

Verb Sequencing Constraints in Ga: the Serial Verb Construction and the Extended Verb Complex

1. Introduction

This paper gives a theoretical examination of Verb Sequencing Constraints in Ga (a language spoken in the Accra area of Ghana), as instantiated in Serial Verb Constructions (SVCs) and Extended Verb Complexes (EVCs), based on the comprehensive description of Dakubu (Dakubu, 2002, 2004, to appear), and using Head-driven Phrase Structure Grammar (HPSG) as framework of analysis.

SVCs in Ga largely resemble constructions classified under this category world-wide: as generally conceived, an SVC is a sequence of verbs or VPs without intervening co- or subordinating particles, and without any subordination or argument-of relation obtaining between the adjacent verbs. A non-initial VP takes as its subject argument a participant which is also an argument of the preceding VP, typically its subject. In some languages, including Ga, the non-initial VP in such a sequence occurs sometimes with, sometimes without a subject agreement marker. Cross linguistically, SVCs divide into at least two major types, one where the consecutive VPs denote temporally distinct events (often referred to as 'clause chaining'), and one where the VPs express interleaving aspects of one and the same event, often in a collocational fashion (referred to as 'integrated SVCs'). SVCs consistently display patterns of agreement of tense, mood and aspect between the VPs, either implicit or explicit, and independently of the number of VPs in the sequence (which is in principle unbounded, although largely restricted to two in the cases of interleaving VPs).

Moreover, in Ga, verb sequencing also obtains *word internally*, in that an item which plays the role of *one verb* relative to the syntactic setting, may be internally composed of many verbs: one *main verb*, and one or more *preverbs*. In the following example, the verb expression is one orthographic word, and can, more essentially, be defined as one word on phonological grounds (see Dakubu (to appear)):

- (1) **Teté yà-nà**
T. go-AOR see
'Tetty will go see (it).'

The construction type instantiated by **yà-na** in (1) we will call an *Extended Verb Complex (EVC)*. What is here called a preverb is the form *yà* 'go', which can independently occur as a verb, but is here part of a phonological domain also comprising *-ná*, the whole complex functioning as one verb word relative to the context. In contrast, in an SVC, each verb is phonologically a complete domain—none of the consecutive verbs is part of the same phonological domain as the verb that precedes it or follows it. One assumed contrast between an EVC and an SVC is thus that the former has the status of a syntactic word, while the latter is a phrasal complex. Although *yà* in (1) is a possible word by itself, a further contrast between the two types is that a preverb is not necessarily capable of occurring independently as a verb; examples are mentioned shortly. What motivates ascribing them verbal status is partly their meaning contribution, and partly their capability of taking inflections characteristic of verbs. As will be shown, internal to each EVC there is a pattern of tense and aspect agreement, not unlike what one finds in an SVC. Corroborating the word status of an EVC, however, are (i) patterns of agreement between the verbs not paralleled by the patterns in SVC, (ii) a fixedness of position of the preverbs relative to each other which also does not have a parallel in an SVC. It

therefore is plausible to recognize this construction as a type of its own, and assess its possible linkages to SVCs.

The construction is apparently quite wide-spread in the languages in the Volta Basin area, and its instantiation in Ga is representative of the phenomenon, although by no means the most complex version.¹ Based on a comprehensive overview of the Ga verb system (Dakubu op.cit.), the present paper makes an attempt to construe some of the facts involving Ga EVCs and their relationship to SVCs in a formal grammatical setting. The framework employed is Head-Driven Phrase Structure Grammar (HPSG) - cf. Pollard and Sag (1994), and Sag, Wasow, Bender (2003).

2. Overview

The segmentally realized *Preverbs* in Ga are the following:

- (2) *kɛ* 'move' (cannot occur alone (in the relevant capacity))
ka 'not'/'neg' (cannot occur alone)
ba 'come' (can also occur alone)
ya 'go' (can also occur alone)

The latter two will be referred to as *deictic preverbs*. The negative preverb is not the main means of expressing negation, see Dakubu (to appear) for an overview. The gloss given for *kɛ* is here highly approximate.

A form displaying a maximal sequence of these items is given in (3):

- (3) (Ekeé á!kɛ) ò- ké- ká- bà- há
 he said that 2S-V_{kɛ}-V_{neg}-V_{deict}-V_{main}
 '(He said) you should not come give (it).'

The only word-internal item capable of preceding such a complex is the pronominal agreement morpheme, exemplified in (3), where the prefixal 2nd person pronoun *o* precedes *kɛ* inside the complex verb-word.² The sequencing here exemplified is strict:

Pron-prefix V_{kɛ} V_{neg} V_{deict} V_{main}

This whole domain of pre-root verb-internal items obeys principles of a phonological nature, which are as follows (cf. Dakubu 2002).

¹ An example of a more complex system is that found in Dangme (Dakubu 1987). A comparable system of deictic preverbs also exists in Akan (Christaller 1875 [1964]; Dolphyne 1996)

² This *o* is an optional item, hence (i) is also possible; as shown in (ii) and (iii), moreover, *o* occurs only once in the second verb, and only initially:

- (i) o-fɔ́ tsensi le kɛ-ɲme shi
 2S-throw pan DEF kɛ-put down
 (ii) *o-fɔ́ tsensi le o-kɛ-o-ɲme shi
 2S-throw pan DEF 2S-kɛ-2S-put down
 (iii) *o-fɔ́ tsensi le kɛ-o-ɲme shi
 2S-throw pan DEF kɛ-2S-put down

The ungrammaticality of (ii) and (iii) constitutes a further reason to distinguish EVCs from SVCs, since the pronominal prefix can occur on any verb in an SVC.

Unlike in ordinary Ga lexical words, the syllable representing a dependent verb does not have an assigned tone of its own, ie. all four are unspecified for lexical tone. All lexical morphemes on the other hand do have specified tones. If a prefix to the main verb or another dependent verb follows a dependent verb, the segmental features of that prefix disappear, ie. the prefix has no segmental realization, and its tone is expressed on the dependent verb to the left. Further, a high tone incorporated from a following prefix is never downstepped from a preceding high tone, as would be the case if such a high tone replaced a specified non-high tone (and the dependent verbs are clearly not specified as, or underlyingly, high). This kind of contraction / incorporation occurs nowhere else. In particular it does not happen in a sequence of two "normal" verbs where nothing intervenes between them. This is demonstrated in the following, where the independent lexical verb *ya* 'go' with the progressive prefix *mii-* is followed by another verb *na* 'see', which is prefixed by *ya*, this time the deictic dependent verb. Deictic *ya* and *na* are each preceded by the subjunctive prefix *a-*. The prefix before *na* is manifested by the high tone on deictic *ya*. The prefix to the deictic *ya* however appears in its full segmental form.

- (4) **Kofi mii-yà á-yá nà le**
 K PROG-go SUBJ-egressive(deictic) SUBJ-see 3S
 'Kofi is going to see him.'

Among the items in (2), only V_{neg} and V_{deict} inflect for tense/aspect; in addition, any full verb stem undergoes inflection. Inflectional categories can be realized either by *segments* (which may or may not have assigned tone) or by *floating tones*. A segment can occur either as a prefix or as a suffix, and a floating tone can "dock" either to the left or to the right. By a morpheme having a *single marking*, we mean that it is realized by a single affix/tone, and by it having a *double marking* we mean that it is realized by two affixes. Segmental exponents representing the aspect inflectional types are *perfect* - { \acute{e} - }, *progressive* - { **mii-** }, *habitual* - { - \grave{o} /- \grave{a} }, and *future* - { **áá-** }. A prefixed floating low tone characterizes both *habitual* and *aorist* and is expressed by downstep. In addition to these aspectual forms, Ga also has a system of modal inflections, which are *subjunctive* - { **á-** }, and *imperative*, which in turn has several phonologically unrelated forms: { -**á** } for all plural imperatives and, for singular imperatives in the absence of any pre-verb, depending on the phonological type of the main verb: { -**mɔ** }, vowel copy with low-high tone pattern, or the bare root. Singular imperatives with pre-verbs are distinguished from subjunctives only by the absence of a subject pronoun.

When a main verb item is preceded by a preverb, the preverb and the main verb essentially share the inflectional morpheme; however, the possible choices of inflectional category are then only a subset of those that obtain when a main verb occurs in isolation, and different for each preverb. In essence, the choice of inflectional morpheme category in an EVC is dictated by the category of its leftmost daughter. If V-main is alone, then the full array of categories is available, whereas when a deictic preverb is leftmost, the category *Progressive* is not available. When the neg-verb is initial, in turn, far fewer categories can be used. *ke* initial doesn't impose any constraints, and the second verb then decides the array.

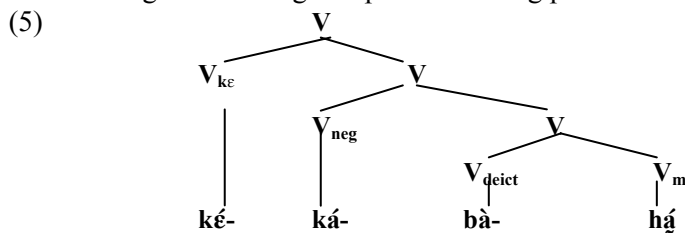
A further factor concerns exponency in an EVC. If the chosen inflection is *aspectual*, then only one verb in the EVC may expose it. In a sequence V_{deict} - V_{main} , if the category is *perfect*, then its exponent occurs on V_{deict} , and if the category is *future* or *habitual*, its exponent occurs on V_{main} . If the chosen inflection is *modal*, and there are at least two verbs present in an EVC, modality is marked twice, on the two leftmost verbs other than *ke*. No matter which of the modal morphemes (subjunctive, sing-imperative, or plur-imperative) is selected for the first of the verbs to be marked, the verb that follows it always carries *subjunctive*.

Turning now to SVCs, we define an integrated Serial Verb Construction in the Ga language as a structure of multiple finite verbs (internally structured as EVCs) that nevertheless constitutes a single clause, in having just one Subject and a potential array of Objects not greater than that possible for a clause with just one verb/EVC. It also has just one interpretation in terms of aspect and modality. A clause-chaining SVC is essentially similar, except for more freely allowing long sequences of verbs, and having an interpretation of temporally consecutive events, which however are aspectually and modally uniform. Much of what is said above about EVCs is true of Serial Verb Constructions as well: an SVC is interpreted as manifesting a single aspectual-modal verb feature, and rules for the distribution of feature marking work from left to right. However the feature marking obeys slightly different rules:

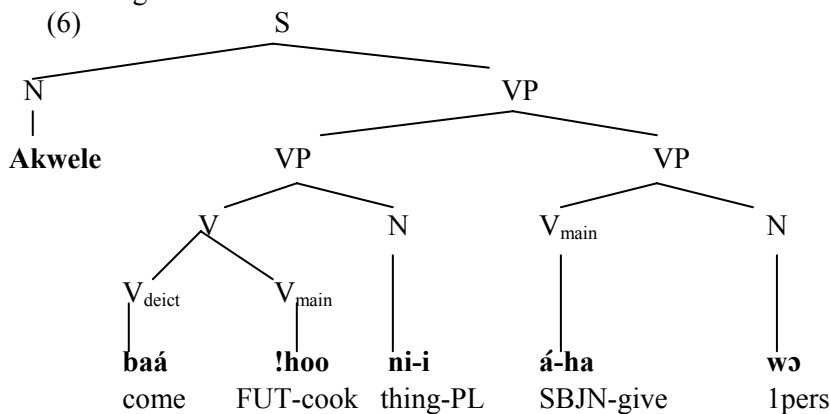
Within an EVC, only subjunctive is morphologically marked more than once, namely on the two left-most pre-verbs excluding *ke*. In an SVC on the other hand, all participating Vs must be marked, be it as aorist, perfect, habitual, or progressive, or subjunctive or plu-imperative. One constraint still applies: only V1 in an SVC can be marked future or sing-imperative. V2 in such cases is marked subjunctive. This sequencing however reflects exactly what happens in an EVC, where, e.g., the sing-imperative suffix on the negative verb *ka* is followed by the subjunctive prefix to the next verb.

3. Analytic assumptions and challenges

We assume that in an SVC, each verb phrase VP_n is *adjoined* to the preceding sequence of VPs headed by Vs/EVCs (which constitutes a constituent already). This is motivated by the circumstance that when a VP_b follows VP_a in the pattern of an SVC, VP_a does *not* take VP_b as a complement; on the contrary, VP_a is fully saturated, and capable of occurring by itself. In an EVC, in contrast, the circumstance that the leftmost V generally decides the array of possible inflectional categories can be captured by analyzing the leftmost V as the *head* of the EVC, so that in complex EVC structures, there will be right-branching complement-taking pattern as in (5) (reflecting (3)):



(6) displays a combination of a simple SVC structure and a simple EVC structure, the latter constituting the first V of an SVC:



' Akwele will cook for us'

baá !hoo is here an EVC, with the transitive verb *hoo* 'cook' as main verb; since the verbs are sequenced together as a word unit, the object of *hoo* appears structurally outside the EVC, and thus not in a direct complement position relative to the verb. The valency of *hoo* therefore has to be transmitted up to the dominating V, formally along lines well explored e.g., in the analysis of German complex verbs (cf. Müller 2002 for a summary of the literature). The second main verb *ha* 'give' is ditransitive, but in this construction followed only by a single object, the indirect object *wɔ*, instantiating the well known constellation of 'object-sharing' of SVCs: what semantically fills the role of the recipient of *wɔ* is *nii*, the object of the first EVC. In the traditional HPSG model developed in the works quoted above, capturing this is not straightforward, since at the point where the two verb projections meet in the structure, the COMPS lists of both verbs are saturated. To propagate the information that the beneficiary argument of *ha* 'give' is referentially identical to the direct object of *hoo* 'cook', we need a feature which 'survives' cancellation. Arguments for the use of such features, with reviews of other literature proposing them, can be found in Ackerman and Webelhuth 1999; in the current setting, we use a feature `DOBJECT`, exploited in the rule adjoining a serial VP to the preceding VP as follows, in the code of an HPSG Grammar-matrix based LKB grammar (cf. Copetake 2002, Copetake et al. 2005) sustaining the current analysis (where the attribute `QVAL` is a counterpart to `VAL` supporting non-cancellable valence information):

(7)

```
verb-serial-mod-tr-tr-phrase := verb-serial-mod-phrase &
  [SYNSEM.LOCAL.CAT.QVAL.DOBJECT.LOCAL.CONT.HOOK.INDEX #1,
   HEAD-DTR.SYNSEM.LOCAL.CAT.QVAL.DOBJECT.LOCAL.CONT.HOOK.INDEX #1,
   NON-HEAD-DTR.SYNSEM.LOCAL.CAT.QVAL.DOBJECT.LOCAL.CONT.HOOK.INDEX #1 ] .
```

Since the information ensuring shared subject valence is still in the valence lists of the respective VPs, the relevant part of the rule insuring subject sharing can use traditional `VAL` list information.

For both EVCs and SVCs, we hypothesize that *aspect* and *mood* information is shared between the sister V constituents at any combination, leading to a feature decomposition of the categories mentioned to state uniformities also for cases where there is superficial variation. For both SVC and EVC combination (the latter instance of complementation), the inflectional category of the head determines that of the sequence. Attention nevertheless is needed to state which item in a given EVC sequence can expose the inflection, leading to more finegrained specifications such as

```
NON-HEAD-DTR.SYNSEM.EXPNT-FUT -
```

in any non-initial V in an SVC, and for, e.g., a deictic pre-verb, a subtype of pre-verb-lexeme (cf. the descriptions given above):

```
deict-pre-verb-lexeme := pre-verb-lexeme &
  [ SYNSEM [LOCAL.CAT.VAL.COMPS <[EXPNT-PERF-, EXPNT-FUT+, EXPNT-HAB+]> ],
    EXPNT-PERF +, EXPNT-FUT -, EXPNT-HAB - ] .
```

Currently beyond implementable HPSG analysis is the treatment of tones and in particular floating tones. But as the present analysis captures all the categorial aspects of the phenomena, including the semantics (couched in MRS in this analysis), one is in a position to approach also the tonal module. As far as generalizability of the analysis to other languages displaying SVCs goes, the type of specification exemplified in (7) seems necessary for all object-sharing SVCs, and this, as well as the subject identity mechanism, is hence a transportable analytic module.

References by Dakubu, M.E. Kropp: *to appear*: Ga verb features. In F.K. Ameka and M.E. Kropp Dakubu eds., *Aspect and Modality in Kwa*. Amsterdam: Benjamins. 2004: Ga clauses without syntactic subjects. *Journal of African Languages and Linguistics* 25.1: 1-40. 2002: *Ga Phonology*. Legon: Institute of African Studies.