Towards a typology of Serial Verb Constructions in Akan*

by

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Introduction

Reflecting a view suggested by many authors, including Christaller (1875) and Osam (1994a,b), this paper explores a possible dichotomy among serial verb constructions (SVCs) in Akan.[1] Following the terminology introduced by Osam (op.cit.), we will refer to one of the two types as *Clause-Chaining* (CC) and the other as *Integrated SVC* (ISVC).[2] In Clause Chaining, the number of VPs in the sequence has no upward bound, each verb has its full independent meaning, and linear sequence reflects strict temporal order, each VP expressing a completed event distinct from the event expressed by its its predecessor. In ISVCs, on the other hand, only two verbs take part, to express a clearly identifiable situational profile, as a kind of 'constructional lexeme'[3]. More than one situational profile can be recognized among ISVCs, and the syntactic-semantic composition of an ISVC varies in accordance with its profile, thus leading to subtypes of ISVCs. We will illustrate with three different constructions, focusing on the 'minimal verb' *de* 'take', and highlight properties salient to semantic and syntactic argument composition, but otherwise, for reasons of space, ignore many properties that would be essential to a realistic conception of each type as such. Our framework of representation will be Head-Driven Phrase Structure Grammar (HPSG); again, for reasons of space, our deployment of this model will be both simpler in formal apparatus and briefer in introductory and explanatory notes than might otherwise be desirable.[4]

1. Clause Chaining constructions (CCs)

1.1. Differences between CCs and VP Coordination.

Examples like (1a,b) below (from Agyeman (2002)), illustrating the possibility of 'wh-extraction' out of one VP in a serial construction but not out of a VP in a coordinated construction, can be taken to show that the construction in question is one of verb serialization

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[1] Akan is a Niger-Congo language of the Kwa group, spoken mainly in Ghana.

[2] In Christaller's terminology, these are, respectively, 'accidental' and 'essential' combinations.

[3] Osam (op.cit.) in turn recognizes two main subtypes of ISVCs, those which are essentially compositional in their semantics, and those of a more idiomatic nature. Our focus here is exclusively on the former kind.

[4] Compared with LFG, which has a research tradition in the investigation of complex predicates (see, for instance, papers in Alsina et al. (1997)), relatively little work on this topic has been done using HPSG. An example of treatments of SVCs in this framework is Muansuwan 2002 (for Thai), and also Sahoo 2001 (for Oriya).

as opposed to 'covert coordination' (cf. discussion in Baker (1989)). (1c) illustrates that more than two verb phrases can form a CC . (1d), next to showing that verbs of different valency can be included in a CC, illustrates so-called 'switch sharing' (cf. Osam (1994a)), that is, the object of the first verb serves as subject for the following verb(s).

(1) a. *clause chaining and wh-extraction:*
Dɛn na Ama noa di-i?
what foc. Ama cook eat-COMPL
'What did Ama cook and eat?'

b. *coordination and wh-extraction:*
*Den na Ama noa na ɔ-di-i?
what foc. Ama cook and 3sg-eat-COMPL
'What did Ama cook and eat?'

c. *unbounded verb-recursion under clause chaining:*
Ama tu-u bayerɛ twitwa noa di-i[5]
Ama uproot-COMPL yam cut cook eat-COMPL
'Ama uprooted (tuber of) yam, cut it in pieces, boiled them (and) ate'

d. *valency alternation and switch sharing under clause chaining:*
Ama ma-a Kofi dɔkono di da-e
Ama give-COMPL Kofi kenkey eat sleep-COMPL
'Ama gave Kofi kenkey, (he) ate it (and) slept'
or: 'Ama gave Kofi kenkey to eat and sleep'.

Further distinctions between coordinated structures and CCs are the following:

First, in CCs negation applies throughout the verbal chain such that every verb carries a negative affix (cf. (2a)), while partial negation is only possible under coordination (cf. (2b)) (see also Osam (2002)):

(2) a. *negation under clause chaining:*
Ama a-m-ma Kofi dɔkono a-n-di a-n-da
Ama tns-Neg-give Kofi kenkey tns-Neg-eat tns-Neg-sleep
'Ama didn't give Kofi kenkey, (he) didn't eat (and) didn't go to bed'.

b. *negation under coordination:*
Ama ma-a Kofi dɔkono naanso w-a-n-di a-n-da
'Ama give Kofi kenkey, but he-ASP-neg-eat (and) ASP- neg-sleep'

Secondly, pronouns resuming the subject are generally ruled out under clause chaining, [6] but can occur under coordination, as instantiated in (3a) versus (3b) below.[7]

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[5] Speakers vary as to whether they require an aspect marker on each of the verbs in the chain.
[6] Different from Akan, pronouns resuming the subject occur in Ga (cf. Kropp Dakubu (2003)), and in Baule (M. Larson (2003)).
[7] The general constraint on resuming subject pronouns in Akan is however not without exceptions. In (i), a pronominal affix referring to the subject is possible, according to Christaller (1875) and Osam (1994a):
i. Me-sɔre-e netɛm me-kɔ-ɔ fie
1sg-rise-COMPL quickly 1sg-go-COMPL home

A third distinction between coordinated structures and CCs lies in the interpretation of the temporal sequence introduced by the verbal chain. While the sequence of events rendered through clause chaining, as in (3a), can only be interpreted as non-overlapping (that is, Ama first cooks and then eats), and a non-overlapping interpretation is generally enforced also in coordination structures (such as in (3b)), there is at least one distribution of aspectual affixes whereby a reading of simultaneity can be introduced in a coordinate structure, namely (in (3c)), but not in a CC (cf. (3d)). Here both conjuncts are marked with the progressive marker *re-*, and the reading is 'Ama eats while she cooks'. In CCs an initial PROG marker will have to be followed by a CONS marker on the second verb (see further in section 1.2 below), and the interpretation can only be that of consecutive events.[8]

(3) a. Ama noa di.
Ama cook eat
'Ama cooks and (then) eats'

b. Ama noa na ɔ-di.
Ama cook and eat.
'Ama cooks and (then) eats'

c. Ama re-noa na re-di.
Ama PROG-cook and PROG-eat.
'Ama eats (a little) while cooking'

d. Ama re-noa a-di.
Ama PROG-cook CONS-eat.
'Ama is cooking and (then) eating'

We conclude that clause chaining expresses strict temporal sequencing, that is, non-overlapping interpretation of the chain of events, and, bearing the contrast between (3c) and (3d) in mind, this also shows a contrast between the two construction types.

1.2. Sequences of T(ense)/A(spect) markers in SVCs.

In the examples (1)-(3), only some patterns of Tense/Aspect marking are shown.[9] Akan distinguishes seven aspectual classes (including morphemes that might also be construed as tense categories), namely *Completive, Habitual, Perfective, Progressive, Stative, Consecutive,* and *Future.* Referring to works like Dolphyne 1987 and Sætherø 1997, the total selection of possible patterns of SVCs in terms of Tense/Aspect morphology of the verbs is as indicated in fig.1. ('+' in fig.1 is the 'Kleene '+", marking the possibility of an unlimited number of repetitions (at least one) of the item in question.)

Figure 1. Possible sequences of verbs in terms of their Aspect category:

(a) FUT CONS^{+}
(b) PROG CONS^{+}

[8] A slightly different picture arises for CCs with a future tense marking on the first verb followed by a consecutive marking on the following verb, as illustrated in (i):

(i) Gyasiba re-nya sika e-si dan a tɔn
Gynasiba FUT-get money CONS-build house CONS-sell
'Gynasiba will get money and will build a house and sell it'
or 'Gynasiba will get money in order to build a house and sell it'

[9] We follow Osam (1994a) in assuming that Akan marks aspect rather than tense. It should be noted that the aspect marking patterns reported obtain not only in CCs but also in ISVCs. This uniformity could conceivably be stated of a construction type subsuming both CCs and ISVCs. Given limitations of space we cannot go further into this topic. For further discussion of aspect in Akan, see Osam (1994a).

(c)	$STAT^+$	
(d)	$STAT^+$	PROG
(e)	$PERF^+$	
(f)	$PERF^+$	PROG
(g)	$COMPL^+$	
(h)	HAB^+	

Relative to fig.1, the following conditions apply:
When two verbs occur adjacent to each other and both, by the above patterns, would have a certain T/A *X* in common, then if *X* is realized as a *prefix*, only the first verb will carry the prefix, and if *X* is realized as a *suffix*, only the second verb will carry the suffix, and only if it is followed by a complement or an adjunct.

Thus, all of the T/A-markers can initiate an SVC, except CONS; all of the T/A-markers can reiterate, except FUT and PROG; and all of the iterating T/As can form a homogeneous sequence, whereas a STAT and a PERF sequence can also be interrupted at any point by PROG. Moreover, whenever two verbs are adjacent, only one of them will have the marking in question - the leftmost verb if the affix is a prefix, the rightmost verb if the affix is a suffix. (In the latter case, though, if the verb is VP final, it will not carry the suffix.)

1.3. Argument sharing in CCs

1.3.1. Types of 'argument sharing'

'Argument sharing' is generally recognized as one of the hallmarks of serial verb constructions (see, e.g., Kroeger (to appear) for a summary of proposed characterizations of 'serial verbs'); thus, what generally meets the eye in a serial construction is that there are somehow 'too few' NPs compared with the number of verbs. In such a case, one possibility is to analyze a single NP as serving as exponent for functions associated with several verbs - e.g., in (3a), repeated, the NP *Ama* could be seen as directly realizing the GF 'subject', or the role 'Agent', relative to both of the verbs *noa* and *di*:

(3a) Ama noa di.
Ama cook eat
'Ama cooks and (then) eats'

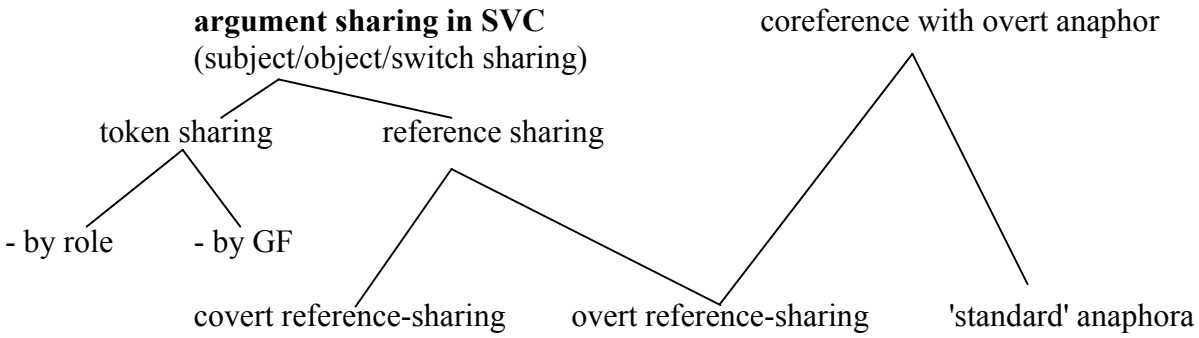
This is a possibility we may refer to as *token-sharing* - two (or more) verbs share a certain token-NP for the assignment of a certain function. An alternative is to invoke something like 'null anaphora' - then it is only relative to the first verb that the NP *Ama* realizes the GF 'subject' (or the role 'Agent'), whereas *di* associates its subject role with a distinct element, which is in turn *coreferent* with *Ama*. On this construal, it is thus not the NP *Ama* as such which plays a 'double role', but rather its referent, and this construal may therefore be called *reference sharing*.

The notion 'reference sharing' will be used as a general term for at least two distinct forms of coreference possible under serialization. One is where an overt anaphoric form appears, associated with the second verb - although this option is generally excluded for subjects in Akan,[10] we will see shortly that it obtains for objects (section 1.3.2). We will refer to this situation as *overt reference-sharing*. What, in contrast, would count as *covert reference sharing* will, in a frameworks like HPSG, reside simply in identifying a referential index with

[10] Cf. footnote 7 for a recognized exception even in Akan, and footnote 6 for reference to languages where such patterns for subject pronoun affixes are quite regular.

the index of the overt argument of the preceding verb (illustrations of this will follow below).[11] More substantive is of course the question how to *empirically* distinguish constructions calling for a covert reference-sharing analysis from those calling for a token-sharing analysis; this is an issue we will explore specifically in sections 1.3.3 and 2.1. Tying our discussion to the patterns of Akan, we will argue that Clause Chaining constructions involve only *reference sharing*, but with different status: *overt* for object sharing (1.3.2), *covert* for subject sharing (cf. 1.3.3). In dealing with ISVCs, in contrast, we will argue that they are characterized by *token-sharing*, albeit differing in whether they come out as sharing through (grammatical) function or thematic role (cf. fig.2 below - this distinction will be made precise in section 2.1). A complete picture of the distinctions we would like to make is given in fig.2:

Figure 2. Some possible construals of co-reference:



1.3.2. Object sharing in CCs.
Going back to (1c), repeated,

(1c) Ama tu-u bayerɛ twitwa noa di-i
Ama uproot-COMPL yam cut cook eat-COMPL
'Ama uprooted (tuber of) yam, cut it in pieces, boiled them (and) ate'

the pattern of argument sharing might give the appearance that Akan CCs allow object sharing in the form of token-sharing or covert reference-sharing. However, Akan has a general rule to the effect that 3rd person pronouns are expressed only when their referent is animate, or precedes an adverbial; they are otherwise phonologically empty.[12] As an effect, in a serial verb construction, repeated reference to an entity from 'object' position will be made with an *overt* pronoun when these conditions are fulfilled:

(4) a. *Pronominal appearing when referent is animate:*
Ama tɔ-ɔ adanko dware-e no yɛn-n no
Ama buy-COMPL rabbit bath-COMPL 3sg rear-COMPL 3sg
'Ama bought a rabbit, bathed it (and) reared it'

b. *Pronominal appearing before adverbial:*
Ama tu-u bayerɛ twitwa-a no ntɛm noa-a no ntɛm
Ama uproot-COMPL yam cut-COMPL 3sg fast cook-COMPL 3sg fast
'Ama uprooted yam, cut it hurriedly (and) boiled it hurriedly'

[11] In a framework like GB or descendants thereof, obeying the 'Theta-criterion' (cf. Chomsky 1981) or similar principles requiring a syntactic projection of any participant role, one would invoke syntactic null elements.
[12] Cf. Stewart (1963) and Saah (1993).

The patterns obseved in (4) thus seem to be of the type *overt reference-sharing*: i.e., overtness of coreferential arguments, but combined with the general set of SVC characteristics otherwise valid in Akan. Given that the distinction in overtness between (1c) and (4) lies only in animacy of the referent, and not in structural factors, one would expect the CC pattern in (1c) to be analyzable analogously to that in (4). What is then the status of the 'covert' arguments in (1c)? The following set of examples indicates that the 'covert argument' is indeed a syntactically fully present item:

Akan has ditransitive constructions, headed by ditransitive verbs, as exemplified in (5a). However, the language imposes restrictions which limit the use of the second object NP of such constructions, the first being that the object ought to be indefinite, and the second that it cannot be pronominalized: a pronoun can in general only occur *adjacent* to a verb, a position not available for the second object. The impact of this condition is illustrated in (5b), where *no* is the (animate) personal pronoun.[13] To express a situation where the item transferred is represented by a pronoun, one instead resorts to the construction in (5c):

(5) a. ɔ-fɛm-m me ne pɔnkɔ
3sg-lend-COMPL 1sg 3sgPOSS horse
he lent me his horse'

b. * ɔ-fɛm-m me no
3sg-lend-COMPL 1sg 3sg
'he lent me it (the horse)'

c. ɔ-de no fɛm-m me
3sg-take 3sg (animate) lend-COMPL 1sg
'he lent me it (the horse)' (= 'he-took-it-lent-me') (Stewart 1963)

The verb *de* 'take' in (5c) 'saves' the pronoun by providing a verb-adjacent slot for it, whereas the verb *fɛm* 'lend' retains the object *me* 'me' expressing the recipient. Now notice that the exact analogue obtains when the pronominal referent is *inanimate*, thus requiring a null pronoun (indicated by 'ø'; examples are again from Stewart (op.cit.)):

(6) a. ɔ-fɛm-m me ne adwa
3sg-lend-COMPL 1sg 3sgPOSS chair
'he lent me his chair'

b. * ɔ-fɛm-m me ø
3sg-lend-COMPL 1sg 3sg
'he lent me it (the chair)'

c. ɔ-de ø fɛm-m me
3sg-take 3sg (inanimate) lend-COMPL 1sg
'he lent me it (the chair)' (= 'he-took-it-lent-me')

A reasonable interpretation of what happens here is that a highly 'surfacy' syntactic principle, operating in terms of adjacency in the linear sequence of constituents, 'sees' the covert

[13] The same restriction applies in cases where an inanimate pronoun is followed by an adverb, which is the other context in which all pronouns must be realized syntactically,

(i) * ɔ-fɛm-m no ntɛm
he/she-lend-COMPL it quickly

pronominal argument; this indicates that this argument indeed be treated as an actually occurring syntactic item, phonologically empty, but otherwise in no sense 'absent'.[14]

From this, we conclude that the argument-sharing patterns in both (4) and (1c), thus of *object-sharing* in Akan CCs in general, should be analyzed as *overt reference-sharing*.

1.3.3. Subject sharing in CCs.

While we have observed for object pronouns an alternation between open and zero syntactic representation, subject pronouns in Akan CCs can only be realized once, as a pronominal affixe on the *initial* verb of a CC. In spite of this difference between the distribution of subject and object pronouns, we nevertheless would like to assume that also subjects of CCs are shared by means of co-reference, and not as token-sharing. Evidence that the identity of subjects is one of referential identity, comes from examples such as (7a/b) below, which are ambiguous as to who went ((7a)) and who fell ((7b)):

(7) a. Ama de sika ma-a Kofi kɔ-ɔe.
Ama take money give-COMPL Kofi go-COMPL
'Ama took the money gave it to Kofi and went'
or 'Ama took the money gave it to Kofi and he went'

b. Ama twe-e Kofi hwe-e fam[15]
Ama pull-COMPL Kofi fall-COMPL under (down)
'Ama pulled Kofi and he fell'
or 'Ama pulled Kofi and fell'

The interpretation of the subject referent of 'go' ((7a)) and 'fall' ((7b)) remains grammatically open relative to the two possible antecedents, that is Ama or Kofi. As a consequence, contextual referential disambiguation takes place. Notice however that an existential or deictic interpretation of the subject referent is excluded, that is, (7b), e.g., does not allow an interpretation whereby Ama pulled Kofi and somebody else fell.

Next to contextual disambiguation, there are at least two more factors that determine the resolution of subjects of non-initial verbs in a CC. The first factor is lexical selection. In (7b) *hwe fam* translates into the English 'fall down', but also the sequence *hwe ase* can be used to express the same event. However, different form *hwe fam*, *hwe ase* ((8)) excludes a reading where the one being pushed - that is Kofi - is the one who falls; instead it must have been Ama that fell.

(8) Ama twe-e Kofi hwe-e ase
Ama pull-ASPcompl Kofi fall-COMPL under (down)

Secondly, subject reference may also be established through the 'internal structure of the event described'. To illustrate this point, let us go back to sentence (1d), here repeated as (9), which can only mean that Ama gave the kenkey to Kofi, which he then ate, and then he slept.

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[14] This is thus a type of syntactic null-element, not forced by theoretical assumptions such as the Theta-criterion in GB, but motivated also in frameworks like HPSG and LFG. It will appear at that level of syntactic representation where linear order and linear adjacency are displayed (such as, presumably, c-structure in LFG, and its counterpart in HPSG).

[15] Although the preferred referent is Kofi, it is still possible that Ama was the one that fell. Notice also that if we replace *Kofi* by *nsensan* 'grass', it must be Ama that fell.

(9) Ama ma-a Kofi dɔkono di da-e
Ama give-COMPL Kofi kenkey eat sleep-COMPL
'Ama gave Kofi kenkey, (he) ate it (and) slept'
or: 'Ama gave Kofi kenkey to eat and sleep'.

In (9), it is the inner logic of the described event that identifies Kofi as eater of the dish that was given to him by Ama, which in turn also suggests him as the subject of the final verb 'sleep'.

In summary, context, lexical meaning and the semantic structure of the overall event are some of the factors that determine the choice of subject referent for a non-initial verb in a CC. From this, it seems safe to conclude that subject sharing in Akan CCs is *not* a matter of token sharing.[16] Thus, in the representation of any CC, subject sharing as well as object sharing, and switch sharing likewise, is a matter of *reference sharing*: while in the case of object sharing, this is a matter of *overt* reference sharing, in subject sharing and switch sharing, it is *covert* reference sharing. (A limiting condition on the choice of subject - as said - is that this referent be identical with *one* referent expressed earlier in the sequence; the limitations on what this antecedent referent can be, is a question we at this point will leave open.)

Summing up: CCs in Akan describe an overall event which consists of a chain of non-overlapping individual events. Syntactically there is no upward bound on the number of verbs, and the verbs retain their normal semantics, together with their ability to project their independent domain of predication, while marking for tense, aspect and negation is constrained to apply in the fashions described above. Argument sharing is a matter of mandatory reference sharing, overt for objects, covert for subjects.

1.3.4. Formal representation.

Turning now to the formalization of the Akan clause chaining, we use a typed attribute-value formalism standard in HPSG.[17] Our main focus will be the representation of argument sharing. In general, an HPSG grammar consists of statements declaring what are possible structures: each statement, or schema, declares, in conjunction with other schemata, actual configurations as grammatical when construed in conformity with these schemata. The main mechanism for 'compacting' such statements is type subsumption; however, we will presently not try to elaborate a type system supporting our analysis, and will only choose a few schemata covering ('licensing') construction types of particular interest. For instance, cases of object sharing CCs need to be distinguished from CCs where object sharing does not apply, [18] both situations requiring licensing schemata; here, we only represent the former type of case. Thus, the case represented in figure 3 below is one where subject and object sharing both apply, illustrated, e.g., in (1c).

As an analytically based 'imposition' on reality, we assume that CCs are rightward binary branching structures: we know of no evidence contradicting this, and the assumption allows us to state the 'unbounded' patterns referred to in a recursive fashion. To this end, we

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[16] Intuitively speaking, token sharing settles the linkage between semantics, functional syntax and concrete syntactic realization connected to individual lexical items. Such a 'grammatical realization package' has obviously not applied as long as factors such as context, lexical meaning and the semantic structure of the overall event determine the subject referent.

[17] For introductions to HPSG, see Pollard and Sag 1994, Sag and Wasow 1999, and for typed feature structure formalisms supporting implemented HSPG grammars, see Copestake 2002.

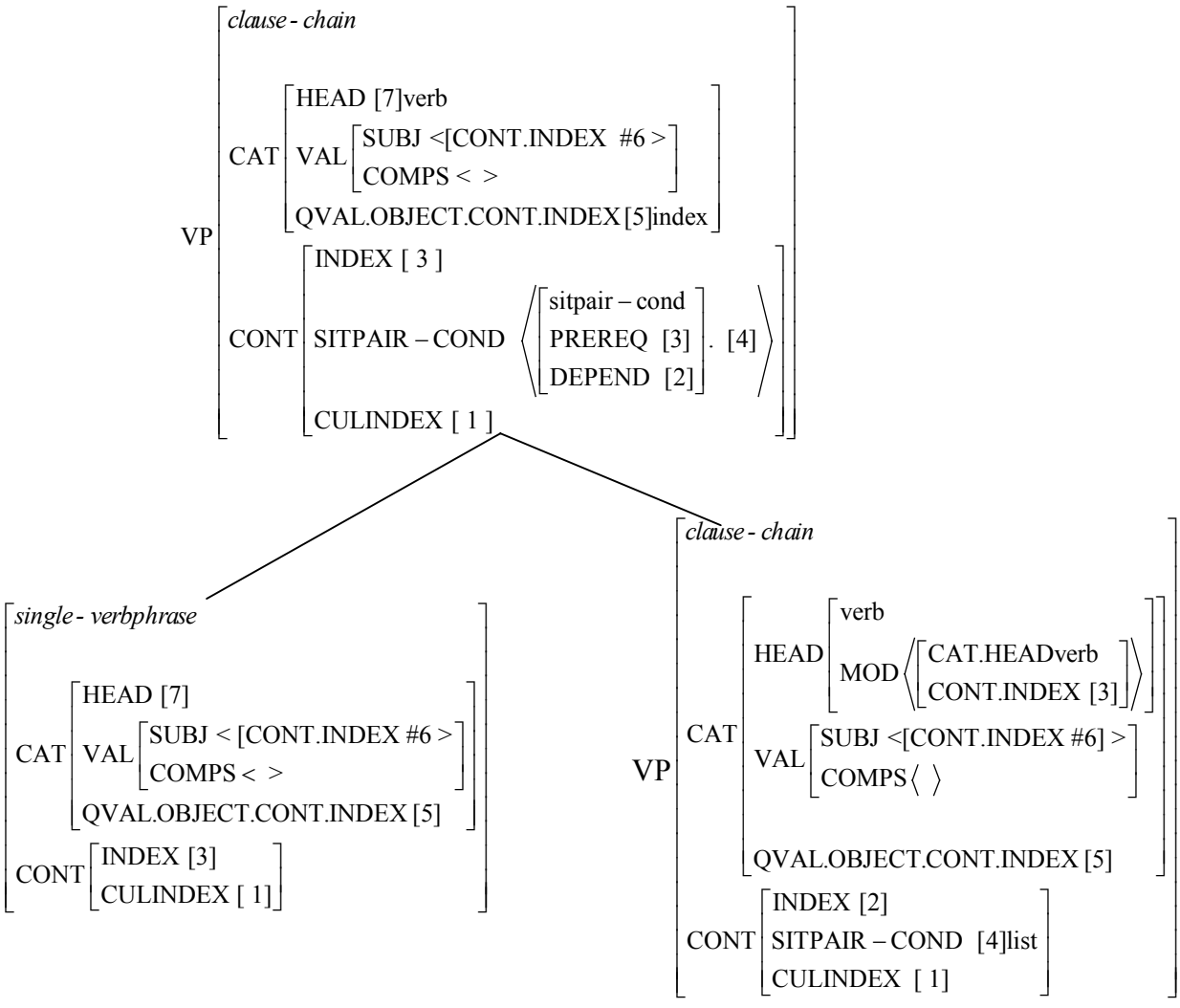
[18] Object sharing is a common but not a necessary condition for CCs. In (i) for example, only the last two verbs share their object:

(i) Gyasiba nya-a sika si-i dan tɔn-ee
Gyasiba get-COMPL money buy-COMPL house sell-COMPL
'Gyasiba got money, bought a house and sold it'

recognize *single-verbphrase* and *clause-chain* as two distinct verb phrase types, of which only the latter licenses recursion, as indicated in fig.3. The schema in fig.3 thus represents a VP consisting of two VPs, of which the leftmost - *single-verbphrase* - counts as the head, and the other as an adjunct. A construction like (1c) is hence viewed as a binary right-branching adjunction structure, licensed in a bottom-up fashion by (three instantiations of) the CC schema.

As generally in the HPSG model, any construct belongs to a certain *type* (written in italics), which licenses its range of attributes; the type of a sign is entered in the upper corner of a bracket, which contains the range of attributes (or 'features', written with capital letters) licensed by the type (or by a given supertype of it). The objects shown in figure 3 are of type *synsem* with the attributes CAT(egory) and CONT(ent), capturing the syntactic and semantic propertied of the object in question; such objects are generally referred to as *signs*. In fig.3, the features SUBJ and COMPS, as attributes under VAL(ence), have lists as their values, showing the items with which the sign in question needs to combine (' < > ' stands for an empty list, while the type *list* itself is underspecified as to whether it is empty or non-empty. That COMPS is empty in all three V-constituents indicates that the verbal heads have combined with their expected complements in all three VPs.

Fig. 3. Clause chaining schema



A further piece of CAT information, relevant at word level as well as phrasal verbal level, resides in a feature Q(ualitative)VAL(ence), which specifies the grammatical functions appropriate for the verb in question (much in the style of LFG attributes for grammatical functions). Among attributes valid for Akan, we assume SUBJECT and OBJECT.[19] Unification of referential indices between VAL and QVAL specifications ensures alignment of information across these attributes.[20] Fig. 3 represents a case of uniform object sharing, which by our analysis will reside in overt reference-sharing (allowing for zero-pronoun synsems which differ from realized pronouns only by being phonetically empty). For all the VPs, their COMPS lists being emptied, there is no way in which specification under COMPS could impose identity of the objects. However, the QVAL specification of objects remains also at the phrasal level where the COMPS list has been emptied, so that by the specification path

`[QVAL.OBJECT.CONT.INDEX [5]]`

in all of the VPs, the referent of the objects is secured to be one and the same.

CONT(ent) introduces as its value the semantic information carried by the element in question. All verbal constituents in fig.3 embed three attributes under CONT.[21] First, INDEX is an event index, which potentially allows us to introduce information about the situation expressed by the verb, possibly including aspectual information. Secondly, CUL(minative) INDEX, an attribute only present in VPs in a CC, is used for a situational index comprising the whole macro-event expressed by the CC; it is identically specified for all the constituent VPs. This is an index which will be accessed, e.g., by adverbs that modify the chain as a whole. Third, SIT(uation)PAIR-COND(itions) is an attribute under which we formulate a precedence relation relative to each pair of consecutive VPs in a CC, the situation expressed by the first VP in the pair being interpreted as a prerequisite for the situation expressed by the second VP.[22] These binary SITPAIR-CONDs are accumulated from right to left, stepwise building up a list of binary conditions whereby all the constituent situations are temporally ordered.

Finally to be commented on is the feature HEAD under CAT. The value of this feature is constant along the 'head projection', and the co-tagging in this respect marks what acts as the head projection in fig.3. An additional feature introduced inside HEAD also provides a marking of head vs. non-head status, namely the feature MOD on the adjunct VP: this feature, standard in the HPSG literature, in the specification '`MOD <[x]>`', may be read as "I modify <[x]>", where '[x]', the single member of a cancellation list, stands for a specification of the item modified - in fig.3, this item is described as being a verb and having the (event) index [3].[23]

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[19] We leave open whether *ditransitive* constructions are most felicitously described in terms of a distinction 'Direct' vs. 'Indirect Object' (the latter linearly first), 'Object' (linearly first) vs. 'Object2' (a common LFG labelling), or 'Direct' (linearly first) vs. 'Asymmetric Object' (Osam 1994a, 2003); for the proposals presently made, the choice is not critical. As a neutral term, we refer to the linearly second of the two objects as *second object*.

[20] QVAL is not part of the inventory of a standard HPSG synsem objects. First introduced in NorSource, an implemented HPSG grammar for Norwegian (Hellan and Haugereid 2003), QVAL allows reference to be made to properties of grammatical dependents that already have been realized in the phrasal build-up, and thereby departs from a type of strict locality constraints assumed for English grammars using the VAL feature exclusively.

[21] As a further attribute of CONT we will assume RELS, with a list value,whicht allows us list the predicates involved. This attribute will play an important role in our representation of ISVCs.

[22] Note that mother-node phrases technically share the situation index with their head daughter, thus making it possible to formulate SITPAIR-CONDitions on pairs of verbs ‘up the projection line’. More generally, the choice of the attribute labels PREREQ(uisit) and DEPEND(ent), rather than, e.g., ‘PRECEDE’ and ‘FOLLOW’, accommodates the fact that in future tense, CCs may express intentions rather then temporal sequence.

[23] A reason why the feature traditionally in HPSG is introduced along with the part-of-speech (pos) specification, is that certain pos's are generally thought to have modification as their main function. In a language where

Missing in the schema is a statement of allowable sequences of *aspect* markings, as they are summarized in fig.1. The sequences there stated might suggest a finite state formalism as suitable. However, the conditions following fig.1 crucially refer to presence or absence of entire constituents, and this, together with the fact that it is VPs rather than verbs that form the sequences in question, suggest that phrasal schemata of the kind in fig.3 are the appropriate vehicles for stating the constraints. Too many issues are as yet unresolved, however, to make an inclusion of such constraints possible at the present point; most prominent among these is the question how aspect is to be generally marked in the AVM of a verb and verb phrase: as part of the INDEX specification, or in a specification of morphological form (or both).[24,25]

We now turn to Integrated Serial Verb constructions.

2. Integrated Serial Verb Constructions (ISVCs)

We consider three types of serial verb constructions that we propose to classify as ISVCs. Each construction consists of two verbs (with their VP material), one of which we call a 'minimal verb', following Sætherø (1997): informally speaking, this is a verb which, alongside its occurrences as a normal full verb, has as one of its typical functions to serve as one of the two verbs forming a pair of the kind in question.[26] The other verb is a 'full' verb.[27] In the following we concentrate on the minimal verb *de* 'take', and consider three of the ISVCs that this verb may enter into.

2.1. The de+ *ditransitive verb ISVC.*

This type is exemplified in (5c), repeated below, and serves as an expression of a *transfer relation*. As noted in 1.3.2 above, Akan allows for ditransitive constructions, headed by ditransitive verbs, as exemplified in (5a), but the second object is restricted to be an indefinite NP; crucially, it cannot be a pronoun, as illustrated in (5b) (where *no* is the (animate) personal pronoun). One instead resorts to a serial construction as illustrated in (5c), where the verb *de* 'saves' the pronoun by providing a verb-adjacent slot for it:

(5)	a.	ɔ-fɛm-m	me	ne pɔnkɔ [28]
		3sg-lend-COMPL	1sg	3sgPOSS horse
		he lent me his horse'		
	b.	* ɔ-fɛm-m	me	no
		3sg-lend-COMPL	1sg	3sg
		'he lent me it (the horse)'		

---

serialization, expressed as adjunction, plays an extensive role for verbs (considering in particular the behavior of the 'full verb' discussed in the next section), this location of the MOD feature may be motivated even for verbs; at any rate, since not too in the current analysis is affected by the exact location of MOD in the over-all faeture structure, we at this point can let tradition of the framework prevail.

[24] For a general approach to these questions, see Beermann and Hellan (forthcoming).

[25] More technically, one may assume that with both the binary phrasal structures and the MOD specifications available, there is sufficient 'space' in these schemata to state the admissible combinations. Proliferations of schemata corresponding to the plurality of cases given in fig.1 may be partly avoidable through hierarchies of aspectual types.

[26] For an enumeration of the class of 'minimal verbs', see Sætherø (op. cit.). It may be noted that among the minimal verbs, the one presently focused on - *de* - lacks tense/aspect inflection.

[27] When minimal verbs appear in longer verb sequences, it is arguable that they appear as part of an ISVC, which in turn occurs as the VP part of a CC. Formally, this requires another schema alongside the one in fig.1, allowing the left daughter to be of type *isvc*. Space limitations preclude developing this point here.

[28] For some speakers of Akan, a definite article following the noun *pɔnkɔ* 'horse' is possible, but then its interpretation is that of a specificity marker, indicating that the speaker knows the horse talked about.

c. ɔ-de no fɛm-m me
3sg-take 3sg (animate) lend-COMPL 1sg
'he lent me it (the horse)' (= 'he-took-it-lent-me') (Stewart 1963)

The question we address at this point is the following: The verb *fɛm* 'lend' being ditransitive, and in (5c) retaining the ('indirect') object *me* 'me' expressing the recipient, how is its valence requirement of a *second* object satisfied, and how does it assign the role 'received' to this subcategorized object? If the second object were covertly present, then, since the referent is animate, this would violate the overtness condition on animate pronouns (see discussion section 1). However, even if one grants an exception to this condition by assuming a null pronoun in this position, this construal will still be impossible. As shown by the examples in (6), repeated, with an intended zero pronoun in the second object position, a ditransitive pattern is excluded in exactly the same way as it is when the second object is an overt pronoun:

(6) a. ɔ-fɛm-m me ne adwa
3sg-lend-COMPL 1sg 3sgPOSS chair
'he lent me his chair'
b. * ɔ-fɛm-m me ø
3sg-lend-COMPL 1sg 3sg
'he lent me it (the chair)'
c. ɔ-de ø fɛm-m me
3sg-take 3sg (inanimate) lend-COMPL 1sg
'he lent me it (the chair)' (= 'he-took-it-lent-me')

Thus, the assumption of an item present in a second object position in cases like (5c) (or (6c)) would lead to an infinite regress in the analysis.

A conceivable way of avoiding such a contradictory situation would be by assuming a structure of *token-sharing*: the second object grammatical function of *fɛm*, and the 'Item-received' role going with it, could be assigned directly to the token NP *no* in (5c), so that this NP receives a GF/role directly from two verbs at the same time: *de* and *fɛm*. There is then no pronominal item occurring in the second object position.[29] This solution is corroborated by the fact that interpretationally, none of the factors typically influencing the referent identification under reference sharing (such as context and the semantic structure of the overall event; cf. 1.3.3) apply. We therefore adopt the strategy of token-sharing in the analysis of (5c).

For the concept of token-sharing we develop here, it is essential to distinguish clearly between grammatical functions (GFs) and the thematic roles that are associated with them. In a 'normal' environment, a verb is associated with a number of grammatical functions (GFs), and each GF is in turn associated with a participant role. So, for *fɛm*, 'second object' is one of its associated GFs, and it is linked to the role Item-received. Now, in a situation of token-sharing

[29] In a framework such as GB or descendants, where a principle like the Theta-criterion excludes a construal as token-sharing (by requiring that a participant role always be matched by a syntactic constituent - cf. Chomsky 1981: p.36), the upshot of these data would presumably be the recognition of distinct types of syntactic 'empty elements': one kind corresponding to the type we have seen to be excluded in the second object position in Akan (which we would call phonologically null, but syntactically non-null), and a more abstract kind, syntactically null, still allowed to occur in this position. Of course, in such a framework, all types of SVCs will be analyzed as having reference sharing (cf. Beermann et al. 2002), and as far as argument sharing distinctions enter into the CC - ISVC dichotomy, they would require an account very different from what is offered presently.

like in (5c), either of the following situations may be hypothesized (spelling out a distinction introduced in fig.2 above):

(i) The role 'Item-received' of *fɛm* is not realized through a GF associated with this verb, but links itself directly to an argument associated with the preceding verb *de*. This is an option we could call *token-sharing* with regard to *role assignment*, i.e., two verbs share one token NP for their assignment of a semantic role each. We also refer to it as *token-sharing by-role* and *thematic token-sharing*.

(ii) The role 'Item-received' of *fɛm is* realized by a GF associated with this verb itself, but this GF is in turn *not* realized by an NP in the position in which a second object relative to *fɛm* would occur.[30] Instead, the GF is realized by the same NP (*no*) as receives a GF relative to *de*, so that *no* receives a GF from both *de* and *fɛm* . This is thus *token-sharing* with regard to *GF-assignment*, i.e., two verbs sharing one token NP for their assignment of a grammatical function each. For short, we refer to this as *token-sharing by-GF* or *functional token-sharing*.

Under either construal, what the NP gets assigned from the two verbs should be at least *compatible* - either relative to roles, or relative to functions. The latter can be generally motivated by the necessity for the NP to be subject to consistent morphological or other requirements, given the principled possibility that GFs are reflected morphologically. The former is motivated by the circumstance that when two verbs token-share, their respective propositional contents invariably contribute to one and the same situation. That being so, the referent of the NP receives roles that are shared in a single participant of a single situation, hence these roles must be compatible.

In the case of ditransitive ISVCs, the compatibility requirements mentioned favor a construal as *thematic* token-sharing, rather than functional token-sharing. While the object of *de* and the second object of *fɛm* are subject to different grammatical requirements (the latter having to be indefinite, and not pronominal, whereas *de*'s object is not restricted), the role of the participants expressed by these objects are both *themes*. Thus, the concept of thematic token-sharing seems in this case is the most appropriate.

Fig. 4 formalizes our analysis of *de*+ditransitive verb-ISVCs. In general outline it is comparable to fig.3; thus, although we recognize CCs and ISVCs as different construction types, we keep both constructions as adjunction structures.[31] The types of the VP daughters, however - *min-verb* and *full-verb* - are mutually exclusive and distinct from the mother VP type, *isvc*, ensuring that a minimal verb won't be followed by an ISVC. Thus, no ISVC recursion is possible (as opposed to CCs).

One essential difference is that under CONT, we are now specifying one more attribute, viz. *RELS*. (In principle, it is there also in the representation of CCs, but in fig.3 it is not pertinent to the analysis.) This is a list of all those predications which are expressed inside the constituent in question, and represents the compositional semantics of the constituent.[32] As a

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[30] The level of realization here referred to is what in LFG would be called *c-structure*; HPSG lacks a convenient label for this construct (as opposed to a level characterized only in terms of the more abstract grammatical functions 'subject', 'direct object', etc.).

[31] an assumption that we assume will facilitate the formulation of a constructional object that generalizes over both CCs and ISVCs, a formulation we do not attempt at this point, in part because, as mentioned in 1.3.4, we as yet have not decided how to represent aspect sequencing, which is one of the substantive common denominators of ISVCs and CCs.

[32] It is a crucial component of the representation format 'Minimal Recursion Semantics' (MRS) - cf. Copestake et al. (1999). In representing both *de* and *fɛm* in the compositional semantics, we depart from the analysis in Hellan

labelling convention, we add '–*rel*(ation)' to all predicate names which occur in such a list. Each such relation is a type, which introduces the attributes PART(icipa)NT1, 2, and 3; these attributes have participant roles as values, such as *agent, beneficiary,* or *theme* (see more below).

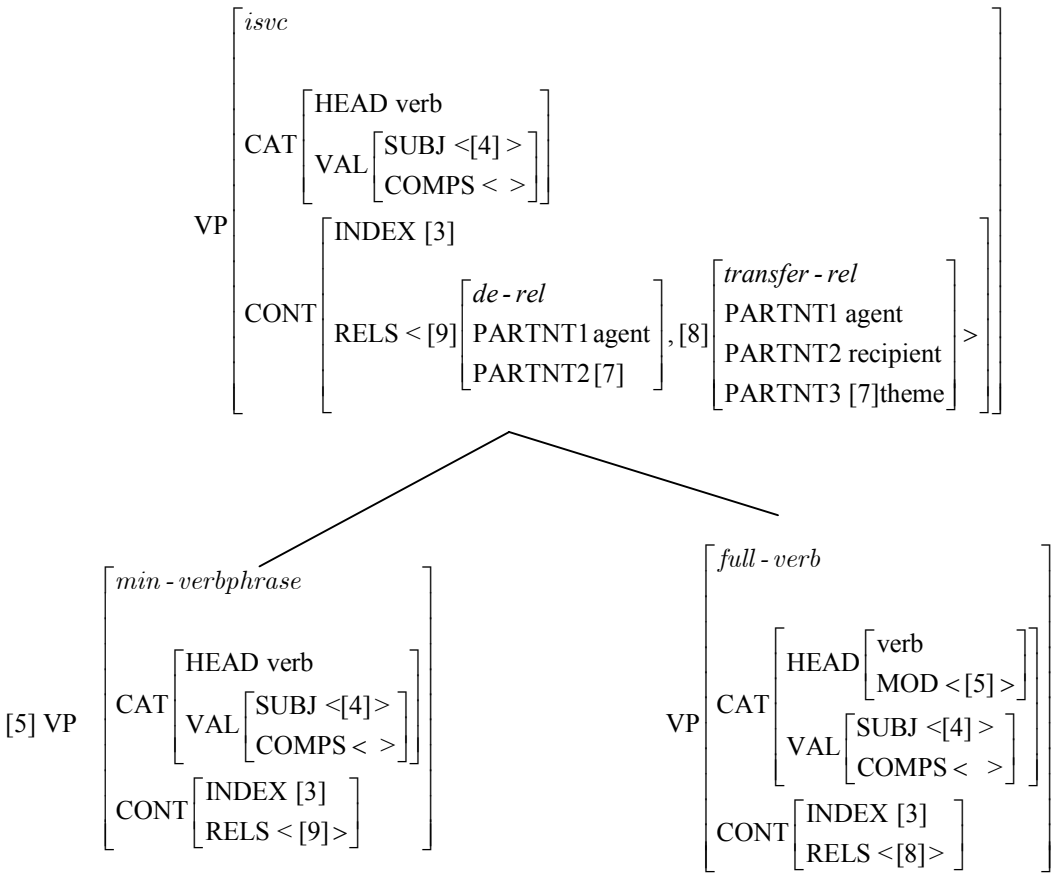
For subject sharing, lacking any evidence for reference-sharing of the kind we discussed in section 1, and there seemingly being uniformity in subject-function as far as a token-sharing construal is concerned, we will assume *functional* token-sharing for subjects, represented by co-tagging of what is entered on the SUBJ-list in the three VPs. What is indicated by the tag ('[4]') is thus the NP token as such (which the *isvc*-VP has not yet combined with).

The object sharing, in contrast, is one of participant role, and is represented by co-tagging of the values of the Participant attributes - PARTNT2 for *de*, PARTNT3 for *fɛm*. This tag - '[7]' - picks out an individual, ensuring coreference between the PARTNT attributes in question, but at the same time constraining this argument sharing to be possible only if both of the arguments in question are *themes*. Identity (or compatibility) of participant roles for the 'shared' argument is a consequence of another feature of the representation, namely the identity of (event) *INDEX* across the three VPs - this states that the situation expressed by each of the daughter VPs is just one aspect of one and the same total situation, expressed by the mother VP. This being so, the behavior of the individual picked out by '[7]' is in total restricted to be consistent as a *behavior of a single participant in a single situation*, which requires that it belong to just one thematic role.

---

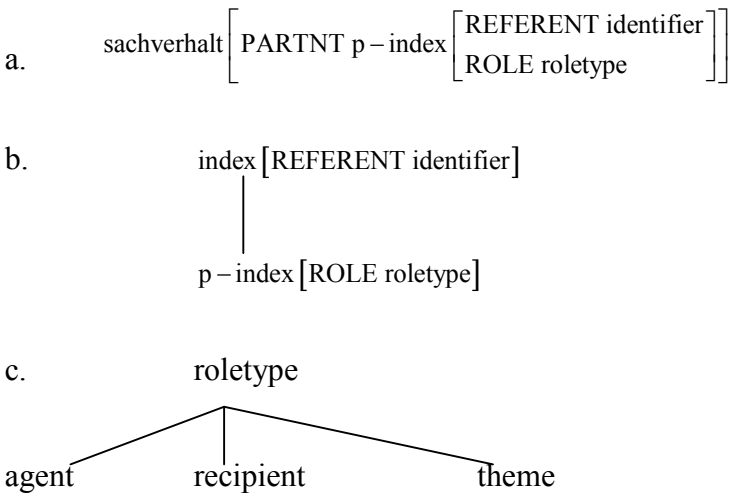
et al. (2003), where only the semantics of *fɛm* would make it to the dominating VP. (The latter type of restrictive approach to semantic propagation is found also in an implemented analysis (on the XLE platform) of complex predicates in Urdu, by Butt and King (cf. (Butt 2003)).

Fig. 4. ISVC schema of '*take-NP-give-her*':



When saying that the tag '[7]' in the above figure picks out an individual, ensuring coreference between the PARTNT attributes in question, and at the same time constrains this argument sharing to be possible only if both of the arguments in question are *themes*, we are, technically, creating a joint representation of thematic role and referential index. This is done through the following partial specifications (simplified in certain respects - cf. Beermann (2003)):

Figure 5.



Thus, by fig.5.a, the attribute PARTNT (introduced under the type *sachverhalt*) takes *p-index* as its value. Unlike more common specifications which would take 'index' to be simply a numeral (or other) identifier, we define a subtype of *index* as in (5b), viz. *p-index,* which introduces the feature ROLE with a thematic type as its value; a simple hierarchy of thematic types is indicated in fig.5.c. A notation like

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[ PARTNT3 [7]theme ]
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in fig.4 is thus short for

$$\left[\text{PARTNT3 } [7]\text{p}-\text{index}\left[\text{ROLE theme}\right]\right]$$

2.2. The take-as-instrument type

This type, commonly referred to as an *instrumental* SVC, is exemplified in (10):

(10) ɔ-de nkrante twa duabasa
he-take sword cut branch
'He cut off a branch with a sword'

Like ditransitive verb ISVCs, instrumental ISVCs feature functional subject-sharing. Examples like (10) indicate that *nkrante* 'sword' cannot be seen as subject of the second verb. For constructions where an 'instrumental' subject is possible (like in 'the sword cut the rope'), as in (11a), the choice of possible manner adverbs is restricted. For constructions with fully agentive subjects like those used as second VP in (10), different manner adverbs would be used, as indicated in (11b):

(11) a. Nkrante no twa-a duabasa no mu yirɛw
sword DEF cut-COMPL branch DEF into fast
'The sword cut the branch fast'

b. ɔ-de nkrante twa-a duabasa no mu ?? yirɛw / ntɛm
he-take sword cut-COMPL branch DEF into fast / fast
'He cut off a branch with a sword'

We thus conclude that instrumental SVCs display subject token-sharing. What however is not obvious is that *de* licenses, through token-sharing, an NP that holds an 'instrument' argument function relative to 'cut'. For one thing, the functional status of 'instruments' generally seems to be unclear; thus, a verb like *twa* 'cut' can hardly be said to hold a GF slot that would accommodate *duabasa no* in (10). Still, 'cut' may be said to provide a semantic slot for an instrument, a situation which might suggest a case of role token-sharing between the object of *de* and an inherent instrument role of 'cut'. However, an example like (12) shows that the capability of *de* to introduce an 'instrument' does not depend on there being an 'inherent' instrument role relative to the second verb - the intransitive verb 'sneeze' would, in isolation, not have an instrument role:

(12) ɔ- de krataa nwansi-i
he/she take paper sneeze-COMPL
'He used the paper to sneeze into it.'

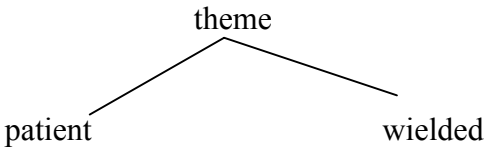
Here the *de*-ISVC serves as a means to say that he used the paper for his sneezing, and the instrument reading may be said to be essentially *constructionally* based. It should be noted that what can be introduced by *de* relative to *nwansi* is exclusively an instrumental reading - for instance, to express that the paper was the *location* that he sneezed into, a different construction would be used, as illustrated in (13) below:

(13) ɔ- nwansi-e gu-u kratea mu
he/she sneeze into paper inside
'He sneezed into the paper.'

Thus, since the verb ‘sneeze’ under standard assumptions does not provide a complement slot, a case like (12) does not represent a case of argument sharing. It is reasonable to generalize this conclusion also to cases like (10), denying also 'cut' an inherent theta-role 'instrument' (at least of sufficient salience to serve as a 'sharing' argument), but if so, how should the constructional basis for the instrument reading be represented?

Consistent with the ISVCs using *de* discussed here is a construal where *de* introduces a theme-like role (by means of its object) to the construction. 'Theme-like' in this connection should be understood as a class of thematic roles containing at least the roles 'Patient' and 'Wielded', with the class membership construed as a type hierarchy with 'Theme' as the supertype; this hierarchy is an extension of that given in fig.5c.:

Figure 6.



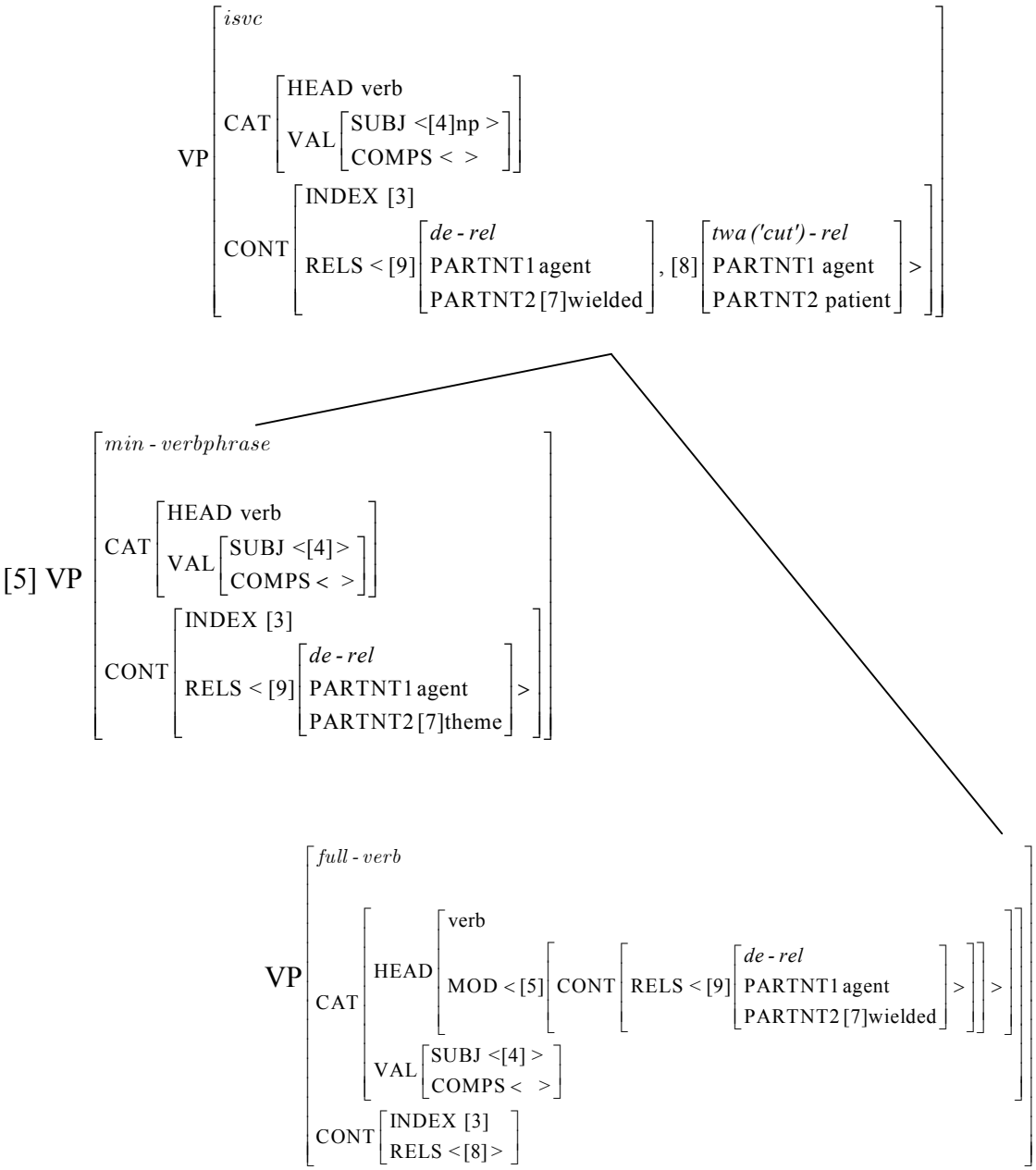
These subtypes represent different ways in which an entity with essentially theme status can be involved in an act: directly undergoing an impact, or serving in a tool-like fashion. The latter will amount to an 'instrument' role.

In the analysis, 'cut' will require of its preceding verb *de* that it introduces the role *wielded*. Albeit *de* itself selects its object as a *theme*, since *wielded* is a subtype of *theme*, these requirements are compatible, with the more specific one prevailing. As a result, in the RELS list of the mother VP, the object of *de* is marked as *wielded*, which is then also the role of this entity in the total situation.[33]

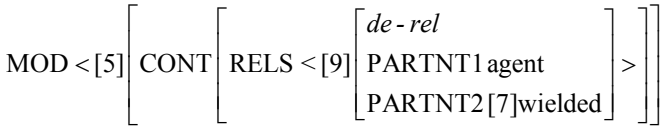
Fig.7 below displays the schema of the construction type, according to these assumptions.

[33] This analysis seems consonant with a proposal in Talmy (2000: 487), where an item, in a local context functioning as 'Figure', in a larger context acquires a status as 'Instrument'.

Figure 7. ISVC schema of *take-NP-cut-branch*



An essential role here is played by the feature MOD of the full verb 'cut' (part of the specification of the *full-verb* VP in fig.7):



What is specified here may be said to be an 'extension' of the basic verb *twa*, accommodating an instrument. When in a grammar of a non-serializing language like English, the basic verb *cut* is

related to a use accommodating an instrument, some mechanism will be invoked by which the head verb 'cut' gets another satellite, headed by *with*. Whatever the exact form of that mechanism, it corresponds to the way in which a basic entry of *twa* is supplemented by an entry containing a MOD specification like the present one. Thus, where English specifies a new frame with the same head as the 'basic' frame, just adding a new item in the frame, in the present case, we do not add anything to the basic frame as such, but co-specify a preceding predication. We may hypothesize this contrast as reflecting an essential difference between serializing and non-serializing languages in lexical specification strategies.

2.3.The de *+ location (motion) verb ISVC*
This type of construction is exemplified in (14c):

(14) a. atadeɛ no sɛn dadewa so
dress DEF hang nail on
'The dress is hanging on a nail'

b. *kofi sɛn-n atadeɛ no dadewa so[34]
'Kofi hang dress DEF nail on

c. kofi de atadeɛ no sɛn-n daewa so
K. TAKE dress DEF hang-COMPL nail on
'Kofi hung the dress on a nail' (Stewart 1963: 148)

In (14c) the minimal verb *de* combines with the verb sɛn 'hang'. Given the possibility of (14a) together with the ungrammaticality of (14b), *sɛn* (different from the English transitive verb 'hang') can be assigned only a single lexical frame, namely that of an intransitive verb. Only through the combination with the minimal verb *de* can an agent be added as a further participant. Thus, while in the instrumental SVC considered above, *de* is used to introduce a theme-type argument to the overall event, in the present construction, its role is to introduce an agent.

A further question is whether (14c) should be treated as a case of switch sharing, that is, does 'dress' serve as the object of *de* as well as the subject of *sɛn*?

Different from ditransitive ISVCs where *de* provides an argument slot for an otherwise inexpressible definite or pronominalized second object, we have relative to (14c) no evidence indicating that the subject of the verb *sɛn* could only be expressed as an object of *de* - on the contrary, given the grammaticality of (14a), we would like to assume that *sɛn* licenses 'dress' as its subject. The question then is rather whether 'dress' is licensed only by *sɛn*, and if so, whether the connection between the two verbs is one of serialization, or, alternatively, one of embedding, with *de* used in a meaning like 'bring about'. The examples in (15) pertain to these questions:

(15) a. Kofi bɛ-de nwoma no a-ba ntɛm
Kofi FUT-take book the CON-come quickly
'Kofi will bring the book quickly'

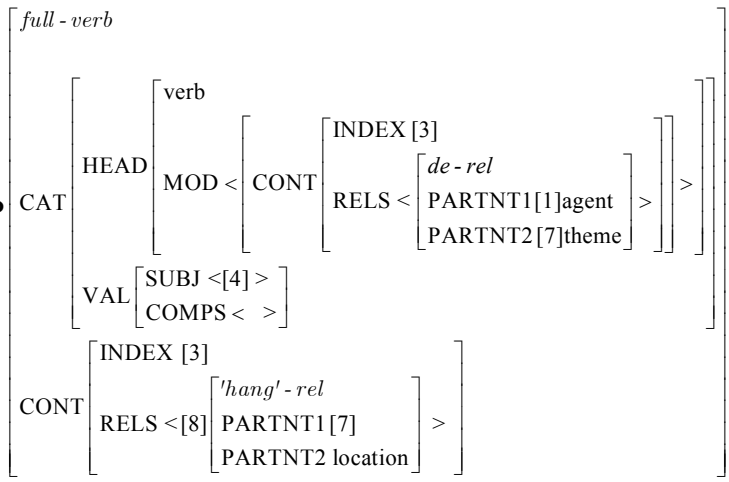
[34] Speakers of Akan seem to disagree as to the grammaticality of the following sentence, where 'dress' is indefinite:
(i) ? kofi sɛn-n atadeɛ dadewa so
'Kofi hang dress nail on
We can not pursue the matter here.

b.	Kofi	bɛ-yɛ	no	ntɛm	a-ma	nwoma	no	a-ba
	Kofi	FUT-do	it	quickly	CON-give	book	the	CON-come
	'Kofi made the book come quickly'							
c.	*Kofi	bɛ-yɛ no ntɛm		a-de	nwoma no	a-ba		
d.	Kofi	a-m-fa		nwoma	no	a-*(m)-ba		ntɛm
	Kofi	COMPL-NEG-take		book	the	COMPL-NEG-come		quickly
	'Kofi didn't bring the book quickly'							

Adverbial modification, shown in (15a), using the full verb *ba* 'come', seems to indicate that locative(motion) ISVCs most likely aren't embedded structures. In (15a), the adverbial modifier occurs sentence finally, modifying the 'bringing'-event as a whole. In some ISVCs, partial modification seems possible, as illustrated in (15b) with a causative construction, with *ma* serving as the minimal verb.[35] In a construction with *de*, however, this option is not allowed, as shown in (15c). While the construction in (15a) has a causative meaning, we infer that this is not due to *de* acting like a causative verb, and that the sentential structure is not one of embedding. Further evidence for this comes form the fact that negation in a structure like (15a) has to apply throughout the whole structure, just as in a standard ISVC. *De* itself cannot be negated, and in case of a negative statement needs to be replaced by the verb *fa* 'take'; still partial negation is not possible, as shown in (15d).

Hence, we will treat locative (motion) ISVCs as the combination of two VPs in a serial modification structure, as in the earlier cases. Since we have little evidence of *de* being possible as an intransitive verb, we tentatively treat (15a) and (14c) as cases of argument sharing, that is, with the NP serving as the subject of the main verb also serving as a complement of *de* (i.e., switch sharing). In the over-all semantic representation, it will seem plausible to represent the locative state as *caused*, with the agent of *de* as 'causer'. An analysis of this construction type may then be conceived partly parallel to that represented in fig.7, with the second verb 'hang' (in (14c)) selecting as its first verb *de,* where *de* introduces both an Agent for the over-all event and a Theme, the latter being identical to 'hang''s own Theme subject. Thus, the VP headed by 'hang' may be seen as having a specification like (16) for this type of occurrence:

(16)



On the basis of the daughter VP specifications, their RELS lists would add up to the RELS-specification (17) for the top VP, expressing essentially what we have just described; we take a combination of elementary predications like that in (17), with *identical EVENT indices*, to have

[35] As expected the interpretation of (15b) is ambiguous, it is either the causing event that what quick, or the coming event was quick.

only an interpretation where the agent of the *de*-predication is *responsible* for the situation expressed by the second predication:

(17) $\text{RELS} < \begin{bmatrix} de\text{-}rel \\ \text{PARTNT1}[1]\text{agent} \\ \text{PARTNT2}[7]\text{theme} \end{bmatrix}, [8] \begin{bmatrix} 'hang'\text{-}rel \\ \text{PARTNT1}[7] \\ \text{PARTNT2 location} \end{bmatrix} >$

Through the selection of a preceding predication with *de*, this specification of *sɛn* 'hang' uses the MOD feature in an analogous fashion as *twa* 'cut' in the previous subsection. This predication will be present in a *sɛn* entry only in the context of the *de* predication.

The constellation may be seen as corresponding to another mechanism often assumed for lexical items in non-serializing languages, namely the mechanism of *lexical rules* (like a rule interrelating the entries for the intransitive and the transitive versions of *hang* in English). In the context of the observations made in 2.2, the present case may thus be seen as a potential other systematic difference between serializing and non-serializing languages in lexical specification strategies.

3. Concluding remarks.

The cases considered throughout section 2 support regarding an ISVC as a kind of 'constructional lexeme'. Each situational profile emerges as a *thematic co-composition based on the semantic* frames of the two verbs. One may hypothesize that a prerequisite for such a compositional construct is that not more than two predicates be involved, motivating the boundedness assumed. Within this space, the three cases studied differ (in increasing order) in the amount of constructional contribution made, but in each case intuitively within the bounds of what may be seen as a natural 'extension space' of the full verb lexeme. As far as token-sharing goes, what unites the cases, as contrasting them to Clause chaining, is in the end that *no reference-sharing* is operative between the VPs: in the *de*+ditransitive verb ISVC, object sharing is a matter of thematic token-sharing and subject-sharing resides in functional token-sharing; in the 'take-as-instrument' type in 2.2, there is no object-sharing, while there is subject sharing, as functional sharing. In the *de*+location type (2.3), finally, there is only switch sharing, although its status is too unclear to allow a conclusion as to which type of sharing it represents. This variation, though, shouldn't be taken as too significant, once we see the common 'drive' of the ISVC formation to be a way for the full verb lexeme to increase its repertoire of supported situational profiles. In this respect, it is the lack of reference sharing which is essential, in that each profile is a fixed package of linkages between syntactic and semantic factors.

To go beyond these very exploratory initial steps, an ontology of minimal verbs in Akan and a typology for Akan ISVCs would have to be important building blocks. Prominently, a verb like *ma* as in (18) provides a case of minimal verb as the *second* verb:

(18) ɔkyeame no kasa ma-a ɔhene no
linguist DEF speak give-PST chief DEF
"The linguist spoke on behalf of the chief"

The meaning of *ma* in (18) is much like 'for' in English, but far from being a preposition (as also witnessed by its full verbal morphology), *ma* as a minimal verb maintains from its ditransitive nature that *ɔhene no* ('the chief') will receive the beneficiary role. Conceivably, one might construe *ma* semantically as maintaining its full ditransitive meaning throughout its

two functions as full and as minimal verb, and portray (18) such that the item given is simply the act of speaking itself. However, such a portrayal of a state of affairs has its encoding as an independent construction type, illustrated in (19a) below, contrasting with (19b), which is more on a par with (18):

(19) a. ɔ- siesie kaa no de ma-a ɔhene no
he/she-repair car the take give-COMPL chief the
'He repaired the car and presented it/ this fact to the chief.'
'He repaired the car with the intension to later present it/this fact to the chief.'

b. ɔ - siesie kaa no ma-a ɔhene no
he/she repair car the give-COMPL chief the
'He repaired the car on behalf of the chief.'

In (19a), the sequence *de* - *ma* may be seen as an instantiation of the pattern addressed in 2.1,[36] with *de* as somehow enabling *ma* to function with its full valence. In (19b), on the other hand, it is only the benefactive aspect of semantic ditransitivity that is preserved in the use of *ma*; here, thus, *ma* acts as a minimal verb, adding a beneficiary participant to the event frame in question. Intuitively, what happens here is very much in line with the general picture suggested of ISVCs;[37] however, exactly how it fits into a systematic picture, and how this could be represented formally, will be among the challenges for further investigations.

Finally, let's restate the main dichotomy considered: while ISVCs may be said to express just 'one event', and are restricted to sequences of two verbs, CCs express chains of distinct, non-overlapping consecutive events, with no upward bound on the number of VPs. As far as the formal representation of the dichotomy is concerned, we have assumed that both constructions are syntactically analyzable as adjunction structures, but only CCs with a recursive second VP. Moreover, the second VP in an ISVC binary tree may use its MOD feature to specify what verb will precede it (cf. fig. 7 and (16)): this facility, together with the factor of EVENT index co-indexation, accounts for the typical 'event interleaving' in ISVCs as opposed to the event independence in CCs.

With due observation of the above-mentioned contrasts, it still has to be emphasized that as far as patterns of aspect marking and negation go, the two construction types behave identically, underscoring the unity of the phenomenon of 'serial verbs constructions' in Akan. While the dichotomy considered seems plausible, the question whether it can ultimately be maintained as a strictly binary dichotomy, or has rather to be construed as a cline, perhaps with the ISVC cases here considered at the extreme end of 'integrated' SVCs, remains to be assessed through the investigation of many more types of verb combinations.

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[36] The occurrence of a VP prior to *de*, and somehow 'resumed' by *de*, is an interesting construction by itself, but not one we can address here. (For a similar use of a pre-verb particle *kɛ* in Ga, cf. Kropp Dakubu 2002.)

[37] And as a phenomenon, it is cross-linguistically very widespread; cf., e.g. Butt and Geuder 2001.

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