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LETTER FROM THE EDITOR 39(1)

Greetings to the readers of *SAL*,

As announced in the last number, Vol. 38, No. 2, Volume 39 is the first volume to be published primarily as an electronic edition with open access. This letter appears in the first number of that volume. As some readers may know, back issues have already been made available at the web site of e-*SAL*,

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Thanks to everyone for your continued support and interest.

Sincerely yours,

Tucker Childs
Editor, SAL

ISSUES IN NOUN CLASSIFICATION AND NOUN CLASS ASSIGNMENT IN GÚJJOLAY EEGIMAA[1] (BANJAL) AND OTHER JÓOLA LANGUAGES

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In his book on gender Corbett observes that establishing the number of genders or noun classes in a given language 'can be the subject of interminable dispute' (1991: 145). Jóola languages like Gújjolaay Eegimaa (bqj, Atlantic, Niger-Congo) have noun class systems exhibiting irregular singular-plural matchings and complex agreement correspondences between controller nouns and their targets, resulting in endless disagreements among authors in Jóola linguistics. This paper addresses the issues surrounding noun class assignment in Gújjolaay Eegimaa (Eegimaa henceforth) and other Jóola languages. It provides a critical evaluation of the noun class assignment criteria used for those languages and proposes cross-linguistic and language-specific diagnostic criteria to account for the noun class system of Eegimaa and other related languages that exhibit a similar system.[2]

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[1]Gújjolaay Eegimaa, also known by outsiders and some authors as Banjal, is in Sapir's (1971: 78) terms, a *BAK* language of the Atlantic branch of the Niger Congo Phylum. *BAK* languages are languages which have a similar 'dependent plural personal marker' of the form *bVk-* (b + vowel +k-). The Atlantic family of Niger-Congo languages has for a long time been divided into three branches: the Northern branch (Fulfulde, Wolof, Eegimaa etc.), the Southern branch (Kisi, Temne, etc.) and Bijogo as an isolate (Sapir, 1971, Williamson and Blench, 2000, Wilson, 1989). However, Blench (2006: 116) suggests (see also Segerer, 2002), that Bijogo shows much more lexical similarities with Benue-Congo than Atlantic and that this 'geographically' based classification of Bijogo in the Atlantic family could be subject to revisions.

Gújjolaay Eegimaa is a Jóola language of the Northern branch spoken in a former small kingdom of ten villages (Mof-Ávvi), located 18 kilometers South-West of the region of Ziguinchor in Southern Senegal. In this paper, language examples in Gújjolaay Eegimaa are transcribed using an updated version of the orthographical representation I designed for my PhD research and distributed to members of the speech community. An acute accent is placed on the first vowel of a word to indicate that its vowels are [+ATR].

1. Introduction

Similarly to other Jóola languages, Eegimaa's[3] noun class system features noun class prefixes indicating noun class (and also verb[4] class) membership and number. In Eegimaa every noun is assigned to a class and participates in an agreement system triggered by controller nouns. In Jóola languages, agreement may be realized either alliteratively or non-alliteratively in a sentence, as will be shown below for Eegimaa. In these languages, noun class prefixes have several forms, among which the most common are individual vowels e.g., *e-*, or the forms *Cu-/Ci-*[5], *Ca-*, where "C" represents a consonant.

Recent accounts of noun class systems within Jóola languages have been characterized by controversy, especially since the introduction of an element referred to as a *'postpréfixe'* ("postprefix" henceforth) by Sambou (1979). This element is postulated to account for the origin of the noun class prefixes of the form *Ca-* by stating that they have an underlying *Cu-a-* form and as a result, are not fundamentally different from the forms *Cu-/Ci-*. This approach reduces the number of classes in Jóola languages contrary to Sapir's (1965) analysis where *Ca-* marks classes different from *Cu-/Ci-*. Since Sambou (1979), the postprefix has been adopted and assumed to be common to all Jóola languages (including Eegimaa) and consequently used in addition to the criteria for the differentiation of noun class prefixes and the identification of noun classes in different

[3] The term Jóola (also spelt Diola, Dyola, Joola, and Jola) is often used to refer to a single language. Linguistic evidence (Barry, 1987, Sapir, 1971), however, shows that 'Jóola' is a cover term for a group of languages and dialects and the peoples who speak them. Those peoples are found in The Gambia, the *Basse-Casamance* area in southern Senegal, and in northern Guinea Bissau where they are referred to as Floup/Felupe.

[4] The issue of the combination of noun class markers with verb stems is not relevant to the discussion proposed here.

[5] The slash is used here to indicate allomorphic variations based on height vowel harmony between noun class prefixes of the form *Cu-* and *Ci-* (see 3.1.1 below for further discussion of this alternation.)

languages. In most studies that have adopted Sambou's proposal, the synchronic relevance of the postprefix is never questioned.

The assignment of nouns into classes in Jóola languages is still a matter of controversy. Virtually no previous studies of Jóola have proposed identical criteria or the same inventory of noun classes. As is the case for other Atlantic languages, there is no established numbering convention for the noun classes in Eegimaa and other Jóola languages, in contrast to Bantu languages where a tradition of numbering classes is established.

This paper addresses the issue of noun class assignment in Jóola languages with particular focus on Eegimaa. Eegimaa has one of the most complex noun class systems of the Jóola languages that have been described and thus provides interesting data for a case study. The following section provides a discussion of the basic terminology used in the description of noun class systems in general (gender, noun class, concord, agreement, etc.) and in the study of the Eegimaa noun class system proposed here. It is followed by a discussion of similarities and differences between noun class markers and agreement markers in Eegimaa in Section 3.

Here, I discuss the relevance and limitations of the criteria used for the noun class inventories proposed in previous studies of Jóola languages, including a critical examination of the notion of a postprefix. I argue that there is no synchronic evidence for its existence and that this element should not play a role in the analysis of synchronic noun class assignment in Eegimaa or other similar systems. Instead, I propose cross-linguistic and language-specific morphosyntactic criteria in section 3.2, whose application shows the existence of 15 noun classes in Eegimaa. A summary of the proposed classes is provided in Table 2.

2. Terminological issues

2.1 Gender. The term "gender" is used in two different ways in the study of noun class systems. This section reviews those two usages and justifies their use in this article. First, I discuss the different usages of the terms "gender" and "noun class" (2.1.1), and then "gender" and "class pair" (2.1.2 below).

2.1.1 Gender and noun class systems. In descriptive linguistics, the terms gender and noun class are often used interchangeably as cover terms for systems of nominal classification that are based on the presence of agreement (Corbett, 1991). These two terms also have more specific usages depending on the tradition of linguistic research. Gender is generally used more specifically to refer to systems found in Indo-European languages e.g., French, and Afro-Asiatic e.g., Hausa (Jaggar, 2001), often referred to as "sex-based" gender

languages (Greenberg, 1978, Heine, 1982), which feature a distinction between masculine, feminine and sometimes neuter. Languages that are traditionally referred to as noun class languages typically exclude the biological sex-based differentiations. The term "noun class system" has traditionally been used to refer to nominal classification systems as found in Niger-Congo, as in (e.g. Eegimaa) and Bantu (e.g. Kiswahili). A noun class system is, according to de Wolf (1971), a more complicated kind of gender system in that there are generally more than three classes, distinguishing on the basis of 'animate' vs. 'inanimate' as well as 'human' vs. 'non-human', etc.

        Despite the fact that gender systems (as found in the majority of Afro-Asiatic languages) are generally more covert than noun class systems, which are usually more overt, they are to a large extent structurally similar because they are defined and identified through the presence of agreement as discussed in 3.2 below. Nouns in these systems belong to a finite number of sets and trigger agreement on certain elements, which include definite determiners, adjectives, demonstratives, numerals and anaphoric pronouns.

        Here, I follow the traditional use of the term "noun class" for Niger-Congo languages that exhibit such systems, since it has the advantage of excluding the biological sex differentiation unattested in Eegimaa or other Jóola languages.

2.1.2 Gender and Class pairs. Typically, in defining the number of classes in a Niger-Congo noun class language, each singular and plural affix, and each agreement set is individually described (Welmers, 1973). Consequently, the singular and plural forms of a stem are analyzed as different classes (de Wolf, 1971). When the singular and plural forms are analyzed as a pair, they are often referred to by the term gender. Gender in this context differs from its use as a cover term in the description of noun class systems. In Eegimaa for example, *bu-tum* 'mouth' and *u-tum* 'mouths', which are two inflected forms of the stem *-tum* 'mouth', would qualify for the treatment as a gender.

        However, Eegimaa has a "crossed" nominal classification system (Heine, 1982: 197). A crossed nominal classification system is one where two or more singular classes can have one plural correspondent and where several plural classes can have one singular correspondent (see Table 2 below). Eegimaa does not exhibit the one-to-one correspondence between singular and plural classes which is typically associated with the term gender. As a result, the term class pair is used to refer to pairs of singular and plural forms of nouns in Eegimaa.

2.2 Agreement/Concord. The terms "agreement" and "concord" are used interchangeably in this paper to refer to the 'systematic covariance between a semantic or formal property of one element and a formal property of another' ((Steele, 1978) quoted in (Corbett, 2006: 4)).

Eegimaa nouns govern agreement on their syntactically dependent elements in a noun phrase and on finite verbs. This is illustrated in example (1) below, where there is agreement between a noun of class 3 *e-* and the two verbs that are in a syntactic relation with it, and also a noun in class 13 *t-* that triggers agreement on its modifier. In the notation throughout this paper, NCM is used to refer to the noun class marker that attaches to a noun whereas CL refers to the agreement markers on agreement targets.

(1) **e-hub**   **e-robo**   **t-iñ**   **t-anur**   **mati**   **e-fat**
NCM3[6]-crab   CL3-sit:MID   NCM13-place   CL13-one   FUT.NEG   CL3–be.fat
'A crab that stays in one place does not get fat. (proverb)'
(ss060508_fir-hono-ao)[7]

In Eegimaa, noun class agreement occurs between a subject noun and the verb as illustrated in (2), but not between a verb and its object.

(2) SUBJ[**a-rokk-a**   **Øahu**]   **a-añ-ut**   [**ga-llah**   **gagu**
NCM1-work-AGT   CL1:DEF   CL1-cultivate-NEG   NCM9-land   CL9:DEF

g-ola]OBJ
CL9-his

'The worker did not cultivate his land' (introsp)

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[6] See the list of abbreviations at the end of the article.
[7] The sources of examples given here are indicated near the free translations. For example, 'Part-Obsv' stands for *Participant Observation*, 'Introsp' for (native speaker) *Introspection*, while reference codes for natural speech events, such as 'ss20040817_abas' are names of files collected by the author (SS) followed by the date and the speaker's name or topic.

2.3 Controller and target. The term "controller" (Corbett 1991) will be used to refer to the elements that trigger agreement whereas "target" will designate the agreeing elements. As will become clearer in the next sections, the choice of the form of an agreement morpheme depends on the class of the controller noun. The agreement system of Eegimaa is not fully alliterative, since the form of agreement morphemes (see Table 1 below) is not always identical to that of the noun class marker.

    Noun class markers also mark number distinctions. Eegimaa noun class markers combine with noun stems denoting mass and abstract concepts and can be used to express collective meaning as will be discussed in Section 3.1.2 below. Agreement markers also indicate singular and plural person distinctions in the third person. The examples below show an alternation between third person singular ((3)-(5)) and third person plural[8] ((4)-(6)).

(3)   **á**-*lullum*   **Ø**anur   **á**-*kkumandi-oli*   *ti*
       NCM1-white.person   CL1:one   CL1.3SG-command-1PL.EXCL.DO   like

       sí-be
       NCM4-cow

       'One white person commanded us like cows.' (ss040828_sidda)

(4)   **é**-*lullum*   **gú**-*uba*   **gú**-*kkumandi-oli*   *ti*
       NCM3-white.person   CL2-two   CL2.3PL-command-1PL.EXCL.DO   like

       sí-be
       NCM4-cow

       'Two white people commanded us like cows.' (ss040828_sidda)

(5)   *imbi eno* **fi**-*ttih*   *fafu*   **fu**-*mug-i-muh,*
       PERM if   NCM7a-war   CL7:DEF   CL7.3SG-kill-2SG.DO-DUP
       'lit: If it happens that the war kills you…' (If you die during the war) (ss040828_sidda)

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[8] The occurrence of Ø 'zero' as an agreement marker and the lack of similarities between the controller and the target agreement forms is accounted for in the next sections.

(6)   *imbi eno **gu**-ttih   **g**agu   **gu**-mug-ul-muh*
       PERM if   NCM8a-war   CL8:DEF   CL8.3PL-kill-2PL.DO-DUP
       'lit: If it happens that the wars kill you(PL)…'
       (If you (PL) die during the wars)

The examples above also show that the agreement markers for a given class differ in form from noun class markers and may also differ in different syntactic environments. For instance, in example (4) the noun class marker differs in form from the agreement markers on the numeral and the verb. These differences in agreement are of two types. First, there are phonologically conditioned dissimilarities between noun class prefixes and their agreement correspondences such as those found in classes 3 *e-* and 6 *u-* (cf. Table 1 below). These are common in other Jóola languages (Sambou, 1979, Sapir, 1965). The other types of dissimilarities are the semantically motivated ones which are found in Eegimaa but not found in other related languages such as Jóola Fogny (Sapir, 1965). These are revealed by the use of e.g., NCM 3 *e-* as a plural marker for a human noun, as in example (4), which triggers agreement of CL2, the regular human plural agreement.

The next section gives an overview of the shape of the noun class prefixes, referred to as noun class markers, and their corresponding agreement markers. It also provides a discussion of the variations in form between noun class markers and agreement markers. The criteria used to determine the class membership of nouns showing irregularities between noun class markers and their agreement markers are proposed 3.2 below.

3. Noun class markers and agreement markers

3.1 The shapes and functions of noun class markers. A division of nouns into the 15 classes of Eegimaa can be justified on the basis of the corresponding agreement markers they trigger. As Corbett (1991: 105) argues, '[noun class] agreement provides the basis for defining [noun classes] and for establishing the number of [noun classes] in a given language.' The table below presents noun class controllers and the targets for the definite determiner, the demonstrative pronoun, independent possessive pronouns, the third person subject and as well as the object pronouns, adjectives, numerals, the pronominal subject prefix and the relative prefix. Table 1 shows complex correspondences between the shapes of the prefixes on nouns and those attached to their modifiers. Cases where there is a lack of phonological similarity between controllers and agreement targets are analyzed in detail in Section 3.1.1 below.

Table 1: Noun class prefixes and agreement markers⁹ (adapted from Sagna (2005))

NC markers	DEF.DET	DEM	POSS	PRO	ADJ	NUM	ORD	SUBJ	REL
1	**Ø-; a-**	*Øa-h-u*	*a-h-u-m-*	*Ø-*	*Ø-*	*a-*	*Ø-*	*a-*	*a-*	*Ø-a-*
2	**bug-**¹⁰	**bug**-*a-g-u*	*u-bug-*	*bug-*	*bug-*	*gu-*	*gú-*	*gu-*	*gu-*	*g-a-*
2 & 8	**gu-**¹¹*(NCM8)*	*g-a-g-u*	*u-bug-*	*bug-*	*bug-*	*gu-*	*gú-*	*gu-*	*gu-*	*g-a-*
2 & 6	**u-** *(NCM6)*	*w-a-w-u*	*u-bug-*	*bug-*	*bug-*	*gu-*	*gú-*	*gu-*	*gu-*	*g-a-*
2 & 3	**e-** *(NCM3)*	*y-a-y-u*	*u-bug-*	*bug-*	*bug-*	*gu-*	*gú-*	*gu-*	*gu-*	*g-a-*

⁹ In the noun class prefix column the forward slash indicates phonological alternations; the semi-colon shows that no synchronic phonological alternations exist between the prefixes it separates. The ampersand "&" indicates multiple classification of certain nouns which, as will be argued below (3.1.3), are simultaneously assigned to two classes. In table 1, noun class markers and the corresponding agreement markers are in boldface.

¹⁰ The noun class prefix *bug-* is lexically determined since it occurs as a plural marker for only one noun; *bug-an* 'people'.

¹¹ In previous work (Sagna 2008), I have argued that noun class prefixes such as *gu-* and *e-* which are used with nouns of human denotation, and which were coded NCM 2b and NCM 2d respectively, are homophonous with for example NCM 8 *gu-* and NCM 3 *e-*. However, new evidence shows that it is actually the same prefixes that are used for certain nouns of human denotation of class 2 and non-human nouns in classes 8 and 3. The class membership of nouns is determined by the agreement they exhibit. Noun class prefixes of other classes, which are used as plural markers for nouns of human denotation, are listed in table 2 under the 'class number' column. This allows one to observe the differences between their use with nouns of class 2 (non-alliterative agreement) and the other class where they show alliterative agreement. The new analysis proposed to account for such combinations, is that nouns of human denotation show multiple semantic classifications by using NCM 8 *gu-* and NCM 3 *e-* (but class 2 agreement) to point out that those human nouns have semantic features associated with classes 8 and 3. It is important to bear in mind, that semantic criteria are not used to determine the class membership of a noun. They only help to understand the motivations underlying the use by a noun of (or better from) another class.

	NC markers	DEF.DET	DEM	POSS	PRO	ADJ	NUM	ORD	SUBJ	REL
2 & 4	*su-/si- (NCM4)*	*s-a-s-u*	*u-bug-*	*bug-*	*bug-*	*gu-*	*gú-*	*su-*	*gu-*	*g-a-*
3	*e- ; y- ; Ø-*	*y-a-y-u*	*y-au-y-*	*y-*	*y-*	*e-*	*y-*	*e-*	*e-*	*y-a-*
4	*su-/si- ; s-*	*s-a-s-u*	*s-au-s-*	*s-*	*s-*	*su-*	*sú-*	*su-*	*su-*	*s-a-*
5a	*bu-/bi- ; b-*	*b-a-b-u*	*b-au-b-*	*b-*	*b-*	*bu-*	*b-*	*bu-*	*bu-*	*b-a-*
5b	*ba-*									
5b & 1	*ba- (NCM5b)*	*b-a-b-u*	*b-au-b-*	*Ø-*	*Ø-*	*bu-/a-*	*bu-*	*bu-/a*	*a-*	*b-a-/a-*
6	*u- ; w-*	*w-a-w-u*	*w-au-w-*	*Ø-*	*w-*	*u-*	*Øú-*	*u-*	*u-*	*w-a-*
7a	*fu-/fi- ; f-*	*f-a-f-u*	*f-au-f-*	*f-*	*f-*	*fu-*	*f-*	*fu-*	*fu-*	*f-a-*
7b	*fa-*									
8a[12]	*gu- ; g-*	*g-a-g-u*	*g-au-g-*	*g-*	*g-*	*gu-*	*gú-*	*gu-*	*gu-*	*g-a-*
8b	*gá-*									
9	*ga- ; g-*	*g-a-g-u*	*g-au-g-*	*g-*	*g-*	*gu-*	*g-*	*gu-*	*gu-*	*g-a-*
10a	*mu-/mi- ; m-*	*m-a-m-u*	*m-au-m-*	*m-*	*m-*	*mu-*	*mí-*	*mu-*	*mu-*	*m-a-*
10b	*ma-*									

[12] Note that the difference made here between the singular class 8 and the plural 9 is based on the argument that singular and plural classes are are treated as different classes as pointed out in 2.1.2 above.

	NC markers	DEF.DET	DEM	POSS	PRO	ADJ	NUM	ORD	SUBJ	REL
11a	*ju-/ji-; j-*	*j-a-j-u*	*j-au-j-*	*j-*	*j-*	*ju-*	*j-*	*ju-*	*ju-*	*j-a-*
11b	*ja-*									
11 & 3	*ji- (NCM11a)*	*y-a-y-u*	*y-au-y-*	*y-*	*y-*	*e-*	*y-*	*e-*	*e-*	*y-a-*
12a	*ñu-/ñi-; ñ-*	*ñ-a-ñ-u*	*ñ-au-ñ-*	*ñ-*	*ñ-*	*ñu-*	*ñ-*	*ñu-*	*ñu-*	*ñ-a-*
12b	*ña-*									
13	*ti-; t-*	*t-a-t-u*	*t-au-t-*	*t-*	*t-*	-	*t-*	*tu-*	*tu-*	*t-a-*
14	*d-*	*d-a-d-u*	*d-au-r-*	-	*d-*	-	*d-*	*du-*	*du-*	*d-a-*
15	*n-*	-	-	-	*n-*	-	-	-		-

3.1.1 Morphophonemic alternations of the Eegimaa noun class markers.
In Eegimaa, it is not possible to have a combination of two noun class
markers prefixed to a noun,[13] as in Bantu languages like Herero (Möhlig et
al., 2002: 38). Noun class prefixes have the following shapes: ∅ (zero), V-,
C-, CV- and CVC-, as can be seen in column two in Table 1 above. Vowels
that are attested as part of noun class prefixes of the CVC and CV shapes are
/u/ e.g., bug-an 'people' and fu-how 'head'; /i/ e.g., fi-ssih 'finger' and /a/
e.g., ga-rafa 'bottle'. Vowels that can occur in isolation as noun class markers
are /a/ e.g., a-rafuhow 'human being'; /u/ e.g., u-ser 'spoons'; and /e/ e.g.,
e-ral 'river'. All these vowels may be realized as [-ATR] or [+ATR]
(Advanced Tongue Root[14]). For example, prefixes in e-vvu 'clean' and é-vvu
'fly' differ because in that the first vowel is [-ATR] while the second is
[+ATR]; this does not, however, signal a change in noun class.

Another phonological alternation between vowels is between prefixes
having a *Cu-* and *Ci-* shape, which do not indicate a distinction in noun class
but vowel height harmony. First described by Sapir (1971: 78) for Jóola
languages (cf. Bassène, 2007: 20-21, Sagna, 2008: 82-83 for Eegimaa),
vowel height harmony distinguishes two harmonic sets based on frontness.[15]
The high front vowel /i/ is used after labial consonants when the initial stem
vowel is a front vowel. The high front vowel is also used as a noun class
prefix after coronal consonants when the initial stem vowel is a front vowel
or /a/.

(7)   *mi-sis*   'salt'   *bi-eç*   'weaving workshop'

      ji-ar   'small root'   *ñi-ssel*   'chain'

      sí-bbibi   'shards'   *sí-it*   'palm nuts.'

The high back vowel /u/ is used as a noun class prefix vowel after
labial consonants when the initial stem vowel is a back vowel or /a/ and after
coronal consonants when the initial stem vowel is a back vowel.

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[13] There are cases where a stripped form of the definite determiner is attached to the prefix
with a deictic meaning or to convey the meaning of 'this/that one/the other' e.g. *f-a-fu-nah*
(CL7-DEF.DET-NCM7a-day) 'the other day', *Øa-h-a-ññil* (ØDEF.DET-CL1-NCM1-
child) 'that (aforementioned) child'. However, these pre-prefixed forms of the definite
determiner are not noun class markers.

[14] [ATR] vowel harmony has been reported as a feature common to all Jóola languages
described thus far (Bassène, 2007, Sagna, 2008, Sambou, 2007, Sambou, 1979, Sambou
and Lopis, 1981, Sambou, 1989, Sapir, 1975, Sapir, 1965, Sapir, 1971, Tendeng, 2007).

[15] Sagna (2008: 72) presents and discusses in detailed the Eegimaa vowels.

(8)   *b**u**-u**l*   'face'   *f**u**-how*   'head'

       *f**u**-a**r*   'root'   *b**u**-a**s*   'Ficus exasperata'

       *ñ**u**-h**u**l*   'funeral'   *j**u**-o**l*   'small fish'

All noun class prefixes having the form *Cu-* (except NCM 8 *gu-*) also have a *Ci-* variant. With NCM 8 *gu-*, the absence of vowel harmony based on frontness is possibly due to the presence of the dorsal consonant */g/* which triggers the use of the back vowel */u/* but never */i/*.

The semivowels *y-* and *w-* and the high vowels */e/* and */u/* alternate in terms of the agreeing elements that they occur with, as can be seen in classes 3 *e-* and 6 *u-* in Table 1 above. Semivowels are attested before vowels, while vowels occur before consonants. Semivowels are also attested as noun class markers of the *C-* shape in nouns like *y-aŋ* 'house', *y-on* 'crocodile' (*s-on* 'crocodiles' in the plural), *w-al* 'hair' (*g-al* 'hair' in the singular). It is important to note here that the occurrence of a semivowel as a noun class prefix is not the result of any synchronic phonological rule. For example, *y-aŋ* 'house' (*s-aŋ* 'houses' in the plural) is not underlyingly *e-aŋ*, which in fact designates a 'kind of musical instrument'. A semivowel can however, also occur as a noun class marker as will be argued in 3.1.3 below.[16]

3.1.2 Notes on number. As mentioned above, number is marked by the use of distinct noun class prefixes for the singular and plural sets. For instance, the noun fi-eñ 'month' included in class 7 fu- forms its plural as gu-eñ 'months' with NCM 8 gu-. All nouns of class 7 fu- form their plural in class 8 gu-, showing a one-to-one singular-plural correspondence. There are also cases where different singular noun class markers have an identical plural class correspondent. For example, bu-ssana 'dug out canoe' and ñi-hin 'plot of rice field', which belong to singular classes 5 bu- and 12 ñu- respectively, form their plural in noun class 6 u- to produce u-ssana 'dug out canoes' and u-hin 'plots of rice field'. This is a case of many-to-one singular and plural pairing. Furthermore, noun stems that have an identical singular noun class

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[16] In example (32), I show cases where the alternation between *y-* and *e-* or *w-* and *u-* with the same noun results either in a minimal pair or produces an incomprehensible word that is at worst not attested in the language. Thus, it cannot be argued that *y-aŋ* 'house' and *e-aŋ* 'kind of musical instrument', for instance, denote the same entity as suggested in previous descriptions of the language (Bassène, 2007). The argument proposed here is that there are a limited number of nouns which take semivowels as noun class markers and which have to be learnt as such. If there was a productive rule according to which *e-* turns *y-* before a vowel, it has been lost. The synchronic rule is that a noun class vowel prefix occurs before an initial root vowel without triggering any alternation between vowel and semivowel. For example, no recorded loanword shows such an alternation with noun class prefixes. On the other hand, loanwords of class 3 having an initial vowel e.g., *é-otor* 'car', do use the prefix *e-* without triggering any assimilation.

prefix do not always combine with the same plural morpheme. For example, ga-ñen 'hand' and ga-ssin 'horn' have an identical singular noun class prefix 9 ga-, but their plural forms are NCM 8 (gu-ñen 'hands') and NCM 6 (u-ssin 'horns') respectively showing a case of one-to-many singular and plural pairing. However, these singular and plural pairings of nouns are not easily predictable because of the intricate singular and plural relationship which includes one-to-one, one-to-many and many-to-one correspondences.

One way of representing irregularities such as those outlined above is indicated in Table 2, which shows singular-plural correlations between count nouns. This is a traditional way of summarizing the different noun classes in a language. However, its shortcomings are that it does not reveal the full complexity of the number system of a language like Eegimaa. Therefore, it is proposed that Table 2 should be read in conjunction with Table 1 which shows the different form of prefixes in a class and their corresponding agreement markers.

Table 2 : The summary of noun classes and singular plural correlations

Non-Pairing (Locatives)

13. *t-*
14. *d-*
15. *n-*

_____ Regular plural (productive)
.... Irregular plural (unproductive)
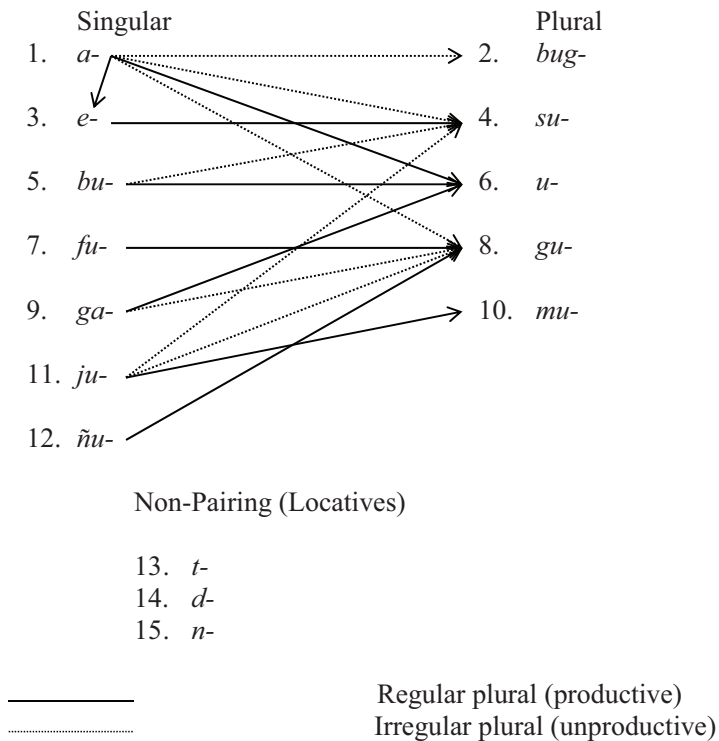
As is typical in noun class languages, there are more singular than plural noun class prefixes. The singular-plural correlations presented in Table 2 are of two types: the regular and productive correlations and the irregular and unproductive ones. Productive pairings are those that include most plural correspondences between singulars and plurals and which can include loanwords. Unproductive plural formations are irregular in that they have very few members and do not include loanwords. These unproductive correlations can be seen as exceptions to the regular and productive singular-plural formations. NCM 1 *a-* for instance, has more than one plural correspondent. The prefix *bug-* is lexically determined and only occurs in *bug-an* 'people', but is found as an agreement marker for various dependents as shown in Table 1 above. NCM 1 *a-* also has two other irregular counterparts (NCM 4 *su-* and NCM 8 *gu-*) and two regular ones (NCM 3 *e-* whose multiple functions are illustrated in (12)-(13) and NCM 6 *u-*).

Because of these variations in class 1 plural formation, it is difficult to associate a single plural noun class prefix with the class. Another example is *jí-çil* 'eye', which uses NCM 11 *ju-*. This is the only recorded noun which combines with NCM 11 *ju-* in the singular and forms its plural with NCM 8 *gu-*, *gú-çil* 'eyes'. All other nouns of class 11 *ju-* form their plural in class 10 *mu-*. Only one noun stem combines with NCM 11 *ju-* in the singular (*ji-ggaj* 'panther') forming its plural with NCM 4 *su-*.[17]

In addition to distinguishing singularity and plurality with count nouns, noun class markers also combine with non-count nouns and are used to express collective meanings. There are however, no dedicated noun class markers for mass and abstract meanings expressions. Non-count nouns occur in different classes in Eegimaa as illustrated in (9) and (10).

(9) **fu-***nah*   'day'   **ga-***nnay*   'year'

     bu-*soŋet*   'stupidity'   **mu-***jah*   'intelligence'

     ña-*tiñ*   'pain'   **ji-***bij*   'lie'

(10) **bu-***nuh*   'palm wine'   **mí-***ita*   'palm oil'

     ba-*raj*   'rice gruel'   **si-***nnaŋ*   'cooked rice'

     gú-*kkaju*   'cashew fruits/alcohol' **e-***por*   'powder/flour'

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[17] Note that most speakers use the singular form (*ji-ggaj*) for the plural, but a plural agreement marker (CL4).

Different types of collectives exist in Eegimaa, some of which are expressed with, what I call 'subclass markers', labeled NCM Xb. These are collectives for small things expressed with NCM 5b *ba-* (11)a, and collectives for swarms which are expressed using NCM 7b *fa-* (11)b. There are also collectives that use different noun class prefixes e.g., NCM 3 *e-* illustrated in (11)c and (11)d which expresses collectives for plants and humans, and its plural correspondent NCM 4 *su-* which expresses distributive meaning referring to entities of different kinds as in (11)d. NCM 4 can also be used with certain mass nouns to indicate diversity of origins as in (11)e.

(11) a. ***a-/u-****ññil*   'child/children'
          ba-*ññil*   'group of small children'

      b. ***e-/si-****ingilit*   'wasp/-s'
          fa-*ingilit*   'swarm of wasps'

      c. ***gá-/ú-****gabal*   'water lily/-ies'
          é-*gabal*   'colony of water lilies'

      d. ***a-/e-****jaora*   'stranger/-s'
          si-*jaora*   'strangers from different origins'

      e. ***e-****llu*   'meat'
          su-*llu*   'meat from different animals'

Sambou (2007: 104-108) discusses aspects of the Jóola Karon number system, showing the existence of some non-count nouns which have only a singular form (*singularia tantum*) and others which only occur with a plural noun class prefix (*pluralia tantum*). However, it is not clear from his discussion which noun class prefixes are used for the formation of collectives. In Sapir's analysis (1965: 61-62), NCM's 3 *e-*, 13 *ba-* and 14 *fa-* are the only noun class prefixes used to express collective meanings.

In Eegimaa most prefixes used as collective markers are singular noun class markers when they combine with count nouns. They trigger alliterative agreement and are, as a result, assigned to classes whose agreement they display.[18]

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[18] It could be argued that if singular and plural are analysed as different sets, collectives and non-count nouns could also be analysed as constituting different sets. However, collectives are usually treated as derivational and are typically not regarded as basic number values (Corbett, 2000), whereas singulars and plurals are analysed as inflectional categories. The traditional approach of treating singular and plural forms of a noun as separate classes seems consistent with this view. In this paper, singular and plural

One further complexity of the Eegimaa number system is the use of the same noun class prefix (NCM 3 *e-*) as a singular marker in examples (11)b and (12), a collective marker in (11)c and (13), a plural marker in (11)d and (14) and with a mass noun in (11)e. Notice that in examples (12)-(14), even though the noun class prefix is the same for all controller nouns, the agreement markers triggered by the singular and collective expressions in (12) and (13), differ from the one that appears for the plural meaning in example (14). The complex Eegimaa number system (including singular-plural correlations, the formation of collectives) and its interaction with inflection and derivation constitute a topic to be investigated in future research. In 3.1.3 below, I discuss formal criteria which can be used to determine the class membership of nouns that show such variations in agreement marking.

(12) **e-***buh*   *yayu*   **e-***kkumasi-e*   *imbi*   **e-***huli*
       NCM3:SG-kinship   CL3:DEF   CL3-start-PFV   PERM   CL3-be.long
       'The kinship has started to extend.' (ss20040910_ebuh)

(13) *[…] ikki* **e-***mmano*   *yayu*   **é-***puren-ul*
          until NCM3:COLL-rice   CL3:DEF   CL3-take.out-DIR
       '[…] until the rice starts producing.' (ss040910_fir)

(14) **e-***soddali*   **gú-***uba*   **gu-***jog-om*
       NCM3:PL-soldier   CL2-two   CL2-catch-1SG.DO
       'Two soldiers caught me.' (ss20090510_Batings-Gal)

In summary, the discussion in sections 3.1.1 and 3.1.2 above, and Table 1 in particular, shows that noun class prefixes associated with a given class may appear in different forms and do not always indicate class membership since the form of the agreement target may differ from that of the class marker on the noun. Table 2 shows that Eegimaa has a crossed noun class system, with regular and irregular correlations between singular noun class markers and their plural counterparts. A further complication is the case of NCM 3 *e-* which combines with noun stems to express singular, plural and collective meanings as exemplified in (12)-(14). An important observation is that the class membership of a noun cannot always be predicted from the form of the noun class marker it combines with. Therefore, instead of morphological criteria, syntactic agreement will be used as the main basis for determining the class membership of nouns.

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categories are treated as distinct classes with agreement used as the criterion to determine class membership.

3.1.3 Variation between noun class markers and agreement markers.
This section discusses variation between the forms of noun class markers and
their agreement correspondents presented in Table 1. Similar to Jóola Fogny
(Sapir, 1965: 24), the Eegimaa agreement system is predominantly
alliterative. However, Eegimaa shows more instances of non-alliterative
agreement than Jóola Fogny.

Alliterative agreement occurs when the controller noun includes a form
which is identical to the agreement marker on agreement targets, thus
indicating the class membership of that noun (Corbett, 1991: 117). In
Eegimaa, alliterative agreement occurs when the initial consonant or the
initial vowel of a noun class marker on the controller noun is phonologically
similar to that of the corresponding agreement markers on targets, as in
examples (15)-(18) and also in most classes in Table 1.

(15) **b**-*aŋ*   **b**a**b**u   **b**u-*uŋ-e*
      NCM5-living.room   CL5:DEF   CL5-be.wide-PFV
      'The living room is wide.' (Introsp)

(16) **bi**-*sem*   **b**u-*joh*   *y-o*
      NCM5a-rust   CL5-catch   CL3-PRO
      'It is rusted.'(Lit: 'Rust has caught it.') (ss20040817_abas)

(17) **ba**-*ccin*   **b**u-*ja-or-e*   *ni*   *bi-çin*
      NCM5b-village.shrine   CL5-go-REC-PFV   LOC   NCM5a-settlement
      'A village shrine does go together with the settlement.'
      (ss20040817_abas)

(18) **ji**-*hin*   *j*a*j*u   **j**-*anur*   *j*a*j*u
      NCM11a-plot.of.rice.field   CL11:DEF CL11-one CL11:DEF
      'The small plot of rice field is the same.' (ss20041010_Fir)

Noun class markers showing phonological similarity with agreement
markers are not always identical in form. In examples (15)-(17) for instance,
noun class prefixes appear in *C*-, *Cu-/Ci*- and *Ca*- shapes but have the same
agreements on targets. Since the class membership of a noun is not
necessarily revealed by the prefix attached to it, it is argued that similarity of
the agreement forms is more appropriately used as the primary criterion to
determine the class membership of a noun.

In previous investigations of Jóola noun class systems, the
dissimilarities in the form of noun class markers such as those illustrated in
(15) to (17) above have been analysed differently. Sapir (1965: 61-68) treats
prefixes of the shape *Ca*- as noun class markers different from those of the
shape *Cu-/Ci*- and C- even though they show alliterative agreement (see (19)

and (20) taken from Sapir (1993)). His argument is based on the fact that in Fogny, prefixes of that shape generally prefix to nouns denoting mass and abstract concepts.[19]

(19) *ánoan* **bu-***facab*   **b-***oola*
      everyone NCM9-quarter   CL9-3SG:POSS
      'Each person her own quarters.' (Sapir 1993)

(20) **bá-***labiñ*   *bu-sof-om*   *di*   *ká-kanum-ak*
      NCM13-numbness   CL13-catch-1SG.OBJ   on   NCM7-foot-DEF
      'Numbness traps me in the foot.' (Sapir 1993)

The other major approach to the treatment of the prefixes that share the same initial consonant as exemplified in (15)-(17) is championed by Sambou (1979). He argues that in Jóola Kaasa Esuulaalu? any prefix of the shape *Ca-* originates from an underlying form **Cu-a* where the high back vowel is deleted by a regular synchronic rule of vowel coalescence. In Sambou (1979: 89), he argues that the vowel /*a*/ in that underlying form is a separate morpheme -*a*- which he calls the postprefix[20]. For example according to Sambou (1979: 133), the underlying form of the Jóola Kaasa Esuulaalu? noun *ñakon* 'filth' is *ñu-**a**-kon* 'filth' which can be broken down into a prefix *ñu-*, the so-called postprefix -***a**-* and the root -*kon*.

Sambou's postprefix has often been adopted by authors working on different Jóola languages, including Jóola Fogny (Hopkins, 1995), Eegimaa (Bassène, 2007, Tendeng, 2007) and Jóola Karon where it has been described as *'post-classe'* (Sambou, 2007). The postprefix approach has been challenged only in Seck (2002: 199) and Sagna (2008: 198-203). Seck (2002) rejects the postprefix on the grounds that claims about its distribution and function are not supported by empirical evidence. Notice that Seck (2002) proposes an analysis which is close to Sapir's (1965) by treating *Ca-* prefixes as markers for separate classes from their *Cu-*/*Ci-* counterparts.

Bassène follows Sambou (1979) in stating that there is a rule of vowel deletion with two main outputs, which accounts for the variation in the noun class prefixes in examples (15)-(17) (Bassène, 2007: 21-22). This rule is used to try to account for the origin of both noun class markers of the form *C-* and those of the form *Ca-*. Noun class prefixes of the shape *C-* are said to come from a rule that deletes the vowel of a prefix of a *CV-* shape if the initial root

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[19] The numbering convention for noun classes proposed in these two examples is that provided for the Jóola Fogny noun class system by Sapir (1965).
[20] The postprefix has become important in recent years especially because its existence has been taken for granted in most studies on Jóola languages. Therefore, it deserves a detailed discussion here.

vowel is /a/ as illustrated in the examples below, taken from Bassène (2007:22).

(21) *gu* + *ar* → *g-ar*   'stomachs'

 mu + *al* → *m-al*   'water'

 fu-al   → *f-al*   'river'

The problem with this first rule is that it does not describe a synchronic process. The forms in the left column which are referred to as the underlying ones are in fact nouns in Eegimaa, with different meanings, as can be seen in example (22).

(22) *gu-ar* 'roots'   *g-ar*   'stomachs'

 mu-al 'small Psammophis elegans (snake)' *m-al* 'water'

 fu-al 'Psammophis elegans (snake)'   *f-al* 'river'

Additional examples provided in (23) show that it is possible to alternate the prefixes of the shape *CV-* or *C-* to form singular, plural and diminutive forms, but the shape of the noun class markers remain the same. In addition, examples in (24) show that as a rule, no vowel of a noun class prefix is deleted when an Eegimaa noun or a loanword has an initial /a/ vowel. This indicates that the rule of vowel deletion is not a synchronic rule operative on Eegimaa noun class markers. That noun class prefixes of the form *C-* come from an underlying *Cu-* form, is therefore not part of the native speakers' tacit knowledge.

(23) *fu-ar*   'root'
    f-ar   'stomach'

 ji-al   'small psammophis elegans (snake)'
    j-al   'small quantity of water'

 gu-al   'psammophis elegans (snake)'
    g-al   'rivers'

(24) *fu-ap*   'blister'   *gu-angileay* 'English'
    ma-agen 'truth'   *ga-afiç*   'poster'
    ga-al   'furrow'   *si-akkut*   'scorpions'

The second claim of the rule of vowel deletion is that noun class markers of the shape *Ca-* synchronically come from the form **Cu-a*. In a way, the rule of the formation of the postprefix is related to that of the formation of *C-* shaped noun class prefixes in that it is argued that the vowel *u-* is deleted to form the noun class markers of the form *Ca-*. Bassène (2007: 33-34) provides a clearer account of this statement for Eegimaa by arguing that the postprefix is always placed between the noun class prefix and the noun stem as in *ga-toj* 'leaf' and *ga-maŋ* 'love' which according to the postprefix analysis should be broken down as **gu-a-toj* 'leaf' and **gu-a-maŋ* 'love'.

Here again, there is no synchronic rule of vowel coalescence that deletes a vowel */u/* when it is in contact with the vowel */a/* or any other vowel. Sambou (1979: 18, Sambou, 1989) argues that there is a "general rule" according to which, a vowel "assimilates" to the one that precedes it. In Eegimaa, a rule of assimilation is observed only with irregular verbs[21] which are, in fact, those used as illustrations for this rule of assimilation by Bassène (2007: 22). The general rule is that adjacent vowels of both a noun class marker and a subject agreement prefix always occur in hiatus, i.e. they are not assimilated when in contact with a stem initial vowel as the examples in (25) below show.[22] Note that none of the loanwords in (26), which combine with NCM 9 *ga-*, appear with the so-called underlying form **gu-a-*.

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[21] The assimilation process only occurs in exceptional contexts i.e., with the irregular verbs e-eh 'say', e-em 'be' and e-egen 'have/hold' whose inflected forms exhibit a somewhat different form which does not follow the regular pattern of most verbs in the language.

[22] To account for the numerous cases where contiguous vowels show no assimilation process Sambou posits a phoneme he calls the disjunctive phoneme. He argues that this phoneme, which in actual fact has no phonetic basis, has to be accepted; otherwise one has to find a way of explaining cases where vowels occur in hiatus when the general rule is that contiguous vowels assimilate. In the case of Eegimaa, the general rule is that contiguous vowels belong to different syllables. This reinforces the argument made here, that noun class prefixes of the form C- and Ca- are not the result of any synchronic phonological process.

(25) **ni-**alene   'I have taken (sth) down'
      ú-ulen   'pour down!'

      ga-alah   'hoof'
      u-alah   'hoofs'

      fu-alen   'place for selling wine'
      gu-alen   'places for selling wine'

(26) **ga-**hait   'sheet of paper'
      ga-bbaç   'tarpaulin'

No synchronic rule justifies the treatment of noun class prefixes of the form *C-* as originating from a *Cu-* form or *Ca-* as being underlyingly *Cu-a-*. In fact the postprefix approach seems to mix synchronic and what has been described as a possible diachronic process to account for the existence of the noun class prefixes of the form *Ca-* (Doneux, 1975). According to Doneux's (1975) hypothesis, the prefix having the form *Ca-*, found in Jóola languages and other Atlantic languages, is probably historically derived from the form *CV-a-*, where the vowel *V* corresponds to /u/. This vowel was then deleted at some stage as a result of the adjacency with the vowel /a/. According to Doneux's analysis, the synchronic prefix form *Ca-* would then be the result of a historically relevant morphophonological rule of vowel deletion. This hypothesis seems to have inspired Sambou's synchronic postprefix, which was subsequently incorporated into most descriptions of noun class systems in Jóola linguistics to argue that prefixes of the form *Ca-* has a synchronic origin of the form *CV-a-*.

From the discussion of the prefixes showing similarities with their corresponding agreement markers, I argue that no morpheme *-a-* ever occurs in the position between a noun class prefix and a noun stem. As a result, referring to the vowel of prefixes of the form *Ca-* as a postprefix is highly problematic since the rule of vowel coalescence posited by the proponents of the postprefix approach is not supported by synchronic data. Thus, I argue that prefixes on nouns appear in different forms and that the criteria showing class membership should simply be those based on agreement. There is no need to posit such an 'impressionistic morpheme' (Seck, 2002: 199) to reduce the number of classes.

I also do not follow Sapir in distinguishing *Cu-/Ci-* versus *Ca-* as markers of different classes. This is not to deny Sapir's observation that in Jóola Fogny, most noun class markers of the shape *Ca-* (except NCM 7 *ka-*) are predominantly used with abstract nouns and in the formation of collectives. In Eegimaa, even though it is possible to find count nouns with noun class prefixes of the form *Ca-* as shown in (27), those prefixes are also

used in the formation of collectives (except NCM 9 *ga-* the Eegimaa equivalent of the Fogny NCM 7 *ka-*), abstract and mass nouns. However, as (28) shows, non-count nouns are not restricted to the *Ca-* prefixes but rather also exhibit prefixes of the *Cu-/Ci-* shape. In fact the strong tendency to express semantic features such as collectives with some prefixes of the shape *Ca-* is the reason why I have labeled these noun class markers NCM Xb; for example NCM5b *ba-* (see also Sagna, 2008). While this points out to a peculiarity of most of these noun class prefixes, it remains clear from the data that not all prefixes of the shape *Ca-* have these semantic properties. However, the distinction is not synchronically productive, although it may be based on a historically productive process, as suggested by Doneux.

(27)   **ba-***giŋ*   'chest'   **u-***giŋ*   'chests'

      ba-*ppil*   'pile of small sticks'   **fá-***bangur*   'locust'

      ba-*pah*   'rudeness'   **ma-***aro*   'the good'

(28)   **bi-***inum*   'mind'   **mú-***hum*   'honey'

      fi-*eñ*   'month'   **ñu-***ssu*   'shame'

In Eegimaa, loanwords can be integrated based on phonological similarity between the first syllable of the borrowed noun with a noun class marker in the language. In example (29) for instance, the noun *ga-rafa* 'bottle' borrowed from the Portuguese Creole word *ga-raafa* 'bottle' is assigned to class 9 *ga-* based on the aforementioned phonological criterion and shows alliterative agreement.

(29)   **ga-***rafa*   **ga***gu*   **g-***umban* **gu-***fum-o-e*
      NCM9-bottle   CL9:DEF   CL9-mine   CL9-break-MID-PFV
      'My bottle is broken.' (Introsp)

Another type of agreement which can be subsumed under alliterative agreement is the one revealed by the alternations between semivowels and vowels of the same place of articulation on agreement targets (*u-/w-* and *e-/y-*) as illustrated in (30) and (31). Semivowels are attested as agreement targets before vowels whilst vowels occur before consonants. Note that these alternations are restricted to targets, since with controller nouns, noun class markers NCM 3 *e-* and NCM 6 *u-* can occur before vowels just like semivowels, as can be seen in example (32) below.

(30) ***u**-jow*   ***wawu***   *bú-sol*   *nahi*   ***ú**-jo-ul*
       NCM6-name   CL6:DEF   NCM5a-back   HAB   CL6-go-DIR
       'The names usually come (are given) later.' (ss060426_fir-ao-hono)

(31) ***e**-buh*   ***yayu***   *mamu*   ***e**-jow*   *mee*
       NCM3-kinship   CL3:DEF   DEM:CL10   CL3-go   Like.this
       'This is how the kinship goes.' (ss20041010_Fir)

Since there is no synchronic rule of vowel deletion that restricts the occurrence of a vowel before another vowel, it can be argued that the semivowel can also occur as a noun class prefix. Here again, the data provided by the proponents of the postprefix arguing that nouns having the shape ***y**+stem* have an underlying ***e**+stem* shape and those having the shape ***w**+stem* have an underlying ***u**+stem* (see e.g., Bassène, 2007: 21) cannot be validated by synchronic data, as demonstrated by the examples below.

(32) ***e**-aŋ*   'kind of musical instrument'   ***si**-aŋ*   'musical instruments'
       ***y**-aŋ*   'house'   ***s**-aŋ*   'houses'
       ***y**-aaj*   'bee'   ***s**-aaj*   '(two) bees' **e + aaj*
       ***g**-añ*   'cloth'   ***w**-añ*   'clothes'
       ***u**-añ*   'cultivate!' (2sg.Imperative)
       ***ga**-an*   'branch'   ***u**-an*   'branches' **w- aan*

Not only are some of the glosses proposed by the proponents of the postprefix for the examples above erroneous, but also some of the data provided (e.g., *w-aan* for *u-an* 'branches') are not Eegimaa words.

In addition to cases of alliterative agreement discussed above, there are also instances of non-alliterative agreement where there are no similarities between the noun class marker on the controller noun and the corresponding agreement markers on targets. These mismatches include both phonologically-based mismatches and semantically motivated ones.

Phonologically based dissimilarities between noun class markers and their agreement targets are cases where a noun stem occurs without a noun class marker (cf. example (33) below).

(33) ***Ø**-háhae*   *nahi*   ***é**-sotten-i-sotten*
       NCM3-leprosy   HAB   CL3-cure-PASS-DUP
       'Leprosy can be cured.' (Introsp)

(34) ***e**-akkut*   ***é**-taf-ol*   *t-o*
       NCM3-scorpion   CL3-sting-3SG.DO   CL13-PRO
       'A scorpion stung him there.' (Introsp)

Semantically motivated non-alliterative agreement mainly includes cases of multiple semantic classification. This is the situation where a noun combines with a noun class marker of one class, but triggers the agreement marker of another one. 'Multiple semantic classification' simply indicates that the use of a noun class prefix from a different class has underlying semantic motivations. It does not imply that semantic criteria are used for the inventory of noun classes. The noun, as elsewhere, is considered to belong to the class whose agreement marker it exhibits.

The plural formation of nouns of human denotation exemplified in (35)-(37) and the noun *ji-ggaj*[23] 'panther' which belong to classes 3 and 4 but uses NCM 11a *ju-* noun class prefix (see example(39) below), illustrate what is referred to as multiple classification. In (36) for example, the noun combines with NCM 6 *u-* which triggers class 6 agreement on the definite determiner, but the agreement marker on other target elements is that of class 2. These nouns, as Table 1 also shows, use markers from different classes, but their class membership is determined based on agreement.

(35) **sí-**ppay-oli   u-**bug**-u   **gu-**bug-e
NCM4-father-1PL.EXCL.POSS   PRES-CL2-MED   CL2-beget-PFV

u-ññil
NCM6-child

'Those forefathers of ours begot children.' (ss20041010_Fir)

(36) **u-**ffan   wawu   u-**bug**-u   **gu-**bug-e   **u-**ññil
NCM6-old   CL6:DEF   PRES-CL2-MED   CL2-beget-PFV NCM6-child
'Those elders begot children.' (ss20041010_Fir)

(37) **é-**jjola   yayu   u-**bug**-u   **gu-**bug-e   **u-**ññil
NCM3-jóola CL3:DEF   PRES-CL2-MED   CL2-beget-PFV NCM6-child
'Those Jóola people begot children.' (Introsp)

Multiple classification shows a partial membership of the noun in the class whose noun class marker and agreement on the definite determiner are used. In (Sagna, 2008) I have shown that these cases of formal mismatches reflect multiple cognitive categorization processes. The argument proposed is that noun class prefixes are associated with semantic content and that multiple class membership reveals the use of multiple semantic classificatory

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[23] It should be noted that nouns do not show multiple classification because of animacy. Animacy plays no role in the Eegimaa noun class system. The semantic principles of categorization which underlie the classification of nouns in example (35)-(37) are culture-bound.

criteria used in the semantic categorisation of the entity denoted by the noun. Table 3 presents a summary of the semantic characterizations of the Eegimaa classes (cf. Sagna (2008)).

Table 3: Outline of Eegimaa semantic parameters of categorization

Noun classes	Typical semantics
1/2	Humanness (including kinship, identity groups in plural)
3/4	Default or unspecified or unfeatured; special humans (including domain of experience of birth and maternity in plural); collectives for colonies; loanwords
5/6	Assemblages or whole; production (also singular domain of experience of birth and maternity) and protection; collectives for small entities; enormous entities & augmentatives
7/8	Roundness; thickness; extended parts of things; augmentative with the meaning round or fat; collectives for swarms (of insects); flexibility
9/6	Flatness; thinness; width; big size; augmentative and derogatory meaning; unpleasant things; rigidity
11/10	Small things; diminutive; endearment
12/6	Economy and social organization or interactions
13	Precise location
14	Location inside
15	Temporal location

In examples (38) and (39) two cases of multiple classification are presented with one "human" noun and one "animal" noun. Here, as with nouns with a human denotation of class 2 illustrated in (35)-(37), culture-specific semantic parameters of classification are responsible for the absence of alliterative agreement. In (38), the multiple classification of 'young woman' is motivated by her simultaneous categorization in the 'domain of experience of birth' (CL5) and the class of humans (CL1) (Sagna 2008: 239-241). On the other hand the combination of *-ggaj* 'panther' with diminutive noun class marker NCM 11 *ju-* is based on a euphemistic classification of this feared animal, whereas CL3, the default class, is a common class for animals.

(38) **b***á*-*jur*   **b***aub*-*u*   *n*-***a***-*kkay*   ***a***-*juh*
      NCM5b-young.woman   CL5:DEM-PROX   LOC-CL1-leave CL1-see

      á-pur
      NCM1-young.man

      'That young woman went to see a young man.' (ss041013_gnabai)

(39) *jambi* ***ji****-ggaj* ***yayu*** ***y****-ola* ***é****-laput*
     PROH   NCM11a-panther   CL3:DEF CL3-his   CL3-be.cruel
     '…to prevent his (reincarnated) panther from being cruel.'
     (ss040918_ñuhul)

3.2 Summary of the class assignment criteria for Eegimaa. In this paper the following criteria are proposed to account for the complex variations noted in the agreement system of Eegimaa. Agreement is a sine-qua-non for defining a language as having a noun class system (Sapir, 1965: 61, Welmers, 1973: 162). Because there is a lack of uniformity in agreement marking between controllers and targets, the agreement diagnostic criteria used to provide a full inventory of the noun classes in Eegimaa must take these peculiarities into account. These criteria may be applicable to other Jóola languages which exhibit simpler or equally complex noun class systems as in Eegimaa.

    As indicated above, nouns whose prefixes show alliterative agreement with their agreement targets are assigned to the same class. This criterion accounts for the class membership of nouns exemplified in (40) and (15)-(18) that combine with noun class markers having the shape *C-*, *Cu-*/*Ci-* and *Ca-*. Note that non-count nouns generally show alliterative agreement. Therefore their class membership is decided on agreement criteria.

(40) ***fi****-ttih*   ***fi****-cce*   ***f****-o,*   *t-o*   *gu-kkan*   ***f****-o*
     NCM7a-war CL7-INDEF   CL7-PRO CL13-PRO CL2.3PL-do CL7-PRO
     'Another war was fought at that place.' (ss040828_sidda)

    Locative classes also show alliterative agreement, as can be seen in examples (41)-(44). Apart from one recorded instance where class 13 *t-/ti-* combines with the lexeme *-nah* 'day', locatives do not normally combine with lexical nouns. They exhibit a complex morphological structure with double agreement marking. Eegimaa has three spatial locatives and one temporal class that have the following meanings: 'precise location', 'general location' (expressed by class 5), 'location inside' and 'temporal location'. Spatial location markers combine with demonstrative suffixes to express proximal, medial and distal location relative to the deictic centre. The locative that expresses general location (cf. (42) below) is interpreted as belonging to class 5 because of its similar phonological agreement form with the latter.

(41) ***táut****-e*   ***tí****-jebi-jebi*
     CL13:DEM-PROX   CL13-be.wet-DUP
     'This place (precise place) is wet' (Sagna 2008)

(42) ***báub-u***   ***bú-**-rali-rali*
      CL5:DEM-MED   CL5-be.far-DUP
      'That area is far away' (Sagna 2008)

(43) ***dáur-u***   ***dí-**-sikki-sikki*
      CL14:DEM-MED CL14-be.deep-DUP
      'This place (inside) is deep' (Sagna 2008)

(44) ***n-**-án-o-**n**-an*   ***n-**-u-jo-ulo*
      CL15-QUANT-INFX-CL15-DUP   CL15-2SG-go-DIR .PFV
      'Whenever you come.' (Part-Obsv)

Note that class 2 and class 8 show phonological similarities in some agreement targets as was also shown in Table 1. However pronominal agreement markers on independent pronouns differentiate these two classes and correspond to human versus non-human semantic differences.

(45) ***gu-**-tti-ol***   ***bug-**-ay* ***gu-**-ot-ulo?*
      NCM8a-same.sex.sibling-3SG.POSS   CL2-INT   CL2-go.home-DIR.PFV
      'Which among his brothers came back home?' (Introsp)

When nouns have a similar noun class marker but different agreement correspondents, then they belong to different classes. This criterion distinguishes some cases of multiple semantic classification revealed by non-alliterative agreement from cases of class membership revealed by alliterative agreement as exemplified in (46) and (47). Recall that cases of multiple classification are, as argued above, manifestations of multiple semantic categorization strategies.

(46) ***bá-**-jur*   ***b**-aub-u*   ***n-**-a-**-kkay*   ***a-**-juh*
      NCM5b-young.woman   CL5:DEM-MED   LOC-CL1-leave   CL1-see

      á-pur
      NCM1-young.man

      'The young woman went to see a young man.' (ss041013_gnabai)

(47) ***bá-**-rusu*   ***b**-abu*   ***bu-**-roŋ*   *t-o?*
      NCM5b-jigger   CL5:DEF   CL5-remain   CL13-PRO
      'Are jiggers still there?' (Part-Obsv)

With count nouns illustrated in (48) and (49), singular and plural forms of the same noun stem are traditionally considered as different classes (Sapir, 1965: 61, Welmers, 1973: 162), even when they have similar agreement

markers. This approach which is universally adopted in Jóola linguistics distinguishes class 9 *ga-* and class 8 *gu-* which also has a subclass NCM8b *ga-*. It is only by considering singular and plural as different classes that one can separate classes 8 and 9 since they exhibit similar agreement markers. Following this criterion, it can be argued that examples (48) and (50) illustrate two different classes since the former is singular whereas the latter is plural.

(48) **ga**-*rej*   **g**a*gu*   **gu**-*ba-e*
      NCM9-tale   CL9:DEF   CL9-finish-PFV
      'The tale is finished.' (ss20030206_Garej)

(49) **gu**-*mangu*   **g**a*gu*   **gu**-*pu-put*
      NCM8a-mango CL8:DEF   CL8-rot-DUP
      'The mangoes are rotten.' (Introsp)

(50) *jama* **gá**-*gguh*   **gu**-*baj-ut*
      today   NCM8b-genie   CL8-have-NEG
      'Today there are no genies.' (ss20090319_mussay1)

The application of the criteria discussed above results in the fifteen noun classes presented in Table 1. The inventory of noun classes proposed here differs from previous works in that it does not accept the so-called postprefix as a valid element in the present stage of the language. For example, class 9 *ga-* is not interpreted as being derived from an underlying *Cu-a noun class as argued by Bassène (2007) and Tendeng (2007).

Another difference between the inventory provided here and that provided by Bassène (2007: 32) is that he proposes a regular singular-plural correlation between NCM 11 *ju-* and NCM 8 *gu-*. NCM 10 *mu-* is in his analysis one that does not participate in singular and plural correlations. My proposal about this specific point is in line with Tendeng's, where NCM 11 *ju-* appears as the singular regular form of class 10 *mu-* (v. Table 2). The correspondence between NCM 11 *ju-* and NCM 8 *gu-* is the irregular one since it only contains one member *ji-çil* 'eye', *gú-çil* 'eyes'. Tendeng on the other hand finds sixteen classes which differ from Bassène's inventory and the one I propose here. She has an additional class 13 *ba-*, which is interpreted by Bassène as deriving from the underlying form of class 5 **bu-a-*. My interpretation of that prefix is that it is a subclass of class 5 *bu-*, bearing in mind that the term *subclass* indicates a semantic tendency but does not describe a formal differentiation. The analysis provided in the current paper deviates from that provided by Bassène by rejecting the inclusion of the postprefix in the analysis.

4. Conclusion.

The North Atlantic Jóola languages of Niger-Congo that exhibit overt nominal classification systems have attracted increasing interest from descriptive linguists in the last decades. The noun class systems of these languages have generally lacked detailed investigations, however, since they are in most cases studied in the framework of larger projects of grammatical descriptions. Due to the numerous forms taken by noun class prefixes in these languages, the complex singular-plural correlations and the irregular agreement correspondences between controllers and targets, other descriptions have been characterized by disagreements between authors, even those describing the same language, as with Eegimaa. Most of the disagreement is related to the treatment of the noun class prefixes of the forms *Ca-* and to some extent those having the form *C-*.

Sapir and his followers analyze prefixes of the form *Ca-* as separate noun class markers whereas Sambou and the subsequent proponents of the so-called postprefix argue that the prefix form *Ca-* is a result of the deletion of the high back vowel /u/ of the underlyingly *Cu-a-* form where *-a-* is termed the postprefix. This paper has provided a critical analysis of the criteria used in previous works on Eegimaa and other Jóola languages to give an inventory of noun classes. I discussed the origins of the so-called postprefix and argued that it is irrelevant to the study of nominal classification systems such as that of Eegimaa, because there is no synchronic evidence to support such an analysis.

Using data from Eegimaa which does not exhibit a fully-fledged alliterative system, I argued that the inventory of noun classes in this language and other Jóola languages having similar systems should be based on the rigorous application of agreement criteria that take the language-specific aspects of the system into account. The application of these criteria has revealed that in addition to simple cases of classification revealed by alliterative agreement, Eegimaa also exhibits unproductive multiple semantic classification which formally manifests itself by a lack of alliterative agreement. The cross-linguistic and language-specific diagnostic criteria proposed here may consequently be more applicable for future studies of other Jóola languages than the frequent automatic adoption and application of the analysis based on the postprefix.

Abbreviations Used

1	First person	INTROSP	Introspection
2	Second person	MED	Medial (demonstrative
3	Third person	*	Underlying form/unattested form
AGT	Agentive	MID	Middle voice
C	Consonant	NCM	Noun class marker
CL	Agreement/concord marker, Co-Indexed with corresponding noun class (on verb)	NEG	Negations
COLL	Collective	ORD	Ordinal
DEF	Definite	PERM	Permissive
DEM	Demonstrative	PFV	Perfective
DIR	Directional	PL	Plural
DO	Direct Object	PROX	Proximal (demonstrative)
DUP	Reduplication	POSS	Possessive
EXCL	Exclusive	PRES	Presentative
FUT	Futurity	PRO	Pronoun
HAB	Habitual	QUANT	Quantitative
INDEF	Indefinite	REL	Relative
INFX	Infix	SUBJ	Subject
INT	Interrogative	SG	Singular

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THE CONSECUTIVE MORPHEME IN BAMILEKE-NGOMBA*

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Payne (1997) proposed a continuum of clause combinations to categorize multiverb constructions (including serial verbs) between the two poles of one single clause and two separate clauses based on their degree of semantic integration. In this article, I argue that Bamileke-Ngomba treats multiverb constructions at either end of this continuum (as well as in the middle) as verb chains. The consecutive morpheme is used in each case to link main verbs to other verbs within and between clauses. The distinction between these chain types is maintained by degree of semantic integration, as well as additional syntactic (location of NP insertion) and phonological (insertion of pauses) criteria.

1. Introduction

Bamileke-Ngomba (ISO 639-3 code [jgo], Lewis 2009) is a Western Bamileke, Grassfields Bantu language. It is spoken by approximately 63,000 people who reside primarily on the Bamileke plateau in the Mbouda Subdivision of the Bamboutos Division in the West Region of Cameroon. The area is accessible year-round by asphalt highway, Cameroon's National Route 6, and is located approximately 25 kilometers northwest of the West Region capital of Bafoussam and 50 kilometers south-southeast the Northwest Region capital of Bamenda. The data used in this paper are primarily from the Bamendjinda village dialect. The other main speech varieties are those of the villages of Bamesso, Bamenkoumbo, Babete and Bamendjo. The data were collected as part of a

language development project of the Cameroon Branch of SIL which works in the country under an agreement with the Cameroonian government. Work on the project began officially in April of 1994 when I and my family allocated to the village of Bamendjinda, which had been chosen as the reference dialect. Aspects of the project are ongoing and are mostly in the hands of the Bamileke-Ngomba speech community with guidance and assistance from the Cameroon Association for Bible Translation and Literacy.

The tonal complexity of Bamileke-Ngomba has not been given as much attention as it deserves, but at the present time I have analyzed it as a having two basic tones: **L** and **H**. There are two types of Low tones – those which fall in the phrase-final position, as in the word *naa* [nàä] 'animal' and those which remain level (**L°**), as in the word *fu* [fù°]'leaf/remedy'. The non-falling **L°** is relatively rare in the data. The presence of downstep is also attested in Bamileke-Ngomba, arising in grammatical constructions. Phonetically, one also finds the contours : **F,** a **high-low falling tone**, as in the word *mɔ̂mbí* 'goat', **R** a **low-high rising tone**, as in the word *ndǔm* [ǹdǔm] 'grasscutter_rat' and **RF** a **rise-fall**. One may view these as sequences of basic tones.

Bamileke-Ngomba is a rather conservative Grassfields Bantu language that retains some strongly Bantu characteristics. Agreement, for example, is still very important in the noun phrase. Although some collapsing of noun classes has occurred, it still boasts of a vigorous noun class system. The nine noun classes present are, according to the bantuist numbering system, : 1, 2, 3, 4, 5, 6, 7, 9, & 10. These combine into eight genders: 1/2, 1/6, 1/10, 3/4, 5/6, 7/6. 9/4, 9/6. Nouns are categorized into classes by their various combinations of prefixes (*N-, ø-, mɔ́-, mɔ̂N-, má-, pɛ-, pa-, pɛN-, mbɔ́- mɛN-, mɛ-*), agreement tones (H or L – occurring in possessive pronouns and as the associative marker[1]), and agreement consonants (w, p, m, n, & y – occurring in the syllable-intial slot of possessive and demonstrative pronouns).

On the other hand, Bamileke-Ngomba has also highly isolating tendencies as may be seen in the sparseness of the verb morphology and the fact that lexical roots for both nouns and verbs tend to be monosyllabic. There are only two productive verbal extension suffixes – one that is roughly valence raising -*tɛ* (for repeated intransitive actions or transitive actions affecting multiple objects) and another that is roughly valence lowering -*nɛ* (for reciprocal actions, for making transitive verbs intransitive and for verbs in relative and some other dependent clauses). For example, the intransitive verb *ŋ́kít* 'to jump', becomes *ŋ́kíttɛ́* 'to jump up and down(repeatedly)' with the addition of the valence-raising suffix *tɛ*.

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[1] Hyman and Tadadjeu attest to a floating H tone as "the mark of association when the first noun belongs to any noun class other than 1 or 9" (1976:60) in Babete, which is one of the speech varieties of Bamileke-Ngomba. My research concurs with this finding.

Since the verb morphology is limited, the language relies, to a large extent, on auxiliary verbs and grammatical tone to mark and maintain TAM[2] and polarity distinctions as will be seen particularly in §§ 4.1, 4.2, 4.4 & 4.5.

The consecutive morpheme in Ngomba, a verbal prefix, is one of the most frequently-used grammatical morphemes in the language and we will see in this article that it is employed in multiverb constructions at various levels both within and between clauses. A clause is commonly defined as a unit of syntax prototypically consisting of a subject and a predicate. The grammatical dictum of one verb one clause, which may be traced back to Aristotle's assumption of "one predicate one proposition" (Givón 2003:452), is called into question, however, by certain combinations of verbs, notably serial verb constructions. Thomas Payne, therefore, proposed categorizing clause combinations on a continuum from one clause to two separate clauses based on the criterion of the degree of grammatical integration (Payne 1997:307) as may be seen in the reproduction of it below:

Figure 1: Thomas Payne's Clause Combination Continuum

One clause	Serial verbs	Complement clauses	Adverbial clauses	Clause chains	Relative clauses	Coordi-nation	Two separate clauses
	--	

| High degree of grammatical integration | | | | | | | No grammatical integration |

In this article, I argue that in Bamileke-Ngomba clauses and clause combinations at three points on Payne's continuum – one clause, serial-like constructions and same-subject clause chains[3] – are all treated the same way, as verb chains. The evidence for this is that the same morpheme is used in all three instances to link the main verb to other verbs in the same clause or combination of clauses. That morpheme is what I term the consecutive morpheme (CNS).

I will briefly present phonological realizations of the CNS morpheme in Bamileke-Ngomba, i.e. its form, in section 2. In the section 3, I go on to introduce the three types of constructions, or verb chains, where the consecutive morpheme occurs. I note that in the second type of verb chain – and sometimes

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[2] For the reader's convenience, there is a list of abbreviations at the end of this article before the table of references.

[3] Only same-subject chains are attested in Bamileke-Ngomba. It is not a switch-reference chaining language.

in the first type – the semantic structure of serialization is there, but the formal marking differs greatly from that of proto-typical serial verb constructions. This leads into a brief justification of the use of the term "consecutive" to denote the morpheme under discussion. In section 4, I deal with the first type of verb chain, setting forth the basic constituent order of the Bamileke-Ngomba verb phrase and also discussing the two categories of auxiliary verbs that occur before the main verb - tense/aspect/negation markers and adverbial auxiliary verbs, respectively. In section 5, I deal with the second type of verb chain, discussing its function in case-role marking, the expression of manner, and the co-lexicalization of complex lexical concepts. In section 6, I deal with the third type of verb chain, pointing out that this construction is not only used for encoding consecutive events, in the strictest sense, but also for adding multiple objects to the verb. I also delve into the conjunctive functions of certain auxiliary verbs. In section 7, the conclusion, I set forth in table form the three criteria for distinguishing these three types of verb chains.

2. Phonological realizations of the consecutive morpheme in Bamileke-Ngomba

The consecutive morpheme in Bamileke-Ngomba is a prefix on the verb root that is most often realized as a syllabic homorganic nasal bearing a high tone. Close cognates of this prefix may be found in other Grassfields Bantu languages. For instance, it is very similar in form and function to the N- prefix in Bamileke-Fe'fe' [fmp] discussed by Hyman (1971) and the consecutive marker in Mankon [nge] (Leroy 2007[4]) and Awing [azo] (van den Berg 2009:24). The morphophonemic rules of Bamileke-Ngomba do not allow the prefix to be realized as a nasal on lexical roots that begin with a voiceless fricative, i.e., /f, s, ʃ/. In these cases, the prefix is realized as a [ə] that bears high tone (Satre 1997:5)[5]. In Table 1 below, we see realizations of the consecutive morpheme (CNS-) on various verb roots of Bamileke-Ngomba written in the orthography of the language. For each verb there is an IPA transcription[6] and free translation to the right as well as a morpheme gloss underneath:

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[4] According to Leroy (2007:17), Mankon does not have syllabic nasals before any voiceless consonant.

[5] There I referred to it as a tense/subject prefix which has the same form.

[6] In many examples throughout this article, I have inserted the IPA transcription of certain verbs and other words to aid the reader. My desire is to respect the official orthography of the language, but I realize that the orthography at times obscures the tone and other features of interest.

Table 1: Realizations of the consecutive morpheme

CNS- as homorganic nasal		CNS- as minimal vowel	
ḿ-bu¹⁷ [ḿ.būʔ] CNS-pierce	'to pierce'	ɛ́-fú [ɔ́.fú] CNS-come_from	'to come from'
ń-tɔ́ [ń.tɔ́] CNS-come	'to come/arrive'	ɛ́-sɔp [ɔ́.sɔ̄p] CNS-prick	'to prick'
ń-jú [ɲ.dʒí] CNS-eat	'to eat' (without chewing)	ɛ́-shɔt [ɔ́.ʃɔ̄t] CNS-turn	'to turn' (trans.)
ŋ́-gʉ [ŋ́.gɨ̄ˣ] CNS-go	'to go/depart'		

3. Three types of verb constructions viewed as verb chains

The consecutive morpheme in Bamileke-Ngomba plays an important role in three types of verb/clause constructions. It links verbs in these constructions together into a chain, thus making it possible to mark tense/aspect and often polarity only once, at the beginning of the chain. For convenience, we may simply label these by numbering them - type one, type two and type three. We will classify verb chains into these types according to syntactic, phonological and semantic criteria.

A type one verb chain in Bamileke-Ngomba is a construction linking auxiliary verbs together with a main verb <u>without</u> the possibility of inserting a NP (object) at more than one point in the string and without pauses in the flow of speech between the components. It corresponds to what Hyman (1971) termed "consecutivization within the auxiliary" (pp. 40-41) in Bamileke-Fe'fe'. They are clearly one event; and verbs which precede the main verb in the chain act as auxiliaries of tense/aspect, negation or may be seen to have an adverbial[8] function. In example (1) below, there are **four** verbs (underlined) in the verb phrase – the first is functioning as a future tense marker, the second and third have an adverbial function and the last is the main verb:

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[7] Note that the symbol " ˈ " is the Ngomba orthographic symbol for /ʔ/ in all examples.

[8] The use of the term "adverbial" in reference to such constructions is not unique to me. Aikhenvald (2006) states in a footnote that, "the term 'adverbial serialization' was introduced by Bradshaw (1993:152)." (p. 18)

(1) Pɛkŋɛ   ɡu̱ [ɣǐ][9]   ń-tsuŋ [ńtsǔŋ]   έ-fɛ́'nɛ   ń-kẅíi[10] [ńkų́í:]
     1P.INCL go(F1)   CNS-really   CNS-quickly CNS-nail[11]

     tú-n-dɑ́   lɔ'nɛ.
     C7.head-AM[12].C9-house   today

     'We're going to really quickly nail on the roof today.'

In composition, example (1) is asymmetrical according to Aikhenvald's (2006) rubric for describing and classifying serial and other multiverb constructions. It has one characteristic similar to manner SVC's in Toqabaqita[mlu], which Aikhenvald states are, "analysed as asymmetrical, since the modifying 'manner' verb can only be stative intransitive and thus comes from a restricted class."(2006:29) The first three verbs in example (1) are likewise from a restricted class of verbs, i.e., they are intransitive, and modify the main verb, glossed as 'nail', which is from a non-restricted class and describes the event.

As seen in example (2) below, a type two verb chain in Bamileke-Ngomba is a construction linking verbs together which admits the insertion of a NP at more than one point in the string but which in intonation pattern (e.g., lack of pauses) and semantics still appears to be a single clause/event. In example (2), the first part of the construction acts as what Aikenwald (2006) calls a "valency-increasing mechanism" (p.25) by specifying another argument, the instrument.

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[9] The orthographic symbol "ɡ" in Ngomba represents the voiced velar fricative /ɣ/ which in certain environments, as in before the high front vowel /i/, is realized by the voiced palatal fricative [j]. When preceded by a nasal it is realized by the voiced velar stop [g]. Following the convention in Bamileke languages, the orthographic symbol "ʉ" in Ngomba represents the close central unrounded vowel /ɨ/ in all examples.

[10] The orthographic symbol "ẅ" in Ngomba represents the labio-palatal approximate [ɥ] in all examples.

[11] Unlike its English gloss, this verb in Bamileke-Ngomba does not appear to be derived from a noun.

[12] The associative marker in Bamileke-Ngomba is a floating tone, L or H, depending on the noun class of the head noun, which may dock to left (on the head noun) or to the right.

(2) N dɔk [dɔ́k] níi   ŋ́-küɔ'[13] [ŋ́-kˣɰ̃ʕʔ] tʉ́.
     I   take.P0   C7.machete   CNS-cut   C7.tree
     'I cut the tree with a machete.'

I hesitate to call either of the preceding examples a serial verb construction because of the way each is marked and will discuss that later on, in §5. Like serial constructions, type two chains have more than one predicate, yet function like single rather than multiple clauses; hence the doubt cast on the assumption that where there is more than one predicate, there is more than one clause and/or verb phrase. This, in turn, blurs the distinctions between the verb phrase, a combination of verb phrases and a combination of clauses[14]. In the debate over the number of clauses in a serial verb construction, Bamgbose (1974), Schachter (1974) and Foley & Olsen (1985) argue for a "monoclausal" analysis rather than a multiclausal analysis of verb serialization. Givón (2003) even uses the term "multiverb single event clauses" (p. 453).

The significance of pauses as a phonological evidence in support of the mono-clausal analysis of serial constructions was attested by Givón (1991) in a quantified study comparing the occurrence of pauses in several Papua-New Guinean languages and Neo-Melanesian Pidgin. He concluded that pauses are much less likely to occur in serial-verb constructions (SVCs) than in main clauses and that, in fact, the chance of a pause occurring in the middle of a SVC:

> "…falls within the probability range of mid-clause pauses associated with lexical words, or is even lower, i.e., falling within the range of the probability of mid-word pauses." (p. 171)

Pauses are part of the intonation pattern that I take into account when classifying verb chains in Bamileke-Ngomba.

By semantic criterion, I refer to Osam's (2003) "semantic integration" criterion for typing serial constructions in Akan [aka]. He uses it to distinguish between what he terms "Integrated Serial Verb Constructions" (ISVCs), which are similar to the type two verb chain in Bamileke-Ngomba and "Clause Chaining Serialization" (CCs) (2003:15), which resembles type three chains. His ISVCs are "tightly integrated events…we cannot break up…into two separate events." (p.16) His CCs "can be broken into separate clauses and linked with conjunctions". (p.16)

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[13] The orthographic symbol "ü" in Ngomba represents the velar approximate [ɰ] in all examples.

[14] See also Foley & Olsen 1985:17-18; Bamgbose 1974:18

Aikhenvald (2006) also makes reference to something akin to semantic integration in describing serial constructions. She states:

> "semantically, serial verb constructions may encode one event or several subevents closely linked together, or even several subevents in sequence which may be conceptualized as connected to each other." (p.12)

She seems to postulate a sort of semantic integration continuum, similar in some respects to Payne's continuum, but only with reference to serial verb constructions.   Payne's continuum is one of grammatical integration, while Aikhenvald's (2006), in the context, would seem to be semantic though her placement of SVCs on it involves grammatical parameters:

> "Cross-linguistically, and even within one language, SVCs occupy different places on the continuum between one indissoluble event and a package of subevents all linked together. The place of a serial verb construction on this continuum correlates with grammatical parameters—such as contiguity and wordhood of components, and argument sharing." (p.12)

Type one chains are closest to what Aikhenvald terms "one indissoluble event" (2006:12). We have seen in example (1) that they are, of necessity, asymmetrical, with their requirement of intransitive verbs fulfilling an adverbial function, which also limits the number NPs that may be 'inserted', other than the subject, to one. Type two chains are more of a mixed bag. One could view the addition of an argument such as instrument in example (2) as a single event or as subevents closely linked, yet in sequence. One must first pick up an object(the instrument) before using it, so it would also fit an iconic ordering of subevents. The addition of a benefactive argument, which involves the verb 'give' and an IO (see examples (33 & 34) below in §5.1) is not truly iconic. And the requirement of a specific verb to introduce an argument means that that verb constitutes a very restricted class, indeed, and hence the chain is asymmetrical. Co-lexicalization, which will be discussed in §5.2, always involves two verbs from an unrestricted class, and so such verb chains are classified as symmetrical constructions. Although type one chains in Ngomba are tighter semantically and are all asymmetrical, looking at type two chains, I cannot see a consistent, direct correlation between Aikhenvald's asymmetry (or symmetry) characteristic and semantic integration.

As may be seen in example (3), a type three verb chain is a construction linking verbs together which admits the insertion of a NP (object) at more than one point in the string and which appears both in intonation (there are pauses)

and semantics to act as a sequence of separate clauses encoding separate and distinct events.

(3)   A kɔ́ʼ   tɛ   ŋ́-kúu   kɔ́ŋ,   ŋkɔ̂ɔnɛ,   ń-cẅɛɛtɛ[15]   fyɛt,   ŋ́-gá
      3S climb.P0 until CNS-arrive above   now   CNS-take_out C7.ring CNS-give

      mbɔ̌   w-ɛ[16].
      to   C1-3S

      'He climbed up to the top, now, took out the ring (and) gave (it) to him.'

Notice how the insertion of the time adverbial *ŋkɔ̂ɔnɛ* 'now' accentuates the separation between the first and second clauses in the chain. Type three chains may also be distinguished by their admission of conjunctive elements, i.e., verbs that act as conjunctions (see example 47 §6.1) at the beginning of one or more clauses in the chain.

   The type two verb chain, which one may broadly term a 'spliced' or 'compound' VP, and often the type one verb chain—VP with auxiliary verbs—resemble verb serialization in their underlying semantics, while the third is a same-subject(SS) clause chain.

   In all three cases, the formal marking that links the verbs into a chain is the same. They are linked together, as has been stated above, by the presence of the consecutive morpheme that is prefixed to the non-initial verbs in the chain.

   The motivation for the formation of verb chains in Bamileke-Ngomba appears to be economy of marking. It is always at the beginning of a chain that one finds the TAM markings and the subject. Since chain types one and two are often embedded in a type three chain, many individual type two and three chains contain no overt subject or TAM marking, only the consecutive morpheme. When there is a change of subject to interrupt the chain, the subject and TAM must again be expressed and a new chain may begin. This is most evident in example (38) in §5.2.

3.1 Use of the term 'consecutive'. According to Hyman (1971), the functional equivalent of serialization in Bamileke languages (i.e., Grassfields Bantu, such as Bamileke-Ngomba) is not properly termed serialization, but rather

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[15] The orthographic symbol "c" in Ngomba represents the alveo-palatal affricate /tʃ/ in all examples.
[16] From an Ngomba folk tale called 'The person who came from a foreign land' told to the author by Mrs. Marie MATCHO of Bamendjinda, Cameroon.

consecutivization. The form is the main criterion for this distinction in terms, whereas others, like Lord (1993), put more weight on the semantics. Lord says:

> "If we focus on surface form, we can limit prototypical serial verb constructions to successive verb phrases without overt connective morphemes. This definition rules out Igbo and Fe'fe' consecutive constructions, as well as Twi verb sequences with the sequential prefix. However, the meanings communicated by the Twi structures are comparable to meanings communicated elsewhere and in related languages by verb sequences without overt connectives. This makes the "no overt connectives" criterion look rather arbitrary." [p. 2]

As was stated in section 3, the consecutive morpheme in Bamileke-Ngomba may occur: 1) within the verb phrase with both tense/aspect markers and other modifiers that precede the verb (see example 1 above in §3); 2) in constructions where a predicate serves to add an argument within the clause such as instrument, manner etc. (see the instrument expressed in example 2 above in §3); or 3) on a higher level, joining same-subject clauses where the action of a given clause is seen to be consecutive to that of the preceding clause (see example 3 above in §3). Strictly speaking, it is the third case that is "consecutive". However, as the same verb form is used in all three, one understands why Hyman grouped them all together as consecutive. I concur with Lord's observation about the communication of comparable meanings but choose to recognize the unity of form in Bamileke-Ngomba as Hyman did in Bamileke-Fe'fe'. I consider the constructions that are linked together by the CNS morpheme in Bamileke-Ngomba to be verb chains and find in the data that there are three distinguishable types of them.

4. Function of the consecutive morpheme in type one verb chains: joining main verb and auxiliary verbs within the verb phrase

Bamileke-Ngomba is a language where auxiliary verbs and particles always precede the main verb in the verb phrase. Like many African languages, Bamileke-Ngomba counts among its auxiliary verbs some that have nothing to do with tense or aspect but which modify the verb in other ways. Creissels (2000) noted this as a characteristic tendency of African languages and described these verbs as "auxiliary verbs expressing meanings commonly taken up by adverbial expressions in European languages" (p. 239).   In example (1) above in §3 we saw two verbs *ńtsuŋ* 'really' and *éfɛ ʰ́ɛ* 'quickly' that fit Creissels description. All the non-initial verbs in that string are all linked to the initial

verb of the verb phrase, *gʉ* 'go', an auxiliary verb which marks the tense, by the consecutive morpheme and so are also linked to the main verb *ŋ́kwïi* 'CNS-nail'.

4.1 Order of constituents in the Bamileke-Ngomba verb phrase. The auxiliary verbs and particles preceding the main verb in Bamileke-Ngomba may be divided into two general categories: 1) tense/aspect/negation markers and 2) optional adverbial auxiliary verbs. These two general categories may be further divided according to co-occurrence rules and whether or not a verb following a particular auxiliary takes or does not take the CNS (consecutive) prefix. In figure 2 below, "+CNS" means that if there is a verb immediately following, it takes the CNS prefix, while "-CNS" means it does not take it.

As Bamileke-Ngomba is a strongly SVO language, immediately following the main verb is where O (object – NPs, PNs or verb complement clauses), if present, occurs. Following O, other words which modify the verb may occur. Here one finds adverbs, a small closed class in Bamileke-Ngomba, as well as prepositional phrases expressing manner, instrument, IO or demoted DO.

The overall structure of the verb phrase in Bamileke-Ngomba may be summarized by the formula in figure 2 below. There are two positions in the verb phrase where negation may be indicated. In most negative verb phrases it occurs before or in portmanteau with tense marking, hence the NEG1 slot. In one tense, negation marking may alternately occur after the tense marking, hence the NEG2 slot. Most positive tense/aspect markers occur before the adverbial auxiliary verbs, as indicated by T/A1 in the formula below. One aspect marker, the auxiliary verb *ḿbɔ́* 'to be' however, may occur before or after the modifiers, as indicated by the A2 slot.

Figure 2: VP constituent order

	+/-NEG1	+/-T/A1	+/-NEG2	+/-MOD1	+/- A2	+ V	+/-O	+/- MOD2
VP→	ká 'NEG.P0/1'(-CNS), lɔɔ'NEG.HAB'(+CNS), ŋ̀kaa[ŋ̀kà:] 'P2[17]- NEG'(-CNS), ŋ̀kaa[ŋ̀kà:] 'P3/4-NEG' (-CNS), kɛ́ 'NEG.F' (-CNS)	lá¹ 'P1' (+CNS), ŋ̀-'¹⁸'P2' (+CNS), ka 'P3' (-CNS), ka lá¹ 'P4' (+CNS), m̀bɔ́/pɔ́[19] 'non-Present IPFV' (+CNS), (ĩ)kɛ́ 'PER[20]' (+CNS) sɛ́ 'PR.PRG' (+CNS), lɔ 'PR.HAB' (+CNS), gɛ/gu 'F1' (+CNS), ŋ̀-¹ 'F2' (+CNS), tĩge/ńdɔ 'F3'(+CNS), ńdá¹' F4' (+CNS)	M̀bɔɔ/pɔɔ [m̀bɔ̀:]/ [pɔ̀:] NEG.P1 /NEG.IPFV (-CNS)	adv. aux. verbs	m̀bɔ́/pɔ́ 'non-Present IPFV' (+CNS)	Main verb	NPs, PNs, verb complements[21]	adverbs, PPs

[17] Though P2 is glossed as the prefix here and elsewhere in examples, there are also changes on the tone on the root involved.

[18] This is a low tone that replaces the lexical tone of H tone verbs and appears to keep L tone verb roots from rising. More research would be needed to determine if this is a 'super low' or a lowering of the register.

[19] The two verb forms, *m̀bɔ́/pɔ́*, are with and without the CNS prefix respectively. The form with the CNS prefix occurs here when it is required to link the clause to a preceding clause in a type three chain.

[20] Persistive aspect. According to Nurse 2008(p.145) this "affirms that a situation has held continuously since an implicit or explicit point in the past up to the time of speaking" and in many Bantu languages has the form *kí*. English equivalent is the adverb 'still'.

[21] Complement clauses with the same subject as the matrix verb begin with nominalized form of the verb, i.e. with C5 prefix nɛ-; different subject from matrix verb begin with complementizer ŋɡɔ , which is a grammaticalized form of the verb 'say'

Note that, in this formula, all but the main verb are shown as being optional. The NEG positions are optional because "negative" is the marked case and so will not necessarily be present in every verb phrase. The tense and aspect positions are optional because there is an unmarked form of the verb that is assigned tense meaning according to the semantic class of the verb (see §4.3) such that only the main verb is obligatory.

While it is true that most positions are optional, it is not true that one may opt for all of the positions at the same time in a given verb phrase. NEG1 and NEG2 are mutually exclusive – only one verbal negator is allowed. The aspect-related markers in T/A 1 – PR.PRG and PR.HAB (which also functions as a gnomic present) – are likewise mutually exclusive with the non-present, general imperfective auxiliary verb that occurs in A2, which is the other position where aspect may be marked[22]. Note, however, that MOD1 and MOD2 are <u>not</u> mutually exclusive and both may be present in a given VP, as may be seen in example (4) below:

(4)   ɔ   ká   tsuŋ[tsŭŋ]   ń-dέ   sʉˈnɛ   pɔ́ [pɔ́ɔ̄]?[23]
     2s   NEG.P0   really   CNS-sleep   well   NEG
     'You did not really sleep well?'

With the exception of the MOD positions and the non-present imperfective marker *ḿbɔ́/pɔ́* in T/A1 that co-occurs with tense markers, the items listed as occurring in a particular position are mutually exclusive.

Note also that some of the auxiliary verbs marking negation are specific to a particular tense while others do double duty, occurring with more than one tense, hence the backslashes separating tense numbers. There is only one negation marker for all future tenses, so I have not bothered to list all the tenses with which it occurs.

In examples (5) and (6), we see two sentences containing minimal verb phrases, which consist of a single lexical verb[24] in the least marked tense, the "P0" (Past Zero) tense:

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[22] See sections 4.4 and 4.5 for a presentation of the various T/A and NEG markers.

[23] This conversational sentence is part of the conventional morning greeting script. The length and tone perturbation on the final syllable of the utterance are best described in terms of intonation patterns and are not in the scope of this paper.

[24] In Bamileke-Ngomba I distinguish between lexical verbs, i.e., verbs with lexical content that may function as the main verb in a verb phrase, from auxiliary verbs. Certain auxiliary verbs may also function as the main verb in a verb phrase while others in the language have not been observed to do so. (See §4.6)

(5)   Fɔɔ   w-ɛk   tɔ́.
       C1.chief C1-1P   come.P0
       'Our chief came/has come.'

(6)   Fɔɔ   w-ɛk   sɑk [sǎk].
       C1.chief C1-1P   be_long.P0
       'Our chief is tall.'

The reader will note that the verb in the P0 in example (5) has past tense meaning but the one in the P0 in example (6) has a present tense meaning. This is due to the semantic class of the verb – inherently perfective vs. inherently imperfective – and is discussed in §4.3 below.

4.2 Tense/aspect/negation markers in the structure of the verb phrase.
Tense/aspect and negation are best seen as constituents of the verb phrase and so are not analyzed as being affixed to the verb per se. (See following paragraph below.) The complexity in the tense/ aspect system of Bamileke-Ngomba, then, is not expressed through complex verb morphology (as in Narrow Bantu languages), but rather through the repertoire of markers that occur in the verb phrase. As was noted above in §4.1, tense/aspect and negation may be marked at various positions in the verb phrase, but they most frequently occur at the beginning. This repertoire consists of an intricate system of segmental markers– auxiliary verbs, particles, and affixes–as well as tonal markers.

As tense marking occurs at a certain <u>position</u> in the verb phrase, tense-related affixes often occur on various auxiliary verbs rather than the main verb, thus substantiating the claim that tense/aspect and negation marking are an operation on the verb <u>phrase</u> level rather than on the level of verb morphology. As the verb phrase expands, the tense marking maintains its position at or near the left edge of the VP. This is illustrated by the P2 examples (7-9) below. The P2 'Yesterday Past' is marked by the combination of a segmental affix bearing a high tone - high tone nasal prefix - and a tonal affix, i.e., a low tone on the verb root that overrides or replaces the lexical tone (see also footnotes 17 & 18 above in §4.1). In these examples, be advised that the orthographic convention of the language uses the grave accent on the prefix of the verb not as a tone mark but as an indication of the P2 tense and only that. The tonal melody is shown in the phonetic transcription next to it. It is important to note that, in the case of the P2 tense, the prefix is not a realization of the CNS morpheme but rather part of the tense marking. Note the absence of the CNS morpheme on *tsuŋ* 'really' in example (9) that is occasioned by the negative marker that immediately precedes it:

(7)   Mɔ   ǹ-zúu [ń-zù:]   m-bɑp   sʉ'nɛ zɔ́n.
       1S   P2-buy   C9-meat good yesterday
       'I bought good meat yesterday.'

(8)   Mɔ ǹ-tsuŋ[ń-tsùŋ] ń-zúu   m-bɑp   sʉ'nɛ   zɔ́n .
       1S P2-really   CNS-buy   C9-meat   good   yesterday
       'I really bought good meat yesterday.'

(9)   Mɔ ŋ̀kɑɑ [ŋ́kà:] tsuŋ   ń-zúu m-bɑp   sʉ'nɛ   zɔ́n   pɔ́.
       1S P2-NEG   really CNS-buy C9-meat good   yesterday NEG
       'I didn't really buy good meat yesterday.'

We see that in example (7) the only verb in the VP is the main verb and the P2 tense marking occurs there. In example (8), however, the tense marking occurs on the adverbial auxiliary verb preceding the main verb. Finally, in example (9), it is realized on the negator which precedes both the adverbial auxiliary verb and the main verb. Clearly, while the marking for this tense must be realized on a particular verb in the string, it is best analyzed as occurring in the phrase-initial position of the verb phrase. Note, also, that the CNS morpheme occurs on the main verb, *ń-zúu* 'CNS-buy', in examples (8) and (9) where the main verb does not occur in the phrase-initial position. The function of the consecutive morpheme is thus shown to be to link the main verb to whatever auxiliaries precede it in the verb phrase.

4.3 Semantically-Based Verb Classes. A very pertinent fact to be aware of when considering the tense and aspect system of Bamileke-Ngomba is that the language recognizes two semantic classes of verbs. It treats those which are inherently perfective in aspectual meaning, i.e., dynamic verbs, such as *ŋ́kʉ̈ɔ* 'to run', differently from those which are inherently imperfective in aspectual meaning, i.e., stative verbs–including cognitive state verbs, such as *ŋ́kwaŋɛ* 'to think', and stative verbs, such as *ńdʉʉ* 'to be sweet', which exercise an attributive function. On a semantic level, this classification manifests itself in the fact that the least marked verb form, what I term the 'P0', has a present tense reading with verbs in the imperfective semantic class (see example (6) above in § 4.1) and a recent past (almost 'perfect[25]') reading with those in the perfective semantic class (see example (5) above in § 4.1).

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[25] The force of it is that the action occurred (recently) and the expectation is that the results are still in effect.

On a formal level, the semantic class of a verb has ramifications for the marking of aspect and tense in the verb phrase. Verbs in the perfective group require special marking not only to take on an imperfective meaning, but also to have any present tense! There are two of these markers that specifically mark a verb for present tense and imperfective aspect — the particle *sɛ́*[26] for the present progressive (PR.PRG) tense/aspect (see examples (10) and (11) below) and the particle *lɔ* for (gnomic) present habitual tense/aspect (PR.HAB). Neither of these tense/aspect markers can co-occur with other tense or aspect markers; thus in future and past tenses, verbs of the perfective class employ the appropriate form of the auxiliary verb *ḿbɔ́* 'to be' as a general imperfective marker (see example (22) in §4.6). This imperfective marker may have either a progressive or a habitual reading depending on the context. Again, the markers do not always occur adjacent to the main verb, but at a particular position in the verb phrase as may be seen with the habitual marker in examples (10), (11) and (12) below:

(10) A <u>lɔ</u>   ŋ́-küɔ [ŋ̀-kˣɯɤ]   n-dyɔl   mbɑ'mbɑ' [m.baʔ.m.baʔ].
      3S PR.HAB   CNS-run   C9-course   morning
      'He (usually) runs in the morning.'

(11) A <u>lɔ</u>   ḿ-bɔ́tnɛ [m̀-bɔ́tnɛ́] ŋ́-küɔ   n-dyɔl.
      3S PR.HAB   CNS -be_slow   CNS -run   C9-course
      'He (usually) runs slowly.'

(12) A <u>lɔ</u> ŋ́-tsuŋ [ǹ-tsuŋ]   ḿ-bɔ́tnɛ   ŋ́-küɔ n-dyɔl.
      3S PR.HAB   CNS -really   CNS -be_slow CNS-run C9-course
      'He (usually) runs really slowly.'

As with examples (7-9), we see in examples (10-12) that the tense/aspect marker maintains its position at the left edge of the verb phrase as auxiliary verbs are inserted into the verb phrase to the left of the main verb. The present habitual marker *lɔ* has a low tone but does not seem to have all the tonal qualities of a low-tone verb, hence I hesitate to call it an auxiliary verb. For example, there is a low rather than high tone on the CNS- prefix immediately following it which may be part of the present habitual marking. One could replace *lɔ* with *sɛ́* in examples (10-12) to change them into present progressive 'he is running' with only a minor change to the time adverbial in example (10).

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[26] The present progressive marker, *sɛ́,* also functions elsewhere in the language to predicate existence. It appears to be a grammaticalized form of the word *sɛ́* 'ground'.

4.4 NEG1 and NEG2.   As was noted in §4.2, the segmental markers for tense/aspect and negation may be divided into those which require that a following verb carry the CNS prefix and those which prohibit that from occurring. While most of the markers which prohibit the CNS prefix from occurring are involved in negation, it is unclear what the motivation[27] for the prohibition is. Those which prohibit the CNS prefix from occurring are: *ka* the P3 (non-recent Past, *ká* 'NEG.P0/1', *ǹkaa* [ŋ̀kà:] 'P2-NEG', *ŋ́kaa* [ŋ́kā:] 'P3/4-NEG', *ké* 'NEG.F' , and *ḿbɔɔ/pɔɔ* [ḿbɔ̀:]/ [pɔ̀:] NEG.P1/NEG.IPFV. The negative marker *lɔɔ* 'NEG.HAB' (never) is an exception. As with the 'positive' present habitual maker *lɔ,* the verb that immediately follows *lɔɔ* has a homorganic nasal prefix with a low tone instead of a high tone, so there is some uncertainty. I take the position that they are followed by the CNS prefix, hence the designation (+CNS) in Figure 2, but further research is required to determine why it bears a low tone in this environment.

The following examples (13-19) show the interaction of tense and negation marking in the Bamileke-Ngomba verb phrase. In examples (13-18), we see the NEG1 position markers in the context of a sentence. The reader will notice variation in the 1S subject pronoun in (17 and (18). This variation is motivated by a need to differentiate between the subject pronoun and the marker that follows it. The more frequent 1S subject pronoun, a homorganic nasal bearing a low tone, is replaced by the more emphatic *mɔ* (employed elsewhere in the language in prepositional phrases) when the verb that follows it already has a homorganic nasal prefix, albeit one bearing a high tone. Be advised that the time adverbials in these examples are not obligatory and are only included to shed light on the tense meaning:

(13)   Ŋ   <u>kɛ́</u>   zúu m-bɑp   lɔˈnɛ   pɔ́.
       1S <u>NEG.F</u> buy C9-meat today   NEG
       'I will not buy meat today.' (without the time adverbial it would have the force of 'now')

(14)   Ŋ   <u>kɛ́</u>   lɔ[28] [lɔ̌]   ń-zúu   m-bɑp   ŋ-gɑp   yi   pɔ́.
       1S <u>NEG.F</u> F3   CNS- buy C9-meat   C9-week   that NEG
       'I will not buy meat next week.'

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[27] See section 7, the conclusion for a discussion of the possible motivations.

[28] In a positive clause the F3 marker is *ńdɔ*. When the homorganic nasal is dropped in the negative clause, the phonology of the language dictates that [d] revert to [l]. Both are allophones of the phoneme /l/ in Ngomba.

(15) Ŋ <u>ká</u>   zúu   m-bɑ   pɔ́.
      1S NEG.P0/1 buy.P0 C9-meat   NEG
      'I didn't buy meat.' (implication: I do not have any meat.)

(16) Ŋ <u>ká</u>   láʹ ń-!zúu   m-bɑp   mbɑʹmbɑʹ   lɔʹɔ pɔ́.
      1S NEG.P0/1 P1   CNS -buy C9-meat   morning   today NEG
      'I didn't buy meat this morning.'

(17) Mɔ <u>ǹkɑɑ</u> [ǹ-kà:] zúu   m-bɑp   zɔ́n   pɔ́.
      1S P2- NEG   buy   C9-meat yesterday NEG
      'I didn't buy meat yesterday.'

(18) Mɔ <u>ńkɑɑ</u> [ń-kā:] zúu m-bɑp   ŋgɑp   yi   pɔ́.
      1S P3-NEG   buy C9-meat   C9-week   that NEG
      'I didn't buy meat last week.'

       In the examples above, one gets a sampling of the range of tenses there
are in Bamileke-Ngomba. Observe again that there is no CNS prefix (nor the
homorganic nasal prefix that is simply part of the tense marking) on any verb
that immediately follows a NEG marker, whether it is the main verb or some
auxiliary verb, such as the F3 (post-hodiernal, 'After-today' Future) tense
marker *ńdɔ/lɔ [ńdɔ́/lɔ̌]* in example (11). The scope of the suppression of the CNS
marker, whether following a NEG marker or following the P3 marker *ka*, only
extends to the verb that immediately follows it, hence the presence of the CNS
marker on the main verb *ń-zúu* in example (14). On a side note, in example (16)
the P1 marker *láʹ* is the same in the positive or the negative, i.e., it does not have
a homorganic nasal to be suppressed.
       The absence of the homorganic nasal prefix on tense markers that require
it could occasion the loss of many tense distinctions were it not for the fact that
the NEG markers themselves also help maintain these distinctions. This fact
may be observed by comparing example (17) with example (18) or example (13)
with example (15). As verbal negators in the NEG 1 position in the verb phrase
occur before tense/aspect markers, one does not find the CNS prefix occurring on
them. The verbal negators that have a homorganic nasal prefix, P2 & P3/4, have
it as part of the tense marking. Again, while this prefix resembles the CNS prefix,
it does not, however, function to link the verb to others in a chain; I, therefore,
do not equate it with the CNS prefix. It does, however, say something about the
verbal quality of these markers.
       Of the negative markers, all but *ḿbɔɔ* always occur in NEG1, i.e., they are
<u>not</u> preceded by a tense marker. When *ḿbɔɔ* is used to negate the P1 tense, it

occurs in NEG2, after the P1 ('Today' Past) tense marker *lá*'. It is important to note that the occurrence of the nasal prefix here <u>is</u> a realization of the CNS morpheme that links it to the tense marker. In example (19), we see the NEG2 position with its marker in a sentence.

(19) N   dá'   <u>ḿ-bɔɔ</u>   zúu   m-bɑp   mbɑ'mbɑ'   pɔ́.
      1S   P1   CNS - <u>NEG.P1</u>   buy   C9-meat   (this)morning   NEG
      'I didn't buy (wasn't buying) meat this morning.'

4.5 T/A1 and A2.   Most of the tense/aspect markers require verbs that immediately follow them in the verb phrase to carry the CNS prefix. These include: *ńdá*' / *ka lá*' 'P4'[29] (indefinite/remote past) which is accompanied by downstep on H tone roots[30], *lá*' 'P1'(hodiernal past) which is also accompanied by downstep on H tone root, *sɛ́* 'PR.PRG' which is also accompanied by downstep on H tone roots, *gɛ/ gʉ* [ɣɛ̌/ ɣɨ̌] 'F1' (hodiernal 'today' future), *ŋ́gɛ* [ŋ́gɛ̌]/ *ńdɔ* [ńdɔ̌] *'F3'* (post-hodiernal future)*, *ńda*' / *ńtáa* 'F4'(remote/indefinite future), *lɔ* 'PR.HAB', *lɔɔ* 'NEG.HAB', *(ŋ́)kɛ́*[31] c (may also be glossed as 'still') and *ḿbɔ́* 'IPFV (non-present)'. The 'F2' tense (immediate to next day future) is not listed here as it is not marked by an auxiliary verb. Instead, a verb in 'F2', whether it is an adverbial auxiliary or a main verb, carries a high tone homorganic nasal prefix, i.e. same form as the CNS prefix, and is also marked by tone perturbations on the lexical root. There is downstep on H tone roots while L tone verb roots in F2 are realized with a rising tone. The general imperfective marker *pɔ́/ḿbɔ́* is an auxiliary verb that may also be glossed as 'to be' and it is what occurs in the A2 position. The other markers listed in this section as well as the P3 marker *ka* occur in T/A1.

      While tone is an important part of the repertoire of markers, there are only two[32] tenses in the affirmative that are distinguished solely by a tonal difference, as well as two in the negative (see examples 17 & 18 above). The P2, which was

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[29] The P4 formed by a combination of the P3 marker *ka* followed by the P1 marker *lá*' seems to have a more definite reading than *ńdá*'.

[30] NB: Downstep is not normally marked in Bamileke-Ngomba orthography but is indicated in examples for those interested in its presence and function.

[31] Note that the future negator(NEG.F) *kɛ́* and the the persistive (PRS) aspect *(ŋ́)kɛ́* are distinguished in context by the fact that verbs following the NEG.F do <u>not</u> carry the CNS prefix while those that follow the PRS aspect marker <u>do</u> carry the CNS prefix.

[32] I have also recently discovered a variant of P4 with the high tone nasal prefix and either H that is not downstepped or perhaps an upstep, making three tenses with the same segmental form, only distinguished by tone. Further research is required to determine that there are indeed two variant forms of P4 or if there is some other distinction that determines their usage.

mentioned above in section 4.2 (see examples 7-9), and F2 are both marked by the high-tone nasal prefix, but are distinguished by grammatical tone on the root. While F2 carries a downstepped H tone or rising tone on the root, the P2 has a low tone that overrides the lexical tone on the verb root. This marking may occur on the main verb or on whichever verb, i.e., such as *m̀bɔ́* 'be' or one of the adverbial auxiliary verbs that happens to occur phrase-initial in the verb phrase in a given utterance as was shown in examples (7-9) above.

4.6 Adverbial auxiliary verbs in the structure of the verb phrase. Adverbial auxiliary verbs occur before the main verb and after the tense/aspect/negation markers mentioned in the section just above. Their verbal quality may be seen in the fact that they may (and often must) take the CNS prefix (see example (5) above) and can carry the tense marking for the verb phrase (see example (6) above). So it is that in Bamileke-Ngomba one finds such lexical items as the verb 'really' *ńtsuŋ* or the verb 'perhaps' *m̀maa*. Bamgbose (1974) refers to verbs like these as "modifying verbs" in the serializing languages of West Africa, such as Yoruba and Twi, and says that they occur in "modifying serial verb constructions" (p.31). While type one verb chains with an adverbial auxiliary verb are more serial-like than those without any, I still choose to call them auxiliary verbs, as many may not function as independent verbs, e.g., the two just mentioned above in this paragraph. There are some, however, such as the verbs *m̀bɔ́tnɛ* 'slowly' and *ńdɨɔmɛ* 'secretly', that may function either as an adverbial auxiliary or as an independent lexical verb. As an independent lexical verb *m̀bɔ́tnɛ* is a stative verb and is glossed as 'to be soft/weak/easy' while *ńdɨɔmɛ* is glossed 'to hide'(intransitive). It is conceivable, perhaps even probable, that these adverbial auxiliaries were all lexical verbs originally, but that the lexical usage of some died out or their meaning changed drastically over time such that they are no longer associated with the adverbial auxiliaries that developed from them. Some of the more common adverbial auxiliary verbs are listed below:

Table 2: Common adverbial auxiliary verbs in Bamileke-Ngomba

Verb	English Gloss
ńnɑꜝ [ń-nāʔ]	'a little, slightly, somewhat'
ńtsuŋ [ń-t̠sūŋ]	'really'
ɛ́fɛ́ꞌnɛ [ɛ́-fɛ́ʔ-nɛ́]	'quickly' or 'hurry-VL'
ḿbɔ́tnɛ [ḿ-bɔ́t-nɛ́]	'slowly' or 'be_soft/easy'
ḿmɑɑ [ḿ-máā]	'perhaps'
ńzɛɛ [ń-zɛ́ɛ̄]	'even/also'
ḿbɛn [ḿ-bēn]	'again, and' or 'return'
ḿmʉ́ʉ [ḿ-mɨ́ː]	'be_early'
ŋ́gɔ́ɔ [ŋ́-gɔ́ː]	'immediately'
ńdʉɔmɛ [ń-dɨ́ɔ̄-mɛ̄]	'secretly' or 'hide-VL'[33]

Note that none of these verbs are transitive. In fact, the *-nɛ́* and *-mɛ* suffixes, the latter being an alternate form of the valence-lowering verbal extension *-nɛ*[34], assure that these verbs are not transitive. There is apparently a necessity for the adverbial auxiliary verbs to be intransitive or stative so as to leave no doubt that their only function in this construction is to modify the main verb, which encodes the event, hence the use of the valence-lowering verbal extension. As was stated above in §3, this restriction also means that type one verb chains in Bamileke-Ngomba are asymmetrical multi-verb constructions. Examples of these adverbial auxiliary verbs in the context of sentences appear below, most taken from narrative texts. In this series of examples (20-28), notice the following characteristics of the adverbial auxiliary verbs in Bamileke-Ngomba:

1. They may be preceded by a tense or aspect marker, as in examples (20) and (25) below.

2. They may themselves carry the tense marking, as in example (8) in §4.2 where an adverbial auxiliary carries the P2 marking or in examples (21), (23), (24) and (27) in the P0 below.

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[33] There is a transitive form of this verb also – *ńdʉɔ* 'to hide (something)꜀'.

[34] This suffix has a L tone in the normalized form of the verb (cl 5) but in many other forms of the verb is has a H tone. My hypothesis is that it is either L or toneless and picks up a H from the tone melody of the verb root or a grammatical tone.

3. They must take the CNS prefix when they are not phrase-initial nor preceded by one of the markers that prohibit it, as in examples (22) *έ-fɛ́ˈnɛ* 'CNS-quickly', (24) *ń-zɛɛ* 'CNS-even', (25) *ḿ-bɛn* 'CNS-again', and (26) *έ-fɛ́ˈnɛ* 'CNS-quickly' below.

4. They may co-occur with other adverbial auxiliary verbs in the same verb phrase, also as seen in examples (24-26) below.

5. They may <u>not</u> be followed by a pause, i.e., no pause occurs between adverbial auxiliaries and the main verb in the verb phrase.

Note in all the immediately following examples the presence of the consecutive morpheme. Its use there, both on the auxiliaries themselves and on verbs that follow them, also confirms the verbal quality of the adverbial auxiliaries.

(20) Ɛ́   kɑ   <u>nɑ́ˈ</u>   ḿ-bɔ́   mbʉʉ   lɑ́ˈ   y-i   pɑ́ɑtɛ-nɛ [pɑ́:ɾɛ́nɛ́]
     3S   P3   slightly   CNS-be   side   C7.village   C7-REL   be_next-VL[35]

     y-ɛk   lɑ́ˈ.
     C7-1P   C7.village

     'It was sort of on the side of the village that borders ours.'

(21) Ɔ   <u>tsuŋ</u> [tsŭŋ]   ń-jí   ŋgɔ   ŋ-ki   lɛɛnɛ [lɛ̀:nɛ́ ɛ̀:[36]]?
     2S   really.P0   CNS-know   COMP   C3-water   be.clean
     'Do you really know that the water is clean?'

(22) Tɛtɔ́ˈ   pɔ́   <u>έ-fɛ́ˈnɛ</u> [έ-fɛ́ʔ-nɛ́]   ń-nɛn [ń-nēn].
     C1.toad   IPFV   P0   CNS <u>-quickly</u>   CNS-walk
     'Toad was walking quickly.'

(23) Cẅímɑŋkɔ́ˈ   <u>pɔ́tnɛ</u> [pɔ́t-nɛ́]   έ-fú   ŋ-kɑ́ˈ.
     C1.tortoise   slowly.P0   CNS -come_from   C3-field.
     'The tortoise slowly came from the field.'

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[35] The suffix *-nɛ* 'VL' is obligatory present on the first verb of VP in a relative clause, also in certain other dependent clauses introduced by a conjunction, such as *kɑ́ˈ* 'when' and *pɑ́ˈ* 'as/while', even if it falls on a verb where the suffix is already present to lower the valency.

[36] The lengthening of the final vowel with low tone is part of the interrogative intonation pattern.

(24) Pʉʉ ŋu   <u>mɑɑ</u> [mǎː] <u>ń-zɛɛ</u>   ŋ́-gw̋ɛɛ   y-ɛcɔ   nu?
     2P   person <u>perhaps.P0</u> CNS-<u>even</u> CNS-have C7-certain/other C7.problem
     'Did you and the person by chance also have a certain/another problem?'

(25) Tɛ ɛ́-fúnɛ [ɔ́-fúnɛ́]   lɛ́ˈ-mbi   êy-á,   ɑ   lɔɔ
     til CNS-come_from   C7.day-world C7-that(ANA) 3S NEG.HAB

     <u>ḿ-bɛn</u> [m̀-bɛ̌n] ń-dʉˈ [ń-dī̄ʔ]   mɛŋ-kʉ   pɔ́.
     <u>CNS-again</u>   CNS -lay   C4-rope   NEG

     'Since that day, he never <u>again</u> lay snares.'

(26) <u>Múʉ</u>   <u>ɛ́-fɛ́ˈnɛ</u>[ɔ́-fɛ́ʔnɛ́] ń-tɔ́!
     <u>be_early(IMP)</u> CNS <u>-quickly</u>   CNS -come
     'Be early and come quickly!'

(27) A <u>gɔ́ɔ</u>[ɣɔ́ˑ]   ŋ́-gɛ   ŋ́-kút   n-tɔ́ˈ.
     2S <u>immediately.P0</u> CNS -make CNS -build C9-palace
     'He immediately caused the palace to be built.'

(28) A <u>lʉɔmɛ</u> [lìɔ̀mɛ́] ŋ́-gá   ŋ-káp   mbɔ̌   cɔˈ   shíshí.
     2S <u>secretly.P0</u>   CNS -give C3-money   to   C7.hat black
     'He secretly gave money to the policeman (lit. "black hat").'

The presence (and exact placement) or absence of pauses in the flow of speech is not only significant as a boundary marker between clauses in Bamileke-Ngomba. It is also an important syntactic criterion in the categorization of chains of verbs into their various types. On a semantic level, it may have bearing on the interpretation not only of a particular chain but also of particular verbs in a chain. In example (25), the lack of a pause in the second part of the sentence is significant. If, for example, the speaker were to insert a pause <u>after</u> *ḿ-bɛn* 'again', it would indicate a clause boundary and that verb would, in this case, have to be interpreted as an independent verb, the verb 'return'; and the verb for laying snares, *ń-dʉˈ*, would then be interpreted as part of a separate clause in a same-subject clause chain, i.e., a type three chain instead of a type one. Thus, instead of the free translation, "he never again lay snares," we would have, "he never returned and lay snares." The placement of the consecutive morpheme on the verbs in question would be the same in either case.

5. Function of the consecutive morpheme in type two verb chains: joining verb phrases in the same clause

In this section, we will discuss those verb-chaining constructions in Bamileke-Ngomba which have the following characteristics:

1. They do allow the insertion of NPs at more than one place in the chain.

2. They are not "the concatenation of potentially independent events" (Osam 2003:15), i.e., they are not same-subject clause chains.

3. They have an intonation pattern consistent with that of a single clause. (There are no pauses in the middle of the chain.)

In its macrostructure, this type of chain can be divided into two parts, each with its own object NP, though in many instances the objects are left implicit when they may be inferred from the context as may be seen in example (29) below:

(29) Tsɛtsɑ   tíi   fyɛt   y-ɛ́,   ŋkɔ̂ɔ,   ń-dɔk   ŋ́-gʉ[37].
      C1.mouse   carry.P0 C7.ring C7-3S,   now,   CNS-take CNS-leave
        'A mouse picked up his ring, now, (and) took (it) away.'

The above example is, taken as a whole, a same-subject chain of two clauses. The second clause is a type two chain that gets its tense/aspect from the first clause in the chain, hence the presence of the CNS prefix on its first verb.

In the first component of a type two chain, when it is not embedded in another chain, one finds all the tense/aspect markers for the chain along with adverbial auxiliary verbs as seen above in Fig. 2 in §4.1 and discussed in §§4.2, 4.4 & 4.5. In the second part of the chain, one finds only a verb with the CNS prefix and another object (see examples in §§5.1-5.3).

This type of chain is in a bit of a gray area with regard to whether or not it consists of two distinct verb phrases in one clause or just one, albeit complex or compound, verb phrase in one clause. One may look on the second VP as a totally separate unit, but many analyses of serial constructions, which this type of chain resembles, see both VPs together as constituting a single complex VP, the second being nested within the other and both relating to the first object NP.

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[37] Another line of text from 'The person who came from a foreign land' told to the author by Mrs. Marie MATCHO of Bamendjinda, Cameroon.

I hesitate to call it serialization because the marking is difficult to categorize. Going by Aikhenvald (2006) these multiverb constructions exhibit the property of single marking of subject (by a full blown NP or pronoun) and of other verbal categories (tense-aspect, negation, illocutional force…) at the beginning of the construction. However, all non-initial verbs, with the exception of those immediately following all but one negation marker and one tense marker are marked with the CNS prefix, though it is not necessarily what Aikhenvald terms concordant marking either. The CNS morpheme in Ngomba is not employed to distinguish multiverb constructions, which in other respects look like serial verb constructions, from consecutivization; it merely links verbs together. Although this type of VP in Bamileke-Ngomba is formally distinct from serial-verb constructions, they are the functional and semantic equivalent of what Osam (2003) calls ISVCs "Integrated Serial Verb Constructions" owing to their high degree of semantic integration. Since they seem to function more like a single predicate, they may be termed single clauses, although it is stretching the traditional dictum of one predicate, one clause.

Bamileke-Ngomba puts its second type of verb chain to some of the same uses that serial-verb constructions are frequently put in proto-typical serializing languages. It is employed most commonly in some case-role marking for Instrumental and Benefactive, in expressing Manner, in expressing some complex lexical concepts (most notably 'bring' and 'take (away)' and in the comparative construction.

5.1 Case-role marking and expression of Manner with type two verb chains.
Instrumental and Benefactive case roles may be encoded in Bamileke-Ngomba by type two verb chains. As with the serializing languages of West Africa, the Instrumental case role is typically expressed in the first part of the chain by a verb, which is usually glossed as 'take', and that has the instrument as its object. Example (30) is from Yoruba (Stahlke 1970: 61-2 quoted in Foley & Olsen 1985:53):

(30) mo fi   àdá   gé   igi   nâ
     I   take machete cut   tree the
     'I cut the tree with a machete.'

The corresponding sentence in Bamileke-Ngomba is of a similar structure. Both the Yoruba and the Bamileke-Ngomba literally say 'I take machete cut tree'. The Bamileke-Ngomba differs, however, from the Yoruba structure above in that it requires the addition of the CNS prefix, the formal marker that links the verbs together into a chain, on the second verb. Thus the Bamileke-Ngomba

equivalent is a type two chain with the lexical verb in the second part of the chain marked with the consecutive morpheme as may be seen in example (31) below :

(31) N   dɔk [dɔ̌k] níi   ŋ́-kü̈ɔ' [ŋ́-kˣu̠ɾ̄ʔ]   tú.
       I   take.P0   C7.machete CNS-cut   C7.tree
       'I cut the tree with a machete.'

Manner, though not a case role, may similarly be expressed in a chain with the verb 'take', as may be seen in example (32):

(32) N-zwɛ́ w-ɛ   lɔk [lɔ̌k] nɛ-kíi   ń-cú   mbɔ̌ w-ɛ   ŋgɔ...
       C1-wife C1-3S take.P0   C5-cry CNS-say to   C1-3S COMP
       'His wife, tearfully (lit. with crying), said to him that…'

This, of course, is different from how manner is expressed in type one verb chains. The first verb is transitive rather than intransitive, and the object has everything to do with the manner being expressed. It appears to be an instrument construction used idiomatically to express manner.

The expression of a Benefactive argument in serializing languages typically involves the use of the verb 'give' (Lord 1993:44) in the second part of the chain. Bamileke-Ngomba also uses the verb 'give' in its Benefactive construction, as may be seen in the examples (33) and (34):

(33) Tsɛ́'lɛ́   n-zwɛ́   w-u   ŋ́-gá   mbɔ̌ mɔ.
       greet(IMP) C1-wife   C1-2S CNS-give to   1S
       'Greet your wife for me!'

(34) Mɔ́ɔ   w-ɑɑ   lá'   ḿ-bú' [ḿ-!búʔ]   ŋwáŋ ŋ́-gá   mbɔ̌ cícɑ.
       C1.child C1-1S P1   CNS-beat   C1.bell CNS-give to   C1.teacher
       'My child rang the bell for the teacher (today).'

Note again the use of the CNS prefix in examples (33) and (34), this time on 'give', since it is in the second part of the chain. Remember that although this prefix is not a tense or agreement marker per se, here it does indicate that 'give' is under the scope of the preceding verb's tense/aspect marking and even illocutionary force, as well as having the same subject.

5.2 Co-lexicalization with type two verb chains. According to Givón (1991), "two or more verb-stems are co-lexicalized to create a more complex verbal concept" (p. 138). In Bamileke-Ngomba, since the object comes after the first

verb and the second verb always has the CNS prefix, one never sees two stems juxtaposed, as one does in the Igbo example below (35) (Aikhenvald 2006: 13):

(35) ó   tì-gbù-rù   nwóké áhừ
      he   hit-kill-TENSE man   that[38]
      'He hit that man to death' (lit.hit-kill)

Note in examples (36-39) that since both verbs share not only the same subject but also the same object, the language does not require the object to be expressed after the second verb. In example (36), the object is *maˈŋkatém* 'hunter', a compound noun, while in example (37) the object is an associative noun phrase *tú-zúˈ* 'plant(of)yam', i.e., yam plant.

(36) Pɔ́p   ǹ-tswáɑ[ńtswà:]   maˈŋkatém   ń-jwí.
      3P   P2-beat   C1.hunter   CNS-kill
      'They beat the hunter to death (yesterday or the day before).'

(37) Pɛ́   lɔ   ń-tsɔ́ˈ   tú-zúˈ   ḿ-bi .
      3INDF PR.HAB   CNS -pull_up C7.plant-AM.C7.yam CNS-plant
      'One (usually) transplants a yam plant.'

One may look at examples (36) and (37) and wonder why these are not under same-subject clause chains. One reason I put them here is that there is no pause to separate the first and second parts of the chain. This is phonological evidence that the language conceptualizes them, if not as what Aikhenvald 2006 terms a "single indissoluble event", then at least as "a package of subevents all linked together" (p. 12). In example (37), the subevents are more distinct than in example (36); nonetheless, the two subevents in each example share two arguments; each overall event has only one subject and one object.

On the subject of argument-sharing, it is important to remember that no construction in Bamileke-Ngomba that employs the CNS morpheme allows the events or subevents in the chain to have different subjects. They must all share the same subject. In Example (36), although the second part of the chain may be seen as the result or outcome of the first, this is not comparable to Aikhenvald's switch-function SVC (among which she lists cause-effect and resultative SVCs). In her switch-function SVC the "subject of one component of an SVC can be identical to a non-subject constituent of the other component." (2006:14). Also, the second verb is usually an intransitive. Neither of these is the case in example

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[38] This example is originally from Lord 1975 (p.28) but I follow the version found in Aikhenvald 2006.

(36). In other words, it (36) does <u>not</u> say 'they beat the hunter die'. Such a construction, if it existed in Ngomba, could not employ the CNS morpheme[39].

Notice, also, that all the verbs in these examples (36 & 37) are from "a semantically and grammatically unrestricted class" (Aikhenvald 2006:3). No subevent is the 'head' in either example, so these would be classified as "symmetrical" rather than "asymmetrical" multiverb constructions according to Aikhenvald's (2006) analysis framework for the composition of SVCs.

In Examples (38) and (39) below, we again see the verb *lɔk* 'take' coupled with the directional verbs *ŋ́gʉ* 'go' and *ńtɔ́* 'come'. This time, instead of either verb marking a case-role, they work together to form the more complex concepts of 'take away' and 'bring'. Each verb carries a component of the meaning. It is such a fixed expression in the language that both components seem to be verbs from a restricted class—the first verb is always 'take' and cannot be replaced by a synonym—making it difficult to categorize this construction as either asymmetrical or symmetrical. Normally, there is an object between the two components but in example (38) it (*mɛnaa* 'animals') is left implicit, being supplied in a pre-posed clause that connects this event with the rest of the discourse. The reader will also notice that the type 2 chain 'take away' in (38) is embedded in a type three chain with the following action being that of selling the animals (still left implicit) at the market.

(38) Ḿ-bɔ́   ḿ-bát   ń-tɛ́m   mɛ-naa   pɔ́ꞁɔ,
      CNS-be   CNS-watch CNS -shoot C6-animal like.this,

      n-jí   kiɛ [kìɛ́],   ɑ   <u>lɔk</u> [lɔ̌k] <u>ŋ́-gʉ,</u>   ɛ́-fɛn   mɛ-táɑ.
      C9-time   brighten.P0   3S   take.P0   CNS -go   CNS -sell   C6-market

      'Observing and shooting animals like this, the next morning (lit.day
      dawned), he <u>took</u> (them) <u>away</u>, sold (them) at the market.'

(39) <u>Lɔk</u> [lɔ̌k]   gwuplɛ   y-áɑ   <u>ń-tɔ́</u>!
      take.IMP   C7.umbrella C7-1S   CNS -come
      '<u>Bring</u> my umbrella!'

In the next examples, (40) and (41), we still have the verb *lɔk* 'take', though this time it is not with verbs of motion, but with speech verbs. It would be difficult to view the verbs here as components of an action in their logical

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[39] One could say *Pɔ́p tswáa ma ꞁŋkatɛ́m tɛ a pfú* 'They beat.P0 the hunter until <u>he</u> die.P0'. Note the use of the 3S subject pronoun rather than the CNS morpheme.

sequence because the 'actions' are not concrete. So what we see in these examples are type 2 verb chains that express abstract verbal concepts:

(40) A lɔk [lɔ̌k] w-ɛ́   ɛ́-fúŋ mɔ̂-naa, ń-tɛ́m.
      3S take.P0   C1-3S   CNS-call C1-animal, CNS -shoot
      'He considered him (*or* took him for) an animal and shot (him).'

(41) Ɔ lɔk[lɔ̌k] ń-cú   ŋgɔ   ku?
      2S take.P0   CNS-speak COMP   what
      'What do you mean?'

It is important to note that one could form a sentence with the gloss 'he called him an animal' that would not require *lɔk* 'take', but it would mean something quite different. The combination of *lɔk* 'take' with *ɛ́fúŋ* 'call' forms its own distinct lexical unit. It is a case of the whole being greater than the sum of the parts. Likewise, in example (41), it is hard to tell what each component verb contributes to the meaning of this construction; and even though 'take' is transitive, one never sees an object, though it might possibly be inferred from context[40].

5.3 The comparative construction. The comparative in Bamileke-Ngomba is also expressed by a type-two verb chain. As the adjective word class has very few members in Bamileke-Ngomba, it is not surprising that the language does not have comparative or superlative forms of adjectives. This is something the language expresses with a verbal construction. This construction usually involves a stative verb, such as *ɛ́sak* 'to be long/tall', in the first part of the chain as the point of comparison. The subject of the stative verb serves as the standard for comparison. The second part of this construction always consists of the verb *ńtsa* 'pass/surpass' with the CNS morpheme prefixed to it and followed by an object that indicates the person or thing being compared to the standard. In the following examples (42) and (43) we see type two verb chains expressing the comparative construction:

(42) Ŋ-ká - m-buŋ sɑk [sǎk] ń-tsɑ   ŋ-ká - luu.
      C9-time-AM   C9-rain be_long.P0   CNS -surpass   C9-time-AM heat
      'The rainy season is longer than the dry season.'

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[40] Evidence to the contrary of context supplying an object here is the fact that the way one asks "What does 'X' mean?" looks like example (41), except that the subject '2S' is replaced by 'X'.

(43) Nɛ-fú   Mbuˈndɑ ŋ́-kúu   Fuˈusɑp tuˈ [tʊ̀ʔú]
     C5-come_from Mbouda   CNS -arrive Bafoussam be_short.P0

     ŋ́-tsɑ   nɛ-fú   Mbuˈndɑ ŋ́-kúu   Pɑmɛ́ndɑ.
     CNS-surpass C5-come_from   Mbouda   CNS -arrive Bamenda.

     'Coming from Mbouda to Bafoussam is shorter than coming from
     Mbouda to Bamenda.' (or)

     'It is shorter to come from Mbouda to Bafoussam than to come from
     Mbouda to Bamenda.'

Observe also in example (43) that the subject is a complement clause whose
structure resembles that of a type-two (serial-like) verb chain. The complement
clause begins with a verbal noun (class 5 prefix + verb root) but continues as a
verb chain with the CNS prefix on the second verb. Moreover, we see that, as
direction is inherent in these verbs, no prepositions are required.

        Even when an adjective does function as the standard of comparison, *ŋ́tsa*
is still required and it still has the CNS prefix. This can be seen in example (44)
below where we have a comparative construction in which the point of
comparison is an adjective:

(44) N-dá   y-u   y-ɛ́   fí   ŋ́-tsɑ   y-ɑɑ.
     C9-house C9-2S   C9-3S   new   CNS -surpass   C9-1S
     'Your house is newer than mine.'

Given the usual structure of such constructions and the presence of the CNS
prefix on *ŋ́tsa* 'surpass', one wonders where the 'verb', or something
functioning as a verb, is to be found in the first part. The most likely candidate is
yɛ́, which appears to be either 'his' or perhaps a contraction of the relativizer *yi*
with the impersonal 3S pronoun *ɛ́* that is often used in (verbless) equative
clauses (see Satre (1999:14-16) with a reading of 'it is'[41]. If we take the latter
interpretation, a more literal 'free' translation of (44) would then be something
like 'Your house (which) is new surpassing mine.'

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[41] In Satre 1999, I also noted the presence of a H tone on the subject in these so-called
verbless expressions serving to link the two elements together. It may function much like a
copular element though is not a word.

6. Function of the consecutive morpheme in type three verb chains: joining clauses in same-subject chains.

The type three chain is broader in reach than the other two types, going beyond the verb phrase and clause level. It joins separate clauses that have the same subject, often encoding separate, consecutive events. This type is thus the 'loosest' semantically, speaking in terms of Osam's or Payne's concept of semantic integration. In fact, it is possible to change polarity in such a chain as may be seen in example (45)

(45) A kɛ́   ń-tɔ́   ŋkɔ̀ɔ,   ḿ-bɔɔ   kíi   ḿ-bɛn
      3S PER.P0   CNS-come   now   CNS- NEG.IPFV   more CNS-again

      ŋ́-kuˈ   nu   pɔ́.[42]
      CNS-be_capable_of   C7.thing   NEG

'He still came at this time, not being capable any more of (doing) the thing again.'

The second clause in example (45) is a type one chain. While it forms the second half of a type three chain with two components, it is not a separate event per se, but rather gives important background information, making the audience aware of the consequences of a previous event. It is not marked by any subordinating conjunction or conjunctive auxiliary. The CNS prefix on *ḿ-bɔɔ* links the entire second clause to the first. Notice that the verb *kíi*, glossed as 'more'[43], has no prefix due to the negative immediately preceding it. Then the following two verbs in the clause do have the CNS prefix, including the main verb of the clause, *ŋ́-kuˈ* 'be_capable_of'. The verb *ḿ-bɛn*, glossed here as 'again', is not functioning in this clause as a conjunctive element but rather as a form of rhetorical underlining to highlight the importance of this information to the story.

This third type of chain may itself have chains of the other two types nested within it. This can be seen in the example below taken from a narrative text about a hunter who mistakenly killed one of his relatives and was

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[42] Taken from `ˋƉu ẅi a fúnɛ kɔp 'The Man Who Came From a Foreign Land' as told to the author by Mrs. Matcho Marie of Bamendjinda. At this point in the story, the protagonist has had his magic ring stolen by a mouse and has just been summoned by the village chief to perform magic for him.
[43] The primary sense of this verb is probably 'to add (more)'.

subsequently beaten to death in retribution. In Example (46), we have a type
three verb chain that also contains two type two chains embedded within it:

(46)   Pɔ́p   tɔ́,   ŋ́-gẅɛɛ [ŋ́-gʉɛ̄·]   pɔ́ɔ   - ŋu p-i   p-ɔ́p
       3P   come.P0,   CNS -grab   C2.children-AM C1.person C2-REL

       ǹtswáa-nɛ [ń-tswà·-nɛ̀] maˈŋkatɛ́m   ń-jẅí,   ń-dɔk   ŋ́-gʉ   nɛ́
       C2-3P   P2-beat-VL   C1.hunter   CNS-kill CNS -take CNS -go to

       jɑndɑmɑli.
       C1.gendarmerie

       'They came, arrested the relatives of the man who had beaten the hunter
       to death (the day before), and took them away to the gendarmerie (i.e.,
       police station).'

       Example (46) is a verb chain that encodes a sequence of three distinct
events that have the same subject – they(*gendarmes*) came, they(*gendarmes*)
arrested the relatives (of the hunter's victim) who had beaten the hunter to
death, they(*gendarmes*) took them away to the police station. It is important to
note the presence of pauses in the flow of speech, as indicated by the use of
commas. A Bamileke-Ngomba speaker employs pauses to make a separation
between the events in a type three (consecutive) chain. There is, in Haiman's
(1983) terms, an 'iconic motivation' for the insertion of such pauses. That is to
say that:

       "The linguistic separateness of expression corresponds to the conceptual
       independence of the object or event which it represents." (p. 782)

Thus, apart from the relative clause, there are three clauses in this chain which
encodes three separate, albeit consecutive, events that share the same subject.
       The relative clause in example (46) is on a separate level from other
clauses in the chain, i.e. it is part of a noun phrase, and its separation from the
rest of the chain is evidenced by the fact that it has as different subject *pɔ́p*
'they', its own separate tense marking (P2) and carries the obligatory -*nɛ* suffix
that marks relative clauses[44]. The separate tense also situates the event in the
relative clause in a time prior to the events in the main verb chain and this is

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[44] The suffix -*nɛ* has several functions in the verb morphology of Bamileke-Ngomba and they
might be subsumed under the general rubric of 'valence-lowering'. This suffix is always
present on the verb in a relative clause.

indicated in the English free translation by the use of the past perfect 'had beaten'. As the point of reference for this P2 is not the moment of speaking, but rather the time of the event in the preceding clause, it is an excellent example of relative as opposed to absolute tense as defined by Comrie (1985b:58). Note also that this relative clause is a type-two chain with all tense/aspect marking on the first verb, including the usual relative clause marking.

6.1 Conjunctive auxiliary verbs in type three verb chains.   Back in §4.6, we saw a certain adverbial auxiliary verb *ḿbɛn* with a gloss 'again, and'. As an independent intransitive verb, it has the gloss 'return' (see discussion of example 25 in the final paragraph of §4.6). In a type-one chain it functions as an adverbial auxiliary with the gloss 'again' (see also discussion of example (25) in the final paragraph of §4.6). In a type-three chain, however, it seems to function as a sort of coordinating conjunction, a 'conjunctive auxiliary verb' to coin a new term, and is glossed by 'and' as may be seen in example (47) below:

(47)   A tɔ́,   ń-naŋ sɛ́,   <u>ḿ-bɛn</u>   ŋ́-kwɛ́t yúu lɑ [lǎ]   ŋ́-gʉ.
       3S come.P0 CNS -sit ground, CNS <u>-and</u>   CNS-eat thing and.then/before   CNS -go
       'He came, sat down <u>and</u> ate something, then left (or before leaving).'

Notice in the above example as well as in (49) and (54) below, that *ḿbɛn* as 'and' does not stand alone in its VP/clause, hence the use of the term auxiliary verb to describe it in these contexts.

Another verb in Bamileke-Ngomba that functions as a conjunction, or perhaps "adverbial subordinator" is a better term, is the verb 'before' *ŋ́gɔ*[45]. It occurs in the VP at the usual place for adverbial auxiliary verbs, but it seems to be functioning at a higher level, indicating its clause is subordinate to what follows. In example (48), taken from a procedural text[46], this subordinating conjunctive auxiliary verb occurs in the initial clause of the chain, a type three chain, and so is preceded by the tense/aspect marker:

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[45] Note that this verb is not to be confused with its homophone the verb *ŋ́gɔ* 'say'.
[46] Told to the author by Mr. Léon KOUHEGNOU of Bamendjinda, Cameroon.

(48) Pέ   sέ   ŋ́-gɔ [ŋ́-gɔ̌] ŋ́-gɛ [ŋ́-gɛ̌] mbɛlik - lá' ,   ŋ́-küɔ́'
      3INDF   PR.PRG   CNS -before   CNS -make   C1.brickAM C1.village,   CNS -cut

      mɛ-gíi   [mέ-!γí:] nǔu zu'   y-i   pέ   gʉ [γɨ̌] έ-fɑ'   zu'.
      CNS -cut C6-grass   on   C7.place   C7-REL 3INDF go   CNS –work there

      'Before making village bricks, one is cutting the grass in the place where
      one is going to work.'

      In example (49), we see both the subordinating auxiliary verb *ŋ́gɔ* 'before'
and the coordinating auxiliary verb *ḿbɛn* 'and' in the same type three verb
chain. The whole chain is an aside in a larger discourse and the 'before' clause
links it to a higher level:

(49) Ŋ́-gɔ   ŋ́-gɛ   pɔ́'ɔ,   pɛ-cícɑ   zέ   nɛ-ŋwɑ'nɛ pɛ-mápitsɔ',
      CNS-before CNS-do like.this C2-teacher begin.P0C5-write   C2-witty.story

      ḿ-bɛn   ŋ́-gɛ   pɛ-sɑknɛkɛt,   ḿ-bɛn   ŋ́-gɛ   mɛ-lɛ'lɛnu   nǔu
      CNS -and CNS -do C2-proverb/fable CNS -and CNS -do C6-relate-affair on

      yúu   m-i   p-ɔ́p   kɑ   jʉ́ɔ-nɛ [jɨ́ɤ̌-nέ].
      thing C6-REL C2-3P P3   see-VL

      'Before doing this, the teachers began writing witty stories, and proverbs,
      and personal accounts about things that they had seen.'

Notice the presence of a 'pro-verb', *ŋ́gɛ* 'do', in this chain alongside *ḿbɛn* 'and',
standing in the place of *zέ nɛŋwɑ'nɛ* 'began writing'. The reason for inserting
this pro-verb at these positions is that, apparently, there is an upper limit as to
how far an object can be separated from the verb or on the number of objects
that may be assigned to a single verb in Bamileke-Ngomba. When a verb has
more than two objects, the grammar of the language requires the insertion of a
copy of the main verb – as in example (52) below – or of a pro-verb to take up
the 'excess' objects, even when there is a conjunctive element. When there are
only two objects, the language may add the second by chaining, as we see below
in example (50), but also has a means of adding the second one without
resorting to verb chaining. In example (51), we see just two objects and these are
conjoined by what appears to be a grammaticalized 3P pronoun. It has the form
of the C2 pronoun 'they', but conjoins a C9 noun and C6 noun. This lack of

agreement would fit in with a grammaticalization scenario. Its use in this context, then, has generalized over time to mean 'and':

(50) A   gʉ   mɛ-táɑ   ń-zúu   m-bap ŋ́-gɛ   mɛ-shú[47].
      3S   go.P0   C6-market CNS -buy   C9-meat CNS-do C6-fish
      'He went (to) market (and) bought meat and fish.'

(51) N zúu   m-bɑp   pɔ́p   mɛ-yúu   - ná!.
      1S buy.P0   C9-meat   3P(and) C6-thing-AM C7.sauce
      'I bought meat and sauce fixings.'

The limit on the number of object NPs that can be conjoined in this manner is evidenced by the fact that example (52) is ungrammatical and would need to be reformulated. One possible reformulation is given in (53) where we can observe the obligatory use of the CNS morpheme in a type 3 verb chain:

(52) *N zúu   ŋkɛndɔŋ pɔ́p   m-bɑp   pɔ́p   mɛ-yúu-   ná!.
      1S buy.P0   C9.plantain 3P(and) C9-meat   3P(and) C6-thing-AM C7.sauce
      'I bought plantain and meat and sauce fixings.'

(53) N zúu   ŋkɛndɔŋ,   ŋ́-gɛ   m-bɑp pɔ́p   mɛ-yúu-   ná!.
      1S buy.P0   C9.plantain, CNS-do C9-meat 3P(and) C6-thing- AM C7.sauce
      'I bought plantain and meat and sauce fixings.'

So we have seen that Bamileke-Ngomba does not allow multiple objects to be juxtaposed and/or conjoined with a conjunctive element and attached to a single main verb in a clause. Rather than exceeding the limit of two objects assigned to one verb in a clause, the language prefers to place the 'excess' objects in separate clauses in a same-subject clause chain. Each clause in such a chain does not necessarily require a 'conjunctive auxiliary' as may be seen in example (54) below where only the final clause has the verb *ḿbɛn* 'and':

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[47]This example comes via personal correspondence from Mr. Bernard MBOUZOKENIA of Bamesso, Cameroon with the assistance of Céline Mantou et Etienne Lonfo.

(54) A zúu   mákɑp,   ń-zúu   m-bɑp,   ń-zúu   shú,
      3S buy.P0   C1.macabo, CNS -buy C9-meat,   CNS -buy C7.fish,

      ḿ-bɛn   ń-zúu   mɛ-yúu -   ná꞊.
      CNS -and CNS -buy   C6-thing- AM C7.sauce

      'He bought cocoyams, meat, fish and sauce fixings.'

More research would be required to determine the significance, if any, of choosing to use the 'pro-verb' *ŋ́gɛ* 'do' vs. choosing to repeat the lexical verb.

7. Conclusion

In this article, we have seen how the consecutive morpheme in Bamileke-Ngomba links verbs together in chains when they can share the same subject and tense/aspect/mood. The language does not allow clauses with different subjects to be chained together as is done in switch-reference chaining languages. Chaining in this language occurs between verbs within the verb phrase and clause as well as between same-subject clauses in larger constructions. We have also seen that these chains may be separated into three categories according to certain syntactic, phonological and semantic criteria. To sum up this information, I present the three chain-types and the various criteria used to distinguish them in Table 3 below.

Table 3: Criteria for distinguishing verb chain types in Bamileke-Ngomba

Criterion \ Chain-type	SYNTACTIC: Ability to insert NPs (objects) at more than one place in chain	PHONOLOGICAL: Intonation over whole chain as one clause	SEMANTIC: Degree of semantic integration of chain
1 - Single clause with Auxiliary verbs	NO	YES	HIGHEST: SINGLE EVENT
2 - 'Serial-like' construction	YES	YES	FACETS OF A SINGLE EVENT
3 – SS-clause chain	YES	NO	LOWEST: SEPARATE EVENTS

Not listed in the chart is the fact that in all verb chain types in Bamileke-Ngomba there is only one subject for the entire chain and so it is not possible or necessary to mark the subject at more than one place in the chain. The semantic criterion on the far right is a different type of criterion from the others in that it is graded rather than binary.

In this article, we have seen that Bamileke-Ngomba has a rather fixed order of constituents in the VP. We have also noted that tense/aspect and Negation occur, not on the main verb, per se, but at a particular position in the VP, i.e. at or near the beginning. We have seen that one of the positions in the verb phrase is MOD1, in which auxiliary verbs with adverbial functions occur. These are what Bamgbose (1974) terms "modifying verbs" in the serial verb constructions of   West African languages. We have also observed that, Bamileke-Ngomba, like many African languages, has a wide range of functions for verbs and that these include adverbial and conjunctive functions.

The question of motivation for the prohibition of the consecutive prefix in certain environments remains unresolved. Two possible solutions suggest themselves. One possibility is that the markers that prohibit the consecutive prefix on a following verb are not really verbs and that only verbs are linked by the consecutive prefix. The P3 marker in particular suggests this, because it bears a resemblance to the ubiquitous Bantu *ka*[48] affix. However, tense marking on certain negators seems to undermine that analysis. A second possibility is that there may be some realis/irrealis distinction involved and that the CNS prefix is also realis. Negated action, being unrealized, is therefore irrealis. However, the P3 marker does not fit in with this analysis nor does the fact that the scope of the prohibition is only one verb, i.e., the verb immediately following.

We did not look into complement clauses and relative clauses because the CNS morpheme, while at times present, is not an essential part of these types of clause combinations. Rather than using the CNS morpheme to indicate that the complement clause has the same subject as the matrix clause, Bamileke-Ngomba employs the class 5 noun prefix *nɛ-*. We saw in example (43) the use of this same *nɛ-* at the head of complement clauses in the comparative construction but subsequent verbs in each complement clause were joined to the initial verbal noun by the CNS morpheme.

In this article, we have also seen that Bamileke-Ngomba, while it is not a switch-reference chaining language, does make frequent recourse to the strategy of building chains of verbs on a variety of levels – between T/A auxiliary verbs,

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[48] Nurse (2008:141) indentifies six " main *ka*-morphemes" among Bantu languages, one of which is a distant past. It is possbible that the P3 marker in Ngomba is related to that.

adverbial auxiliaries and the main verb within a simple VP, between verbs in a 'complex' VP (i.e., a serial-like construction) and between clauses in same-subject verb chains. This strategy of chaining verbs together on various grammatical levels is so frequent in the language that one often finds complex chains that involve combinations of all three types! Bamileke-Ngomba resorts to forming same-subject verb chains not only when there are a series of events with the same subject, but also when there are more than two direct objects in one verb's event frame. We have seen that while only type three verb chains encode undeniably consecutive events, all three types of chains employ the CNS morpheme to link the verbs together.

It is important to note that the consecutive morpheme, in itself, does not express specific information regarding the subject or the tense/aspect of the phrase, i.e., it is not a form of agreement. What it does do, however, is mark the verb on which it occurs as being in the 'scope' of the verb that immediately precedes it in its chain, whether that chain is contained within one clause or stretches out between a number of clauses. As the subject is indicated at the beginning of the clause–remember, this is a strongly SVO language–and as tense and negation marking usually occur near the beginning of the verb phrase, this morpheme indicates, in effect, that the verb on which it occurs has the same subject and the same tense/aspect and, quite often, the same polarity as was previously marked. It is a highly productive and very frequently-used morpheme in the language, perhaps because it allows maximum economy in the use of tense, aspect and polarity markers.

ABBREVIATIONS

1P	first person plural	F4	future 4
1S	first person singular	IMP	Imperative
3P	third person plural	IO	indirect object
3S	third person singular	INCL	Inclusive
AM	associative marker	IPFV	Imperfective
ANA	Anaphoric	NEG	negative/negation
C1	noun class 1	O	Object
C2	noun class 2	P0	past 0
C3	noun class 3	P1	past 1
C4	noun class 4	P2	past 2
C5	noun class 5	P3	past 3
C6	noun class 6	P4	past 4
C7	noun class 7	PER	persistive
C9	noun class 9	PP	prepositional phrase
CNS	Consecutive	PR.HAB	present habitual
COMP	Complementizer	PR.PRG	present progressive
CONJ	Conjunction	SVC	serial verb construction
DO	direct object	SVO	subject verb object
F1	future 1	TAM	tense/aspect/mood
F2	future 2	VL	valence-lowering
F3	future 3		

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THE VERBAL MORPHOLOGY AND PHONOLOGY OF ASANTE TWI[*]

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1. Introduction

This paper presents an analysis of the verbal morphology and associated phonological processes in Asante Twi, a member of the Akan group of languages/dialects spoken in Ghana and Côte d'Ivoire, which belongs to the Nyo subgroup of the Kwa language family (Lewis 2009). There has been considerable interest in Akan in the theoretical literature, largely due to some peculiarities in the tense/aspect system which will be addressed later in this paper. However, the verbal morphology and phonology have been given relatively little attention. In this paper I show that the verbal morphology exhibits a number of interesting properties including tonal marking of tense/aspect categories – the latter having been largely ignored or misrepresented in the previous literature.

2. Background on Akan and Asante Twi

The most well-known of the Akan dialects are Asante Twi, Akuapem Twi, and Fante. The name 'Twi' is often used to refer to the Asante and Akuapem dialects to the exclusion of Fante; hence it is not always clear which dialect is intended when a particular claim is made about 'Akan' or 'Twi'. There is a tendency in the literature to describe all three of the major Akan dialects together, which has a confounding effect whenever tone is relevant, since some of the most significant differences among these dialects are tonal. Relatedly, many sources present examples in the standard Akan orthography, which does

not mark tone, so tone is often omitted. In this paper, I focus on only one dialect (Asante) and I will depart from the conventional use of the Akan orthography in order to mark tone in my examples. All examples are from Asante Twi and are from my own notes, except where specified.[1]

The most thorough existing descriptions of the verbal morphology are found in Dolphyne 1965, 2006. The latter provides partial verb paradigms and a description of the phonology and morphology of three Akan dialects, but it does not give a full morphological analysis of the verbal tense/aspect system. There are some discrepancies between what Dolphyne 2006 reports and what my own consultants produce in some areas of the morphology and phonology, some of which I point out below. It is not entirely clear what accounts for these differences, but some possibilities include interspeaker variation (perhaps based on a generational difference) and the fact that Dolphyne simultaneously describes three Akan dialects while my focus is solely on Asante Twi. Other resources include Boadi 2008, which gives a partial analysis of the verbal morphology, and the discussion of Akan morphology and/or phonology found in Schachter and Fromkin 1968, Essilfie 1986, Osam 1994, Saah 1994, Dolphyne 1996, Ofori 2006a,b, and Stump 2009.

Asante Twi, like other Akan dialects, has two tones, High (H) and Low (L) (in this paper, H is marked by an acute accent (á), and L is marked by a grave accent (à); downstep is marked by a superscripted exclamation mark (ꞌá)).

The following verb root shapes are attested in Asante Twi (where C = consonant, V = vowel, R = sonorant consonant, G = glide, and O = obstruent): CV H, CVR(V) HL, CVR(V) LH, CVV LH (of which those whose first vowel is round surface as [CGV] due to a Glide Formation rule, with accompanying tone changes, while the others surface as [CVV]; this will be discussed further below), and CVOV LH. Dolphyne (1996) identified a number of 'root types' (for Akan, rather than Asante Twi specifically), which divided the root shapes into separate categories based on their behavior in different tense/aspect categories: CV H, CV L, Tone Group 1 (which consists of CVR(V) LL and CVR(V) HL verbs), Tone Group 2 (which consists of CVR(V) LH, CCV LH, and CVV LH verbs), and Tone Group 3 (which consists of CVOV LH verbs). I depart from Dolphyne (1996) in that I have no evidence for CV L verbs in my data, nor for CVR(V) LL verbs, and I do not make use of the concept of 'tone groups'. Rather, I will demonstrate how grammatical tones and lexical tones interact straightforwardly via regular phonological rules of the language to produce the surface tone patterns regardless of root shape. Therefore, although

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[1] This study is based on data from two young people (18-34; KD – male, EA – female), both native speakers of Asante Twi, and both having exposure to the Akuapem dialect. Data in this paper are from KD except where noted.

in each tense/aspect category described below I will provide examples of verbs with each of the shapes mentioned earlier, these should not be taken as significant categories in the grammar.

3. Asante Twi verbal morphology

In this section I provide data showing how each verb type is manifested in each tense/aspect category (note that I am treating [CGV] LH and [CVV] LH as different types for this purpose, even though they are both underlyingly /CVV/). In order to show the tone of the verb clearly, each verb is followed by an object since there is a Final Lowering rule that changes H tones to L in utterance-final position (this rule complicates the analysis of the verbal tone unless an object is present to 'protect' the verb from its effect). The tense/aspect categories are presented in groups based on the type of morpheme used to mark them: prefixes vs. suffixes and/or H vs. L tones. Where relevant, I will introduce regular phonological processes that account for the surface forms of the different verb types in a given category. For each verb, I give four examples – one with a H-toned subject (the name 'Esi'), one with a L-toned subject (the name 'Yaw'), one with a H-toned pronominal subject (2sg *wó*, 2pl *mó*, or 3pl *ɔ́mó*), and one with a L-toned pronominal subject (1sg *mì*, 1pl *yè*, 3sg human *ɔ̀*, or 3sg non-human *ɛ̀*) (the difference is significant since, as will be seen in the examples, in some tense/aspect categories, verbs have different tone patterns depending on the underlying tone of the subject, and in some cases the tone of the subject is altered depending on the tense/aspect).

3.1 Categories with no tone marking on the verb root. The Habitual is not marked by any tone, or by any segmental prefix or suffix. Thus, the Habitual reflects the underlying form of verb roots more straightforwardly than any other tense/aspect category. Examples are given in (1) (note: underlining indicates nasality).

(1)   a. CV H

        ésí tɔ́ pèn   'Esi buys pens'
        mó tɔ́ pèn   'You pl. buy pens.'

        yàw tɔ́ pèn   'Yaw buys pens.'
        yè tɔ́ pèn   'We buy pens.'

    b. CVR(V) HL

        ésí nôm ìnsyù   'Esi drinks water'
        wó nôm ìnsyù   'You drink water.'

        yàw nôm ìnsyù   'Yaw drinks water.'
        mì nôm ìnsyù   'I drink water.'

    c. CVR(V) LH

        ésí dàné nè h<u>ɔ̂</u>   'Esi turns herself.'
        mó dàné mɔ̀ h<u>ɔ̂</u>   'You pl. turn yourselves.'

        yàw dàné nè h<u>ɔ̂</u>   'Yaw turns himself.'
        mì dàné mì h<u>ɔ̂</u>   'I turn myself.'

    d. CGV LH (/CVV/)

        ésí ˈbwá yàà   'Esi helps Yaa.'
        wó ˈbwá yàà   'You help Yaa.'

        yàw bwá yàà   'Yaw helps Yaa.'
        mì bwá yàà   'I help Yaa.'

    e. CVV LH

        ésí kàé kòfì   'Esi remembers Kofi.'
        mó kàé kòfì   'You pl. remember Kofi.'

        yàw kàé kòfì   'Yaw remembers Kofi.'
        ɔ̀ kàé kòfì   'He remembers Kofi.'

f. CVOV LH

ésí bìsá àsɛ̀m	'Esi asks something.'
wó bìsá àsɛ̀m	'You ask something.'
yàw bìsá àsɛ̀m	'Yaw asks something.'
ò bìsá àsɛ̀m	'He asks something.'

The forms in (1)d exhibit Glide Formation, which deletes the mora belonging to a labial (round) vowel, changing it to [w] when it precedes another vowel within the word. The rule is schematized below.

(2)   Glide Formation

$$\mu \rightarrow \varnothing \qquad \mu \qquad]_{word}$$

X   X

[labial]

There are several arguments for assuming that this verb's underlying form is /boa/ and that Glide Formation applies to it. First, as we will see later, Glide Formation applies productively across the language, in some cases resulting in alternations, so the rule is independently motivated (and as will be discussed later, this verb does surface as [boa] in the past tense). Second, assuming /boa/ as the underlying form of the root helps us to understand its otherwise anomalous tone pattern. There are no verbs with a consistent [ˈH] tone pattern, suggesting that there is no group of /ˈH/ verbs. There are, however, LH verbs. The tone pattern on this verb makes sense if we assume that it is underlyingly LH. Elsewhere in the language, contour tones generally occur only where there are two moras; as also observed by Dolphyne (2006: 66), there are no rising tones observed on syllables with only a short vowel in the rime. The verb 'help' can be made consistent with this generalization if we assume that it is underlyingly bimoraic, i.e., /boa/ rather than /bwa/. In this analysis, the L tone is underlyingly linked to the first mora, which is lost when the /o/ undergoes Glide Formation. This leaves the L tone 'floating', and this L is then manifested as a downstep on the following H tone. A sample derivation for this verb is given in (3) (a circle around a tone indicates a floating tone).

(3)   Derivation of *wó ꜛbwá yàà*

The ꜛH tone pattern occurs on this verb anytime it is preceded by a H tone (either a H-toned subject or a H-toned prefix, such as the Future prefix to be discussed later). No downstep is evident in the forms *yàw bwá yàà* or *mì bwá yàà* because the subjects are L-toned, but I assume that there is a floating L tone at some point in the derivation of these forms as well; this L is either merged with the preceding (linked) L tone or else it remains until the end of the derivation but has no phonetic effect since it does not occur between two H tones.

A second rule that applies in the data above is ATR Harmony (4), which changes a [-ATR] vowel in a prefix to [+ATR] when the first vowel of the stem[2] is [+high, +ATR]. Notice that in (1)f, the 3sg pronoun surfaces as [o] rather than [ɔ]. This is due to the [+ATR] vowel in the first syllable of the verb stem *bisa*.

(4)   ATR Harmony
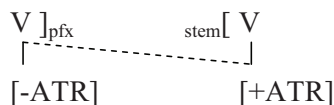
One point about ATR Harmony that is relevant to the data being discussed in this paper is that the [+ATR] counterpart of /a/ is /e/. Dolphyne treats the [+ATR] low vowel as being distinct from /e/ (in Twi but not in Fante), but they are indistinguishable in my consultants' speech. A table showing the [-ATR] vowels and their [+ATR] counterparts is shown in (5).

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[2] Note that 'stem' refers to the 'stem of attachment' for the target prefix. I am assuming that words are built from the inside out, such that the stem of attachment for a particular prefix includes the root plus any affixes already attached to the root. This is what accounts for the fact, to be discussed below, that ATR harmony applies iteratively from the root into a prefix, and then into another prefix to its left.

(5)   [-ATR]   [+ATR]

       a   e
       ɛ   e
       ɪ   i
       ɔ   o
       ʊ   u

ATR Harmony is an iterative rule, applying to the vowels in any number of prefixes (whether subject prefixes or tense/aspect markers). For example, in the immediate future form *mó ò-bè-bìsá àsèm* 'you pl. are about to ask something', the [+ATR] value of the /i/ in *bisa* spreads leftwards through the prefix /bɛ̀-/ (changing it to [bè]) and the progressive prefix (which is realized here as *ò-*), all the way to the 2pl pronoun /mɔ́/ (changing it to [mó]). Note, however, that the rule will not apply to a prefix vowel that is followed by a [+ATR] vowel within the same prefix. In particular, the 3pl subject pronoun invariably surfaces as *ɔ́mó*; its initial, [-ATR] vowel never harmonizes with the final, [+ATR] vowel. This follows from the requirement that the triggering vowel be part of the stem. See Dolphyne (2006) for further discussion of ATR harmony; note, however, that rather than the IPA symbols being used here, Dolphyne uses the vowel symbols from the Akan orthography, modified with diacritics (the orthography has only seven vowels, using <e> for IPA [e] and [ɪ], and <o> for [o] and [ʊ]).

The negative habitual is also not marked with a tone on the root; it consists of a regular habitual form plus the negative prefix /ǹ-/. Examples are given below.[3]

(6)   a. CV H

        ésí ń-ꜜtɔ́ pèn   'Esi doesn't buy pens.'
        wó ń-ꜜtɔ́ pèn   'You don't buy pens.'

        yàw ǹ-tɔ́ pèn   'Yaw doesn't buy pens.'
        mì ǹ-tɔ́ pèn   'I don't buy pens.'

---

[3] Stump (2009: 200) claims that Negative forms of some categories (including the Habitual) have the tone reversed on the root-initial syllable. However, a comparison between the Habitual and Negative Habitual examples in this paper shows that the tone of the root remains the same, modulo the effects of the Tonal Plateauing rule described below.

b. CVR(V) HL

    ésí ń-ˈnôm ìnsyù   'Esi doesn't drink water.'
    wó ń-ˈnôm ìnsyù   'You don't drink water.'

    yàw ǹ-nôm ìnsyù   'Yaw doesn't drink water.'
    mì ǹ-nôm ìnsyù   'I don't drink water.'

c. CVR(V) LH

    ésí ń-dàné nè hǫ̱   'Esi doesn't turn herself.'
    mó ń-dàné mò hǫ̱   'You don't turn yourselves.'

    yàw ǹ-dàné nè hǫ̱   'Yaw doesn't turn himself.'
    mì ǹ-dàné mì hǫ̱   'I don't turn myself.'

d. CGV LH (/CVV/)

    ésí ḿ-ˈmwá yàà   'Esi doesn't help Yaa.'
    wó ḿ-ˈmwá yàà   'You don't help Yaa.'

    yàw m̀-mwá yàà   'Yaw doesn't help Yaa.'
    mì m̀-mwá yàà   'I don't help Yaa.'

e. CVV LH

    ésí ŋ́-ˈkáé kòfì   'Esi doesn't remember Kofi.'
    wó ŋ́-ˈkáé kòfì   'You don't remember Kofi.'

    yàw ŋ̀-kàé kòfì   'Yaw doesn't remember Kofi.'
    mì ŋ̀-kàé kòfì   'I don't remember Kofi.'

f. CVOV LH

    ésí ḿ-ˈmísá àsὲm   'Esi doesn't ask something.'
    wó ḿ-ˈmísá àsὲm   'You don't ask something.'

    yàw m̀-mìsá àsὲm   'Yaw doesn't ask something.'
    mì m̀-mìsá àsὲm   'I don't ask something.'

Notice that tone is transcribed on the nasal prefixes in (6), but in fact their surface tone is predictable: it is identical to the tone of the preceding mora (the negative prefix still needs to have an underlying L tone, however, in order to explain the presence of a downstep before H-initial verbs, as in (6)a and b). This seems to be true throughout the data regardless of whether the nasal syllabifies with the preceding mora (as can be assumed in examples such as *wó ń-ꞌtɔ́ pèn* 'you don't buy pens') or not (as might be argued for examples such as *yàw ǹ-tɔ́ pèn* 'Yaw doesn't buy pens'). This can be accounted for via a rule of Nasal Tone Assimilation, given in (7) (T stands for any tone, H or L).
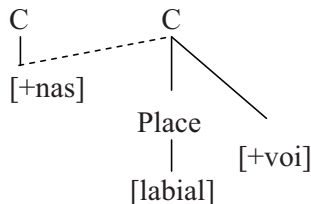
(7)   Nasal Tone Assimilation

$$
\begin{array}{ccc}
 & & \text{C [+nas]} \\
 & & | \\
\mu & \cdots & \mu \\
| & & \# \\
\text{T} & & \text{T}
\end{array}
$$
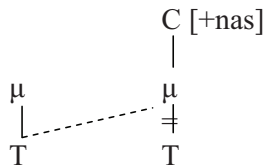
The rule must apply relatively early in the derivation since it feeds another rule, Tonal Plateauing, to be discussed later in the paper.

Another set of phonological processes is at work in the data in (6). First, in (6)d, f, the verbs /boa/ and /bisa/ surface with initial [m]. This is due to a rule of Labial Nasalization, where /b/ becomes [m] after a nasal consonant. This rule is given in (8).

(8)   Labial Nasalization

$$
\begin{array}{ccc}
\text{C} & & \text{C} \\
| & \cdots & | \\
\text{[+nas]} & & \\
 & & \text{Place} \quad \text{[+voi]} \\
 & & | \\
 & & \text{[labial]}
\end{array}
$$

Labial Nasalization is an optional rule; in this paper I have given transcriptions that reflect Labial Nasalization where applicable, but all of these examples have fully grammatical counterparts in which Labial Nasalization does not apply. Note also that Labial Nasalization applies only within words, not across word boundaries. This can be seen in examples such as *èntɔ́ntɔ́m bé bìsá àsèm* 'Mosquito will ask something' and *èntɔ́ntɔ́m bìsá àsèm* 'Mosquito asks something', where **èntɔ́ntɔ́m mé bìsá àsèm* and **èntɔ́ntɔ́m bìsá àsèm*,

respectively, are ungrammatical. A final note about Labial Nasalization is that it differs somewhat from the rule described by Dolphyne (2006: 141-142). In the variety of Asante Twi described by Dolphyne, all plosives and affricates (not just labials) become nasals when preceded by a nasal consonant, yielding forms such as *nna* from /nda/ and *ŋŋo* from /ŋgo/ (2006: 1952; tones and glosses not given). Although my consultants do not outright reject forms like these in which nasalization applies to non-labial consonants, they do not volunteer these forms on their own, and they express a strong preference for forms where the rule does not apply to these segments. This is why I have formulated the rule in (8) as applying only to labials. At present I do not have an explanation for the discrepancy between Dolphyne's data and my own except to note that, as Dolphyne points out (2006: 142), the nasalization rule does not apply at all in Fante. Perhaps the rule is in the process of being lost from Asante Twi under influence from Fante (though this would not explain why it still applies to labials).
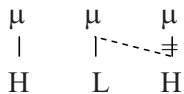
In addition to Labial Nasalization, there is a regular rule of Nasal Place Assimilation, shown below, where a nasal consonant takes on the place of articulation of a following consonant (9). Via the application of Nasal Place Assimilation plus Labial Nasalization, /n + b/ sequences surface as [mm], as in *mì m̀-mìsá àsɛ̀m* 'I don't ask something' from /mì ǹ-bìsá àsɛ̀m/.

(9)   Nasal Place Assimilation

<pre>
        C   C
        | |
     [+nas]   Place
</pre>
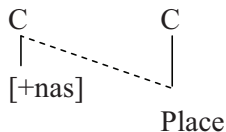
A final rule exhibited in the negative habitual forms above (examples (6)a, b, e, and f) is Tonal Plateauing, by which a L-toned mora surfaces with a downstepped H tone between two H-toned moras. This is seen, for example, in *wó ŋ́-ˈkáé kòfì* 'you don't remember Kofi', where the verb, which underlyingly has a LH tone pattern, surfaces with the tone pattern ˈHH. The rule is schematized in (10).

(10)   Tonal Plateauing

<pre>
        μ   μ   μ
        | |
        H   L   H
</pre>

There are a few complications to the Tonal Plateauing rule that need to be addressed here. The first is that, as mentioned earlier, this rule must be preceded by Nasal Tone Assimilation. In addition, it must be assumed that the tone that is dislodged by Nasal Tone Assimilation is deleted or fused with a following identical (linked) tone, and that this also takes place before Tonal Plateauing. The derivation of the form *wó ŋ́-ˈkáé kòfì* below shows how the processes interact.

(11)   wo n kae   *wó ŋ́-ˈkáé kòfì*   'You don't remember Kofi.'
        | | | |
        H L L H

        Nasal Tone Assimilation

            wo n kae
            |/ | |
           H (L) L H

        Floating L is deleted before a linked L

            wo n kae
            |/ | |
           H   L H

        Tonal Plateauing

            wo n kae
            |/   \|
          H (L) H

Notice that Nasal Tone Assimilation, and the deletion of the floating L before the linked L, feed Tonal Plateauing; if the L of the /ǹ-/ prefix were still present when Tonal Plateauing applied, the rule would be blocked. The same is true in (6)f.

Another complication is that Tonal Plateauing does not apply to verbs of the CVR(V) LH type (e.g., *dane* 'turn') as can be seen in (6)c above. However, this does not require any modification to Tonal Plateauing if we assume (following, e.g., Ofori 2006a) that the underlying form of verbs of this type does not contain the final vowel. This would mean that the H tone of the verb is floating, and therefore the representation of the verb would not meet the structural requirement for the application of Tonal Plateauing. Under this

analysis, the root-final vowel would have to be inserted by default at the end of the derivation.

A third complication is that there are some tense/aspect categories in which Tonal Plateauing does not apply where it would be expected to apply given the description of the rule in (10). First, it does not apply in habitual, or in the past (to be discussed below). The non-application of Tonal Plateauing in the habitual must be treated as an arbitrary fact about the habitual since there is no phonological element of this aspect category that would explain the failure of the rule.

It should also be noted that the Tonal Plateauing process observed in my data differs from the process described by Dolphyne (2006). Dolphyne proposed a Tone Spreading rule by which the underlying sequence HLH surfaces as [HH$^{!}$H] when the onset of the third syllable is an obstruent; otherwise HLH surfaces as [H$^{!}$HH] (2006: 60). In my data from KD and EA I have not found evidence for any underlying HLH sequences surfacing as [HH$^{!}$H] except in cases where the L tone belongs to the negative nasal prefix. In all of my examples, if Tonal Plateauing applies, the output is [H$^{!}$HH], indicating that the spread of the H tone is always from right to left, never left to right.

We turn now to another tense category in which the verb root is not marked by a grammatical tone: the future. As seen in the examples below, future is marked by the prefix /bɛ́-/.[4]

(12)   a. CV H

ésí bɛ́-tɔ́ pɛ̀n	'Esi will buy a pen.'
wó bɛ́-tɔ́ pɛ̀n	'You will buy a pen.'
yàw bɛ́-tɔ́ pɛ̀n	'Yaw will buy a pen.'
ɔ̀ bɛ́-tɔ́ pɛ̀n	'He will buy a pen.'

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[4] The 1sg subject and future tense are marked by a single portmanteau morpheme, /mɛ́-/. Note that this does not reduce to /mɪ + bɛ́/, because there is no regular phonological process that deletes /ɪ/ between /m/ and /b/, and the output of Labial Nasalization is [mm], not [m].

b. CVR(V) HL

ésí bɛ́-nôm ìnsyù	'Esi will drink water.'
wó bɛ́-nôm ìnsyù	'You will drink water.'
yàw bɛ́-nôm ìnsyù	'Yaw will drink water.'
mɛ́-nôm ìnsyù	'I will drink water.'

c. CVR(V) LH

ésí bɛ́-dàné nè hɔ̰́	'Esi will turn herself.'
mó bɛ́-dàné mò hɔ̰́	'You pl. will turn yourselves.'
yàw bɛ́-dàné nè hɔ̰́	'Yaw will turn himself.'
ɔ̀ bɛ́-dàné nè hɔ̰́	'He will turn himself.'

d. CGV LH (/CVV/)[5]

ésí bɛ́-ꜜbwá yàà	'Esi will help Yaa.'
wó bɛ́-ꜜbwá yàà	'You will help Yaa.'
yàw bɛ́-ꜜbwá yàà	'Yaw will help Yaa'
ɔ̀ bɛ́-ꜜbwá yàà	'He will help Yaa.'

e. CVV LH

|	
ésí bɛ́-ꜜkáé kòfì	'Esi will remember Kofi.'
wó bɛ́-ꜜkáé kòfì	'You will remember Kofi.'
yàw bɛ́-ꜜkáé kòfì	'Yaw will remember Kofi.'
mɛ́-ꜜkáé kòfì	'I will remember Kofi.'

---

[5] The downstep in the forms in (d) is the surface manifestation of the floating L tone that is left behind when the first mora of the root is deleted via the Glide Formation rule described earlier.

    f. CVOV LH

ésí bé-ˈbísá àsὲm	'Esi will ask something.'
mó bé-ˈbísá àsὲm	'You pl. will ask something.'
yàw bé-ˈbísá àsὲm	'Yaw will ask something.'
ò bé-ˈbísá àsὲm	'He will ask something.'

Recall from the earlier discussion that Dolphyne (2006) claims that Tone Spreading (here, 'Tonal Plateauing') is rightward when the onset of the third syllable is an obstruent. This means that, for example, the future forms of the verb 'ask' should exhibit righward H tone spreading; indeed, Dolphyne transcribes 'he will ask' as [ò bé-bíˈsá]. In KD and EA's pronunciation, however, the downstep occurs between the first and second syllables in the underlying HLH sequence, i.e., [ò bé-ˈbísá]. Below is a spectrogram and pitch track showing KD's pronunciation of 'Esi will ask something', showing that the downstep occurs on the first syllable of the verb root rather than the second.

(13)   ésí bé-ˈbísá àsὲm   'Esi will ask something.'
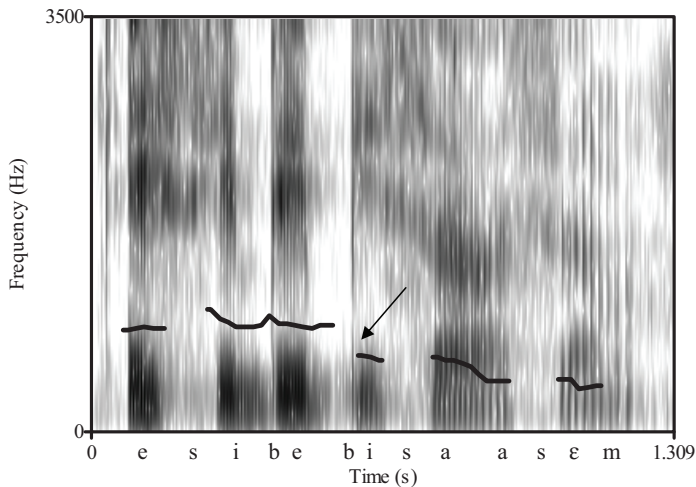
     As seen in (14), the negative future does not assign a tone to the verb root, but it does come with a prefix tone that affects the tone of some subject markers (to be discussed below). Like other negative categories such as the negative habitual described above, the negative future is marked with the negative prefix /ǹ-/. In addition, however, the negative future has a floating H tone that

immediately precedes the negative /ǹ-/ marker. The regular (affirmative) future marker /bɛ́-/ is absent in the negative future, so the floating H tone prefix marks both future and negative.

(14)   a. CV H

    ésí ń-ˈtɔ́ pɛ̀n   'Esi will not buy a pen.'
    wó ń-ˈtɔ́ pɛ̀n   'You will not buy a pen.'

    yàw ńń-ˈtɔ́ pɛ̀n   'Yaw will not buy a pen.'
    yɛ́ ń-ˈtɔ́ pɛ̀n   'We will not buy a pen.'

  b. CVR(V) HL

    ésí ń-ˈnôm ìnsyù   'Esi will not drink water.'
    wó ń-ˈnôm ìnsyù   'you will not drink water.'

    yàw ńń-ˈnôm ìnsyù   'Yaw will not drink water.'
    ɔ́ ń-ˈnôm ìnsyù   'He will not drink water.'

  c. CVR(V) LH

    ésí ń-dàné nè h<u>ɔ̰</u>   'Esi will not turn herself.'
    ɔ́mó ń-dàné ɔ̀mò h<u>ɔ̰</u>   'They will not turn themselves.'

    yàw ńń-dàné nè h<u>ɔ̰</u>   'Yaw will not turn himself.'
    yɛ́ ń-dàné yɛ̀ h<u>ɔ̰</u>   'We will not turn ourselves.'

  d. CGV LH (/CVV/)

    ésí ḿ-ˈmwá yàà   'Esi will not help Yaa.'
    mó ḿ-ˈmwá yàà   'You pl. will not help Yaa.'

    yàw ḿḿ-ˈmwá yàà   'Yaw will not help Yaa.'
    mí ḿ-ˈmwá yàà   'I will not help Yaa.'

e. CVV LH

ésí ŋ́-ˈkáé kòfì	'Esi will not remember Kofi.'
wó ŋ́-ˈkáé kòfì	'You will not remember Kofi.'
yàw ŋ́ŋ́-ˈkáé kòfì	'Yaw will not remember Kofi.'
yɛ́ ŋ́-ˈkáé kòfì	'We will not remember Kofi.'

f. CVOV LH

ésí ḿ-ˈmísá àsὲm	'Esi will not ask something.'
mó ḿ-ˈmísá àsὲm	'You pl. will not ask something.'
yàw ḿḿ-ˈmísá àsὲm	'Yaw will not ask something.'
ó ḿ-ˈmísá àsὲm	'He will not ask something.'

The floating H tone that I propose behaves differently depending on the surrounding tones. If the subject has a final H tone, the floating H is deleted or absorbed, leaving no trace. If the subject has a final L tone, the behavior of the floating H depends on the status of the subject: if subject is a pronoun, the H tone links to the subject, changing its tone. If, on the other hand, the subject is a noun (e.g., a person's name), the H tone associates to the nasal consonant of the negative prefix.

The derivation of negative future forms in each context is given below. First, (15) shows what happens to a form where the subject has an underlying final H tone: the floating H is deleted or absorbed, and then Nasal Tone Assimilation applies.
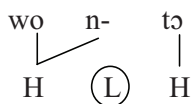
(15)   H-toned subject

wó ń-ˈtɔ́ pὲn 'You will not buy a pen.'

Floating H deleted/absorbed after H
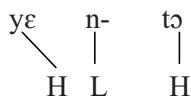
Nasal Tone Assimilation

wo　　n-　　tɔ
H　　(L)　　H

(16) shows the derivation of a form in which the subject is a L-toned pronoun. The floating H tone associates to the subject, causing it to surface with H tone. Nasal Tone Assimilation then applies, resulting in a downstepped H tone on the nasal prefix.
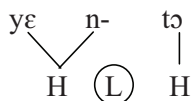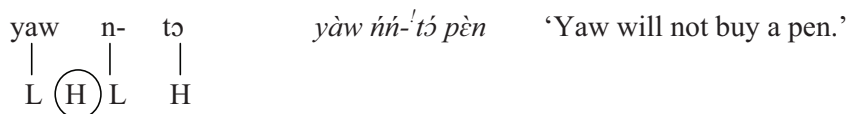
(16)　L-toned pronoun subject

　　yɛ　　n-　　tɔ　　　　　*yɛ́ ń-ꜜtɔ́ pɛ̀n* 'We will not buy a pen.'
　　(H)　　L　　H
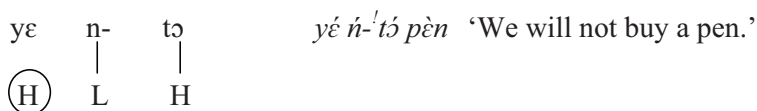
Floating H links to subject

　　yɛ　　n-　　tɔ
　　　H　L　　H

Nasal Tone Assimilation

　　yɛ　　n-　　tɔ
　　　H　(L)　　H

Finally, (17) shows the derivation of a form where the subject is a person's name with an underlying final L tone. The floating H tone prefix associates to the /n/ of the negative prefix, resulting in a falling tone, which causes lengthening of the nasal. Then Nasal Tone Assimilation applies, resulting in a HH tone pattern on the lengthened nasal prefix.

(17)　L-toned subject (name)

　　yaw　　n-　　tɔ　　　　*yàw ńń-ꜜtɔ́ pɛ̀n*　　'Yaw will not buy a pen.'
　　L　(H)　L　　H

Floating H links to nasal

$$\text{yaw} \quad \text{n-} \quad \text{tɔ}$$

L   H   L   H
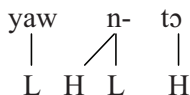
Nasal is lengthened due to falling tone

$$\text{yaw} \quad \text{nn-} \quad \text{tɔ}$$

L   H   L   H

Nasal Tone Assimilation

$$\text{yaw} \quad \text{nn-} \quad \text{tɔ}$$

L   H (L) H
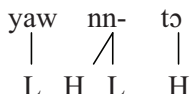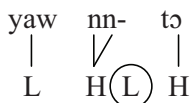
     Why does the floating H associate to pronouns but not to L-toned nouns in subject position? There are a number of possible explanations. One is that L-toned nouns have underlying L tones while the 'L-toned' pronoun subjects are really toneless and get their surface L tones by default. Notice that this is the approach I have taken above. One benefit to this approach is that it allows us to avoid having to propose another rule deleting the underlying L of the pronoun (since otherwise an underlying L-toned pronoun with a floating H tone associated to it from the right should yield a rising tone rather than a level H tone). Such a rule would have to be specific to the subject markers, since rising tones are allowed to occur elsewhere in the language. Another possibility is that there is a restriction on H tone association such that the floating H will only associate to something within the same word, assuming (following, e.g., Dolphyne 2006) that pronoun subjects are prefixes and therefore contained within the word.

     The negative past is marked by a prefix /a-/, which always has the same tone as the final tone of the subject, followed by the negative prefix /ǹ-/. Examples are given in (18).

(18) a. CV H

        ésí á-ń-ˈtɔ́ pὲn   'Esi didn't buy a pen.'
        wá-ń-ˈtɔ́ pὲn   'You didn't buy a pen.'

        yàw à-ǹ-tɔ́ pὲn   'Yaw didn't buy a pen.'
        yà-ǹ-tɔ́ pὲn   'We didn't buy a pen.'

b. CVR(V) HL

        ésí á-ń-ˈnôm ìnsyù   'Esi didn't drink water.'
        mwá-ń-ˈnôm ìnsyù   'You pl. didn't drink water.'

        yàw à-ǹ-nôm ìnsyù   'Yaw didn't drink water.'
        wà-ǹ-nôm ìnsyù   'He didn't drink water.'

c. CVR(V) LH

        ésí á-ń-dàné nè h<u>ɔ̀</u>   'Esi didn't turn herself.'
        wá-ń-dàné wò h<u>ɔ̀</u>   'You didn't turn yourself.'

        yàw à-ǹ-dàné nè h<u>ɔ̀</u>   'Yaw didn't turn himself.'
        mà-ǹ-dàné mì h<u>ɔ̀</u>   'I didn't turn myself.'

d. CGV LH (/CVV/)

        ésí á-ḿ-ˈmwá yàà   'Esi didn't help Yaa.'
        wá-ḿ-ˈmwá yàà   'You didn't help Yaa.'

        yàw à- m̀-mwá yàà   'Yaw didn't help Yaa.'
        mà-m̀-mwá yàà   'I didn't help Yaa.'

e. CVV LH

        ésí á-ŋ-ˈkáé kòfì   'Esi didn't remember Kofi.'
        wá-ŋ-ˈkáé kòfì   'You didn't remember Kofi.'

        yàw à-ŋ̀-kàé kòfì   'Yaw didn't remember Kofi.'
        yà-ŋ̀-kàé kòfì   'We didn't remember Kofi.'

f. CVOV LH

ésí é-ḿ-ˈmísá àsɛ̀m	'Esi didn't ask something.'
mwé-ḿ-ˈmísá àsɛ̀m	'You pl. didn't ask something.'
yàw è-m̀-mìsá àsɛ̀m	'Yaw didn't ask something.'
yè-m̀-mìsá àsɛ̀m	'We didn't ask something.'

I analyze the tone pattern of the prefix /a-/ as resulting from the prefix having no underlying tone. It is assigned its tone via the Tone Spreading rule in (19), which spreads a tone rightward onto any toneless mora (μ' represents a toneless mora; note that it is crucial to indicate that the target of spreading is toneless, because tone spreading does not apply to any mora that already bears a tone).

(19)   Tone Spreading
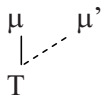
The /a/ also triggers Glide Formation or Vowel Fusion when a vowel precedes it, resulting in predictable surface changes to subject pronouns as exhibited in the data above.

A final tense/aspect category that is not marked by a grammatical tone on the verb root is the progressive. As shown in (20), progressive forms have a L-toned prefix consisting of a segment that matches the final segment of the subject.

(20)   a. CV H

ésí ˈí-tɔ́ pɛ̀n	'Esi is buying a pen.'
ɔ́mɔ́ ˈɔ́-tɔ́ pɛ̀n	'They are buying a pen.'
yàw ẁ-tɔ́ pɛ̀n	'Yaw is buying a pen.'[6]
mì ì-tɔ́ pɛ̀n	'I am buying a pen.'

---

[6] Note that this and other progressive examples involving the subject 'Yaw' are transcribed as having a L-toned syllabic glide preceding the verb root. Syllabic, tone-bearing glides are not attested elsewhere in the data, so the proper phonological representation of these segments may therefore be a vowel rather than a glide, as in, e.g., *yàw ù-tɔ́ pɛ̀n*. I have transcribed the prefixes as glides here in order to reflect their auditory profile, and to reflect more clearly the fact that they result from a lengthening of the immediately preceding segment.

b. CVR(V) HL

    ésí ˈí-nôm ìnsyù   'Esi is drinking water.'
    wó ˈó-nôm ìnsyù   'You are drinking water.'

    yàw ẁ-nôm ìnsyù   'Yaw is drinking water.'
    ɔ̀ ɔ̀-nôm ìnsyù   'He is drinking water.'

c. CVR(V) LH

    ésí ì-dàné nè hɔ̲   'Esi is turning herself.'
    wó ò-dàné wò hɔ̲   'You are turning yourself.'

    yàw ẁ-dàné nè hɔ̲   'Yaw is turning himself.'
    mì ì-dàné mì hɔ̲   'I am turning myself.'

d. CGV LH (/CVV/)

    ésí ì-bwá yàà   'Esi is helping Yaa.'
    ɔ́mó ò-bwá yàà   'They are helping Yaa.'

    yàw ẁ-bwá yàà   'Yaw is helping Yaa.'
    mì ì-bwá yàà   'I am helping Yaa.'

e. CVV LH

   ésí ì-kàé kòfì   'Esi is remembering Kofi.'
    wó ò-kàé kòfì   'You are remembering Kofi.'

    yàw ẁ-kàé kòfì   'Yaw is remembering Kofi.'
    mì ì-kàé kòfì   'I am remembering Kofi.'

f. CVOV LH

    ésí ì-bìsá àsɛ̀m   'Esi is asking something.'
    wó ò-bìsá àsɛ̀m   'You are asking something.'

    yàw ẁ-bìsá àsɛ̀m   'Yaw is asking something.'
    mì ì-bìsá àsɛ̀m   'I am asking something.'

The progressive appears to differ across dialects. Dolphyne (2006) states that the prefix [rὲ-] is used in Asante, but my consultants instead produce the forms in (20), and they claim that the [rὲ-] form is the Akuapem pronunciation. It is also spelled <re-> in the Akan orthography. My analysis of the form produced by my consultants is that the progressive prefix consists of a single L-toned mora. Because the mora is not underlyingly associated with any segmental features, it takes on the quality of whatever segment precedes it via a rule that spreads the entire segment's Root node (i.e., the node in the feature geometry that dominates all of the segment's features) to the empty mora, whether the segment is a consonant or a vowel. The rule is schematized in (21).

(21)   Root Node Spreading

        μ   μ

        |----
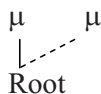
      Root

As will be discussed below, this analysis of the progressive as being marked by an empty mora affix is very similar to (and also bears on) Ofori's (2006a,b) analysis of the past suffix.

3.2 Categories marked by L tone on the verb root. There is one tense/aspect category that I analyze as being marked by a L tone on the verb root, namely, past. As shown in (22), past forms have a L tone on the first mora of the root, and when an object is present, the final segment of the verb root is lengthened, with a L tone occurring on the latter portion of the lengthened segment.

(22)   a. CV H

            ésí tɔ̀-ɔ̀ pὲn   'Esi bought a pen.'

            wó tɔ̀-ɔ̀ pὲn   'You bought a pen.'

            yàw tɔ̀-ɔ̀ pὲn   'Yaw bought a pen.'

            ɔ̀ tɔ̀-ɔ̀ pὲn   'He bought a pen.'

b. CVR(V) HL

ésí nòm-m̀ ìnsyù   'Esi drank water.'
wó nòm-m̀ ìnsyù   'you drank water.'

yàw nòm-m̀ ìnsyù   'Yaw drank water.'
ɔ̀ nòm-m̀ ìnsyù   'He drank water.'

c. CVR(V) LH

ésí dàné-è nè hɔ̰̂   'Esi turned herself.'
wó dàné-è wò hɔ̰̂   'You turned yourself.'

yàw dàné-è nè hɔ̰̂   'Yaw turned himself.'
mì dàné-è mì hɔ̰̂   'I turned myself.'

d. CGV LH (/CVV/)

ésí bòá-à yàà   'Esi helped Yaa.'
wó bòá-à yàà   'You helped Yaa.'

yàw bòá-à yàà   'Yaw helped Yaa.'
yɛ̀ bòá-à yàà   'We helped Yaa.'

e. CVV LH

ésí kàé-è kòfì   'Esi remembered Kofi.'
wó kàé-è kòfì   'You remembered Kofi.'

yàw kàé-è kòfì   'Yaw remembered Kofi.'
mì kàé-è kòfì   'I remembered Kofi.'

f. CVOV LH

ésí bìsá-à àsɛ̀m   'Esi asked something.'
wó bìsá-à àsɛ̀m   'You asked something.'

yàw bìsá-à àsɛ̀m   'Yaw asked something.'
mì bìsá-à àsɛ̀m   'I asked something.'

Following Ofori (2006a,b), I analyze the lengthening of the final segment as an empty mora suffix. The suffix takes on the quality of the vowel or consonant to its left via the Root Node Spreading rule described earlier. The past suffix therefore has the same phonological representation as the progressive prefix in my analysis, namely an empty mora linked to a L tone.[7]

When no object follows the verb, the ending *yὲ ~ ìyὲ ~ ὸyὲ* appears along with the lengthening of the final segment shown above. Examples are given below.

(23)   wó tɔ̀ɔ̀yὲ   'You bought.'   wó nòm̀ὸyὲ 'You drank.'

       wó dànéèyὲ 'You turned.'   wó bòáàyὲ 'You helped.'

       wó kàéèyὲ 'You remembered.'   wó bìsáàyὲ 'You asked.'

Ofori (2006a: 38-44) gives a number of arguments that the source of this ending is not an alternative past tense suffix *-yὲ* as was proposed by Dolphyne (2006). Ofori's analysis is that the empty mora of the past suffix becomes /ɪ/ when no object follows the verb, and then the segment /ɛ/ is inserted after the /ɪ/ for reasons of phonological augmentation. The /ɪ/ changes to [y] by Glide Formation, and its mora is preserved via lengthening of the root-final vowel. If the root is consonant-final, a high vowel is inserted after the root (this vowel surfaces as round when the final consonant is labial) before the past suffix. Ofori's rationale for assuming that there is an /ɪ/ at some point in the derivation appears to be the fact that in other dialects of Akan (i.e., Fante and Akuapem), verbs in this context end in *-ɪ* rather than having a lengthened final vowel followed by *-yὲ*. This may well be the historical origin of the *-yὲ* ending, but modern Asante lacks evidence for the *-ɪ* suffix. I therefore propose that the empty mora suffix is realized on all past affirmative forms (whether followed by an object or not) as lengthening of the root-final segment, and that there is a separate element *-yὲ* that is deleted when an object follows the verb.

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[7] Stump gives an alternative analysis of the past suffix as /-a/, claiming (2009: 223) in response to Ofori (2006a) that '…there is no independent motivation for the postulation of floating moras in this language'. However, representing the suffix as /-a/ does not allow for a satisfactory explanation of why the suffix always assimilates to the final segment of the verb root regardless of whether it is a consonant or a vowel. There is no independent process in the language (or, most likely, in any language) that changes /a/ into whatever consonant or vowel precedes it, so one would have to posit an item-specific rule of total assimilation that applies only to the suffix /-a/. It appears that Stump chose /-a/ as the suffix simply because the examples he used involved the verb *bisa* 'ask', which ends in /a/; his analysis fails when verbs not ending in /a/ are taken into account.

Evidence for the floating L tone prefix in the past comes from the fact that verb roots having initial H tone in other forms have initial L tone in the past (e.g., the verb 'bring' in (22)a). This change can be explained by a floating L prefix that associates to the left edge of the verb root via a rule of Grammatical Tone Association (24), replacing the lexical root-initial tone. [8]

(24)   Grammatical Tone Association

$$[_{root} \quad \mu$$

$$\widehat{T} \cdots \cdots \cdots \overset{\ddagger}{}$$

$$T \rightarrow \varnothing$$
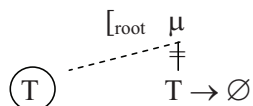
The floating L prefix may also have an indirect effect, in cases where the verb root has underlying initial L tone, precluding a distinct realization of the floating L on the root. In those cases, Glide Formation fails to apply, a fact that could be attributed to the L tone of the past. Notice that the forms of the verb *boa* 'help' in (22)d do not exhibit Glide Formation. Recall that this same verb does undergo Glide Formation in habitual forms such as *wó ꜜbwá yàà* 'you help Yaa' in (1)d. It is possible that the rule simply does not apply in this tense. However, it is also possible that Glide Formation is reversed via a rule of Glide Vocalization when the mora that is delinked from the vowel is associated to a L tone marking the past tense. The data do not distinguish between these two possibilities at present, so this is only a hypothetical manifestation of the floating L. It is true that none of the forms in (22) exhibit the Tonal Plateauing rule, but since another tense/aspect category (habitual) is already marked as not undergoing this rule, the failure of the rule to apply in the past is not necessarily attributable to the presence of the floating L and therefore does not provide strong evidence for it.

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[8] Though this rule is similar to the Tone Spreading rule proposed above and can be assumed to apply at roughly the same point in the derivation, the two rules differ in that Grammatical Tone Association replaces the tone on the mora to which it links, while Tone Spreading applies only to toneless moras.

3.3 Categories marked by H tone. The perfect and negative perfect are marked
by a H tone on the first mora of the verb root. Perfect (affirmative) forms are
given in (25). As can be seen in the data, in addition to the tone changes (to be
discussed further below), the perfect also has a prefix /a-/, which always
surfaces with the same tone as the final tone of the subject.[9]

(25)   a. CV H

          ésí á-tɔ̀ pὲn   'Esi has bought a pen.'
          wá-tɔ̀ pὲn   'You have bought a pen.'

          yàw à-tɔ́ pὲn   'Yaw has bought a pen.'
          wà-tɔ́ pὲn   'He has bought a pen.'

       b. CVR(V) HL

          ésí á-nòm ìnsyù   'Esi has drunk water.'
          wá-nòm ìnsyù   'You have drunk water.'

          yàw à-nôm ìnsyù   'Yaw has drunk water.'
          mà-nôm ìnsyù   'I have drunk water.'

       c. CVR(V) LH

          ésí á-dàné nè hɔ̲̂   'Esi has turned herself.'
          mwá-dàné mò hɔ̲̂   'You pl. have turned yourself.'

          yàw à-dáné nè hɔ̲̂   'Yaw has turned himself.'
          wà-dáné nè hɔ̲̂   'He has turned himself.'

       d. CGV LH (/CVV/)

          ésí á-ˈbwá yàà   'Esi has helped Yaa.'
          wá-ˈbwá yàà   'You have helped Yaa.'

          yàw à-bwá yàà   'Yaw has helped Yaa.'
          mà-bwá yàà   'I have helped Yaa.'

---

[9] Notice that this prefix is phonetically identical to the negative past prefix described above.
The similarity between these two affixes will be discussed in detail in §4.

e. CVV LH

ésí á-ˈkáé kòfì	'Esi has remembered Kofi.'
wá-ˈkáé kòfì	'You have remembered Kofi.'
yàw à-káé kòfì	'Yaw has remembered Kofi.'
yà-káé kòfì	'We have remembered Kofi.'

f. CVOV LH

ésí é-ˈbísá àsɛ̀m	'Esi has asked something.'
wé-ˈbísá àsɛ̀m	'You have asked something.'
yàw è-bísá àsɛ̀m	'Yaw has asked something.'
yè-bísá àsɛ̀m	'We have asked something.'

I analyze the perfect as having a H tone prefix that associates to the leftmost mora of the verb root. The clearest evidence for this prefix comes from forms where the subject has final L tone in (25)a-f above. As seen in those examples, verbs that otherwise have an initial L tone have initial H in the perfect when the subject is L-toned. Forms where the subject has H tone are a bit more complicated due to the application of some rules to be described below.
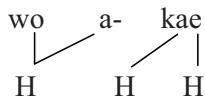
To account for the tone of perfect verbs after H-toned subjects, we need a rule of Perfect Polarity (26), which applies after Tone Spreading and feeds Plateauing. This rule changes a H to L when it immediately follows another H linked to the perfect prefix /a-/.

(26)   Perfect Polarity

$$
\begin{array}{c}
[_{\text{Perf}} \quad \text{a-} \\
| \\
\mu \qquad \mu \\
| \qquad | \\
H \qquad H \ \rightarrow L
\end{array}
$$
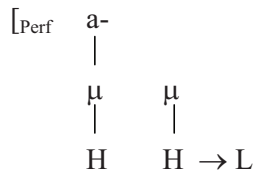
Below is a sample derivation showing perfect forms with a H-toned subject in (27)a and a L-toned subject in (27)b.

(27)   a. H-toned subject
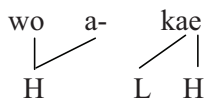
wo   a-   kae   *wá-ˈkáé kòfì* 'You have remembered Kofi.'
| ||
H   (H) LH

Tone Spreading and Grammatical Tone Association

wo   a-   kae
| / |
H   H   H

Perfect Polarity

wo   a-   kae
| / |
H   L   H

Tonal Plateauing

wo   a-   kae
| \
H   (L)   H

Vowel Fusion

w   a-   kae
 \   /   \
H   (L)   H

b. L-toned subject

yɛ   a-   kae   *yà-káé kòfì*   'We have remembered Kofi.'
| ||
L   (H) LH

Tone Spreading and Grammatical Tone Association

```
yɛ      a-    kae
|              /
L       H   H
```

Vowel Fusion

```
y      a-    kae
   /              |
L              H
```
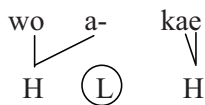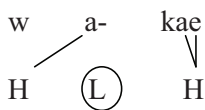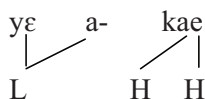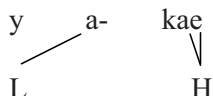
The negative perfect, like the perfect, has a H tone on the initial mora of the verb root. In addition, negative perfect is marked by the negative prefix /ǹ-/ and by lengthening of the final segment, with L tone on the lengthened portion of the segment.

(28)   a. CV H

ésí ń-ˈtɔ́-ɔ̀ pὲn	'Esi hasn't bought a pen.'
wó ń-ˈtɔ́-ɔ̀ pὲn	'You haven't bought a pen.'
yàw ǹ-tɔ́-ɔ̀ pὲn	'Yaw hasn't bought a pen.'
ɔ̀ ǹ-tɔ́-ɔ̀ pὲn	'He hasn't bought a pen.'

b. CVR(V) HL

ésí ń-ˈnôm-m̀ ìnsyù	'Esi hasn't drunk water.'
wó ń-ˈnôm-m̀ ìnsyù	'You haven't drunk water.'
yàw ǹ-nôm-m̀ ìnsyù	'Yaw hasn't drunk water.'
ɔ̀ ǹ-nôm-m̀ ìnsyù	'He hasn't drunk water.'

c. CVR(V) LH

ésí ń-ˈdáné-è nὲ h<u>ɔ̂</u>	'Esi hasn't turned herself.'
wó ń-ˈdáné-è wò h<u>ɔ̂</u>	'You haven't turned yourself.'
yàw ǹ-dáné-è nὲ h<u>ɔ̂</u>	'Yaw hasn't turned himself.'
mì ǹ-dáné-è mì h<u>ɔ̂</u>	'I haven't turned myself.'

d. CGV LH (/CVV/)

ésí ḿ-ˈmwá-à yàà	'Esi hasn't helped Yaa.'
wó ḿ-ˈmwá-à yàà	'You haven't helped Yaa.'
yàw m̀-mwá-à yàà	'Yaw hasn't helped Yaa.'
yè m̀-mwá-à yàà	'We haven't helped Yaa.'

e. CVV LH

ésí ŋ́-ˈkáé-è kòfì	'Esi hasn't remembered Kofi.'
wó ŋ́-ˈkáé-è kòfì	'You haven't remembered Kofi.'
yàw ŋ̀-káé-è kòfì	'Yaw hasn't remembered Kofi.'
mì ŋ̀-káé-è kòfì	'I haven't remembered Kofi.'

f. CVOV LH

ésí ḿ-ˈmísá-à àsɛ̀m	'Esi hasn't asked something.'
mú ḿ-ˈmísá-à àsɛ̀m	'You pl. haven't asked something.'
yàw m̀-mísá-à àsɛ̀m	'Yaw hasn't asked something.'
mì m̀-mísá-à àsɛ̀m	'I haven't asked something.'

I treat the lengthening of the root-final segment as resulting from a mora suffix, whose phonological representation and behavior are identical to that of the past suffix described earlier. Therefore all of the arguments cited earlier in favor of a mora as the underlying representation of the past suffix also apply here. The similarity between the past and negative perfect has been the subject of some debate in the literature and will be discussed in depth in the following section.

3.4 Interim summary. Having presented all of the verbal categories necessary to exemplify the phonological rules that apply to verbs in Asante Twi, I will now summarize the verbal morphemes and phonological rules before moving on to discuss some important issues arising in the analysis of the verbal morphology. Below is a list of the verbal affixes covered in this paper (see the Appendix for data from categories listed here that were not discussed above; these are marked below with a pound sign).

(29)   Verbal Affixes

Category	Marker(s)	Example	Gloss
Habitual	∅	ò bìsá	'he asks…'
Negative (e.g. habitual)	/ǹ-/	ò m̀-mìsá	'he doesn't ask…'
Future	/bɛ́-/	ò bé-ˈbísá	'he will ask…'
Negative future	floating H prefix+neg pfx	ó m̄-ˈmísá	'he will not ask…'
Progressive	L mora pfx	ò ò-bìsá	'he's asking…'
#Negative progressive	identical to neg fut[10]	ó m̄-ˈmísá	'he isn't asking…'
#Immediate future	prog pfx + /bè-/	ò ò-bè-bìsá	'he's about to ask…'
Past	floating L pfx+L mora sfx	ò bìsá-à	'he asked…'
Negative past	/a-/ + neg pfx	wè-m̀-mìsá	'he didn't ask…'
Perfect	/a-/ + floating H pfx	wè-bísá	'he has asked…'
Negative perfect	neg pfx+H pfx+L mora sfx	ò m̀-mísá-à	'he hasn't asked…'
#Imperative	floating L		
	(replaces lexical tones)	bìsà	'ask…!'
#Negative imperative	/mɛ́-/ or /ɛ̀ɛ̀-/ + neg pfx	mé-m̄-mìsá ~	
		ɛ̀ɛ̀-m̀-mìsá	'don't ask…!'
#Motional			
'come and X'	/bè-/	ò bè-bìsá-à	'he came and asked'
#Motional			
'go and X'	/kɔ̀-/	ò kò-bìsá-à	'he went and asked…'

(30) gives a list of phonological rules applying in the data presented in this section. Arrows indicate crucial rule orderings; other rules are not crucially ordered.

(30)   Glide Formation
      Vowel Fusion
      ATR Harmony
      Labial Nasalization
      Nasal Place Assimilation
      Root Node Spreading
      Grammatical Tone Association/
         Tone Spreading
      Perfect Polarity
      Nasal Tone Assimilation
      Tonal Plateauing
      Final Lowering

---

[10] This describes speaker EA's pronunciation. Speaker KD's negative progressive forms are less consistent, and he reports not having any negative progressive forms at all for certain verbs.

In the following section I discuss some theoretical issues arising in the analysis of the verbal morphology, particularly with respect to the past and perfect categories and their negative forms.

4. Theoretical issues in the interaction of tense/aspect and negation

The quote from Stump (2009) below summarizes a generalization that has commonly been made about Akan/Twi morphology:

> In Twi, negative verb forms exhibit an apparent reversal in tense morphology: the tense morphology of negative past-tense forms is that of affirmative perfect-tense forms, and that of negative perfect-tense forms is that of affirmative past-tense forms (*mè-bìsá-è* 'I asked', *m-à-bísá* 'I have asked', but *m-à-m̀-bìsá* 'I didn't ask', *mè-m̀-bísá-è* 'I haven't asked').

Similarly, Schachter and Fromkin (1968: 126) claim that 'In the presence of the NEGative morpheme, transformational rules apply which replace deep-structure PAS[t] by surface-structure PER[fect], and vice versa.' Dolphyne (1996: 93) describes the pattern as follows: 'The affixes of the Past and Perfect forms of the verb switch over between the positive and negative forms of the verb.' Essilfie (1986: 70) states that 'the Akan negative *Past tense form* translates the English Negative *Perfect tense* form while the Akan negative *Perfect* form translates the English *negative Past* form.' Similarly, in Saah's (1994: 21) description, a negative past form exhibits 'perfective morphology' while a negative perfect form 'bears the past tense morphology.' Finally, Ofori (2006b: 22) schematizes the situation as follows:

(31)   <u>A Schematic Representation of Similarities in Recent-past and Remote-past Forms</u>[11]

Recent-Past in the Affirmative (Prefix)   *Recent-past in Negative (Suffix)*
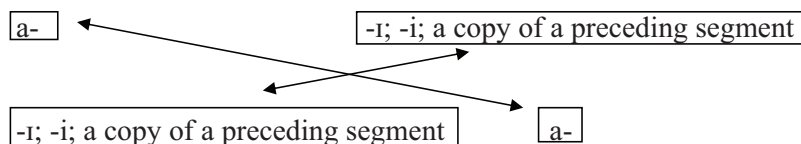
Remote-Past in the Affirmative (Suffix)   *Remote-past in the Negative (Prefix)*

While the sources cited above analyze the pattern as a 'replacement', 'reversal', etc.,[12] Ofori (2006a,b) analyzes all four of the affixes in (31) as having the same underlying form, namely, a single mora. He argues that '…the recent-past morpheme and the remote-past morpheme in Akan each [comprise] a single mora, and these moraic units are not inherently specified as either prefixes or suffixes, but are dependent on a Verbal Affix Hierarchy for their distribution as either prefixes or suffixes. The difference in segmental exponence between prefixal and suffixal position is predictable given certain observations about Akan phonology' (2006b: 22).

Ofori's (2006a,b) analysis is that all of the past and perfect markers reduce to empty mora affixes that are unspecified with respect to the side of the stem to which they attach (i.e., they are 'mobile affixes,' to use Noyer's (1994) term). When these moras occur as prefixes, their default segmental realization is [a] due to 'a general constraint in the language prohibiting non-low vowels initially' (Ofori 2006a: 30). When they are suffixes, they result in lengthening of root-final segment (or they surface as [i/ɪ], in case no object follows the verb). Ofori (2006a: 25) proposes a Verbal Affix Distribution Hierarchy, reproduced in (32), which accounts for the position of the affixes.

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[11] Note that what I have been calling perfect is called 'Remote-past' in Ofori's analysis. I use the term 'perfect' because this aspect marking is independent of tense. It can be used in the future, for example: *ɔ bé ˈbá nɔ̀ ná **m à-wɔ́ fùfù*** 'By the time he comes, I will have pounded fufu,' where the bolded portion is identical to *m à-wɔ́ fùfù* 'I have pounded fufu.'

[12] Osam (1994: 89) uses the term 'criss-crossing', but in his analysis the similarities between the forms are due to historical change and are not explained in the synchronic grammar.

(32)   Negative morpheme   *(strictly verb-root initial) >>*

       Recent-past mora   *(normally prefixal but must be verb-root edge-sharing so suffixing in the negative) >>*

       Remote-past mora   *(normally suffixing, but prefixing in the negative for avoidance of homophony)*

The interaction of these constraints results in the perfect marker, which is normally a prefix, becoming a suffix when the negative prefix is present in order to stay adjacent to the root. The past marker, which is normally a suffix, becomes a prefix in the negative in order for the form not to be homophonous with the negative perfect. Once the position of the mora is determined, the quality of the segment associated to it follows from what Ofori argues are regular phonological principles of the language: first, that an empty mora in suffix position will get its segmental features from the root-final segment when an object follows the verb (otherwise it becomes *-ɪ* or *-i* by default), and second, that the default realization of a featureless verb-initial mora is [a].

As I have argued above, Ofori's (2006a,b) analysis of the past and negative perfect suffixes as empty moras does have significant advantages over alternative analyses, and I have adopted it here. However, other aspects of Ofori's analysis are not compatible with the data I have presented in this paper. There are are at least three major problems with Ofori's account. The first is that, contrary to Ofori's claim, [a] is not the default realization of a verb-initial vowel – at least not in the dialect of Asante Twi under discussion here. Recall that the progressive is marked by a prefixal segment whose features come from the final segment of the subject. I analyzed the progressive prefix as an empty mora, just like the past and negative perfect suffixes, since its behavior is the same (i.e., it exhibits total assimilation to the segment to its left). If this is indeed the correct analysis of the progressive, then we can see that the default realization of a verb-initial vowel is not [a]; rather, when an empty mora precedes the verb, the segmental features are filled in by the same Root Node Spreading rule that supplies segmental features to the past and negative perfect suffixes. Hence, the [a-] prefixes seen in the perfect and negative past cannot be empty moras underlyingly; rather, they must be represented as /a-/.

A second problem for Ofori's account is that the /a-/ prefixes and mora suffixes do not have the same tones. The mora suffixes always have L tone, while the /a-/ prefixes have alternating surface tones. Thus, the mora suffixes are best analyzed as having an underlying L tone, while the prefixes are underlyingly toneless. Hence they could not all reduce to a single underlying form even in the absence of the vowel quality problem discussed above.

A third problem is that Ofori's account relies on homophony avoidance. This in itself is problematic *a priori* only if one accepts arguments made elsewhere against homophony avoidance as a property of synchronic grammars (see, e.g., Lass 1980, Gessner & Hansson 2004, Blevins & Wedel 2009, Mondon 2009, Paster to appear[13]). But it is especially problematic as an analysis of Asante Twi because the hypothetical homophonous forms that Ofori's analysis is designed to avoid would actually not be truly homophonous in any case, due to the tonal properties of the perfect aspect. Because his analysis ignores tone, Ofori assumes that if the negative past were formed with a suffix rather than a prefix, it would be homophonous with the negative perfect. But as will be shown below, once tone is taken into account, this is shown not to be the case.

To refresh the reader's memory, below are examples representing the four verbal categories of interest (recall that the prefix *a-* surfaces as [e] with this verb due to ATR harmony).

(33)   a. Past

        wó bìsá-à àsὲm   'You asked something.'
        mì bìsá-à àsὲm   'I asked something.'

    b. Perfect

        wé-ˈbísá àsὲm   'You have asked something.'
        yè-bísá àsὲm   'We have asked something.'

    c. Negative past

        mwé-ḿ-ˈmísá àsὲm   'You pl. didn't ask something.'
        yè-m̀-mìsá àsὲm   'We didn't ask something.'

---

[13] The references cited here deal primarily with the role of homophony avoidance in blocking sound change rather than in its potential effects in affixation. However, as pointed out by Paster to appear, phonologically driven morphological homophony avoidance would be analyzed using the same anti-homophony mechanisms that have been proposed for phonology, so if it is successfully argued against as a phonological constraint then it should not play a role in morphology either.

d. Negative perfect

mú ḿ-ˈmísá-à àsɛ̀m	'You pl. haven't asked something.'
mì m̀-mísá-à àsɛ̀m	'I haven't asked something.'

Suppose that the past forms in (33)a above underwent simple negative affixation to form the negative past. We would expect our hypothetical regular negative past forms to be **wó ḿ-ˈmísá-à àsɛ̀m* 'you didn't ask something' and **mì m̀-mìsá-à àsɛ̀m* 'I didn't ask something'. Notice that while the form with the pronoun 'you' would be identical to the corresponding negative perfect form in (33)d, the form with 'I' would not be identical to its corresponding negative perfect form; the tone of the verb root differs. This is because, as discussed earlier, the negative perfect (like the perfect) is marked by a H tone on the first mora of the root. Therefore, an account relying on homophony avoidance to explain why the negative past is formed with a prefix rather than a suffix does not work for all of the data.

A similar problem afflicts Stump's (2009) reanalysis, which is based on data from Dolphyne (2006). Stump proposes two abstract tense categories labeled 'tense$_1$' and 'tense$_2$'. Tense$_1$ is marked by a suffix; tense$_2$ is marked by a prefix. There are 'rules of semantic interpretation whose construal of the properties "tense$_1$" and "tense$_2$" in the interpretation of a given verb form is sensitive to whether this form is associated with the property "negative"' (Stump 2009: 221). So, a tense$_1$ form (i.e., a verb with a lengthened final segment) in the absence of a negative marker (or feature) is interpreted as a past form, while the same verb form in the presence of the negative will be interpreted as a (negative) perfect form. Similarly, a tense$_2$ form (i.e., a verb with the prefix *a-*) will be interpreted as a perfect form in the absence of the negative; if the negative is present, the same verb form will be interpreted as a (negative) past form. The problem for such an analysis is that it fails to account for tone. As described above, perfect is consistently marked by a H tone in both the negative and affirmative forms. Stump acknowledges the tonal complication but explains it away by claiming (as I mentioned earlier in describing the habitual) that some negative forms have the opposite tone from their corresponding affirmative forms (presumably this refers only to the initial tone of the verb root, since we do not observe any tonal alternations on non-initial moras in the root). This claim cannot be refuted by looking at other tense/aspect categories since Stump's claim extends only to 'some' categories, but it is worth reiterating that Stump does claim that there is a tonal reversal between the habitual and negative habitual, and that this claim is incorrect for Asante Twi.

Given that neither Ofori's analysis nor Stump's reanalysis is successful, is there any possible analysis that both accounts for the data and treats the

similarity between the past/negative perfect suffixes and the perfect/negative past prefixes as significant rather than arbitrary? Of course it is possible to analyze each of these four categories as having its own unique morphology so that, for example, the perfect prefix *a-* is a distinct formal object from the negative past prefix *a-* that happens to have the same phonological shape. However, this approach seems unsatisfying in light of the behavior of the past and negative perfect suffixes, since as discussed above, both are analyzable as floating moras and have a *-yɛ̀* ending that is deleted when an object follows the verb.[14]

I propose a variant on Stump's (2009) analysis where the abstract 'tense$_1$' vs. 'tense$_2$' distinction is responsible for the segmental morphology of past and perfect and their respective negative forms, but perfect is also independently marked by a floating H tone prefix. The effect is that there is some redundancy in the exponence of aspectual features on the verb, since, for example, the presence of the tense$_2$ prefix *a-* in the absence of the negative marker is sufficient to indicate perfect aspect, but this verb will also bear a H tone on the root-initial mora as another marker of the perfect. Similarly, when the negative marker is present, the tense$_1$ mora suffix marks the verb as perfect, but the H tone on the root-initial mora also indicates perfect aspect.

5. Conclusion

In this paper I have described the verbal morphology of Asante Twi. I have shown how the verbal morphology is analyzable as a compositional system in which affixes and their associated meanings combine straightforwardly to produce transparent surface forms, with a few exceptions as noted. I have also proposed an apparently novel analysis of grammatical tone patterns in the verbal morphology that avoids reference to tone classes or lexical groupings. Previous analyses of Asante Twi morphology were discussed, with particular attention to the interaction of tense/aspect and negation, which has featured prominently in the literature. Though future research may produce a superior explanation for

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[14] Osam (1994), rejecting the possibility of a synchronic explanation for these patterns, instead attempts to explain them diachronically. He claims that over time, perfect markers tend to develop into perfective or past markers (following Heine 1993), and that negative forms are more conservative than affirmative forms (following Givón 1979). Based on these generalizations, he suggests a diachronic approach in which an old perfect suffix developed into a completive suffix and a new perfect prefix *a-*; the new perfect and completive had the same negative forms at this stage. After this, 'for some reason currently unclear… the completive developed a new negative form while the perfect maintained the older negative form' (Osam 1994: 94). See Ofori (2006a: 15) for several arguments against Osam's approach.

this complex pattern, I have provided one possible analysis that avoids the shortcomings of previous analyses.

Appendix

Below are examples of verbs in tense/aspect/mood/polarity categories not presented in the paper.

(34)   Immediate future – progressive prefix (a L-toned mora) followed by the prefix /bɛ̀-/

     a. CV H

          ésí ì-bɛ̀-tɔ́ pɛ̀n   'Esi is about to buy a pen.'
          ɔ́mɔ́ ò-bɛ̀-tɔ́ pɛ̀n   'They are about to buy a pen'

          yàw ẁ-bɛ̀-tɔ́ pɛ̀n   'Yaw is about to buy a pen.'
          mì ì-bɛ̀-tɔ́ pɛ̀n   'I am about to buy a pen.'

     b. CVR(V) HL

          ésí ì-bɛ̀-nôm ìnsyù   'Esi is about to drink water.'
          wó ò-bɛ̀-nôm ìnsyù   'You are about to drink water.'

          yàw ẁ-bɛ̀-nôm ìnsyù   'Yaw is about to drink water.'
          mì ì-bɛ̀-nôm ìnsyù   'I am about to drink water.'

     c. CVR(V) LH

          ésí ì-bɛ̀-dàné nè hɔ̲   'Esi is about to turn herself.'
          wó ò-bɛ̀-dàné wò hɔ̲   'You are about to turn yourself.'

          yàw ẁ-bɛ̀-dàné nè hɔ̲   'Yaw is about to turn himself.'
          yɛ̀ ɛ̀-bɛ̀-dàné yɛ̀ hɔ̲   'We are about to turn ourselves.'

d. CGV LH (/CVV/)

ésí ì-bὲ-bwá yàà	'Esi is about to help Yaa.'
ɔ́mó ò-bὲ-bwá yàà	'They are about to help Yaa.'
yàw ẁ-bὲ-bwá yàà	'Yaw is about to help Yaa.'
mì ì-bὲ-bwá yàà	'I am about to help Yaa.'

e. CVV LH

ésí ì-bὲ-kàé kòfì	'Esi is about to remember Kofi.'
wó ò-bὲ-kàé kòfì	'You are about to remember Kofi.'
yàw ẁ-bὲ-kàé kòfì	'Yaw is about to remember Kofi.'
ɔ̀ ɔ̀-bὲ-kàé kòfì	'He is about to remember Kofi.'

f. CVOV LH

ésí ì-bὲ-bìsá àsὲm	'Esi is about to ask something.'
ɔ́mó ò-bὲ-bìsá àsὲm	'They are about to ask something.'
yàw ẁ-bὲ-bìsá àsὲm	'Yaw is about to ask something.'
yὲ ὲ-bὲ-bìsá àsὲm	'We are about to ask something.'

(35)   Imperative (sg.) – floating L tone associates to every mora of the root, eliminating lexical H tones. Final Lowering does not apply to the object.

a. CV H	tɔ̀ pέn	'Buy a pen!'
b. CVR(V) HL	nòm ìnsyù	'Drink water!'
c. CVR(V) LH	dànè wò hɔ́	'Turn yourself!'
d. CGV LH	bwà yàá	'Help Yaa!'
e. CVV LH	kàè kòfí	'Remember Kofi!'
f. CVOV LH	bìsà àsέm	'Ask something!'

(36) Negative imperative - prefix /mɛ́-/ or /ɛ̀ɛ̀-/, followed by the negative prefix
      /ǹ-/

      a. CV H   mɛ́-ń-ˈtɔ́ pèn   ~ ɛ̀ɛ̀-ǹ-tɔ́ pèn   'Don't buy a pen!'
      b. CVR(V) HL   mɛ́-ń-ˈnôm ìnsyù ~ ɛ̀ɛ̀-ǹ-nôm ìnsyù   'Don't drink water!'
      c. CVR(V) LH   mɛ́-ń-dàné wò hɔ̰ ~ ɛ̀ɛ̀-ǹ-dàné wò hɔ̰   'Don't turn yourself!'
      d. CGV LH   mɛ́-ḿ-ˈmwá yàà   ~ ɛ̀ɛ̀-m̀-mwá yàà   'Don't help Yaa!'
      e. CVV LH   mɛ́-ŋ́-ˈkáé kòfì ~ ɛ̀ɛ̀-ŋ̀-kàé kòfì   'Don't remember Kofi!'
      f. CVOV LH   mɛ́-ḿ-ˈmísá àsèm ~ ɛ̀ɛ̀-m̀-mìsá àsèm   'Don't ask something!'

(37) 'Motional' ('come' and 'go') – L-toned prefixes /bɛ̀-/ and /kɔ̀-/,
      respectively

      a. CV H

            ésí ˈbɛ́-tɔ́-ɔ̀ pèn   'Esi came and bought a pen.'
            wó ˈbɛ́-tɔ́-ɔ̀ pèn   'You came and bought a pen.'

            yàw bɛ̀-tɔ́-ɔ̀ pèn   'Yaw came and bought a pen.'
            mì bɛ̀-tɔ́-ɔ̀ pèn   'I came and bought a pen.'

            ésí ˈkɔ́-tɔ́-ɔ̀ pèn   'Esi went and bought a pen.'
            wó ˈkɔ́-tɔ́-ɔ̀ pèn   'You went and bought a pen.'

            yàw kɔ̀-tɔ́-ɔ̀ pèn   'Yaw went and bought a pen.'
            ɔ̀ kɔ̀-tɔ́-ɔ̀ pèn   'He went and bought a pen.'

      b. CVR(V) HL

            ésí ˈbɛ́-nôm-m̀ ìnsyù   'Esi came and drank water.'
            wó ˈbɛ́-nôm-m̀ ìnsyù   'You came and drank water.'

            yàw bɛ̀-nôm-m̀ ìnsyù   'Yaw came and drank water.'
            mì bɛ̀-nôm-m̀ ìnsyù   'I came and drank water.'

            ésí ˈkɔ́-nôm-m̀ ìnsyù   'Esi went and drank water.'
            wó ˈkɔ́-nôm-m̀ ìnsyù   'You went and drank water.'

            yàw kɔ̀-nôm-m̀ ìnsyù   'Yaw went and drank water.'
            ɔ̀ kɔ̀-nôm-m̀ ìnsyù   'He went and drank water.'

c. CVR(V) LH

ésí bὲ-dàné-è nè hɔ̱   'Esi came and turned herself.'
wó bὲ-dàné-è wò hɔ̱   'You came and turned yourself.'

yàw bὲ-dàné-è nè hɔ̱   'Yaw came and turned himself.'
mì bὲ-dàné-è mì hɔ̱   'I came and turned myself.'

ésí kɔ̀-dàné-è nè hɔ̱   'Esi went and turned herself.'
wó kɔ̀-dàné-è wò hɔ̱   'You went and turned yourself.'

yàw kɔ̀-dàné-è nè hɔ̱   'Yaw went and turned himself.'
mì kɔ̀-dàné-è mì hɔ̱   'I went and turned myself.'

d. CGV LH (/CVV/)

ésí bὲ-bwá-à yàà   'Esi came and helped Yaa.'
wó bὲ-bwá-à yàà   'You came and helped Yaa.'

yàw bὲ-bwá-à yàà   'Yaw came and helped Yaa.'
ɔ̀ bὲ-bwá-à yàà   'He came and helped Yaa.'

ésí kɔ̀-bwá-à yàà   'Esi went and helped Yaa.'
wó kɔ̀-bwá-à yàà   'You went and helped Yaa.'

yàw kɔ̀-bwá-à yàà   'Yaw went and helped Yaa.'
mì kɔ̀-bwá-à yàà   'I went and helped Yaa.'

e. CVV LH

ésí bɛ̀-kàé-è kòfi	'Esi came and remembered Kofi.'
wó bɛ̀-kàé-è kòfi	'You came and remembered Kofi.'
yàw bɛ̀-kàé-è kòfi	'Yaw came and remembered Kofi.'
yɛ̀ bɛ̀-kàé-è kòfi	'We came and remembered Kofi.'
ésí kɔ̀-kàé-è kòfi	'Esi went and remembered Kofi.'
wó kɔ̀-kàé-è kòfi	'You went and remembered Kofi.'
yàw kɔ̀-kàé-è kòfi	'Yaw went and remembered Kofi.'
yɛ̀ kɔ̀-kàé-è kòfi	'We went and remembered Kofi.'

f. CVOV LH

ésí bɛ̀-bìsá-à àsɛ̀m	'Esi came and asked something.'
mó bɛ̀-bìsá-à àsɛ̀m	'You pl. came and asked something.'
yàw bɛ̀-bìsá-à àsɛ̀m	'Yaw came and asked something.'
ò bɛ̀-bìsá-à àsɛ̀m	'He came and asked something.'
ésí kò-bìsá-à àsɛ̀m	'Esi went and asked something.'
wó kò-bìsá-à àsɛ̀m	'You went and asked something.'
yàw kò-bìsá-à àsɛ̀m	'Yaw went and asked something.'
ò kò-bìsá-à àsɛ̀m	'He went and asked something.'

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BOOK REVIEWS AND NOTICES

Bohnhoff 2002: Dii Dictionary.

Bohnhoff, Lee E., with Mathieu Kadia and Asmaou Marthe. (2002). *Dictionnaire de la langue dii (duru), 3ᵉ éd*. Mbé, Cameroun: Equipe de Littérature Dii.

This dictionary is based on a Lee Bohnhoff's lengthy stay (1963-2001) among the Dii people and was created primarily for the Dii people themselves. It is the third edition preceded by the first edition in 1972, and a second in 1992. The introduction states that it is designed for *brevet*-level (9th grade) Dii students and non-Dii students at the university level. In his unpublished grammar (Bohnhoff 2010), the author characterizes the language's demographics in this way,

> The Dii language (Duru or Durru) is spoken in northern Cameroun by an estimated 50,000 people. The chief concentration of the Dii population, as illustrated on the map at the end of this introduction [copied below], is located in an area north and northeast of Ngaoundéré, and south and southeast of Garoua, although sizeable Dii populations have sprung up in Ngaoundéré, Garoua, Yaoundé, and Douala (Bohnhoff 2010:16).

Its classification has been characterized as follows,

> Joseph Greenberg (1970:9) placed Dii (his Durru) with Vere, Namshi, Kolbila, Pape, Sari, Sewe, Woko, Kotopo, and Kutin in the Adamawa group of the Adamawa-Eastern subfamily of the Niger-Congo family. The Linguistic Atlas of Cameroun (Dieu et al. 1983:43, 96, 352-9) classed Dii in its (zone 3) Kobo-Dii 'Vere-Duru' group (Kobo, Koma-ndera, Gímníme, Gímme, Dooyaãaãyó = northern subgroup; and Páárá, Lóñtó, Duupa, Pa'noã, Dii = southern subgroup) in the Adamawa subfamily of the Adamawa-Oubanguien family. Boyd (1999:3-4) places it in a group called 'Adamaoua du Sud-Ouest'.

The orthographic conventions states that the Dii alphabet includes the following additions to French orthography: "ɓ ɗ ɛ ɨ ŋ ɔ ə ʉ" and "'" (presumably for [ʔ]) for a total of some 43 phonemes. In the provisional grammar (Bohnhoff 2010), the author identifies a phonemic inventory of sounds, 35 consonants and 10 "basic" vowels with contrastive vowel length and contrastive vowel nasalization. In addition to the two implosives Dii has a series of preglottalized

series: /'m, 'n, 'w, 'y /. Other interesting sounds are three labialvelars, spelled "kp gb mgb", a labiodental flap "vb", and four (voiced) prenasalized stops and one (voiced) prenasalized fricative "nz". The 10 "basic" Dii vowels are the four front vowels /i, ɨ, e, ɛ/, two central vowels /ə, a/, and four back vowels /u, ʉ, o, ɔ).

The tones are High, Low, and Mid; only High is marked in the official orthography, but the dictionary marks both High and Low; tones are additionally marked on consonants closing syllables: /m n ŋ w y r/. The lateral [l] appears in this position as well but it was not marked because the printer would not show it (p. 4).

Each entry in the dictionary shows the traditional elements: variants, grammatical category, tonal and other morphological irregularities, language of origin if borrowed, meaning(s). Illustrative examples are provided if the meaning is unclear.

The dictionary is nearly 300 pages long, and a rough estimate suggests that it contains over 4,000 entries. (In another publication (Bohnhoff 1982), the author mentioned a lexicon of 4,244 entries.) There are lots of ideophones listed, ideophones forming an important word category in Dii and related languages (Childs 1994). (Bohnhoff 1982 found 535 ideophones in the mentioned lexicon of 4,244 entries.)

The one feature missing is some indication of what the grammar is like; one can infer certain features from the orthography but not much else. To make the dictionary more valuable to linguists (for whom it was statedly not intended), a short grammatical sketch would be invaluable, easily based on Bohnhoff 1971a and Bohnhoff 2010. Other useful references for information on the language are: Bohnhoff 1968, 1971a, 1971b, 1976, 1982, 1986, 1990, and Bohnhoff and Boyd 2003. The sum of these publications represents the successful documentation of a language that will soon disappear.

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Bemile 2010 *Dàgàrà Proverbs*

Bemile, Sebastian K. 2010. *Dàgàrà Proverbs* (*Sprache und Oralität in Afrika,*
Band 25). Berlin: Dietrich Reimer Verlag. 342 S., 17 × 24 cm, Ln. ISBN
978-3-496-02834-5. **79,00 €** [D] | 112,00 SFR [CH].

After a brief forward from the general editor Hermann Jungraithmayr and some
introductory notes on abbreviations and Dàgàrà sounds and orthography, the
author provides a lengthy and informative preface. Bemile indicates the
important component of the book, the grounding of Dàgàrà proverbs in universal
and particular practice and culture. The preface gives important sociolinguistic
and cultural background to the situated use of Dàgàrà proverbs, and introduces
the two major parts of the book.

Part I contains five chapters, the first of which (Introduction, pp. 41-56)
continues on in the same vein, expanding on information introduced in the
preface. It provides some details of this cultural grounding, first by some
comparisons to proverbs in European languages. Chapter 2 (pp. 57-74) identifies
some of the "literary and linguistic aspects" of proverbs, situating proverbs and
the study of proverbs within more general frameworks, discussing such
figurative devices as simile and hyperbole. In addition the author identifies some
specific phonetic, phonological, and syntactic features. The short Chapter 3
"Approaching universality" (pp. 75-78) shows how some proverbs can be
translated almost word for word, following Kuusi 1972, who has begun the
somewhat formidable task of extensive cross-linguistic comparison. Chapter 4 is
a short (one page, p. 79) "Conclusion" to this first section of Part 1.

Chapter 5, the "Corpus of proverbs" (pp. 81-140) constitutes the data of Part 1.
It lists the 199 proverbs, translating them into five different languages, including
Latin! The other languages are the more expected ones English, French,
German, and Spanish.

In Part II are found the proverbs themselves, explained and situated in particular
contexts. Once again the discussion of each proverb is multilingual, but here just
the languages English, French, and German. Although I could read only the
English and French translations, this section is the most helpful in understanding
the meaning of each proverb. Chapter 6: Introduction (pp. 143-146) introduces
the heart of Part II, Chapter 7 "Corpus of proverbs" (pp. 147-332). After some
endnotes, the book concludes with a useful bibliography (pp. 337-342).

For anyone interested in African proverbs and their analysis Bemile's work is an essential (and entertaining) one.

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Kandybowicz 2008 The grammar of repetition

Kandybowicz, Jason. 2008. *The grammar of repetition: Nupe grammar at the syntax-phonology interface*. Amsterdam and Philadelphia: John Benjamins. ISBN 978-90-272-5519-8. Cloth.

Abstract [from the publisher]: Displacement is a fundamental property of grammar. Typically, when an occurrence moves it is pronounced in only one environment. This was previously viewed as a primitive/irreducible property of grammar. Recent work, however, suggests that it follows from principled interactions between the syntactic and phonological components of grammar. As such, the phonetic character of movement chains can be seen as both a reflection of and probe into the syntax-phonology interface. This volume deals with repetition, an atypical outcome of movement operations in which displaced elements are pronounced multiple times. Although cross-linguistically rare, the phenomenon obtains robustly in Nupe, a Benue-Congo language of Nigeria. Repetition raises a tension of the descriptive-explanatory variety. In order to achieve both measures of adequacy, movement theory must be supplemented with an account of the conditions that drive and constrain multiple pronunciation. This book catalogs these conditions, bringing to light a number of undocumented aspects of Nupe grammar.

All of these books are available for review:

Caron, Bernard éd. 2008. *Subordination, dépendance et parataxe dans les langues africaines (Afrique et Langage 12)*. Louvain and Paris: Peeters. **ISBN:** 978-90-429-2166-5; **Pages:** 200 p. **Price:** 60 EURO.

Summary (from the publisher)**:** De nombreuses langues africaines ont la particularité d'avoir des subordonnées non marquées segmentalement. Le lien de dépendance entre les propositions n'est pas marqué par un morphème spécifique, pourtant, l'enchaînement des propositions construit un lien de subordination qui présente des propriétés sémantiques spécifiques. Il s'agit de ce qu'on appelle généralement « parataxe » par opposition à « hypotaxe ». Ces phénomènes de hiérarchisation sans marque segmentale posent, entre autres, la question des limites de l'énoncé et celle de la nature des mécanismes par lesquels se construisent hiérarchisation et dépendance.

Le présent volume rassemble dix contributions originales sur ce thème, fruit d'une Opération de Recherche menée dans le cadre du LLACAN (*Langage, Langues et Cultures d'Afrique Noire*, UMR 8135 CNRS-INALCO). Ce programme s'inscrit dans une perspective de typologie des langues africaines visant, à partir d'analyses comparatistes, à dégager des régularités, des types structurels ainsi que d'éventuels invariants.

Typologie des énoncés complexes en bambara : traits généraux
    G. DUMESTRE

Coordination et parataxe en capverdien modern
    N. QUINT

Logophorique et imminence/immédiateté en yakoma
    P. BOYELDIEU

Les marqueurs de discours en gbaya
    P. ROULON-DOKO

Enoncés hiérarchisés, converbes et prosodie en bedja
     M. VANHOVE

Parataxe et dépendance en tupuri
     S. RUELLAND

Connexité linéaire et connexité configurée : l'exemple du joncteur oo en Somali
     D. MORIN

La structure énonciative des subordonnées conditionnelles
     B. CARON

Les formes de la dépendance entre syntaxe et énonciation : la solution égyptienne
     E. ORÉAL.
La nature de la relation entre propositions dans une construction de type parataxe en ikwere
     S. OSU.

Lambert-Brétière, Renée. 2010. *Les constructions sérielles en fon. Approche typologique*. Louvain-Paris: Peeters. **ISBN:** 978-90-429-2363-8; **Pages:** XVIII-398 p.; **Price:** 55 EURO.

Summary (from the publisher)**:** Cet ouvrage porte sur la description d'un aspect syntaxique problématique de la grammaire fon : la sérialisation verbale. Le fon est une langue kwa (groupe gbe), parlée principalement dans le sud du Bénin par près de 2 millions de locuteurs. La sérialisation verbale est un phénomène linguistique largement observé dans les langues d'Afrique de l'Ouest comme le fon et dans d'autres langues typologiquement variées.

Après avoir présenté un aperçu de la grammaire du fon et un tour de la question concernant la sérialisation verbale, l'auteure se consacre à l'examen des constructions sérielles en fon dans une approche typologique et fonctionnelle, intégrant des paramètres sémantiques et pragmatiques à l'analyse morphosyntaxique. Neuf types de constructions sérielles sont étudiés : les causatives, les instrumentales, les directionnelles, les comitatives, les comparatives, les aspectuelles, les résultatives, les séquentielles et les compositionnelles. L'ouvrage apporte une contribution typologique à trois niveaux. Premièrement, il propose un modèle pour aborder la description de la sérialisation verbale dans d'autres langues. Deuxièmement, il contribue à enrichir la typologie des constructions sérielles en précisant pour le fon leurs fonctions, leurs origines possibles et les corrélats conceptuels liés à leur utilisation. Enfin il montre que l'étude des constructions sérielles permet de raffiner les typologies actuelles concernant la classification des langues sérialisantes.

Rilly, Claude. 2010. *Le méroïtique et sa famille linguistique (Afrique et Langage 14)*. Louvain-Paris: Peeters. **ISBN:** 978-90-429-2237-2; **Pages:** 557 p.; **Price:** 45 EURO.

Summary (from the publisher)**:** La famille linguistique du méroïtique, la langue du royaume pharaonique de Méroé, au Soudan, a été depuis plus d'un siècle l'objet de débats passionnés. Était-elle couchitique, nilo-saharienne ou isolée comme le sumérien et l'étrusque? Aucune réponse certaine ne pouvait être apportée tant que la langue n'était pas mieux connue, et notamment son vocabulaire fondamental, le plus utile pour repérer une filiation linguistique. Tout au plus savait-on que la piste couchitique (ou chamito-sémitique en général) était très peu vraisemblable et la piste nilo-saharienne la plus plausible.

La première partie de cet ouvrage est consacrée à l'accroissement du lexique de base au moyen d'une étude philologique serrée des textes méroïtiques. Dans un second temps, ces données font l'objet d'une «comparaison de masse» destinée à repérer au sein du nilo-saharien le groupe où les ressemblances sont les plus nombreuses. Il s'agit d'une branche nouvelle, nommée «soudanique oriental nord» (SON), qui comprend quatre ensembles de langues ou de dialectes: le nubien, le nara, le taman et le nyima, tous situés sur une région du Sahel qui va du Tchad à l'Érythrée. Dans la partie suivante, la méthode comparative classique est utilisée pour reconstruire le proto-nubien, puis, en amont, le proto-SON. Dans la dernière partie, l'auteur démontre que les données méroïtiques s'intègrent parfaitement dans cet ensemble, et étend les correspondances au niveau de la phonologie et de la morphologie. Un scénario historique est enfin proposé pour déterminer l'origine géographique du proto-SON et les modalités de sa dispersion, liée aux changements climatiques en Afrique durant la période néolithique. Les chercheurs disposent désormais d'une base solide pour progresser vers la traduction des plus anciens textes de ce continent.

Takács, Gábor. 2011. *Studies in Afro-Asiatic Comparative Phonology: Consonants*. Berlin: Dietrich Reimer Verlag.

From the publisher: Going beyond standard consonantal reconstruction, this examination unifies various studies drawn from a decade's worth of etymological research. The study incorporates the extensive lexical materials of the overlooked cognate African branches, concentrating on the elaboration of regular consonantal correspondence among Semitic, Egyptian, Berber, South Cushitic, and West Chadic peoples. Featuring a comparative-historical analysis of the South Cushitic and West Chadic sibilants, pharyngeals, and laryngeals, this consideration is complemented by chapters on new etymological evidence for the affricate origin of certain Proto-Semitic sibilants, a critical appraisal of Otto Rössler's theory on Egypto-Semitic comparative phonology, and the background of compensatory vowel lengthening in Proto-East Cushitic.

Van Otterloo, Karen. 2011. *The Kifuliiru Language, Vol. 1: Phonologuy, Tone, and Morphological Derivation*. Dallas, TX: SIL International. PL 146, 2011, 512 pp., **ISBN** 978-1-55671-261-6, **Price** $52.99.

From the publisher: This volume on Kifuliiru, a Bantu (J) language of the Democratic Republic of Congo, and its companion volume (The Kifuliiru Language, Volume 2: A Descriptive Grammar) is one of the most thorough and yet readable Bantu grammars available. Designed primarily as language documentation rather than as theoretical analysis, these volumes aim at a thorough presentation of the many interesting features found in a typical Interlacustrine Bantu (J) language.

A special highlight of this first volume is an unusually detailed and thorough autosegmental analysis of Kifuliiru tone, with emphasis on the realization of tone in an extensive variety of verbal forms and constructions, with and without various object prefixes and including passive and causative variations of most forms. This allows clear evaluation of the concomitant tonal changes. Whereas in most Bantu languages a high tone seems to contrast only with its absence, this thorough analysis of Kifuliiru indicates a synchronic three-way distinction in verbs between high (H), low (L), and toneless (Ø). Verbs of all three classes are used to illustrate each different grammatical tone pattern.

One chapter is dedicated to a detailed presentation of the morphology and morphophonology of derivation in Kifuliiru. Discussion of the verbal extensions includes the morphophonological and syntactic aspects as well as the semantic nuances of each extension. An exhaustive treatment of the formation of the resultative (often called perfective) form of the verb stem is also included.

WOCAL 7 (Cameroon)

6 April 2011: Last week, the organizers of WOCAL7-Buea announced a workshop on post-verbal negation in African languages. This workshop is to take place within the frame of WOCAL7, which will be held in Buea, Cameroon from August 20 to August 24, 2012. All abstracts should be directed to the organizers of the workshop, Maud Devos and Dmitri Idiatov (***maud**.**devos***@**africamuseum.be**).

The history of post-verbal negation in African languages

Workshop to be organized by Maud Devos (Royal Museum for Central Africa) and Dmitri Idiatov (LLACAN du CNRS)

Notwithstanding a cross-linguistic tendency for negative markers to occur before the verb (Dryer 1988) there is an area in Africa where post-verbal negative markers abound. Following Dryer (2009:307) this area "stretches from Nigeria across to the Central African Republic and down into the northern Democratic Republic of the Congo". This region overlaps with the "hotbed" of a large linguistic area referred to by Güldemann (2008) as the Macro-Sudan belt. The proposed workshop aims at a better understanding of the typologically unusual phenomenon of post-verbal negative markers and its history in the African context. We invite papers that take a closer look at post-verbal negative markers in African languages (within and beyond the area described above) and contribute to one of the following topics (or another topic relevant to post-verbal negation):

1. The position of the post-verbal negative marker: In the area identified by Dryer the post-verbal negative markers typically occur "at the end of the clause, following any adverbs or adjunct phrases" (Dryer 2009:307). Outside the area the position of the post-verbal negative marker shows more variation. Data, mostly from Bantu languages, show that the post-verbal negative marker may also occur immediately after the verb (Devos et al. 2010), or that (pragmatically motivated) variation is possible (Odden 1996, Philippson & Nurse 2000).

2. The etymology of the post-verbal negative marker: What is the source of the post-verbal negative marker and especially are non-negative source meanings as

suggested for Metta (Grassfields Bantu, Mihas 2009), Senufo (Gur, Carlson 1994), Ma (Adamawa-Ubangi, Tucker and Bryan 1966) and a number of Bantu languages (Devos & van der Auwera forthcoming) a recurrent phenomenon?

3. Post-verbal negative markers and "Jespersen Cycles": For Bantu languages it has been suggested that post-verbal negative markers were originally used to reinforce negation and a fair number of Bantu languages display double, even triple negation. How valid is the Jespersen Cycle as a historical explanation for post-verbal negative markers in Africa and how recurrent is triple negation (involving post-verbal negative markers)?

4. Post-verbal negative markers and language contact: Following Güldemann (2008) post-verbal negation, more precisely the V-O-Neg word order pattern, is one of the linguistic features relevant for the Macro-Sudan belt. How does such a pattern diffuse? Nurse (2008:180) notes that some of the post-verbal negative markers in Bantu languages are *Wanderwörter*; they are easily transferred from one language to another. Do we find clear cases of borrowed post-verbal negative markers or is contact-induced grammaticalization (Beyer 2009) a more plausible scenario?

5. Stability of post-verbal negative markers: Can post-verbal negative markers be reconstructed for any significant time-depth, such as the level of a proto-family or a major branch of a family?

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Colloquium on African Language and Linguistics (CALL 2011)

Dear colleague,

It is our pleasure to invite you to the 41st COLLOQUIUM ON AFRICAN LANGUAGES AND LINGUISTICS to be held in Leiden on 29-31 August, 2011.

Papers and research reports on all aspects of African languages and linguistics are welcome. We shall allow 30 minutes for the presentation of each paper, including (10 minutes) discussion.

Please register before June 1st, 2011, by answering the questions below. We just need your title; since there is no selection, we do not need an abstract. We shall confirm your registration and provide more detailed information in our second circular which we shall send to you early in July.

The meetings will be held from Monday morning through Wednesday afternoon. The registration fee is €15 (students €10). We suggest you try to book your own accommodation. You can find suitable addresses at the following website: http://www.vvvleiden.nl/en/accommodations/. Let us know if you need any help. If you need an official letter of acceptance of your participation, just ask us. If you need a visa to enter the Netherlands, please start procedures well ahead of time. Unfortunately it is impossible for us to provide financial assistance.

This invitation is sent to participants of recent CALL's and to some other addresses. Please share this information with interested colleagues and students at your institution. The CALL website will be updated regularly with more information, see: http://www.hum.leiden.edu/lucl/research/conferences/upcoming-conferences/call-2011.html

In the same week as CALL 2011 the 'Nuba Mountain Conference' will be organized. For more information on this conference, see: http://www.hum.leiden.edu/lucl/research/conferences/upcoming-conferences/nuba-mountain-conference.html.

Hoping to hear from you and to see you at our Colloquium.

Yours sincerely,
Maarten Mous

African Linguistics School (ALS) 2011

Dear all, As you may know, the African Linguistics School (ALS) 2011 is taking place this year in Benin (Porto-Novo). For those of you who don't know this school, our aims are very simple: bring African students together and expose them to formal linguistics. All the students have to do is to apply and if selected they may receive a travel subsidy to the venue. Accommodation and food are free for everyone.

This email is to inform you that the deadline has just been extended to March 15th. Please encourage your students to apply and please circulate this message.

You can visit our webpage for more information: http://www.als.rutgers.edu/

Best,
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Berlin Bantu Conference (B4ntu)

Special theme: Historical Bantu Linguistics , 7-9 April 2011

Held at the Seminar für Afrikawissenschaften, Humboldt-Universität zu Berlin. Conference Website (from 31 March 2010): http://www2.hu-berlin.de/b4ntu/

The Fourth International Conference on Bantu Languages brings together specialists in all aspects of the study of Bantu languages. Abstracts are invited for conference presentations addressing any aspects of the analysis, description or comparison of Bantu languages. We especially welcome contributions on the conference theme, Historical Bantu Linguistics.

The B4ntu in Berlin conference website has been updated. You can now find a preliminary program. Accommodation about hotels near the conference venue has also been posted on the conference website. There is no registration fee for the conference but we ask you to register online if you are interested in attending: http://b4ntu.hu-berlin.de/

We look forward to welcoming you to Berlin. -B4ntu organizers

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Other types of correspondence concerning NJAS should be addressed to the Editor, Professor Axel Fleisch (axel.fleisch@helsinki.fi).

Kind regards,
Arvi Hurskainen

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Le préfixe nominal yasa
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