.** | fall PRF.3SG | 'He/she/it fell down.' |
| **Daanu nanu.** | fall PRF.1PL | 'We fell down.' |
| **Daanu ngeen.** | fall PRF.2PL | 'You (pl.) fell down.' |
| **Daanu nañu.** | fall PRF.3PL | 'They fell down.' |

Similarly, in Wolof, the third person object indexes **ko** (sg.) and **leen** (pl.) give no clue to the class membership of the understood object.

All the Bak languages for which the relevant data are available have argument indexation systems reflecting class distinctions. By contrast, among the North Atlantic languages for which there are data, indexation systems neutralizing class distinctions are more widespread than indexation systems reflecting class distinctions. Such systems are found not only in Wolof, but also in Kobiana, Ñun, Sereer, Tenda, and Biafada.

**5.3. Nouns class systems without CMM's on nouns**

In typical Niger-Congo noun class systems, noun forms include CMM's, and this is the case in all the languages of the Bak group for which the relevant data are available. By contrast, in Wolof, it is not possible to isolate in noun forms a synchronically active paradigm of CMM's, although many noun forms quite obviously include frozen vestiges of former CMM's. This means that, in a strictly synchronic description of Wolof, the division of noun forms into classes relies exclusively on the selection of class agreement markers, and the (sometimes quite tricky) analytical problems following from the possible complexity of the relationship between the CMM's of nouns and their properties as agreement controllers are simply inexistent.

The fact that Wolof has lost the CMM's of nouns without innovating dedicated plural markers, and still uses class alternation as the only number marking device, has the following consequence: as illustrated in (15), bare nouns are not specified for number, and NPs can only be identified as singular or plural if they include modifiers expressing class agreement.

(15) Wolof

(15a) **Gis naa fas**
see PRF.1SG horse
'I saw a horse.' or 'I saw horses.'

(15b) **Gis naa fas w-u ñuul.**
see PRF.1SG horse CLW-REL be_black
'I saw a black horse.'

(15c) **Gis naa fas y-u ñuul.**
see PRF.1SG horse CLy-REL be_black
'I saw black horses.'

As regards the presence of CMM's in noun forms, Laalaa (Cangin) shows a mixed situation. This language has seven singular classes (Y, W, F, M, K, J et P), three plural classes (Ɓ, C et T), and eight class pairings. In three of the eight class pairings, noun forms have prefixed CMM's whose alternation marks the singular vs. plural distinction, whereas nothing similar can be observed in the other four pairings.

(16) Singular–plural pairings in Laalaa (Cangin)

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

### 5.4. The emergence of number marking dissociated from the noun class system

The phenomenon described in this section constitutes a major deviation from the Niger-Congo prototype of noun class systems. Among North Atlantic and Bak languages, it can be observed in Ñun languages, Buy (Kobiana and Kasanga), and Biafada. These languages have in common a division of nouns into two substsets with respect to the way their plural is expressed. Part of the nouns follow the typical Niger-Congo pattern according to which the expression of the singular vs. plural distinction consists of a class alternation whose most obvious manifestation is a change in the CMM of the noun, but others express the plural by the adjunction of a dedicated plural marker. In general, the nouns taking the dedicated plural marker control the same class agreements in the singular and in the plural, but in addition to class agreement markers, their modifiers take an additional affix (either a suffix, as in (17), or a prefix, as in (18)) expressing plural agreement.

(17) Guñaamolo (Ñun)

(17a) **ka-taama kɛ-denn**
CLka-river CLka-big
'big river'

(17b) **ka-taama-aŋ kɛ-denn-eŋ**
CLka-river-PL CLka-big-PL
'big rivers'

(18) Biafada

(18a) **sá-də sá-təbbá sa-ggə**
CLsa-house CLsa-big CLsa-DEM
'this big house'

(18b) **ba-sá-də ba-sá-təbbá ba-sa-ggə**
PL-CLsa-house PL-CLsa-big PL-CLsa-DEM
'these big houses'

This situation raises an important theoretical problem, which is however rarely addressed: in a synchronic description, to what extent, and on the basis of which criteria, is it justified to isolate CMM's in nouns behaving in the way illustrated in (17) and (18), if they lend themselves to no other class alternation manifested by a change in their form? A possible answer is that, in such nouns, CMM's are isolated by analogy with nouns including a variable element correlated to their agreement properties. In any event, one must be conscious that isolating CMM's on such a basis implies relaxing the definition to include non-canonical CMM's that cannot be isolated from the noun stem by applying the standard procedures of morphological analysis.

In the languages having such a partition of the nominal lexicon, the CMM's divide into three subsets:

- those that invariably behave as canonical CMM's (which means that they are found exclusively in nouns expressing the singular vs. plural distinction by a class alternation);
- those that invariably behave as non-canonical CMM's (which means that they are found exclusively in nouns forming their plural by the addition of a dedicated plural marker);
- those behaving as canonical CMM's with some nouns, but as non-canonical CMM's with some others.

(19) and (20) illustrate the case of dual-behavior CMM's.

(19) Guñaamolo (Ñun)

(19a) **fa-tɔnɔ fɐ-denn**
CLfa-bird CLka-big
'big bird'

(19b) **ja-tɔnɔ jɐ-denn**
CLja-bird CLja-big
'big birds'

(19c) **fɐ-kkir fɐ-denn**
CLfa-monkey CLka-big
'big monkey'

(19d) **fɐ-kkir-eŋ fɐ-denn-eŋ**
CLfa-monkey-PL CLfa-big-PL
'big rivers'

(20) Biafada

(20a) **ni-ndá nə-ntəbbá nu-ŋ**
CLnə-child CLnə-big CLnə-DEM
'this big child'

(20b) **ma-ndá ma-ntəbbá ma-ŋ**
CLma-child CLma-big CLma-DEM
'these big childs'

(20c) **ni-mpúulɐ nə́-ntəbbá nu-ŋ**
CLnə-girl CLnə-big CLnə-DEM
'this big girl'

(20d) **ba-ni-mpúulɐ ba-nə́-ntəbbá ba-nu-ŋ**
PL-CLnə-girl PL-CLnə-big PL-CLnə-DEM
'these big houses'

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

(21) Guñaamolo (Ñun)

(21a) **bi-giir** **bi-denn**
CLbi-face CLbi-big
'big face'

(21b) **ʁ-giir-eŋ** **ʁ-denn-eŋ**
CLa-face-PL CLa-big-PL
'big faces'

As regards the historical origin of the development of dedicated plural markers dissociated from the noun class system, Ñun languages provide particularly convincing evidence that they result from the reanalysis of an associative plural marker as an ordinary additive plural marker and its gradual extension to nouns other than those likely to combine with an associative plural marker. This hypothesis is strongly suggested not only by the fact that the same suffix can be used as an associative plural marker (as in 'Assane and other people associated with him'), but also by comparative data (in particular from Wolof and Fula) on the basis of which an associative plural marker ***-en** can be traced back at least to Proto-North-Atlantic, and perhaps further. This hypothesis also explains why, as a rule, the dedicated plural marker attaches to noun forms including a class marker which with other nouns marks the singular. On this question, see also Cobbinah (2013), Voisin (2015).

### 5.5. Loss of some other typical functions of class alternations

In Niger-Congo languages, the expression of diminutive and augmentative meanings is among the typical functions of class alternations, but the loss of this function, attested for example in Southern Bantu languages, also occurred in some Atlantic languages. For example, in Ganja, the possibility of analyzing a limited number of class GI nouns as diminutives suggests that the expression of diminutive was formerly a possible function of class GI (or a former class involved in the genesis of present-day class GI), but synchronically, Ganja has no productive class alternation expressing this meaning.

### 5.6. Blurring the distinction between human and non-human classes

A major deviation from the Niger-Congo prototype observed in some of the languages of the North Atlantic branch is the lack of a human class pairing cumulating all the properties enumerated in 4.6 as characteristic for the human classes in typical Niger-Congo noun class systems. This does not put into question the importance of the semantic feature [human] in the noun class systems of the languages in question, since these properties are generally present in one way or another. The problem is that they are distributed across different class pairings, which makes it impossible to select a particular class pairing as having an exclusive relationship to the feature [human].

Wolof is a case in point. **Nit** 'human being' belongs to the class pairing K–Ñ, and as illustrated in (22b) the K- and Ñ-forms of adnominals used pronominally lend themselves to an 'absolute' interpretation in which they encode [human] without reference to any particular antecedent. This is an important property of human class pairings in Niger-Congo noun class systems. However, **nit** is the only noun belonging to this class pairing, and as illustrated in (22c), the nouns referring to humans are distributed across the other class pairing, without a particular concentration in any class pairing. The class pairing K–Y, whose only member is **këf** 'thing', is the only one that does not include human nouns. Moreover, personal pronouns and human proper nouns control class M agreement – (22d-e), which is somewhat unexpected since the proportion of human common nouns in class M is particularly low.

(22) Wolof

(22a) **nit** (K/Ñ) 'human being'

(22b) **k-an?** 'who?'
**k-enn** 'someone'
**k-eneen** 'another person'
**ñ-eneen** 'other persons'

(22c) **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) 'pier, companion'

(22d) **yow m-i fa dem**
2SG CLm-REL there go
'you who went there'

(22e) **Faatu m-an**
2SG CLm-REL
'which Fatou?'

Similar facts are found in other North Atlantic languages. For instance, in Gujaher (Ñun), only the terms for 'man' and 'woman' are in the 'human' class pairing U–IN, whereas agent nouns are in U–ÑAN (Friederike Lüpke, pers.com.).

## 5.7. Semantic agreement

### *5.7.1. Introductory remarks*

In some Niger-Congo languages, for example Igo aka Ahlon (Kwa), the former CMM's of nouns have been formally maintained, but the Niger-Congo system of class agreement has

given way to a system of generalized semantic agreement in which the former CMM's have lost their relationship to agreement. In Igo, agreement operates now on a purely semantic basis: Igo noun forms divide into four agreement classes that can be straightforwardly defined as 'animate singular', 'animate plural', 'inanimate singular', and 'inanimate plural' – Gblem (1995).

None of the languages considered in this chapter attests such a shift from the Niger-Congo system of class agreement to a gender system involving generalized semantic agreement. However, several of them have class agreement mechanisms that can be accounted for in terms of competition between morphological agreement and semantic agreement, a type of deviation from the Niger-Congo prototype particularly widespread across Niger-Congo languages, found among others in Swahili.

In systems in which morphological agreement may be in competition with semantic agreement, nouns forms including a given CMM do not always control the agreement pattern that can be analyzed as intrinsically associated to their CMM; they may also control an agreement pattern partially or entirely identical to the agreement pattern typical for nouns including another CMM, and this particular behavior is predictable on the basis of some semantic criterion.

Note that this distinction concerns only languages in which noun forms include CMM's. In languages in which noun forms bear no mark of the class to which they belong, one question which may arise is the extent to which class assignment can be predicted on the basis of semantic criteria, but it would make no sense to put forward a distinction between 'morphological' and 'semantic' agreement.

### *5.7.2. Semantic agreement triggered by humanness/animacy*

This particular type of competition between morphological and semantic agreement is found in a number of Niger-Congo languages that have otherwise prototypical noun class systems, with overt CMM's on nouns and two classes that can be identified as 'human singular' and 'human plural' according to the definition posited in Section 4.6.

As a rule, in such languages, a minority of common nouns denoting humans show CMM's other than those of the human classes. It may happen that the behavior of such nouns in agreement mechanisms is fully consistent with the CMM's they show (morphological agreement), but it may also happen that their agreement properties are partially or entirely identical to those of nouns showing the CMM's typically found with human nouns.

Interestingly, when the agreement properties of a given noun show variation between morphological and semantic agreement depending on the constructions, the tendency towards selecting semantic rather than morphological agreement is generally stronger in argument indexation and in the agreement of pronouns with their antecedents than in head-modifier agreement within noun phrases.

In some languages, a similar behavior is found not only with human nouns that show class markers other than those of the human classes, but also with nouns denoting non-human animates: their class markers are not those typically found on noun denoting humans, but as agreement controllers, they partially behave like nouns denoting humans.

Semantic agreement in Banjal (Joola) has been analyzed by Bassène (2012) and Sagna (2013). In this language, semantic agreement is only found with nouns denoting humans that do not show the class prefixes typical for human nouns.

In Ganja, semantic agreement is also found with nouns referring to non-human animates.

In Ganja, the human classes are sg. HA (marked by **à-** on nouns) and pl. BI (marked by **bì-** ~ **bì-** on nouns) – (23a), but a minority of common nouns referring to humans show non-human class prefixes, either in the singular only – (23b), or both in the singular and the plural (23c). However, as agreement controllers, human nouns invariably trigger class HA agreement in the singular, and class BI agreement in the plural (23d-e).

(23) Ganja (Balant)

(23a) **à-láantɛ̀** pl. **bì-láantɛ̀** 'man'

(23b) **Ø-fàafá** pl. **bì-fàafá** 'father
(**Ø-** is the canonical prefix for non-human nouns of class U)

(23c) **Ø-mbùutá** pl. **ŋ-mbùutá** 'child'
(**Ø-** is the canonical prefix for non-human nouns of class U, and **ŋ-** is an allomorph of the canonical prefix for non-human nouns of class G)

(23d) **Ø-Fàafá à-mfáná ˈh-í**
CLu-father CLha-kind CLha-ID
'This is a kind father.'

(23e) **Ŋ-mbùutá bì-dìndímè bá**
CLg-child CLbi-stubborn CLbi.ID
'These are stubborn children.'

In Ganja, all of the nouns denoting non-human animates show hybrid agreement patterns: in the singular, they may show the prefix of the singular human class or the prefix of a non-human class, in the plural all of them show prefixes of non-human classes, but the agreement properties of those showing the human prefix **à-** in the singular are partially those of the non-human class U, and the agreement properties of those showing non-human prefixes are partially those of the human classes HA (singular) and BI (plural).

(24) Ganja (Balant)

(24a) **Ø-Mfôl ù-lóodè h-í**
CLu-frog CLu-dead CLha-ID
'This is a dead frog.'

(24b) **À-hɔ́d ɔ̀-dɔ̀ɔlɔ́ ˈh-í**
CLha-guinea_fowl CLu-small CLha-ID
'This is a small guinea fowl.'

Interestingly, in Ganja, nouns denoting mechanisms such as 'watch', 'car', or 'bicycle' control the same hybrid agreement patterns as nouns denoting animals.

*5.7.3. Semantic agreement conditioned by the referential status of nouns*

Given the polysemy of the term ‘generic’ (already commented in section 4.6.3), the reader is invited to keep in mind that ‘generic’ is taken here as referring to the referential status of nouns in discourse. In this use of the term ‘generic’, a noun in generic value refers to a kind, not to a specific individual or group of individuals.

Among the languages considered in this chapter, Joola languages and Bijogo attest the possibility that genericity in the sense of reference to kinds conditions class agreement between subject nouns and subject indexes attached to verbs.

The way Bijogo uses class agreement to express generic reference is reminiscent of the French construction illustrated by **Les chiens, ça aboie** ‘Dogs bark’ (litt. The dogs it barks’), where a plural masculine noun is resumed by the neuter index **ça**, typically used to express vague reference. In Bijogo, the class used to express vague reference is class ƉO, which includes in particular the noun **ŋoo** ‘thing’ as one of its members, and as illustrated in (25), one of the possible functions of the subject index of class ƉO is to indicate that a noun belonging to another class and fulfilling the subject function must not be understood as referring to an individual, but to a kind.

(25) Bijogo

(25a) **Kɔ-kpɛñ** **kɔ-tɔnɔŋ.**
CLko-silk_cotton_tree CLko.CPL-be_tall
‘The silk cotton tree is tall.’
(deictic or anaphoric reference to an individual)

(25a) **Kɔ-kpɛñ** **ŋɔ-tɔnɔŋ.**
CLko-silk_cotton_tree CLŋo.CPL-be_tall
‘Silk cotton trees are tall.’
(reference to kind)

The way Joola languages use class agreement to specify that a noun in subject function refers to a kind rather than to an individual is more surprising. For example, in Banjal, when singular nouns that do not denote humans are used in subject function and must not be understood as generic, they can only be indexed on the verb by means of the index corresponding to their class prefix. When they carry generic reference, it is still possible to have morphological agreement (in which case there is no overt indication that the subject noun must be understood as generic), but it is also possible to cross-reference them by the human singular index, and this deviation from morphological agreement can only be interpreted as indicating that the subject noun does not refer to an individual, but to a kind, since in Banjal, nouns that do not denote humans normally follow morphological agreement. In Joola languages, this construction, illustrated in (26), is particularly common in proverbs.

(26) Banjal (Joola) – Sagna 2011

| **Fu-kun** | **ɪndɪ** | **a-bʊgɔr** | **ga-pɔrɔk.** |
|---|---|---|---|
| CLfu-fish_sp | HAB.NEG | CLa-beget | CLga-fish_sp |

'Fúkun fishes do not beget gaporok fishes.'
→ 'Children are what they are made.'

### 5.8. The question of phonological/alliterative agreement

Many languages have systems of gender assignment rules in which phonological criteria are variously involved. A particular clear and straightforward case is that of Afar (Cushitic), where with few exceptions noun forms ending with a stressed vowel are feminine, and noun forms ending with an unstressed vowel or a consonant are masculine, regardless of the status of this ending in a morphological segmentation of the noun form (Hassan Kamil 2015).

As discussed by Corbett (2006: 87-90), the term 'alliterative agreement' can be understood in two different ways: it may refer to "a characterization of morphological exponence", in systems in which agreement controllers have an inflectional marker correlated to their behavior in the agreement system, and phonologically identical segments are used as agreement markers on agreement targets. In this sense of 'alliterative agreement', Niger-Congo systems of class agreement (but also many Indo-European systems of gender-number-case agreement) can be characterized as partially alliterative, since they involve both CAM's phonologically identical to the corresponding CMM's, and CAM's phonologically distinct from the corresponding CMM's – see example (1) in section 3.2. As rightly pointed out by Corbett, this characterization of agreement systems as ±alliterative is not an 'all or nothing' classification. Moreover, it is worth emphasizing that a thorough description of class agreement systems often leads to the conclusion that they are in fact less alliterative than they may look at first sight, because CAM's that are roughly similar to the corresponding CMM's may differ from them in an unpredictable way in details such as vowel quality or tone.

There is another possible view of 'alliterative agreement', for which Corbett proposes the term of 'radical alliterative agreement'. A noun class system with radical alliterative agreement would have a particular type of phonology-based system of class assignment involving agreement markers systematically copying the initial of the noun form acting as controller (in the case of prefixed agreement markers), or its ending (in the case of suffixed agreement markers), regardless of the status of the copied material in a morphological analysis. The question that arises is whether the Atlantic noun class systems are simply partially alliterative systems, like for example the Bantu systems, or whether some of them have innovated a radical alliterative agreement system.

Sauvageot (1967) suggests that a radical alliterative agreement system might be found in Guñaamolo (Ñun), but this hypothesis does not stand up to scrutiny. To take just an example, 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 belong to class A, in which the agreement 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 of class agreement commonly found throughout Niger-Congo.

See also Cobbinah (2013), who refutes the radical alliteration agreement hypothesis for Gubëeher, where similar observations hold.

To the best of my knowledge, among Atlantic languages in the broad sense of this term, Landuma and Baga Mandori (Mel) are the only languages for which, on the basis of the available data, the hypothesis of a radical alliterative agreement system seems to deserve consideration. In Landuma, according to Sumbatova (2003 and pers. com.), with inanimate nouns, any initial consonant can be copied as an agreement prefix on modifiers, irrespective of its phonological nature and its morphological status. On Baga Mandori, see Seidel (this volume)

## 6. Vestiges of a former noun class system in languages that do not have a synchronically active noun class system

Synchronically, Jaad and three of the five Cangin languages (Ndut, Palor, and Saafen) cannot be described as having noun classes manifested in agreement mechanisms operating in a variety of constructions. However, if class agreement has been lost as a syntactic mechanism, the morphological material involved in class agreement has been partly preserved. The languages in question still have a nominal classification system in the sense that their morphosyntax cannot be described without recognizing a partition of the set of nominal lexemes into subsets manifested in some morphosyntactic mechanisms. Moreover, the morphological material manifesting this partition of nominal lexemes into subsets is quite obviously cognate with class markers found in other Atlantic languages. However, the system has undergone a qualitative change, and cannot be analyzed as a noun class system, or even more generally as a gender system.

For example, Palor has only frozen vestiges of the former CMM's, and all that remains of the former CAM's is a paradigm of markers **f / m / k / Ø / V** that are historically the reflex of CAM's constituting the first formative of enclitic determiners, and synchronically combine with deictic or associative morphemes, as for example the proximal deictic marker **-a** illustrated in (27), to form determinative suffixes of nouns – ex. (13).

(27) Palor (Cangin)

| | | | |
|---|---|---|---|
| **pɛʔ** | 'goat' | **pɛʔ-f-a** | 'the goat' |
| **ñɪf** | 'blood' | **ñɪf-m-a** | 'the blood' |
| **tigal** | 'bed' | **tigal-k-a** | 'the bed' |
| **bʊʊr** | 'chief' | **bʊʊr-Ø-a** | 'the chief' |
| **andɪ** | 'tale' | **and-a-a** | 'the tale' |

Palor nouns divide into subsets according to their compatibility with one of these five markers, but these subsets are not 'noun classes' in the sense commonly given to this term in Niger-Congo linguistics, since the markers in question can occur only once within the limits of a given noun phrase, which excludes analyzing them as agreement markers in a gender system.

Since these markers occur exclusively between noun stems and a particular set of suffixes, the obvious conclusion is that their status in the present state of the languages in question is that of thematic suffixes in a system of inflectional classes of nouns.

## 7. Conclusion

In general, the analysis of the variation found in the noun class systems of the languages belonging to the North Atlantic and Bak groups shows that the typological diversity is greater among the noun class systems of North Atlantic languages than among those of Bak languages, and that, as a rule, the noun class systems of Bak languages stand closer to the Niger-Congo prototype than those of North Atlantic languages. Several types of deviation from prototypical Niger-Congo noun class systems that are relatively common among North Atlantic languages are not attested among the Bak languages for which sufficient documentation is available:

- Argument indexation mechanisms that do not reflect class distinctions are very common among North Atlantic languages, whereas all Bak languages have argument indexation systems sensitive to class distinctions.
- Noun class systems in which the nouns belonging to some class pairings, or even the nouns in general, do not show CMM's, can only be found in Wolof and Cangin.
- Languages in which number marking and number agreement may be dissociated from the noun class system can only be found in Biafada, Buy, and Ñun.
- Noun class systems in which the distinction between human and non-human classes is more or less blurred are found exclusively among North Atlantic languages.

Two other features reinforce the typological contrast between the noun class systems of the North Atlantic and Bak branches:

- Systems in which consonant alternations play a crucial role as an exponent of class distinctions are found exclusively among the languages of the North Atlantic branch.
- Semantic agreement triggered by humanness/animacy is more common among Bak languages than among North Atlantic languages.

In a broader typological perspective, among the phenomena examined in this chapter, the coding of generic reference by assigning the nouns in generic value to the human singular class (as in the Fouta Djalon variety of Fula) or by using human singular indexes with subject nouns belonging to other classes (as in Joola) is of particular interest in the sense that it does not seem to have been discussed in the typological literature on noun classes/gender.

## Abbreviations

CL = noun class, CPL = completive, DEF = definite, DEM = demonstrative, EQCOP = equative copula, HAB = habitual ID = identification marker, INCL = inclusive, INTERR =

interrogative, LK = linker, NEG = negative, PL = plural, PRF = perfect, REL = relativizer, SG = singular

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