

How to become a “Kwa” noun

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Abstract An important problem of comparative Niger-Congo morphology is understanding the processes that relate word structures in languages of the isolating “Kwa” type to those of the agglutinating “Bantu” type. A salient sub-problem of this larger morphological puzzle is charting the connection between the noun class systems of the Kwa-type languages which, at one extreme, can lack such classes entirely, against those of the Bantu type which, at the other extreme, are famously elaborated. This issue is examined by looking at a range of ways that Niger-Congo noun class systems have been observed to diverge from the canonical Bantu type. The main conclusion of this study is that Niger-Congo noun class systems are quite robust, in the sense that loss of one part of the system need not be correlated with loss of the other parts. This suggests that the level of noun class attrition found in Kwa languages was not a historically “natural” event and also has implications for models of agreement and inflectional morphology.

Keywords gender, agreement, inflection, Niger-Congo, Kwa, Bantu

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1 Surface morphological divergence in Niger-Congo

An important problem of comparative Niger-Congo morphology is understanding the processes that relate word structures in languages of the so-called “Kwa” type to those of the “Bantu” type.¹ As a first approximation, the differences between these groups of languages can be characterized as an opposition between relatively isolating Kwa-type languages and highly agglutinating Bantu languages (see, e.g., Hyman (2004)). This contrast can be seen, for example, by comparing the sentence in (1) from Fongbe, a Kwa language, to the sentence in (2) from Chichewa, a Bantu language. The Fongbe sentence in (1) contains no clearly synchronically morphologically complex words, while each of the Chichewa words in (2) are morphologically complex—nouns are coded for their noun class and the verb is coded for subject agreement, tense, and valency.²

- (1) *Kòkú sò àsón ɔ ná Àsíbá.*
 Koku take crab DEF give Asiba
 “Koku gave the crab to Asiba.” (Lefebvre and Brousseau 2002, p. 466)

- (2) *Chitsîru chi-na-gúl-ír-á atsíkána mphátso.*
 7.fool 7s-PST-buy-APPL-FV 2.girl 9.gift
 “The fool bought a gift for the girls.” (Alsina and Mchombo 1993, p. 18)

Given the central place that noun class systems have both within the grammars of specific Niger-Congo languages and as a family-level feature (Williamson 1989b, pp. 32–37), an important sub-problem of this larger morphological puzzle is charting the relationship between the noun class systems of languages of the Kwa type which, at one extreme, can lack such classes entirely, against those of the Bantu type which, at the other extreme, show noun classes systems which are complex even at a worldwide level (Corbett 2005). The goal of this paper, therefore, is to take a broad comparative perspective within Niger-Congo to examine the different ways that noun class systems in the family can manifest themselves, with an emphasis on understanding what kinds of changes could be involved with their reduction and, ultimately, their loss.

Many of the basic facts to be presented below have been well known to specialists in the Niger-Congo family for some time, and the present work has been anticipated

¹ The title of this paper draws on that of Hyman (2004), which, in turn, draws on that of Williamson (1985). A more apt title for this paper would perhaps be, “How to become a Kwa noun phrase”, but the shorter title is used to maintain parallelism with these earlier publications and is also a reflection of a commonly held idea that the lexical and morphological properties of nouns themselves have a central role in determining the properties of noun phrases.

² Following the recommendations of Haspelmath (2006, p. 30), I avoid use of the term *marked* here to refer to a category that is “overtly coded” in order to eliminate potential confusion between this sense of the word and other, more abstract senses. However, I retain use of the word *marking* to refer to the coding of noun class in general and the word *marker* to refer to specific formatives associated with noun class coding, since these terms do not present the same problem.

by a number of studies of low-level subgroups—or even dialect groups—of the family (see, e.g., Hyman et al (1970); Faraclas (1986); Connell (1987); Donwa-Ifode (1989); Gerhardt (1994); Mc Laughlin (1997); Storch (1997)). This paper’s primary new contribution is to situate the relevant facts in a broad comparative and theoretical context in order to make clear their significance to a more general audience. To the extent that this requires assembling data from across a number of branches of the family, this paper additionally can be understood as providing a more complete overview of the diversity of Niger-Congo noun class systems for non-specialists than has previously been available, highlighting, in particular, ways in which they can differ from the well-known Bantu noun class systems. Finally, this paper develops an updated descriptive framework for cataloging deviations from “canonical” Bantu-type noun class systems, which can assist with the detection and classification of such deviations more generally and gives it a heuristic value for the further analysis of Niger-Congo noun class systems—and, perhaps, beyond. The work reported here is not the result of a comprehensive survey. However, an effort has been made to ensure that it is representative, following the model of Hyman (2004, p. 72).

The rest of this paper is as follows. Section 2 introduces the terminology that will be used in this paper to describe noun class systems and gives some relevant theoretical background. Section 3 overviews relevant aspects of the Niger-Congo language family, providing, among other things, more details on the distinction between Kwa and Bantu. Section 4 offers data from a number of Niger-Congo languages, cataloging the different ways that attested systems can deviate from the canonical Bantu type. Some readers may find it profitable to skip ahead to this section, insofar as the primary aims of the earlier sections are to provide the background needed to fully understand the significance of the comparative data rather than to advance key descriptive or theoretical points. Sections 5 and 6 discuss the importance of the data presented here for both Niger-Congo prehistory and general morphological models of agreement and inflection. Section 7 offers a brief conclusion.

2 Noun class systems: Description and theory

2.1 Noun class system terminology

Of central interest to this paper are the grammatical properties of entire noun class systems. Accordingly, it will be important to be able to clearly refer to their different facets here. I use the term *noun class system* for the entire set of grammatical generalizations relating to the grouping of nouns into inflectional classes that may be reflected both on nouns themselves and in associated words.³ Within this domain, I use the term *class marking* for the morphological coding of noun class on a noun itself, e.g., via a prefix or a suffix, whether or not this coding is associated with concord

³ In the Niger-Congo literature one sometimes finds an opposition between the terms *noun class* and *gender* (see, e.g., De Wolf (1971, p. 42)). When the distinction is made, *noun class* is used to refer to the basic inflectional classes instantiated by the noun class system and *gender* is used to refer to the way those noun classes structure into singular/plural pairings (with the possibility of genders not exhibiting a singular/plural opposition). To avoid the potential for terminological confusion, here, I will, where relevant, simply refer to noun class pairings rather than using the term gender.

or agreement patterns. While this is consistent with much descriptive work on Niger-Congo languages (see, e.g., Lefebvre and Brousseau (2002, pp. 193–195)), it should be noted that it runs counter to typological work which reserves the term noun class only for cases where there is evidence for the class in patterns of agreement (Corbett 1991, p. 146). When referring to a specific noun class in a given language, I use the capitalized variant *Class* followed by a number (e.g., *Class 1*) or a pair of numbers (e.g., *Class 1/2*) when referring to a common singular/plural noun class pairing in that language.

I further use the term *concord* for patterns of noun class agreement within a noun phrase (e.g., involving determiners or adjectives) and the term *agreement* for patterns of agreement outside of the noun phrase or as a general term subsuming both concord and agreement phenomena. Concord will play a more prominent role in the discussion than agreement, largely because it is more robustly attested in the languages examined here.

The examples in (3), from Swahili (Bantu) illustrate the class, concord, and subject-verb agreement associated with the Bantu noun class system (see section 3.4)—which represents the elaborated extreme of the Niger-Congo noun class system continuum. The sentences in (3a) and (3b) are essentially identical syntactically except for the class of the noun referring to the subject. In (3a), this noun is from Class 1 (see table 1) and is associated with a class marker *m*, a concord marker which is also *m*, and a subject-verb agreement marker of form *a*. In (3b), by contrast, the subject noun is from Class 7 and is associated with class, concord, and agreement markers of form *ki*.

- (3) a. *M-toto m-dogo a-me-fika.*
 1-child 1-little 3s-ANT-arrive.FV
 “The little child arrived.”
- b. *Ki-kapu ki-dogo ki-me-fika.*
 7-basket 7-little 7-ANT-arrive.FV
 “The little basket arrived.” (see Katamba 2003, p. 111)

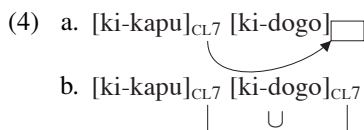
The example in (3) is intended only for initial illustration of the use of terms. Further details regarding Bantu noun class systems will be provided below in section 3.4.

As will be clear from some of the examples to be discussed in section 4, a two-way division between class marking and concord masks potential complexity within these categories where, for instance, marking may only be found for some classes in a given language or concord may be limited to only a handful of constructions. This situation is clearly seen, for example, in Hyman’s (1970) description of the noun class system of Fe’Fe’ (Bantoid), which has greatly reduced class marking and only overtly shows the full range of its noun classes in possessive constructions. Such “internal” variation within class marking and concord systems will be pointed out where relevant, but systematic discussion of it is outside the scope of this paper.

2.2 Modeling noun class systems

Because noun class systems can manifest themselves both through inflectional marking on specific words as well as patterns of agreement, they can serve as an interesting testing ground for theoretical models of these phenomena. Moreover, to the extent that synchronic models of morphology should be consistent with observed patterns of change, the variation in noun class systems that we see in a family like Niger-Congo can be especially useful in gauging their cross-linguistic validity. Some of the key issues are introduced here in order to provide context for the data to be presented in section 4. Exploring the significance of the Niger-Congo data for the understanding of these issues will then be taken up in sections 5 and 6.

As discussed in work like Barlow (1988, pp. 22–45), Corbett (2006, pp. 114–116), and Wechsler (2009, pp. 385–390), there have been two broad analytical approaches to modeling agreement. One involves a mechanism that copies features from an agreement trigger (e.g., a noun) to an agreement target (e.g., an adjective). The other does not propose such a trigger–target asymmetry and suggests, instead, that the relevant agreement features on each must be consistent in a way that allows them to unify with each other (i.e., allows their agreement information to be combined without contradiction). These two possibilities are informally schematized in (4), with (4a) schematizing a copying relation and (4b) a unification relation. The forms in (4) are based on the subject of (3b). While for forms like those in (3b), either analysis may be equally justifiable, some of the less canonical instances of agreement to be presented in section 4 will be argued in section 6.2 to support unification models over copying ones.



In a different domain, Stump (2001, pp. 1–3) presents a typology of formal models of inflectional morphology across two independent dimensions: whether they are *lexical* or *inferential* and whether they are *incremental* or *realizational*. Roughly speaking, lexical theories assume that inflectional markers should be treated analogously to canonical lexical items—that is, they should be listed as signs in a language’s lexicon. Inferential theories treat the relationship between a root and its inflected form via rules that relate the root to the various members of its paradigm. Incremental theories of morphology assume that the addition of inflectional morphology adds information that is missing in a root (e.g., that a verb is in present tense). Realizational theories instead treat the appearance of inflectional morphology as the result of a word already being associated with the information the morphology is an exponent of.

To the extent that noun class systems represent a relatively complex kind of inflectional morphology, the comparative data from a family like Niger-Congo, again, serves as a useful testing ground for general models of inflection, and, it will be argued in, section 6.3 that, on the whole, the Niger-Congo data would seem to support inferential-realizational approaches over the others—though, interestingly, at least

one language appears more consistent with an incremental rather than realizational model, suggesting that both may be needed in a complete framework for analyzing inflectional morphology.

At the same time, it will also be seen in section 6.4 that the comparative data presented here is not merely useful for helping us choose from among existing proposals but also raises new issues. Specifically, there is evidence that noun class marking in some Niger-Congo languages may be better considered to be specified, at least partly, at something like the phrase-level rather than the word-level. It will be argued, therefore, that, when modeling phenomena like class marking and agreement, we may need to consider the possibility that noun class realization may not always derive from purely morphological features that a given phrase may “inherit” but, rather, can also be specified at the level of the syntactic construction, an idea I am not aware of having been previously proposed in the general literature on agreement.

This last point underscores the value of a comparative approach like the one taken in this paper insofar as it does not merely allow us to refine existing theories but also prompts consideration of possibilities that may otherwise have gone unnoticed. Of course, within Niger-Congo, Bantu languages have already been of significance in developing theories of agreement for some time (see, e.g., Harris (1945) for an early example and Baker (2008, pp. 157–171) for a more recent one). As will be seen, this study offers additional possibilities for the family to contribute to such discussion.

3 Niger-Congo background

3.1 The important features of the Niger-Congo family for this study

This paper is based on the premise that taking a broad comparative perspective in the examination of Niger-Congo noun class systems will not only help us understand the dynamics of morphological change within Niger-Congo itself but also of morphological systems more generally. Therefore, to fully contextualize the arguments to be presented below, it will be useful to have some understanding of how the different languages to be discussed fit into the larger Niger-Congo picture (section 3.2) and to summarize the current understanding of the shape of the noun class system of Proto-Niger-Congo (section 3.3). Section 3.4 discusses in detail the contrast between the Kwa-type languages, which have essentially lost their noun class systems, and the elaborated noun class systems found in canonical Bantu. This will set the stage for section 4, which looks at different ways that Niger-Congo noun class systems can “break down” in order to shed light on the processes that might have contributed to the complete loss of noun class systems in languages of the Kwa-type.

Readers interested primarily in the broad historical and typological patterns, as opposed to the comparative details, can safely skip sections 3.2 and 3.3 and can reasonably assume, at least in the context of the discussion here, that the noun class systems of canonical Bantu languages approximate the Proto-Niger-Congo situation, while the lack of noun class systems in languages of the Kwa type is innovative.

3.2 Relevant aspects of the composition of Niger-Congo

The Niger-Congo languages comprise the largest referential language group in world (Williamson and Blench 2000, p. 11), dominating Sub-Saharan Africa geographically. The extent to which this group of languages forms a true genealogical unit is far from clear, though the language groups of focus here, Kwa and Bantu—as well as others to be discussed in detail in section 4—are part of a presently uncontroversial “core” of the family (see, e.g., Dimmendaal (2008, pp. 841–842), Güldemann (2008)).⁴

Kwa languages are found in southern West Africa from Côte d’Ivoire to the Nigerian border, in a contiguous band along the Atlantic coast moving substantially inland. Directly to the east of the Kwa languages are the Benue-Congo languages, of which the Bantu languages are widely viewed to constitute a low-level subgroup (Greenberg 1966, pp. 37–38; Schadeberg 2003b, p. 155). Non-Bantu Benue-Congo languages dominate southern Nigeria and are also found in adjacent regions of Cameroon, geographically connecting Kwa to Bantu. The Bantu languages themselves are found in a large area of southern Sub-Saharan Africa from southern Cameroon to Kenya to South Africa.

Despite the acceptance of broad genealogical relationships, precise delineations of Kwa and Bantu have not been established (Stewart 1989, pp. 217–222; Williamson and Blench 2000, pp. 17–18; Nurse and Philippson 2003b, pp. 5–7). A key issue in the case of Kwa is locating a boundary between Kwa and Benue-Congo. A key issue in the case of Bantu is locating the boundary between a group of “true” Bantu languages, conventionally referred to as Narrow Bantu, and the family’s closest relatives within Benue-Congo.

The lack of clear diagnostic criteria for a Kwa genealogical subgroup has resulted in the label being used both for a putative genealogical unit and for a language type within Niger-Congo (see, e.g., Greenberg (1963, p. 217) for an early statement on this point and Aboh and Essegbey (2010, p. xi) for a recent such use).⁵ The most salient typological feature associated with Kwa is reduced morphology, as will be discussed in more detail in section 3.4. It is the typological sense of Kwa that is largely intended here, but, for purposes of clarity, this will be referred to as the *Kwa type*, while the plain word *Kwa* will refer to the genealogical unit.⁶

For the purposes of the present paper, the lack of clarity regarding what languages belong to the Kwa and Bantu groups, and precisely how the groups relate to each other, will not be a crucial impediment. Here, the focus is on understanding the diverse manifestations of noun class systems in Niger-Congo in order to come to a general understanding of the nature of the processes that have affected them, rather than to develop a specific historical scenario. This requires, of course, some sense of

⁴ In fact, it has even been proposed that, together, Kwa and Bantu are part of a low-level subgroup within Niger-Congo (Williamson and Blench 2000, pp. 16–18), though this is not universally accepted (Stewart 1976, p. 6; 2002, p. 205).

⁵ Elugbe (1989, p. 292) typifies this dual sense of “Kwa” in writing, “The Kwa-ness of Edoid was apparently never in doubt. . . In light of recent developments, however, the Edoid group is now classified under the new Benue-Congo.”

⁶ When classifying a language as genealogically *Kwa*, I understand this to refer to the so-called “New” Kwa group (see Williamson and Blench (2000, pp. 27–30)), following what appears to be standard practice at present.

the features of the noun class system of the parent language (see section 3.3) but does not require a detailed family tree.

Niger-Congo subgroup names to be referenced prominently below other than Kwa and Bantu include Benue-Congo (already mentioned above), Bantoid, Gur, Kru, and North Atlantic. The Bantoid group (see Watters (1989)) comprises the well-known (Narrow) Bantu languages and their closest relatives found in Cameroon and Nigeria at the northwest border of the Bantu area. Benue-Congo (see Williamson (1989a)), in turn, comprises Bantoid and its closest relatives, some of which are close to (and even border) Kwa geographically and, as we will see, exhibit the typological profile of “true” Kwa languages. Throughout the paper, reference to a language as Bantoid should be understood as “non-Bantu Bantoid”, and reference to a language as Benue-Congo should be understood as “non-Bantoid Benue-Congo”. That is, the more precise terms will be used unless they are not appropriate.

The Gur subgroup (Naden 1989) is found in an inland region of West Africa, including the bulk of Burkina Faso, southern parts of Mali, northern parts of Côte d’Ivoire, Ghana, Togo, and Benin, as well as a small portion of western Nigeria. Its southern and eastern borders are with Kwa and Benue-Congo languages respectively. While the present paper only discusses data from two closely related Gur languages in detail, Dagaare and Dagara, (see sections 4.2 and 4.4), there has been significant historical-comparative investigation into the noun class systems of the subgroup, as evidenced recently by Miede and Winkelmann (2007). The Kru languages (Marchese 1989) are found in a strip along the West African coast directly to the west of Kwa including the southwestern part of Côte d’Ivoire and much of Liberia.

North Atlantic languages (Wilson 1989, pp. 37–40) were historically geographically detached from the other languages under consideration here, stretching along the Senegal coast and points southward to Guinea (though the Fula subgroup has spread much more widely in recent times). These languages are noteworthy for being morphologically much closer to the Bantu type than the Kwa type despite their geographic distance from Bantu—a pattern also encountered, though less strikingly, in some languages of the Kordofanian group (Schadeberg 1989), found in a detached area to the northeast of the rest of Niger-Congo in the Nuba mountains of Sudan.

The subgroups of Niger-Congo discussed in this paper do not represent the whole family. The lack of discussion of some subgroups, for example Mande and Ubangian, reflects the tenuous nature of the evidence connecting them to other Niger-Congo languages (Dimmendaal 2008, p. 842), making them less than ideal candidates for a comparative study like this one. In other cases—for example Adamawa—the lack of discussion simply reflects the fact that this survey is not systematic and is biased towards languages that I am more familiar with. Nevertheless, I believe the examples to be discussed below are, on the whole, fairly representative of the diversity of noun class systems found within the family.

3.3 The noun class system of Proto–Niger-Congo

That Proto–Niger-Congo had some sort of noun class system appears to have never been seriously questioned (Heine 1980, p. 99). Indeed, evidence of noun classes is

one of the key diagnostics for family membership. While there is no generally accepted full reconstruction of the Proto–Niger–Congo noun class system, much relevant work has been conducted within branches of the family, in particular regarding the form of class prefixes on nouns (Williamson 1989b, pp. 37–40). The number of noun classes that can be reconstructed for the family does not appear to be as high as the number found in canonical Bantu, but there is still evidence that it would have been fairly large, perhaps even more than ten (Williamson 1989b, pp. 38–39), and De Wolf (1971, pp. 51–59) reconstructs fifteen for the Benue–Congo subgroup to which Bantu belongs. An aspect of noun class reconstruction for Proto–Niger–Congo that has seen a noteworthy amount attention is how to account for the fact that some Niger–Congo groups (e.g., Bantu) show class prefixes while others, as will be seen in section 4, show suffixes (see, e.g., Hoffman (1967, pp. 252–254), De Wolf (1971, pp. 180–182), Welmers (1971, p. 15), Greenberg (1977, 1978), Childs (1983), Williamson (1989b, pp. 31–37), and Dimmendaal (2001, pp. 378–381)). Mieke’s (1991) study, though focused on the specific issue of noun class prefixes containing nasal consonants, presents the most recent readily available overview of what is known about the noun class systems of Benue–Congo and Kwa, and, therefore, serves as a valuable initial reference on the topic.

There has not been significant work on reconstructing concord marking for Proto–Niger–Congo, though, again, such work has been conducted within branches of the family (see, e.g., Meeussen (1967, p. 97) for Bantu and De Wolf (1971, pp. 51–50) for Benue–Congo), though it must have been present at least in the form of concord with noun modifiers (see, e.g., Mukarovsky (1977, p. 35), Güldemann (2011, p. 131)). The possibility of subject–verb agreement at the Niger–Congo level of the sort seen in Bantu examples like (2) is less clear given that, even for Bantu, it has been suggested that this might be the result of shallow grammaticalization processes (see, e.g., Güldemann (2003, pp. 183–187; 2011, pp. 123–129) and Nurse (2008, pp. 69–72)), but the facts are complicated and, even if the characteristic Bantu prefix pattern (see Nurse (2008, p. 31)) is a late innovation, this does not mean that some form of subject agreement could not have been an earlier development, especially given that subject–verb agreement appears to be a robust feature of Cross River (Benue–Congo) languages (Faraclas 1986, p. 51) (see also Hyman 2007b, 2011:§4).

It would clearly be helpful in a work like this one to be able to work from a widely-accepted reconstruction of the Proto–Niger–Congo noun class system which could serve as a kind of baseline for comparison among the daughter languages. However, the most significant features of Proto–Niger–Congo, for present purposes, appear to be secure: a relatively large number of noun classes with accompanying concord. This tells us, crucially, that one way in which Kwa-type languages are innovative is the extent to which they have lost synchronic reflexes of noun-class phenomena that were present in Proto–Niger–Congo.

3.4 The Kwa and Bantu types

The basic characteristics of the Kwa type were laid out as early as Westermann and Bryan (1952, pp. 90–94), and some of the features relevant to the group’s morpho-

logical profile are given in (5). It is important to bear in mind that the sense of *Kwa* of primary interest here is as a label for a type of Niger-Congo language—with the most salient feature of that type in the present context being the lack of noun classes—not as a label for a putative genealogical unit. As indicated in section 3.2, the ambiguous use of this name is not specific to this work but is found more generally in work on comparative Niger-Congo.

- (5) a. Most roots (verb or noun) are monosyllabic, of shape CV
 b. No true noun classes, but relics of them can be found; no concord
 c. There are no verbal derivatives (e.g., passives, causatives, applicatives)
 d. The verb root is invariable (e.g., it is not coded for tense or agreement with the subject)

While Westermann and Bryan (1952) treated Kwa as a genealogical unit, the languages comprising their proposed group are today split across Kwa and Benue-Congo in reference classifications (Williamson and Blench 2000, pp. 30–31). Within Kwa itself, some languages, like those of the Gbe group, as exemplified by Fongbe in (1), are closer to the Kwa type than others, like Akan, which shows a system of number marking making use of class markers and also very limited concord, involving number agreement, in at least one adjective (Christaller 1875, pp. 33–36, 47; Welmers 1946, pp. 41, 46; 1971, pp. 4–5; 1974, p. 256). Indeed, there are even languages conventionally classified as Kwa which have more or less “complete” noun class systems such as members of the Ghana-Togo Mountain group (see Heine (1968, pp. 112–130) and Schuh (1995)).

At the same time, one finds languages classified as Benue-Congo—the Niger-Congo subgroup to which Bantu belongs—adhering closely to the Kwa prototype, such as Yoruba, Igbo, Nupe, and Edo. Information on their (either remnant or lack of) noun class patterns can be found in Ogunbòwale (1970, pp. 32–39) for Yoruba, Green and Igwe (1963, pp. 13–20) for Igbo, Banfield and Macintyre (1915, pp. 19–20) and Smith (1967, pp. 46–47) for Nupe, and Dunn (1968, p. 207) for Edo. These languages are all found in an area of southern Nigeria whose western border abuts Kwa languages.

Relevant characteristics of Bantu languages can be characterized as in (6). As with Kwa, it is not the case that all Bantu languages adhere strictly to this type, which is more closely associated with so-called Savanna Bantu in the east and south of the Bantu area than the northwest Bantu languages (Nurse and Philippson 2003b, pp. 7–10). Each of the “Bantu” characteristics given in (6) are intended to parallel the characteristics given for the Kwa type in (5).

- (6) a. Canonical verb roots are -CVC-, though longer roots are not uncommon; verbs generally surface as minimally -CVCV; canonical noun roots have shape -CVCV (see, e.g., Meeussen (1967, p. 86) for verbs and the figures in Teil-Dautrey (2008, pp. 60–61) for verbs and nouns)
 b. Robust noun class systems; extensive concord and agreement (Maho 1999; Katamba 2003)
 c. A number of verbal suffixes (e.g., passive, applicative, causative), forming derived verb stems are well-attested and reconstructed in the family

(Schadeberg 2003a); multiple suffixes appearing on a single verb root is common (Hyman 2003; Good 2005)

- d. Tense and agreement prefixes are well-attested and have been reconstructed for the family (Meeussen 1967, pp. 108–111; Nurse 2008, pp. 226–283)

Non-Bantu Niger-Congo languages most closely adhering to the Bantu type are found at the family's northwest periphery (roughly in the area of Senegal) in the North Atlantic branch, as discussed in section 3.2. Noun class systems in this group roughly comparable to those seen in Bantu (especially when set against the Kwa type) can be found, for example, in Fula (Arnott 1970, pp. 67–109), Seereer (Mc Laughlin 1992, pp. 26–32), Manjaku (Doneux 1967; Kihm 2005, pp. 463–469), and, to a lesser extent, Wolof (Njie 1982, pp. 55–59; Mc Laughlin 1997).⁷

The examples in (3) illustrated the elaborated pattern of class, concord, and subject-verb agreement marking found in a canonical Bantu noun class system. Of additional relevance here is the number of classes that can be found. Table 1 adapts and simplifies the Proto-Bantu noun class overview of Maho (1999, p. 51).⁸ The forms in the table list the reconstructed class prefixes found on nouns, including proposed singular/plural pairings where relevant. It is additionally possible to reconstruct concord and subject-agreement prefixes (see, e.g., Meeussen (1967, p. 97)), which are often, but not always, closely formally related to the prefixes found on nouns.

SINGULAR		PLURAL	
1	mù-	2	βà-
3	mù-	4	mì-
5	lì	6	mà-
7	kì-	8	βj-
9	nì-	10	lì-nì-
11	lù-		
12	kà-	13	tù-
14	βù-		
15	kù-		
16	pà-		
17	kù-		
18	mù-		
19	pì-		

Table 1 Proto-Bantu noun classes

The class that a given noun belongs to is not necessarily completely arbitrary. For example, Class 1/2 is closely associated with nouns referring to humans. But, at

⁷ As pointed out by Dimmendaal (2008, pp. 842–843), the conservative nature of the Bantu and Atlantic noun class systems follows a general pattern of morphological conservatism of Niger-Congo languages at the family's periphery. Such conservatism is also seen, for instance, in Niger-Congo languages of the Nuba mountains associated with the name Kordofanian, which have similarly been found to show fairly robust noun class systems (see, e.g., Stevenson (1956–1957, pp. 117–152; 2009, pp. 18–31, 145–177; Schadeberg (1981a, pp. 132–152; 1981b, pp. 112–129; 1989, pp. 76–79).

⁸ The symbol *i* in table 1 represents the highest front vowel in a seven vowel system (see Schadeberg (2003b, p. 147)).

the same time, assignment cannot be said to be primarily semantically motivated (Katamba 2003, pp. 114–119). A number of the classes (e.g., 12/13 and 15–19) are associated with derivational or quasi-derivational functions (e.g., the creation of diminutives or locatives from nouns in other classes or nominalizations) and are, thereby, associated with consistent semantics, though few nouns are typically inherent to such classes (Maho 1999, pp. 64, 88–99).

As pointed out by Maho (1999, pp. 50–55), one does not generally (if ever) find a modern Bantu language exhibiting the full number of noun classes that has been reconstructed. Nevertheless, one frequently finds languages with fifteen or more classes, and large noun class systems are typical of the family. One does also find Bantu languages with highly reduced noun class systems (Maho 1999, pp. 127–142)—some of which could even be reasonably viewed as closer to the Kwa type than the canonical Bantu type.⁹ Therefore, this study is potentially relevant not only for understanding how the Kwa type relates to Bantu but also for understanding patterns found within Bantu itself.

Shifting back to Kwa-type languages, table 2 illustrates patterns in data drawn from the Kwa language Fongbe (Lefebvre and Brousseau 2002, pp. 193–194) which appear to be the strongest evidence for the presence of anything like a noun class system in that language (see also Westermann (1930, pp. 43, 167–169) for discussion of the closely related language Ewe). These all involve potential class markers on the noun. Lefebvre and Brousseau (2002, p. 183) otherwise explicitly state, “There are no verbal affixes encoding subject or object agreement, tense, mood, or aspect. Nor are there any morphological markers specific to the noun system to indicate, for example, gender, number, or case.”

NOUN	GLOSS	ROOT	GLOSS
<i>à-dɔ</i>	‘nest’	<i>dɔ</i>	‘sleep’
<i>à-sá</i>	‘leg’	<i>sá</i>	‘crawl’
<i>à-sɔn</i>	‘crab type’	* <i>sɔn</i>	—
* <i>à-fún</i>	—	<i>fún</i>	‘blow’

Table 2 Fongbe nominal prefixes

The forms in table 2 show some possible derivational connections between nouns and verbs in Fongbe involving vocalic markers. As can be seen, the semantic connections between the nouns and the verbs are not entirely transparent, and the pattern is not fully productive. The markers cannot be straightforwardly considered inflectional morphology coding something as a noun since many nouns lack such marking. At the same time, in certain syntactic contexts these vowels must be dropped, indicating that

⁹ For example, there are descriptions of Bantu languages at the northern periphery of the Bantu area with extremely reduced noun class systems, including one language, Komo, which is reported to have no noun classes (Guthrie 1971, p. 42; Thomas 1992:4) (see also Maho (1999, p. 53)). None of these languages appears to be well described but, presumably, the reduced systems are connected to the fact that they are spoken in areas where Bantu languages are in contact with languages from other groups (see section 5). While Komo is unambiguously stated not to have noun classes, data from Thomas (1992, pp. 76–81) shows that verbs can be coded for subject-verb agreement, and perhaps object agreement, for person and number.

they are at least partly analyzable (Lefebvre and Brousseau 2002, pp. 194–195). Patterns like this in Niger-Congo languages are generally viewed as constituting relics of more elaborate noun class systems (see, e.g., Welmers (1971, pp. 3–6)). However, such interpretations are made on the basis of comparative, not synchronic, evidence. This illustrates the extreme nature of the differences between the Kwa and Bantu types: One has elements which can, at best, be reconstructed as part of a noun class system, while the other has, essentially, a textbook example of such a system.

The presence and absence of noun classes in the Niger-Congo has long been recognized as not being a simple “on or off” matter, like what is seen when one opposes Bantu directly to Kwa.¹⁰ Rather, one finds a wide range of systems of differing levels of elaboration, leading Greenberg (1949, p. 90), for example, to state: “The drift in Niger-Congo has been in the direction of the simplification of the nominal classificational system. This has reached its climax in [Mande] and some of the Kwa languages in which the affixes have been entirely lost and an isolating system results.” While, here, it is not assumed that the relationship between the two kinds of systems can be treated as a simple matter of drift from more complex to less complex (see section 5), this remark reflects the variable nature of the observed synchronic systems, as will be made clear immediately below in section 4.

4 What can happen to noun class systems

4.1 Overview

This section exemplifies various synchronic patterns found in noun class systems in Niger-Congo which are instructive in understanding the relationship between the Bantu-type and Kwa-type systems. The focus is on different ways in which a noun class system can depart from what is found in a canonical Bantu language, as exemplified by the Swahili data in (3). Many of the examples will be drawn from Bantoid languages spoken in a “buffer zone” (see Stilo (2005)) between Kwa-type and Bantu-type languages found around the southern Cameroon-Nigeria border, both because they are languages that I am familiar with and because the transitional systems found in this area are especially revealing of the processes through which noun class systems can “break down”.¹¹ Other Benue-Congo language groups in this area have been described as showing comparable patterns, such as Cross River (Faraclas 1986) and Platoid (Gerhardt 1994), and the transitional typological status of languages in this region has been recognized for some time in various guises (see Williamson (1971, pp. 246–248)).

¹⁰ Dimmendaal (2001, pp. 377–382) contains a concise summary of significant descriptive aspects of Niger-Congo noun class systems, including an overview of the extent to which class marking and concord is present across major subgroups of the family.

¹¹ This is not a new observation. It appears to have been recognized at least as early as Hyman’s (1970) discussion of the Bamileke (Bantoid) languages (which was to some extent anticipated by Voorhoeve (1968)). Descriptions of the noun class systems of Bantoid languages in this area can be found in numerous works, but it is worth singling out Hyman and Voorhoeve (1980) and Hyman (1980a) as collections dedicated to the topic.

Section 4.2 exemplifies the possibility of a language with robust class marking on the noun but no evidence for class-controlled concord. Section 4.3 exemplifies the reverse pattern: concord without class marking. It also illustrates how class marking can be achieved via non-segmental means, in principle allowing it to be found in a language with strong constraints on word size. Section 4.4 discusses cases where absence of class marking, rather than being interpretable as a symptom of “decay” of a noun class system is, instead, found to mark certain grammatical constructions. Section 4.5 illustrates the possibility of dissociation between class marking and concord, while section 4.6 shows the association being maintained even under fluctuation of a noun’s apparent lexical noun class. Finally, section 4.7 illustrates the possibility of noun class systems becoming restructured in a more semantically transparent way.

4.2 Class marking without concord

The noun class system of Dagaare, a Gur language spoken in Ghana and Burkina Faso, adapted from Dakubu (2005, pp. 42–45), is given in table 3 (see also Bodomo (1997, pp. 55–60)). Dakubu’s Class 4, which is small in size, is not included. The class numbers in table 3 are used for singular/plural pairings following a convention quite distinct from that used for Bantu languages. Noun class markers are suffixing in Dagaare (and in Gur generally (Naden 1989, p. 158)). Capitalized letters in the suffix forms indicate vowels whose quality changes depending on the shape and final vowel of the stem.

CLASS	SUFFIXES	SINGULAR	PLURAL	GLOSS
1	-a/-ba	<i>pəga</i>	<i>pəgba</i>	‘woman’
2	-E/-rI	<i>bíe</i>	<i>bíri</i>	‘child’
3	-rI/-A	<i>nyágrI</i>	<i>nyága</i>	‘root’
5	-UU/-rI	<i>píruvv</i>	<i>pírì</i>	‘sheep’
6	-aa/-rI	<i>ɣmáràa</i>	<i>ɣmárì</i>	‘moon’
7	-Ø/-rI	<i>zâ</i>	<i>zúrí</i>	‘head’
8	-Ø/-nEE	<i>mui</i>	<i>muinee</i>	‘rice’

Table 3 Dagaare (Gur) noun classes

There is no concord of the Bantu type in Dagaare. One does find agreement patterns sensitive to number and humanness (see section 4.7), but these are not related to the noun class system (Dakubu 2005, pp. 49–50). Thus, while Dagaare has a robust system of class marking on nouns, as observable in the singular/plural pairings, it is not accompanied by class-based concord. This shows that the presence of class marking is not dependent on concord marking. We will see the reverse situation: concord without class marking in section 4.3. Gerhardt (1994, p. 169) similarly reports that, in the Platoid group (Benue-Congo), one finds both situations.¹²

¹² These observations are not obviously congruent with suggestions in Demuth et al (1986, p. 462) (see also Dimmendaal (2001, p. 381)) that concord is more robust than noun class marking in Niger-Congo,

The retention of class marking despite the loss of concord will be taken below in section 6.3 to constitute evidence for an inferential, rather than lexical, approach to inflectional morphology (see section 2.2 for discussion of the distinction).

4.3 Concord without class marking and non-segmental class marking

The Dagaare data in section 4.2 exemplifies a system which shows class marking without concord. The reverse situation is also found. This is seen, for example, in the Cameroonian Bantoid language associated with ISO 639-3 code [boe] spoken in the villages of Buu, Mufu, and Mundabli (see Hamm et al (2002); Good et al (to appear)), with the data in this section being drawn from the Mundabli variety.¹³ The class numbering attempts to relate the Mundabli noun classes to Proto-Bantu ones (see table 1) by using the same numbering system but should not be considered a definitive reconstruction. Table 5 gives examples of nouns in each of the classes given in table 4.¹⁴

SINGULAR			PLURAL		
1	∅-	w`-	2	bà-	b´-
3	w-	w´-	4	y-	y´-
5	∅-	w´-	7	∅-	k´-
7	∅-	k´-	8	∅-	b´-
9	`-	y´-	10	`-	y´-
19	fì-	f´-	18	mù-	m´-
6a	N-	m´-			
14	∅-	b´-			

Table 4 Mundabli (Bantoid) noun classes

The first form associated with each class in table 4 indicates the (regular) form of the class marker on nouns. The second form indicates the shape of associated concord markers (see (7) for examples). Classes 6a and 14 are associated with nouns which do

though perhaps a comprehensive survey might reveal this to be a tendency in the family, if not an absolute pattern.

¹³ The data in this section is derived largely from fieldwork conducted by Rebecca Voll and the author, extending and corroborating the description of Hombert (1980) for Buu (see Good et al (to appear), § 3.3) for further discussion). There is dialect variation among the three villages, and the dialect of Buu does not show all of the patterns of interest below. In particular, it exhibits overt prefixal marking on Class 7 and 8 nouns (see Hombert (1980, pp. 87–88)). While the grammatical features of the language of relevance here are securely documented, some aspects of the data (e.g., tone marking) may require revision. Tone conventions are as follows: à–low tone, ā–mid tone, á–high tone, ǎ–super-high tone, ǎ–low-to-high rising tone, à–mid-to-low falling tone, â–high-to-mid falling tone, â–high-to-low falling tone, à–low-to-mid rising tone, and ǎ–mid-to-high rising tone.

¹⁴ Class 7 is described as being associated with both singular and plural nouns (in different pairs) in table 4 because of formal identity of the concords in the relevant singular and plural forms, though this is surprising from a Proto-Bantu perspective, where Class 7 is only reconstructed as a singular class, suggesting that the plural forms associated with Class 7 in Mundabli here have a distinct diachronic source from the singular. The problem of the proper identification of the historical class for this group of plurals was already recognized by Hombert (1980, p. 93).

SINGULAR	PLURAL	GLOSS
1 <i>ɥkǒŋ</i>	2 <i>bàɥkǒŋ</i>	‘chief’
3 <i>gbḗ</i>	4 <i>dzḗ</i>	‘house’
5 <i>yí</i>	7 <i>yí</i>	‘eye’
7 <i>nəm</i>	8 <i>nəm</i>	‘belt’
9 <i>nyám</i>	10 <i>nyám</i>	‘animal’
19 <i>fjĩ</i>	18 <i>mùjĩ</i>	‘small dog’
6a <i>ngĩ</i>		‘water’
14 <i>nyām</i>		‘fufu’

Table 5 Examples of Mundabli (Bantoid) noun classes

not exhibit a singular/plural distinction.¹⁵ Grave and acute accents in table 4 should be interpreted as indicating that a given class or concord is associated with a lower or higher tone (respectively) than segmentally homophonous counterparts, but with the precise tonal realization dependent on the stem that the relevant marker appears with. The superscript *w* and *y* shown for Classes 3 and 4 signify noun class marking involving initial consonant mutations where Class 3 is associated with a labialized consonant and Class 4 a palatalized one (see (7a)). This pattern is connected to a small-scale areal phenomenon discussed in Kießling (2010b).

As can be seen in table 4, the Mundabli noun class system is both reduced and much more formally heterogenous than the reconstructed Proto-Bantu system given in table 1, with class marking involving not only segmental prefixes but also consonant mutations and tonal ablaut. Systems like this (see also section 4.5) have long been recognized as having Bantu features, but, at the same time, the clear divergence in their class systems from canonical Bantu has led to their classification outside of Bantu proper, first under the label of “Semi-Bantu” (Johnston 1919) and later under the label Bantoid.

The data in (7) exemplifies the concord patterns for Classes 3/4 (7a), 5/7 (7b), 7/8 (7c), and 9/10 (7d). These are the classes not associated with segmental class marking.

- (7) a. Class 3/4: *gbḗ wén* ‘3.house 3.this’ / *dzḗ yén* ‘4.house 4.this’
kpān wén ‘3.wood 3.this’ / *tswān yén* ‘4.wood 4.this’
 b. Class 5/7: *yí wǎmwó* ‘5.eye 5.one’ / *yí kǎfíē* ‘7.eye 7.two’
 c. Class 7/8: *kḗ kén* ‘7.bone 7.this’ / *kḗ bén* ‘8.bone 8.this’
 d. Class 9/10: *jǔ yén* ‘9.goat 9.this’ / *jǔ yén* ‘10.goat 10.this’

Two important points emerge from the Mundabli data. The first, as already mentioned, is that it attests to the possibility of concord being maintained even in the absence of class marking, as seen in five of the language’s thirteen classes. Mc Laughlin (1997, p. 2) describes a similar situation for Wolof (North Atlantic).¹⁶ Such a pattern is not especially surprising given that it is simply an instance of the generally attested

¹⁵ See Hyman (1980b, p. 183) for discussion of Class 6a, associated with liquids, clarifying why it has been linked to Class 6.

¹⁶ Sauvageot (1967, p. 232) reports an interesting pattern in Bainuk (North Atlantic) where some nouns not coded for class actually trigger the creation of new alliterative concord based on the form of their first syllable (see also Sauvageot (1987)).

phenomenon of “covert” gender (see Corbett (1991, pp. 117–119)). And, even in Bantu, one finds a group of nouns without class marking that belong to concord Class 1 (e.g., proper names) throughout the family (see Van de Velde (2006)). Nevertheless, it is of interest here as part of the catalog of patterns found in Niger-Congo noun class systems, which is especially well-attested in Mundabli insofar as it is found across multiple classes and even within paired singular/plural classes. This data will be argued in section 6.2 to support models of agreement involving unification, rather than copying, of features and in section 6.3 to support realizational approaches to inflectional morphology over inferential ones (see section 2.2 for discussion).

The second point to note about this data is how it reveals that marking of class on the noun can be done via non-segmental means, either via consonant mutation as seen in (7a)—a phenomenon found even more robustly in the North Atlantic language Fula (Arnott 1970, pp. 93–109) as well as elsewhere in Mundabli’s area (Kießling 2010b) and in Platoid (Benue-Congo) (Gerhardt 1994, pp. 164–165)—or via tone marking, as seen in (7d), a pattern found in a number of other languages spoken in the area around Mundabli (Hombert 1980, pp. 91–92) (see also section 4.5). In both cases, this noun class marking can be traced to earlier segmental prefixes some of whose features became absorbed into their stem. In the case of Class 3/4, the relevant prefixes were of shape *u-/i-*, and, in the cases of Class 9/10, the relevant prefixes were of shape *ɪ-/ɪ-*. (See section 4.6 for a language of the same region as Mundabli where the historical shapes of these prefixes are maintained.) While reduction in the size of roots may be associated with the loss of a noun class *prefix*, what we see here is that this need not imply loss of noun class *marking*.¹⁷ A prefix can be lost, but some of its features can still survive, maintaining the relevant distinctions.

Something similar is seen in Kru languages, but on the other side of the stem. Marchese (1988, p. 337), for example, describes a noun class system in Godié where there is a strong correlation between the final vowel of a noun and its noun class, due to the absorption of noun class suffixes into the noun stem (Marchese 1988, pp. 330–332) (see also Dawson (1975), Kaye (1981, 1982), and Bing (1987)). This, too, creates a path through which the overall size of a noun may be reduced—via replacement of an original stem-final vowel by the former class suffix—without class marking being lost.

What is important about these phenomena in the present context is it suggests that reduction of stems alone cannot explain the loss of class marking on nouns in Kwa. In principle, a Niger-Congo language could reduce its nouns to, say, a CV-shape (see (5)) but still maintain class marking via consonant mutations, tonal alternations, or vowel ablaut—to take just the possibilities I am aware of. This point will prove significant in section 5 when the issue of the extreme nature of the processes that produced Kwa-type nominal systems will be discussed in detail.

¹⁷ Donwa-Ifode (1989) suggests another kind of sound change—loss of vowel distinctions—may also be associated with reduction of noun class systems, specifically when the result of such change is that historically distinct prefixes become formally merged.

4.4 Constructionally-conditioned class marker loss

Another pattern of interest here are cases where the absence of class marking on a noun is constructionally conditioned and, therefore, to some extent meaningful. This implies that loss of a marker need not be viewed simply as a matter of “decay” but, rather, can become entrenched as a significant grammatical pattern in its own right. I will focus on two examples of this here, one from the Bantoid language Aghem (Hyman 1979a) and one from Dagara (Gur) (Delplanque 1997), a close relative of Dagaare discussed in section 4.2.

The examples in (8) give the realization of the plural form of the Aghem noun ‘dog’ in various contexts. In the singular, this word is associated with Bantu Class 9 (see table 1) and has form *bvú*, which is not coded for noun class. In the plural, the citation form of the word is *tí-bvú*, associated with Bantu Class 10 and coded by a prefix. The word shows another class coded form as well, *bvú=’tś*, with an enclitic, rather than prefixal, class marker (Hyman 2010, pp. 102–103).¹⁸ The factors conditioning the distribution of these latter two forms are complex, but can be considered to be connected roughly to a contrast between an “in-focus” form (with a prefix) and an “out-of-focus” form (with a suffix) (see Hyman (1979b, p. 16; 2010)). This pattern is reminiscent of phenomena found in some Bantu languages involving so-called tonal case (König 2008, pp. 204–222) or the distribution of “augmented” and “unaugmented” noun forms (see, for example, Hyman and Katamba (1993) and Katamba (2003, pp. 107–108)). What is of primary interest here, however, is the fact that there are a number of constructions where a noun that shows class marking in its citation form is found without any class marking at all.

- (8) a. *éná? m̀ ò fũo tí-bvú á bé=’kś*
 Inah RPST give 10-dog to 7.fufu-DET
 “Inah gave the dogs fufu.” (Watters 1979, p. 184)
- b. *ò m̀ ò fũo kí-bé á bvú=’tś*
 3S RPST give 7-fufu.A to 10.dog=10.DET
 “He gave fufu to the dogs.” (Hyman 2010, p. 107)
- c. *bvú ’táŋá*
 10.dog 10.my
 “my dogs” (Hyman 1979b, p. 57)
- d. *bvú ’tín*
 10.dog 10.these
 “these dogs” (Hyman 1979b, p. 57)
- e. *bvú ’tí ’wé*
 10.dog 10.ASS 1.child
 “the dogs of the child” (Hyman 1979b, p. 57)

¹⁸ Hyman (1979b) characterizes the alternation between prefixed and non-prefixed forms in Aghem in terms of deletion of prefixes in certain contexts (a characterization maintained in Hyman (2010, p. 103)). However, as discussed in Hyman (1979b, p. 27), in some cases prefix “deletion” does not appear to be complete insofar as tonal effects on noun roots otherwise associated with the prefix are retained despite the absence of segmental material associated with the prefix.

f. *bvú* [!]*tí* *mô* *bvù* *nò*
 10.dog 10.SM RPST fall FOC
 “The dogs fell (today).” (Hyman 1979b, p. 57)

g. *tí-bvú* *tì-bìghà*
 10-dog 10-two
 “two dogs” (Hyman 1979b, p. 57)

Examples (8a) and (8b) illustrate the bare noun ‘dog’ with both prefixing and suffixing class markers. The noun is in the prefixing form in (8a) due to an association between postverbal position and focus, and it is in the suffixing form in (8b) due to the fact that it follows the preposition *â* (see Hyman (2010)). In example, (8c), the noun appears without any class marking because it is followed by a possessive pronoun, which, independently, shows concord with the noun. A similar situation holds in (8d) and (8e) in demonstrative and associative constructions. (The word for ‘child’ in (8e) does not appear with a noun class marker since Class 1 is not associated with overt class marking on the noun.) In example (8f), the verb is immediately preceded by a subject marker (showing Class 10 subject-verb agreement), which is also associated with the lack of class marking on the noun itself.¹⁹ Finally, (8g) underscores that this prefix loss is grammatically conditioned since, when a noun is modified by a numeral, it does not lose noun class marking (Hyman 1979b, p. 58), contrary to the other modificational constructions seen here. Demuth and Ellis (2009, pp. 96–97) and Demuth et al (2009) report (roughly) comparable patterns of prefix loss in the southern Bantu language Sesotho, which must be due to independent developments but shows, nevertheless, that similar patterns are attested in Bantu proper.

The examples in (9) illustrate a different pattern of noun class marker loss in Dagara, which, like Dagaare (see section 4.2), makes use of suffixing class markers. The data is drawn from (Delplanque 1997) (see also Creissels (2009, pp. 75–76)). Essentially the same phenomenon is found in Dagara (Bodomo 1997, pp. 39, 47–51; Dakubu 2005, pp. 47–48). See also Elders (2003) for detailed description of a comparable pattern in the Gur language Kulango. Loss of class markers in constructions like these, in fact, appears to be quite common in Gur (Miehe 2007, fn. 22).

- (9) a. *bi-e* / *bibii-d*
 child-SG / child-PL
 “child/children” (Delplanque 1997, p. 52)
- b. *bi ní-u* / *bi ní-dú*
 child hand-SG / child hand-PL
 “child hand/child hands” (Delplanque 1997, p. 52)
- c. *bi béd-ø* / *bi béd-é*
 child big-SG / child big-PL
 “big child/big children” (Delplanque 1997, p. 52)
- d. *bi faa* / *bi faa-ló* / *a bi-é faa-ló*
 child nasty / child nastiness-SG / DEF child-SG nastiness-SG
 “nasty child/child nastiness/the nastiness of the child”
 (Delplanque 1997, p. 53)

¹⁹ Patterns like this have been reported elsewhere, for instance in the Nigerian language C’lela (also known as Dakarkari), which is classified within the Kainji subgroup of Benue-Congo (Hoffman 1967).

e. *dò ba-a / dò bà nén-d*
 pig dog-SG / pig dog meat-SG
 “(domestic) pig/pork”

(Delplanque 1997, pp. 60, 65)

In (9a), the citation forms for the singular and plural of ‘child’ are given. As can be seen, in both cases the noun is coded with a suffix marking number and associated with a given noun class. (In the case of ‘child’ in Dagara, the singular/plural class is cognate with Dagaare’s Class 2, given in table 3.) In (9b), a compound construction is given where ‘child’ appears without a class suffix immediately before the head noun of the construction, which shows singular and plural marking following its lexical class. A similar pattern is seen in (9c) in a noun-adjective construction, where the adjective shows singular and plural marking using suffixes drawn, again, from a distinct, lexically-determined class from the noun. From a semantic perspective, this is somewhat surprising since it means that, unlike (9b), the semantic head of the construction (and also the element which determines the choice of referring pronoun (Delplanque 1997, p. 53)) is not the locus of morphological marking for number, meaning that the morphological coding found in this construction does not fit into either of the well-known categories of head-marking or dependent-marking (see Nichols (1986)), appearing, instead, to be a hybrid of the two, as pointed out by Creissels (2009, p. 76).

The phrases in (9d) give another instance of a noun-adjective construction (for an adjective without an overt suffix in the singular), opposing it to compound and genitive constructions involving a nominalized form of the adjective. As can be seen, the last of these phrases shows that, in a genitive construction, number marking is found on both the possessor and the possessee, showing that the absence of a noun class marker is not simply the result of juxtaposition of two nouns but, rather, is a feature of specific constructions. Finally, (9e) shows that constructions involving the lack of noun class marking can extend beyond two elements, in which case only the last word appears with number marking.²⁰

In neither the Aghem nor the Dagara case can one assign a simple function like “modified” to nouns that appear without their class markers. At the same time, it is clear that the lack of a class marker can function as a kind of coding property for grammatical constructions in these languages. What may look like the breakdown of a class system on the surface is actually a restructuring of it towards one where absence of a class marker has become significant.²¹ (For discussion of *significant absence*, see Stump (1997, pp. 219–220).) This suggests that “decay” of a noun class system is more than a simple matter of loss of form. Rather, it involves loss of form without accompanying reanalysis of function for the absence of that form.

This last point will be returned to in the discussion of the historical processes resulting in the loss of noun classes in Kwa-type languages in section 5, and the patterns seen in this section will also play a central role in the discussion in section

²⁰ The Dagara number marking pattern in compound and attributive adjective constructions is comparable to phenomena that Halpern (1995, p. 6) has characterized as involving “lexical clitics”.

²¹ Faraclas (1986, p. 45) describes comparable phenomena to what is seen here in the Nigerian language Efik (Benue-Congo), though, in that case, rather than constructionally conditioned loss, there is constructionally conditioned prefix “re-emergence”. Specifically, some prefixless nouns appear with a vowel prefix of unpredictable quality in at least some adjectival constructions.

6.4, where they will be taken as evidence for treating class-marking as a phrase-level property in addition to a word-level one.

4.5 Mismatch between class and concord in Noni

The noun class system of the Bantoid language Noni is presented in table 6 (Hyman 1981, pp. 7–33; Hombert 1980, p. 88). Class numbering conventions follow Hyman (1981) and partly attempt to relate Noni noun classes to Proto-Bantu (table 1) in a way comparable to what was found in table 4 for Mundabli. The presentation is simplified from the table in Hyman (1981, p. 33).

SINGULAR			PLURAL		
1	∅-	ẉ-	2	bɔ-	ḅ-
3	ẉ-	ẉ-	4	∅-	ỵ-
5	-e	dỵ-	6	ɛ-	ɛ-
5	-e	dỵ-	13	ji-	dỵ-
7	ke-	ḳ-	8	bi-	bỵ-
9	ʼ(N)-	ỵ-	10	ʼ(N)-	ỵ-
11	fe-	fỵ-	12	muN- -m	mẉ-
14	bvu-	bẉ-	15	m(ɔN)- -m	m-
16	fɔ-	f-			
17	(ê-)	j-			
18	∅-	dv-			

Table 6 Noni (Bantoid) noun classes

The conventions in table 6 largely follow those found in table 4 in section 4.3. The consonants given for the concord markers are drawn from those found in the third singular possessive (e.g., the Class 7 third singular possessive is *kêw* and the Class 8 form is *bêw*). Singular Class 5 is associated with two plural classes in Noni, which is why it is repeated in the table. Classes 16, 17, and 18 are locative classes without associated plurals (see section 3.4). The noun class markers are generally prefixal, but Class 5 is suffixal, and Classes 12 and 15 are circumfixal. The superscript *w* for Class 3 indicates labialization on the first consonant of a word which is lost in the plural, comparable to what is found in Mundabli as discussed in section 4.3, though without associated palatalization in the plural. Table 7 gives examples of nouns from the non-locative classes.

Two points are of interest regarding the Noni system in the present context. First, it gives another example, in addition to what was seen in section 4.3, of how a class marker can, in principle, be maintained even if the segmental material associated with a prefix is lost. This is seen specifically in the case Classes 3/4 and 9/10.

The second point is more specific to Noni and relates to a class-marking/concord mismatch involving Class 7 nouns.²² As Hyman (1981, p. 10) writes, “Approximately one-third of the nouns in Class 7 can be realized with the prefix *ɛ-* (identical to Class

²² Of course, the idea that this involves a “mismatch” rather than some other kind of “irregularity” is dependent on the analysis one gives of this pattern. I use the label mismatch here on the assumption that

SINGULAR		PLURAL		GLOSS
1	<i>bvulè</i>	2	<i>bóbvulè</i>	‘lion’
3	<i>kwen</i>	4	<i>ken</i>	‘firewood’
5	<i>lówe</i>	6	<i>elów</i>	‘bean’
5	<i>nfóón</i>	13	<i>jinfóón</i>	‘leaf’
7	<i>kècàw</i>	8	<i>bicàw</i>	‘belt’
9	<i>bìè</i>	10	<i>bíé</i>	‘fish’
11	<i>fetene</i>	12	<i>munténém</i>	‘squirrel’
14	<i>bvudvútu</i>	15	<i>mòndvúúm</i>	‘place’

Table 7 Examples of Noni (Bantoid) noun classes

6, but still taking Class 7 agreement) instead of *ke-*. It cannot be predicted which nouns allow this alternative realization of their prefix. It seems, though, that many of the most common words fall into this category.” Examples of words showing this alternation are given in (10). Example (10e) is the only reported case of a Class 7 noun which must have the unexpected ε - prefix.

- (10) a. *kebó / ebó* ‘hand’
 b. *kete / ete* ‘tree’
 c. *ketó / etó* ‘ear’
 d. *kegè / egè* ‘tooth’
 e. **kelemé / elémé* ‘blood’
- (Hyman 1981, p. 10)

The Noni data illustrates that divergences between a noun’s coded class and its concord can arise without a major impact on the overall system. Thus, the connection between class marking and concord, though formally conspicuous in a language like Swahili (see example (3)), is not pivotal in nature. In the Noni case, the relevant mismatch appears to be purely lexically conditioned, though, as we will see in section 4.7, semantically-conditioned divergences are also attested. Of course, a language like Noni is not at all unique in this regard. Wechsler and Zlatic (2000, pp. 812–814), for example, describe a comparable pattern in Serbo-Croatian and Corbett (2007, pp. 35–38) discusses something similar for one noun in Tsez (Nakh-Daghestanian). Nevertheless, it gives us a further example of a non-canonical pattern that can be found within Niger-Congo noun class systems, which will be returned to in sections 6.2 and 6.3, where it will be argued to support unificational models of agreement and realizational models of inflection.

the “normal” pattern is for a noun marked for a *k*-initial marker to be associated with *k*-initial concords, which are found for Class 7 in Noni (Hyman 1981, p. 33). Both comparative and language-internal criteria (involving type frequency) establish this as the normal pattern. On the use of the frequency of a morphological pattern to establish a mismatch, see Baerman (2007, pp. 5–7). Voorhoeve (1968, p. 589) describes a situation in the Bamileke language Bantangte, also a Bantoid language of Cameroon, where class marking appears to have become so detached from concord that one cannot speak of a mismatch as with Noni but rather of class marking constituting a separate system which “seems to operate quite independently from the concord system”.

4.6 Concord from class marker, not stem

A different kind of development involving the way that noun class is lexically associated with a root has been found in the Cameroonian Bantoid language associated with ISO 639-3 code [mij], spoken in five villages in an area adjacent to where the language described in section 4.3 is spoken (see Hamm et al (2002); Good et al (to appear)).²³ There is significant dialect variation among the five villages, and the data in this section will be drawn from two of them, Abar and Munken. The most striking feature of the noun class system of the varieties of these villages, class marking fluctuation, is found in all dialects, though not with precisely the same properties.²⁴ Table 8 schematizes the noun class system for the Munken dialect, which will serve as a representative example here. (See the description of table 4 in section 4.3 for discussion of the conventions employed in table 8.) Tonal marks appear on segmentally homophonous prefixes in cases where they are tonally distinct, with higher tone prefixes indicated with an acute and lower tone prefixes with a grave, but they should not be taken as precise tonal transcriptions nor viewed as an indication of the presence an opposition between specified and unspecified tone bearing units. Class 7a in Munken is coded by a circumfix whose suffixal portion treated as having an *l* as its basic consonant but which can change depending on the final segment of the stem it attaches to. Table 9 gives examples of nouns falling into the classes given in table 8.

SINGULAR			PLURAL		
1	ù-/Ø-	w`-	2	bə-	b´-
3	ú-	w´-	4	í-	y´-
5	ì-	y`-	6	a-	n´-
4a	í-	y´-	7(a)	ki...(-lə)	ky´-
12	a-	k´-	8	bi-	by´-
9	ì-	y`-	10	í-	y´-
14	bu-	bw´-			
19	shi-	sh´-	18	mu-	mw´-
6a	N-	m´-			

Table 8 Munken (Bantoid) noun classes

While the table in 8 presents the noun class system as structured in a way comparable to a canonical Bantu noun class system, every dialect in this language is, in fact, characterized by a surprising amount of variation in class marking on nouns, especially in plurals. While not all noun classes are equally affected by this—for instance, Class 1/2 is quite stable—the phenomenon can be observed spontaneously in elici-

²³ The data in this section is primarily based on fieldwork by Jesse Lovegren as well as the author, significantly extending the description provided for the Misong variety of this language found in Hombert (1980, p. 87) (see Good et al (to appear, § 3.2) for further discussion). While the grammatical features of the language of relevance here are securely documented, some aspects of the data (e.g., tone marking) may require revision. See section 4.3 for description of tone marking conventions.

²⁴ Though not found in languages showing clear evidence for class marking, comparable variability in the formation of plurals has been reported in languages of the Rashad group of Kordofanian (Stevenson 1956–1957, p. 47).

SINGULAR	GLOSS	PLURAL	GLOSS
1	<i>ñfà</i>	2	<i>bəm̄fà</i>
3	<i>úshě</i>	4	<i>íshě</i>
5	<i>isě</i>	6	<i>ásě</i>
4a	<i>íyí</i>	7a	<i>kíyíí</i>
7	<i>átse</i>	8	<i>bimfě</i>
9	<i>īsũ</i>	10	<i>ísũ</i>
14	<i>bũũ</i>		
19	<i>shibús</i>	18	<i>māwáhá</i>
6a	<i>ñnyě</i>		

Table 9 Examples of Munken (Bantoid) noun classes

tation environments and has also been found in texts. There is no obvious semantic or pragmatic explanation for this variation.²⁵ To the extent that it may not be completely free, it seems most likely that it is sociolinguistically conditioned with some dialects favoring some noun class markers on a given noun over others. Examples of such class fluctuation in nouns drawn from the Munken variety are given in table 10, where variation in plural forms found in elicitation contexts is indicated for a given singular form. These variable forms all come from a single speaker. The fact that one of the plural variants in each of the examples is drawn from Class 7 is not coincidental. Rather, this is a frequent variant plural form, reflecting the status of Class 7 as an apparent “imperialistic plural”, to borrow an expression from Gerhardt (1994, p. 167). An example of variation not involving Class 7 will be seen in (12).

SINGULAR	PLURAL	GLOSS
5	6 <i>ázěhě</i> 7 <i>kízěhě</i>	‘eye’
9	7 <i>kíshí</i> 10 <i>íshí</i>	‘animal’
12	7 <i>kīyōhō</i> 8 <i>bīyōhō</i>	‘jaw’

Table 10 Munken (Bantoid) plural variability

The effects of this class marking variation are not limited to the noun itself. Concord is sensitive to the class a noun is coded for as well. In elicitation, for instance, the forms in (11) were produced, where the demonstrative modifying each of the two plural forms for the word ‘jaw’, seen in table 10, showed different concord depending on the noun’s class marking in that particular utterance.

- (11) a. *kīyōhō kyénkì*
 7.jaw 7.this
 “these jaws”

²⁵ Contini-Morava (2008, pp. 153–161) gives detailed discussion of a case of apparent pragmatically conditioned concord alternation in Swahili (Bantu) connected to human nouns.

- b. *b̄ȳh̄ byénbì*
 8.jaw 8.this
 “these jaws”

Comparable phenomena are found in texts, though, in such cases, one can also observe mixed concord patterns, as in (12), which is drawn from the Abar variety of this language. The most frequent noun class for the word ‘day’ appears to be Class 14, in a form like *bū-tù*. In (12), however, the word appears as Class 3 *ū-tù*. The following demonstrative takes Class 3 concord, as well. However, a pronoun, which serves as the object of a sentence-final postposition, shows the Class 14 form in an apparent reversion back to the dominant concord of the word.

- (12) *À humiliation ūtù wón bū η̄n.*
 DS humiliation 3.day 3.DEM 14.OBJ LOC
 “There is humility on this day.”

The word for ‘day’ in (12) thus behaves like a so-called lexical hybrid (Corbett 2006, pp. 213–220), where agreement values differ depending on what the target of agreement is. However, unlike better known instances of such hybrids, such as the German noun *Mädchen* ‘girl’, which behaves as a neuter noun in some contexts and a feminine one in others (Corbett 1991, pp. 183–184), this system of hybridity is not stably associated with particular nouns but, rather, is dependent on the particular class marker used with a noun in a given utterance. Furthermore, at least in the case of an example like (12), the hybrid agreement does not obviously involve a shift from grammatically-conditioned agreement to semantically-conditioned agreement as one moves from the domain of attributive agreement within the noun phrase to antecedent-pronoun agreement within the postpositional phrase. This is because Class 14 is not associated with coherent semantics of the kind that would automatically place a word meaning ‘day’ into that class.²⁶ Thus, the pattern in (12) cannot be straightforwardly reduced to an agreement hierarchy effect of the sort described by Corbett (2006, pp. 206–237) as operative in many languages.

At first glance, the prefix fluctuation found in varieties like Munken and Abar is not as obviously relevant to the problem of how a Kwa-type language might develop as, for example, the data discussed in sections 4.2 and 4.3, where important parts of the noun class system had been unambiguously lost (concord and class marking, respectively). However, what it crucially shows is the extent to which lexical aspects of the class system can deteriorate while the system itself can still be maintained. The data from Noni in section 4.5 showed this, too, but in a different way. In that case, class marking and concord were dissociated in a systematic and stable manner. Here, the lexical classes associated with many roots appear simply to be in flux, and the concords fluctuate in parallel. One factor that makes this possible is that, like Bantu languages (see section 3.4), noun classes in this language are not associated with coherent semantics overall (though there are pockets of coherence as in, for

²⁶ Class 14 has been associated with abstract nouns in Bantu languages (Maho 1999, p. 64) which ‘day’ could be construed as, in principle. However, in Abar, Class 14 is small and not obviously coherent. The few other nouns known to belong to it include words meaning ‘bridge’, ‘medicine’, ‘witchcraft’, ‘fufu’ and ‘cowpea leaves’ (Jesse Lovegren, personal communication).

example, Class 1/2 which, as elsewhere, is associated with humans). Accordingly, shifting many nouns from, say, one plural class to another, as seen in table 10, need not correlate with any kind of semantic change that would impede communication. It seems likely that the largely formal nature of these classes is an important factor in allowing this kind of “instability” to be a stable feature of the language.

Taken together, both Noni (section 4.5) and the data seen in this section indicate that it is not simply class and concord which can operate independently from each other in Niger-Congo noun class systems. The lexical nature of the classes can also shift in significant ways without loss of class marking on nouns or concord. Unlike the Noni case, however, where the “mismatch” can be interpreted as supporting a realizational approach to inflectional morphology, the data in this section appears more consistent with an incremental approach, as will be discussed in section 6.3, suggesting that perhaps a full model of inflectional morphology may need to include word-construction mechanisms consistent with both of these logical possibilities.

4.7 Semantic restructuring

The last kind of noun class system restructuring that will be discussed here are cases where the system moves from one that primarily involves nouns being lexically associated with their class to one where more general semantic conditions govern part of the system. I will discuss two such cases here from Bantu, one involving the introduction of concord principles based on animacy and another involving reduction of the class system towards a simple singular/plural distinction.

The existence of animacy-based principles affecting concord is most well-known from Swahili, receiving significant discussion even outside of the Bantuist literature (Corbett 1991, pp. 45–49). An important early study of the phenomenon is found in Wald (1975), who looks at patterns of animacy concord in Bantu’s northeast coastal area, a prominent language of which is Swahili, and Contini-Morava (2008, pp. 129–133) offers an up-to-date overview of the phenomenon, situating it in the larger context of class and concord phenomena for Swahili terms referring to humans. Maho (1999, pp. 122–126) discusses the phenomenon in Bantu more generally, Richardson (1957, p. 35) describes a comparable pattern in Pande, a distant Bantu relative of Swahili, and Wilson (1961, pp. 13–14, 1962, p. 28) describes something similar in the South Atlantic language Temne, indicating the pattern has developed multiple times.²⁷ McGill (2009) offers an exceptionally detailed study of Cicipu (Benue-Congo) suggesting that both animacy and topicality (among other grammatical factors) are important to understanding comparable agreement phenomena in that language. (See also section 4.2, where a limited kind of human agreement was discussed for Dagaare.)

The sentences in (13) illustrate the relevant concord patterns. In (13a), a Class 7 noun is modified by a demonstrative, topicalized, and recapitulated by a prefixal object marker in the following verb. The demonstrative and the object marker show

²⁷ Despite the names, the possibility of a genealogical relationship between South Atlantic languages and North Atlantic ones is, at best, controversial (Childs 2003, pp. 46–50).

concord and agreement respectively with Class 7, as would be expected if these phenomena were governed by class. The sentence in (13b) shows the same pattern, but with a Class 1 noun. The sentence in (13c) illustrates the pattern of animate concord. The topicalized noun *kiboko* ‘hippopotamus’ is coded with a Class 7 prefix, but is associated with a Class 1 demonstrative and object marker since it refers to an animate entity. As discussed in section 3.4, Class 1/2 in Bantu is associated with humans. In the case of a language like Swahili, this association seems to have been generalized in concord and agreement constructions to other animates (Wald 1975, p. 312).

- (13) a. *Ki-le ki-su, ni-li-ki-on-a.*
 7-that 7-knife, 1s-PST-7.OBJ-see-FV
 “That knife, I saw it.” (Wald 1975, p. 270)
- b. *Yu-le m-toto, ni-li-mw-on-a.*
 1-that 1-child, 1s-PST-1.OBJ-see-FV
 “That child, I saw him.” (Wald 1975, p. 272)
- c. *Yu-le ki-boko, ni-li-mw-on-a.*
 1-that 7-hippopotamus, 1s-PST-1.OBJ-see-FV
 “That hippopotamus, I saw it.” (Wald 1975, p. 272)

While the pattern in (13) only affects a small part of the overall noun class system, it nevertheless attests another way in which such systems can restructure: principles of concord can become non-arbitrary from a semantic perspective. Like the Noni “mismatch” discussed in section 4.5, this pattern will also be argued in section 6.2 to support unificational models of agreement over feature-copying ones.

A more extreme example of semantic restructuring is found in Kituba, a Bantu trade language of the southern Democratic Republic of the Congo, whose noun class system has undergone extensive simplification (Stucky 1978). Kituba completely lacks concord (Stucky 1978, pp. 227–229), but class marking remains on the nouns. However, there are signs that class marking of the regular Bantu type is being replaced by a system where singulars are not morphologically coded—at least from a synchronic perspective since they could still begin with segments corresponding to the historical prefixes—and plurals are uniformly coded with *ba-*, the historical Class 2 marker.²⁸ The process was far from complete at the time it was described since there were still many singular/plural pairing making use of the expected class prefixes. However, if Kituba were to develop into a language without any significant synchronic evidence for noun classes in singular/plural pairings, its system would be quite close to that of Kwa languages, a point which will be returned in section 5.²⁹ Less well-described cases of comparable patterns in Bantu languages are found in Pande and Mbatl (Richardson 1957, pp. 34–43) and can also be found in other

²⁸ Something similar appears to be found in the Rashad languages (conventionally placed in the Kordofanian subgroup of Niger-Congo), some of which appear to have shifted towards a (somewhat complex) pattern of singular-plural marking without evidence for noun classes and others of which retain noun classes but which also have a class of nouns that are coded only for a singular-plural opposition but which, nevertheless, can be associated with noun classes on the basis of their concord patterns (Stevenson 1956–1957, pp. 47–48).

²⁹ Maho (1999, pp. 129–145) discusses a range of comparable simplifications to what is seen in Kituba found in other Bantu languages showing that Kituba represents an extreme pattern on a cline of simplification effects.

groups as well, such as Edoid (Benue-Congo) (Donwa-Ifode 1989, pp. 237–238) and Nupoid (Benue-Congo) (Hyman and Magaji 1970, p. 21).

4.8 Summary

Given the size of the family, there are no doubt other ways that Niger-Congo noun class systems can deviate from the canonical Bantu type. Nevertheless, the complications discussed above should give a reasonable indication of the wide variety of developments that can affect them. I summarize the most important observations in (14), indicating the sections where the relevant pattern was most prominently discussed.

- (14)
- a. Class marking can exist without concord marking (sections 4.2)
 - b. Concord marking can exist without class marking (section 4.3)
 - c. Class marking can be maintained even in the absence of segmental class markers (section 4.3)
 - d. The absence of class marking need not necessarily be associated with “loss” but, rather, can take on grammatical significance (section 4.4)
 - e. Class and concord marking can be maintained even if the lexical system of class assignment becomes restructured in arbitrary ways (section 4.5 and 4.6)
 - f. Class and concord systems can be restructured towards greater semantic transparency in ways that preserve formal features associated with the earlier system (section 4.7)

These facts, taken together, suggest a more general conclusion regarding Niger-Congo noun class systems: The whole appears to be greater than the sum of its parts. Specifically, it does not seem to be the case that the system is centered around any particular “pivot”.³⁰ Rather, some of the system can be retained even if there are major changes to (i) the class marking system, (ii) the concord system, (iii) the lexicon, (iv) the phonological shape of stems, or (v) the function of the class system itself. I will explore the import of this point for Niger-Congo historical linguistics and general models of morphology in the following two sections.

5 How to get to Kwa (by really trying)

As discussed in section 4.8, there are a number of ways for a noun class system which involves both class marking and concord to evolve significantly without the entire system being lost. Indeed, what is striking is the apparent lack of interdependence of pieces of the system—class marking, class assignment, concord, and word shape

³⁰ Of course, this is not to say there may never be any interaction among the different “pieces” of a noun class system. Manessy (1967a), for example, suggests the possibility of a connection between patterns of class marking on nouns and class oppositions coded on pronouns, though this connection is suggested to be largely indirect as change to one part of the system would not necessarily result in change to the other part but, rather, would create conditions that facilitate such change (Manessy 1967a, p. 220).

can change, but a recognizable Niger-Congo system can survive, which is one reason why noun classes have long been viewed as an important diagnostic criterion for membership in the family.

Prominent work in Niger-Congo linguistics, such as Greenberg (1966, p. 9), has characterized Niger-Congo noun classes as being subject to “drift... in the direction of the simplification of the nominal classification system” (see also De Wolf (1971, p. 188)). However, while many of the patterns described in section 4 can be understood as simplifications, it is not clear that they can be easily subsumed under the rubric of a general “drift” towards simplification since they do not structure themselves along an obvious historical cline from which a language might start out as Bantu-like and shift toward being Kwa-like. The most striking problem in this regard is the lack of clear primacy of concord over class or class over concord. Since either can be maintained (or lost) independently of the other, it suggests that we cannot immediately attribute the loss of both in Kwa to a single historical change.

The issue is made even more complex when we consider the fact that the grammatical ubiquity of exponents of noun class in a language with rich concord opens up the possibility for renewal of noun class markers via grammaticalization of an article positioned adjacent to the noun (Greenberg 1977; 1978).³¹ In other words, drift towards simplification is not an inevitable outcome even in a language that appears to be undergoing local processes of simplification via erosion of class markers. Furthermore, as discussed in section 3.4, there has been some suggestion that subject-verb agreement in Bantu is an innovative extension of the concord system to the verb. It also appears to be generally accepted that at some stage in the development of Bantu from Benue-Congo several noun classes were added to the Proto-Niger-Congo inventory (Williamson 1989b, p. 37), in particular the locative Classes 16, 17, 18 (see also the reconstructed Benue-Congo noun class system of De Wolf (1971, pp. 51–52), which presents a notably smaller system than what is found in Bantu). This indicates the possibility that “drift” in the family can lead to a more complex system, in addition to a simpler one. Indeed, the trend towards simplification appears to be confined to a “central” area of Niger-Congo, excluding geographically marginal groups like Bantu and North Atlantic (see Corbett (2005)).³²

In fact, it is hard to escape the conclusion that the complete loss of noun class systems we see in Kwa-type languages is due to something other than simple “drift”. There are simply too many ways for the system to maintain itself in some way or another without such drastic loss. The data in section 4.3 even crucially shows that one can lose segmental noun class prefixes but maintain class marking. So, one of the more obvious suspects for the loss of noun class systems in Kwa languages—general phonological reduction of stems—while undoubtedly a factor, would seem to be insufficient in and of itself to explain the observed patterns (just as Hyman

³¹ Such a development appears to be taking place in Aghem in cases where nouns are coded with class suffixes in some morphosyntactic environments (compare, for example, (8a) against (8b) in section 4.4). See also Kießling (2010a, p. 161) for relevant discussion regarding the closely related language Isu.

³² Güldemann’s (2008) proposals regarding a large linguistic area in Africa encompassing “central” Niger-Congo, which he terms the Macro-Sudan belt are clearly of relevance here. See also Wallis (1978, pp. 99–127) for an early proposal for the existence of a large “sprachbund” in West Africa including most of non-Bantu Niger-Congo.

(2004, p. 72) implicates more than sound change in extreme changes affecting verbal systems in Kwa languages, suggesting that morphological and syntactic change are quite relevant as well).

The Kituba case, discussed in section 4.7, is also potentially quite instructive here. While the language has sometimes been treated as a creole, this label is probably too strong. It does, however, show undeniable effects of contact-induced simplification reminiscent of what one sees in prototypical creoles (McWhorter 1998, pp. 810–812) (see Fehderau (1966, pp. 89–102) for discussion of the origins of Kituba). Kituba’s status as a contact language does seem to have resulted in a drastic reduction of its noun class system but, even so, it at least retains robust singular/plural marking on nouns.³³ Thus, while the more purely grammatical aspects of the system were subject to significant attrition, an aspect with a clearer semantic correlate was maintained. But, in Kwa-type languages, we do not even see this level of maintenance.³⁴

All of this suggests that becoming a Kwa-type nominal system is not a completely “natural” or “language-internal” event. Intense language contact, presumably with languages either lacking almost any system of nominal inflection or having a system very different from that associated with Niger-Congo, is an obvious suspect for explaining the extreme reduction. There is, however, no attested language or language group that we can clearly point to as the trigger of this reduction, and one can only suggest the historical occurrence of such language contact using indirect evidence.³⁵ Implicating language contact in the development of Kwa is not an entirely new suggestion. Mukarovsky (1977, pp. 32–35), for example, briefly discusses this possibility, relating it to earlier work by Westermann (1947).³⁶ This study lends further support to this idea.

Perhaps the most obvious alternative to viewing the developments leading to the Kwa type as requiring some kind of intense language contact would be to suggest that languages of this kind simply attest a probabilistically rare confluence of otherwise unremarkable changes, whose co-occurrence somewhere is, perhaps, relatively

³³ See Alexandre (1967) for further discussion of reduction of noun class systems in contact Bantu varieties.

³⁴ Not surprisingly, one may find very limited singular/plural marking in languages that otherwise have characteristics associated with the Kwa type, as in, for example, the case of four nouns (all referring to humans) in Edo (Dunn 1968, p. 207). However, one does not see productive systems like what Stucky (1978) describes for Kituba.

³⁵ Since the time from which we have historical records, the Kwa-type languages have been completely surrounded by other language groups that have been classified as Niger-Congo, meaning we have no clear instances of anything like a pre-Niger-Congo substrate. However, one neighboring group, Mande, whose Niger-Congo status is controversial (see section 3.2) does not show evidence of even a remnant noun class system of the sort found in, for example, a Kwa language like Fongbe as discussed in section 3.4 (see, e.g., Welmers (1971, p. 3; 1974, pp. 184–186)). Languages of another neighboring group, Ijoid are associated with a class system but one of a very different sort from what is otherwise found in Niger-Congo (Jenewari 1989, pp. 114–15). It therefore seems possible that contact with these groups could, perhaps, provide at least part of the explanation for the development of the Kwa type.

³⁶ Westermann, however, had a different overall historical interpretation (connected to a classification of the languages of Sub-Saharan Africa that is no longer accepted) which resulted in him treating what today are seen as class systems which have undergone partial historical loss as, instead, the result of imperfect borrowing of noun classes from languages with “fuller” systems (Westermann 1947, p. 15; Mukarovsky 1977, p. 28; Williamson 1989b, p. 7).

unsurprising given the large size of the Niger-Congo family.³⁷ Such an explanation, however, cannot account for why languages of the Kwa type are found in a geographically restricted, and more or less contiguous, area in the center of the family containing languages cutting across the genealogical groupings of Kwa and Benue-Congo. This suggests that more than simple probability has been at work in creating languages of this type.

6 Modeling noun classes

6.1 Overview

An important conclusion of this study is that Niger-Congo noun class systems are “robust” in the sense that changes to one piece of the system do not seem to be necessarily tied to changes in other pieces, as discussed in section 4.8.³⁸ Section 2.2 introduced a number of theoretical issues which the results of the survey in section 4 would be relevant to, and we are now in a position to examine the extent to which the comparative Niger-Congo facts are consistent with various models of agreement (section 6.2) and inflectional morphology (section 6.3). Moreover, the cases of apparent constructional conditioning of class marking (see section 4.4) raise additional issues not well-covered by major existing approaches to either of these phenomena to the best of my knowledge. How we might analyze them will be dealt with in section 6.4.

The discussion in this section will be largely informal, in order to keep it maximally general, though it will draw significantly on proposals from formal work. Moreover, the analyses that will be given will be largely schematic in nature, in a way that is consistent with the nature of a “surveying” work like this one. In depth analyses of the wide range of patterns introduced above will have to await future studies.

While the discussion here will center on the Niger-Congo facts presented in section 4, it is potentially of wider relevance given that the apparent robustness of the family’s noun class systems does not seem to be peculiar but, rather, is part of a more general cross-linguistic pattern of stability for gender systems, except in cases where they may be lost due to language contact (Nichols 2003, pp. 299–303). Therefore, models which can account for the robustness of Niger-Congo noun class systems have the potential to be applicable to gender systems in general.

³⁷ See Harris (2008) for discussion of explaining unusual patterns by reference to the low probability of the right set of changes occurring.

³⁸ Of course, this may lead one to wonder if noun class systems are any more robust than other prominent features of Niger-Congo languages, for instance the system of verb extensions found in many subgroups of the family (see Voeltz (1977) and Hyman (2007a) for surveys). Unfortunately, I am not in a position to address this question.

6.2 Feature copying or feature unification?

As discussed in section 2.2, a major divide in theories of agreement relates to whether or not agreement is understood as involving copying of features or unification of features (see (4)). Various patterns seen above suggest that the unification approach is a more suitable model for agreement, at least within Niger-Congo.

In section 4.5, for example, we saw the presence of a class of words with a mismatch between class and concord where a significant number of nouns alternated between being coded for Class 7 versus Class 5 but, nevertheless maintained Class 7 concord. Such an agreement “clash” presents an analytical problem for either a copying or a unification approach, of course. But, the problem is somewhat worse for the copying model since it is not clear how an agreement target could be assigned different agreement features from a trigger without creating a whole new mechanism of feature assignment. A unification model, by contrast, must merely change the requirements for feature “matching” in the relevant construction.

Similarly, the Swahili examples in (13), while not arguing specifically for a unificational approach, would seem to pose fewer problems for such an approach than a copying one. As seen in those examples, a concord principle based on animacy, employing Class 1/2, overrides concord based on class. In a copying approach to concord, a noun like the one in (13c) which is animate, but not in Class 1/2, would have to somehow be associated with one set of features governing class and a different set governing concord that could be copied, as appropriate, to a modifier. In a unification model, the noun and the modifier can each simply be associated with the grammatical properties they are otherwise associated with and animacy agreement can be defined via a specialized construction where class agreement is not strictly enforced under specific semantic conditions. Again, both cases require analytical complications, but those involved in a unification approach clash less with the key insight of the model, which is that features must simply “match” in a grammatically appropriate way rather than literally being transferred from one element to another.

Finally, in the discussion of Mundabli in section 4.3, we saw a number of noun classes where class marking was completely absent on the noun but concord was maintained. Importantly, three of these classes were also associated with two singular-plural pairings (Class 5/7 and Class 7/8). The most straightforward analysis of roots in these classes would be to treat them as lexically specified for their particular class pairing but not a specific class, which would only become unambiguously coded in the presence of an element showing concord. Such an analysis is easily handled in a unification model, where such “additive” semantics in an agreement system is perfectly natural. A copying model, on the other hand, would presumably have to always assign a root not coded for class with a specific class, even in the absence of surface evidence for such assignment, in order to make the right predictions in the domain of concord—an analysis which does not fall out naturally from the facts of the language.

More generally, a unification model provides for the kind of featural “robustness” that we seem to see in Niger-Congo noun class systems. If agreement is essentially a kind of copying relation, then we would expect agreement triggers to be the crucial “pivot” around which the entire noun class system is built. But, this is not what we see. The different pieces of the system can survive on their own and can also

diverge from each other without being lost. This is broadly consistent with unificational approaches that treat each element as being separately specified for its noun class properties, allowing them, in principle, to be affected by distinct processes of change.

6.3 Models of inflection

Of the approaches to inflectional morphology introduced in section 2.2, the range of phenomena described here seem most consistent inferential-realizational models, of the sort advocated by Stump (2001) (as well as others like Anderson (1992)) over the other logical types. I will first discuss how they appear to favor a realizational approach over an incremental one and then move on to how they favor an inferential approach over a lexical one.

As already discussed in section 6.2, there are languages like Noni (section 4.5) and Mundabli (section 4.3) where changes to class marking on nouns do not have comparable effects on concord, suggesting that the properties that nouns may be specified for relevant to concord are not introduced by class markers but, rather, simply reflected by them. This argues in favor of a realizational approach over an incremental one since otherwise we would have to determine how the class information that would be “lost” when the class marking of a noun changes can still manage to be associated with it purely for purposes of concord.

It should be pointed out, however, that the data seen in section 4.6 regarding class fluctuation in plural forms in varieties like Munken and Abar, and associated concord covariation, could be viewed as an argument that, in that language, noun class prefixes do add some grammatical information in an incremental way to a stem—in this case, which of the possible variant classes the stem happens to appear within a given utterance. While alternative realizational analyses are no doubt possible, an incremental interpretation, therefore, would seem to be the more natural one in that case. This suggests, intriguingly, that perhaps both realizational and incremental models may be needed in a complete framework for analyzing inflectional morphology, though it should be said that the patterns described in section 4.6 appear to be quite unusual for Niger-Congo, indicating that “incremental” languages are less common than “realizational” ones in the family, even if both are attested.

An argument in favor of the inferential rather than the lexical approach to class relates to the sort of lexical entries one might want to posit within a lexical approach. If we treat class and concord markers as a kind of lexical item, then, in cases where noun class markers on the noun and concord markers have comparable phonological form (as is frequently found in Niger-Congo), one might want to posit that they are, in fact, both instantiations of the same lexical item. Indeed, this has even been suggested for Manjaku (North Atlantic) by Kihm (2005, p. 500), which adopts the lexical-realizational approach to inflectional morphology of Distributed Morphology (see Stump (2001, p. 2)) in its analysis of noun class markers.³⁹ But, if this were

³⁹ Taraldsen (2010) develops a similar analysis for Nguni (Bantu) languages, but with some additional complications regarding the morphological structure of noun class markers and concords.

the case, we do not see what would be an expected implication that, when marking disappears in one place, it should disappear elsewhere because it is underlyingly a realization of the same lexical item. Rather, we see class marking being retained when concord is lost as in Dagaare (section 4.2), and concord being maintained when class is lost, as in Mundabli, just discussed.⁴⁰ Of course, this problem could be dealt with in a lexical approach by positing distinct lexical items for each pair of class and concord markers. Nevertheless, the data seems more consistent with the inferential approach since it would not lead one to expect such an implicational relation.

Overall, a noteworthy way that inferential and realizational approaches differ from incremental and lexical ones is that they do not naturally lead to analyses where noun class is directly introduced (in an incremental approach) or coded (in a lexical model) by a single process or element. As with unificational models of agreement, this makes them more consistent with the robust nature of Niger-Congo noun class systems insofar as they do not prompt analyses where the whole system is dependent on one lexical or grammatical “pivot”.

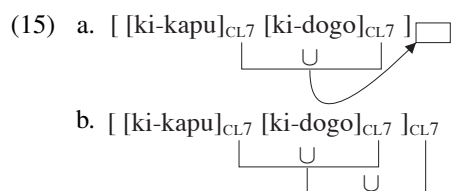
6.4 Constructional effects

The final topic I would like to discuss in this section is the significance of the apparent constructional effects in noun class marking. These were seen most clearly in section 4.4, where examples of significant absence of class markers were introduced that suggested that the primary domain of class marking need not be the word but, instead, an entire phrase. Faraclas (1986, p. 53), in fact, already suggested something similar in his study of Cross River (Benue-Congo) noun class systems, and earlier, though less explicit, remarks in this regard can be found in Hoffman (1967, p. 253). However, I am not aware of the relevant patterns ever having received significant discussion in the theoretical literature.

To briefly recapitulate, the examples in (8) from Aghem show that the presence of class marking on a noun can depend on whether or not another element showing concord with that noun appears within its clause. The examples in (9), from Dagara, show that in some nominal constructions plurality of the referent of the noun which is the semantic head appears on the last word of the construction, with the class marking appropriate for that word, whether or not that particular word is the semantic head.

These patterns suggest that the constraints governing the inflectional exponence of noun classes can “escape” the word and be grammatically construed as a phrasal property. To make the discussion more concrete, the schematizations in (15) build on those in (4), further modeling the nature of the process through which a phrase may be associated with class properties.

⁴⁰ In the case of Mundabli, the comparative evidence from the Buu dialect of this language shows prefixes on nouns beginning with *k* and *b* in Class 7/8 (Hombert 1980, pp. 87–88), indicating that this class in Mundabli probably once showed alliterative concord of the sort that could be used to justify an analysis making use of a single lexical item for class marking on the noun and concord in these classes within a lexical approach.



The schematization in (15a) models a “percolation” mechanism through which the (matching) agreement features of a noun and an adjective are acquired as the agreement features of the phrase. Schema (15b) instead shows two unification relationships, first between the noun and adjective (as in (4b)) and then between an independently specified class feature at the phrase level and the noun and adjective. This latter model can be considered constructional insofar as it allows, in principle, the phrase to be specified for its features in a way that is distinct from the features of its constituents.

As with the case of unificational models of agreement, the unificational model of phrasal class features is again more consistent with the robust nature of Niger-Congo noun class systems than the percolation approach (which is, of course, parallel to a copying approach). If we consider the Aghem facts, for example, they suggest the presence of a grammatical constraint favoring the marking of a noun’s class at least once within a clause. Thus, even if an element showing concord is not present, some kind of class marking will still appear (as in (8a) and (8b)). If constraints on class realization are specified both at the word and the phrasal level, then the absence of class marking on a single constituent, again, need not result in a loss of the overall system because the class features would still be required to be independently specified within the higher-level phrasal construction.

The Dagara facts are somewhat different since they do not involve a functioning concord system but, rather, singular/plural marking. They nevertheless are indicative of a construction-level effect where plurality of the semantic head of certain phrases must be coded via class on the last word of the phrase regardless of its semantic status—suggesting the possibility of an independent phrase-level specification of plurality also favoring a model like the one in (15b).

Again, what we see is that the noun classes do not depend on just one “piece” of the system—in this case, words themselves. There is indication that phrases, too, can independently condition the appearance of exponents of noun classes, suggesting an additional element of robustness to the system, insofar as phrasal constructions may be able to support a system’s maintenance even as the morphological structure of their component words breaks down. Such an interpretation may also help us understand the possibility of class and concord fluctuation described in section 4.6. The robustness of class marking and concord accompanied by the apparent breakdown of significant aspects of lexical class specification indicates that constructional requirements for class marking and concord may support their presence even as the lexicon restructures in ways that cause class specification to become less precise. In other words, it is, to some extent, as if the grammar specifies a need for class and concord marking even when the lexicon does not.

7 Conclusion

Niger-Congo grammars instantiate some of the world’s most complex noun class systems as well as the complete absence of such systems, meaning it is clearly an instructive family to gather comparative data from if we want to understand the morphological structure of gender. The most striking result of this survey is the extent to which salient aspects of a noun class system can be lost, but it can still be maintained in a different form. This further adds to the mystery of what happened to the Kwa-type languages (Hyman 2004). It also potentially provides a rich data source for developing models of agreement and gender phenomena that are both synchronically adequate and diachronically informed, and the explorations in this regard here clearly only scratch the surface.

To conclude, it should be reemphasized that this paper is not the result of a systematic survey of Niger-Congo noun class systems. While it should give some indications of the nature of their diversity, there are undoubtedly interesting patterns that have been missed, and perhaps not even yet clearly described. One key area that has not been covered is what patterns govern the loss of specific noun classes in a language which retains a functioning noun class system overall. Furthermore, the nature of the phonological processes that result in reduced noun class systems has only barely been covered, which, as indicated by Hyman’s (1987) study of a surprising phonology-mismatch in Kukuya (Bantu), undoubtedly raises complications well beyond what we have seen in the more morphologically focused study here.

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Glossing abbreviations

1...19(a) without “s” or “p”	noun classes
1, 2, 3 with “s” or “p”	person and number
APPL	applicative
ASS	associative
ANT	anterior
DEF	definite
DEM	demonstrative
DET	determiner
DS	dummy subject
FV	inflectional final vowel
LOC	locative
OBJ	object pronominal
PL	plural
PST	past
RPST	recent past
SG	singular
SM	subject marker

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