

Some Issues in Verb Serialization*

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In a variety of world languages, notions that would elsewhere be expressed through conjunction, complementation, or secondary predication are rendered uniformly by means of a sequence of verbs or verb phrases. This phenomenon of *verb serialization* is illustrated by the sentences in (1-3), drawn from languages of West Africa:

- (1) a. Kofi kɔɔɛ baae.
Kofi went came
'Kofi went and came.'
- b. Kofi daadaa Amma kɔɔɛ.
Kofi tricked Amma went
'Kofi tricked Amma and went.' (Akan; Schachter (1974a))
- (2) a. Dàdà gbé àkpótí lọ ilé ní ànà.
Dada took box went home on yesterday
'Dada took the box home yesterday.' (Yoruba; Stahlke (1974))
- b. Wọ̀n mu ọ́tí yó.
They drank wine drunk
'They drank wine until they were drunk.' (Yoruba; Bamgbose (1974))
- (3) a. Kókú sọ àtí hò Àsíba.
Koku take stick hit Asiba
'Koku hit Asiba with a stick.' (Fon; Lefebvre (1989))
- b. Amma free Kofi baae.
Asiba called Kofi came
'Asiba called Kofi (to come) in.' (Akan; Schachter (1974a))
- c. Olú bú ọ̀mọ náà já de.
Olu berated child the go out
'Olu berated the child and he/ the child went out.'
(Yoruba; Bamgbose (1974))

The papers in this volume offer insights into verb serialization from a variety of different perspectives — grammatical, comparative, and cognitive / functional. In attempting to provide some orientation for this work and for the general phenomenon, I will arrange my remarks around two questions: first, what is the basic character of the serial verb construction — what is its structure and thematic constitution? As we will see, the papers of this volume largely cover the spectrum of possibilities available under current grammatical theory. Second, what analogues for verb serialization can be found in the more familiar grammatical apparatus of English? Developing some ideas by the major contributors, I suggest that verb serialization finds a clear echo in the secondary predicate structures of English, and that the difference between English and a language like Yoruba lies in the fact that secondary predicates are fundamentally nominal in the former, but verbal in the latter.

1 The Serialization Phenomenon

As the examples in (1-3) suggest, serial verb constructions present themselves as a noun phrase subject followed by a sequence of verbs or verb phrases (often with accompanying inflectional elements):

- (4) [_S NP INFL VP1 VP2 VP3 ...]

A number of straightforward questions arise immediately with respect to the underlying form of serial structures, the grammatical principles licensing them, and the parameters responsible for their cross-linguistic variation — why some languages have serial verbs while others do not.

1.1 *Serialization Structure and Licensing Principles*

Broadly speaking, three quite different proposals can be distinguished regarding the underlying form of verb serialization. And these may be associated (although not exactly) with specific diagnoses of the thematic relations holding among serial verbs.

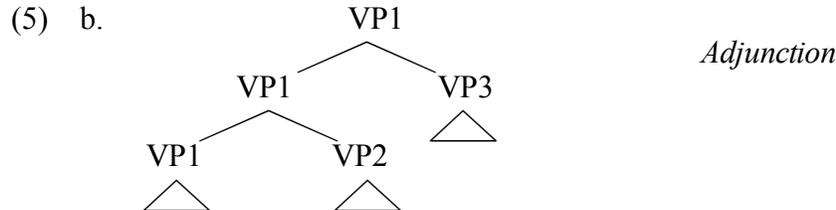
First of all, the sequenced VPs might represent a basically coordinate structure as in (5b), with all the verbal elements structurally on a par¹:

- (5) a.
-
- Coordination*

This view accords naturally with an interpretation in which the VPs represent a series of successive predications of the matrix subject. Such an interpretation is found in examples like (1a,b) (repeated below), where serialization appears to express (essentially) verb-phrase conjunction:

- (1) a. Kofi kɔɔɛ baae.
Kofi went came
'Kofi went and came.'
- b. Kofi daadaa Amma kɔɔɛ.
Kofi tricked Amma went
'Kofi tricked Amma and went.'

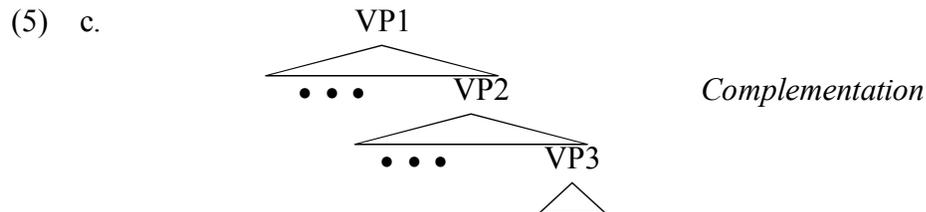
Alternatively, the VPs might represent a nested sequence of adjunctions to a main VP²:



On this view, the additional VPs form a series of secondary predications with a basically modificatory status. This idea is natural given examples like (2a,b) (repeated below), whose interpretations express roughly locative and temporal modification (respectively):

- (2) a. Dàdà gbé àkpótí lọ ilé ní àná.
Dada took box went home on yesterday
'Dada took the box home yesterday.'
- b. Wón mu ọ́tí yó.
They drank wine drunk
'They drank wine until they were drunk.'

Finally, the VPs might constitute a series of embedded verbal complements, where the relation between the verbal elements is neither co-predication nor modification, but rather selection:



Here each VP falls within the selection domain of some sister predicate. This view comports naturally with examples like (3a,b), which are interpreted essentially as causatives³:

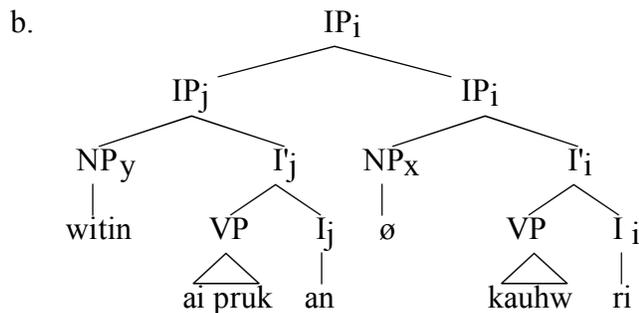
- (3) a. Kókú sọ àfí hò Àsíba.
Koku take stick hit Asiba
'Koku hit Asiba with a stick.' ('Koku caused a stick to hit Asiba.')

- b. Amma free Kofi baae.
 Amma called Kofi came
 ‘Amma called Kofi in.’ (‘Asiba caused Koku to come in by calling.’)

The contributors to this volume can be seen as staking out the full range of structural and interpretive possibilities sketched above, often with different structures proposed for different languages.

1.1.1. *Hale*. In his study of Misumalpan serialization structures, Hale proposes that apparent V-chaining constructions in these languages are underlyingly clausal adjunctions. To the Miskitu sentence (6a), for example, Hale assigns the structure in (6b):

- (6) a. *Witin ai pruk-an kauhw-ri.*
 He me strike-OBV:3 fall-PAST:1
 ‘He hit me and I fell down.’ *or*
 ‘He knocked me down.’

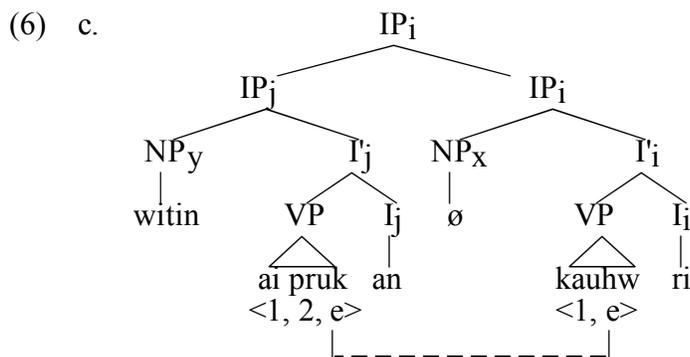


Here IP_j has been adjoined to IP_i , and hence although the two clauses are formally sisters, the latter bears an asymmetric superordinate relationship to the former. This “weak subordination” relation figures centrally in Hale’s account of the obviation and switch reference facts of Miskitu and Ulwa.

Hale points out an important two-fold division in the types of Misumalpan clause-chaining structures. He distinguishes a coordinate clause-chaining construction in which the various verbs designate distinct events, and a second, “true serialization” construction in which the various verbs jointly designate a single event. This difference is illustrated in the two glosses for (6a); on the first (clause chaining) reading, the hitting and falling may represent distinct events, whereas on the second (serialization) reading, the hitting and falling represent a single event of ‘knocking down’.

Hale notes that in Misumalpan, as elsewhere, coordinate and true serialization readings are realized in indistinguishable surface forms, and suggests on this basis that the two readings are not structurally distinct. He makes the (tentative) proposal that such differences arise from whether or not the event positions in the major predicates of the two clauses are “identified” in the sense of Higginbotham (1985). On this view, the true serialization

interpretation of (6a) corresponds to the linked “thematic” grids shown in (6c), while the coordinate reading simply lacks this linking:



While the empirical motivation behind Hale’s proposal is clear, there are some apparent problems with the view. One arises in connection with examples involving negation such as (6d), discussed by Hale:

- (6) d. *Witin ai pruk-an kauhw-ras.*
 He me strike-OBV:3 fall-NEG (-1)
 ‘He hit me and I didn’t fall down.’ *or*
 ‘He didn’t knock me down.’

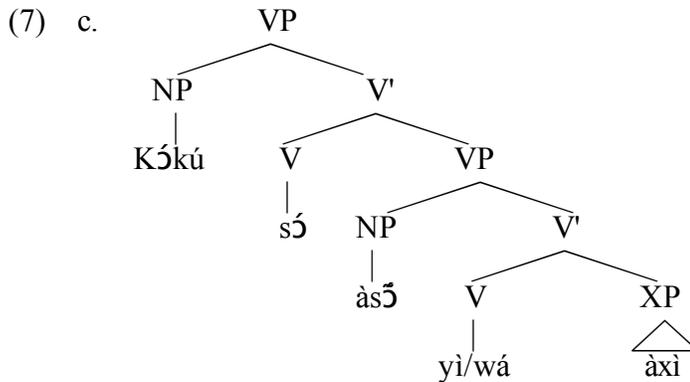
As Hale notes, on its “clause chaining” reading, scope of negation in (6d) extends only over the main clause IP_i , while on its “serialization” reading, scope of negation extends over both clauses. Given the standard view of scope as a structural matter, it is unclear how scope of negation could vary on the two readings without concomitant variation in structure⁴.

A second problem comes up in connection with Hale’s particular suggestion of “event place identification”. In the theory proposed by Higginbotham (1985) from which this proposal is drawn, thematic identification is crucially constrained to configurations of sisterhood between the predicates whose roles are to be identified. In clausal adjunction structures of the sort assumed by Hale, no such relation obtains between the relevant predicates (*pruk* and *kauhw* in (6c)), and hence it is unclear how such a proposal is to be executed. This last point makes clear a more general question for analyses (like Hale’s) that assume serial verbs to be joined at a level no lower than the clause. Such a view apparently demands a radical uncoupling of the thematic notion “single predicate” and the structural notion “single constituent”.

1.1.2. *Lefebvre*. Lefebvre develops an analysis of causative serialization constructions based on structures and principles very different from Hale’s. She is concerned, in particular, with serial causatives in the West African Kwa language Fon involving the verb *só* ‘take’. The basic phenomenon is illustrated in (7a,b) below:

- (7) a. Kókú só àsǎ̀ yi / wá àxi.
 Koku take crab go/ come market
 ‘Koku brought (direction away / towards the speaker) the crab to the market.’
- b. Kókú só àsǎ̀ dó távò-ǐí.
 Koku take crab put table-on
 ‘Koku put the crab on the table.’

On the matter of structure, Lefebvre proposes a complementation analysis involving embedded VPs, rather than an adjoined or coordinate form. (7a), for example, receives the structure in (7c), where *só* is understood essentially as a causative verb selecting a complement with clausal meaning — in this case one expressing the proposition that the /a crab went or came to the market:



As with Misumalpan “true serializations”, Fon serial predicates like *só* and *yi /wá* are understood to define a single event. However, Lefebvre takes the relation between these verbs to be more intimate than linkage by theta-identification. She proposes instead that complex elements like *só-yi /wá*, ‘bring away-from / to’, are formed in the lexicon by a process that “conflates” the Lexical Conceptual Structures (LCSs) of the constituent predicates⁵. To illustrate briefly with (7a), *só* ‘take’ receives the LCS in (8a), and *yi /wá* ‘go / come’ receive the LCS in (8b); conflation combines the two, merging their shared elements, to form the complex lexical predicate in (8c):

- (8) a. *só* : [x cause [y undergo change of location]]
 b. *yi /wá* : [y undergo change of location
 away from/towards speaker to location z]
 c. *só-yi /wá* : [x cause [y undergo change of location
 away from/towards speaker to location z]]

Such predicates are then projected into syntax by means of the X-bar theory given in (9)⁶:

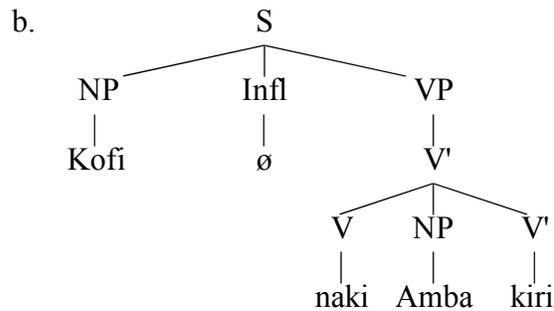
- (9) a. XP → SpecX' X'
 b. X' → X YP

Under this theory, heads are permitted at most a single complement per maximal projection. This forces a binary branching structure in which the two heads of the complex predicate (*sɔ́* and *-yi/wá*) are inserted into two available V head positions; the result is (7c) (see Lefebvre for details).

Assuming that complex predicates are uniformly obtained by LCS conflation, Lefebvre's analysis appears compatible with the strong, and intuitively appealing view that predicates defining a "single event" are assigned a single representation at some level of structure. Here the notion "single event" appears to be definable in terms of the notion "single LCS", and the relevant level at which this unity is represented is the lexicon.

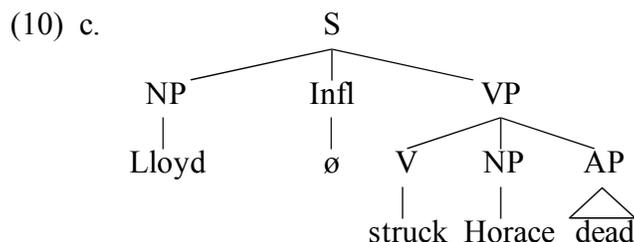
1.1.3. Baker. Baker adopts a position on verb serialization that combines elements of the previous two proposals. The configuration Baker suggests is analogous to complementation, but its interpretation is rather similar to coordination-adjunction. To illustrate, the Sranan serial verb construction in (10a) is assigned the structure in (10b):

- (10) a. *Kofi naki Amba kiri.*
 Kofi hit Amba kill
 'Kofi struck Amba dead.'



As in Lefebvre's analysis, Baker assumes that serial constructions are dual headed — that the serialized verbs jointly constitute a single predicate. The chief difference between the two proposals lies in how dual-headedness is expressed. As I've mentioned, for Lefebvre, serializations are dual-headed as a matter of lexico-semantics, but not as a matter of structure. The relevant verbs merge LCSs and form a unit in the lexicon, but the latter is subsequently broken up and realized discontinuously in syntax. For Baker, on the other hand, no lexical relation assumed to hold between serial verbs prior to D-Structure, and dual-headedness is expressed directly in the syntax. This is observed in the formally aberrant X' configuration in (10b), where V is permitted a complement that is non-maximal and where the non-maximal item is in fact a projection of V. As a result, the indicated V' contains two competing candidates for head — [_V naki] and [_{V'} kiri]. Baker proposes that *both* elements count as heads for V', and that both directly theta-mark *Amba*, "sharing" the direct object. Syntactic multi-headedness, which permits object-sharing, is the distinctive property of serial constructions on Baker's view.

Thematically, Baker's proposal has simple analogues in other constructions. The basic properties attributed by Baker to serial forms like (10b) are quite similar to those assumed by Williams (1983) for secondary predication constructions like (10c). In both cases, the verb (*naki / strike*) and an additional predicate (*kiri / dead*) directly theta-mark (and hence "share") an object (*Amba / Horace*):



Baker argues that the interaction between his structure, the Projection Principle (Chomsky (1981,1986)) and accepted views about Case assignment sharply constrains the class of predicates that can appear in the serial construction. For example, assuming that roles like agent are only assigned externally to the verb phrase, it follows that in structures like (10b), the direct object must bear a non-agent role with respect to both the first and second verb. This means that, quite generally in serial constructions in which the initial verb is transitive and the second intransitive, the latter must be unaccusative and not unergative.

It is important to note that on Baker's analysis, unlike Lefebvre's, the notion of a complex predicate is entirely a structural one. Although the structure is dual-headed, and although both heads contribute thematic roles, they do not "compose" or "conflate" in any way to do so. It also appears that under Baker's account only *the way in which theta-roles are assigned* — internally vs. externally, and in what order — will be relevant to the determination of possible serial structures, and that the actual identity of the roles — agent, theme, goal, etc. — will be irrelevant insofar as it does not bear on this issue. This contrasts with Lefebvre's account, in which specific lexico-semantic information is appealed to (and potentially available) to condition conflation and hence serialization. In view of this, Baker's proposal appears to yield a more constrained approach to verb serialization, appealing to no extra processes (such as conflation) and little specific lexical information in accounting for the basic phenomenon. It is of course a separate question as to whether such an account is empirically adequate for the range of serializations.

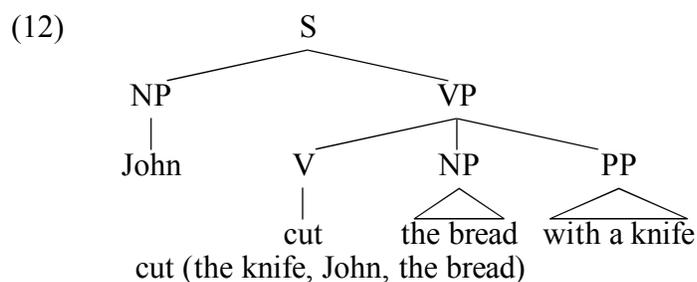
1.1.4. Li. Li presents an analysis of serialization that is, in a certain sense, more complex than those offered by Hale, Lefebvre or Baker. But it is also one treating data not discussed by the others. Like Lefebvre, Li appeals to an account involving lexical formation of complex predicates from semantic-conceptual forms. However on Li's view, the formation of serial vs. nonserial constructions crucially depends on behavior of the certain "prelexical" event

relations (PRs), and on how they are lexicalized vis-a-vis verbal event-denoting concepts⁷.

To illustrate, Li considers verbs expressing the notion of “cutting”, to involve a conceptual form as in (11a), in which a prelexical predicate relating two events (MEANS) embeds another predicate (CUT) relating two individuals:

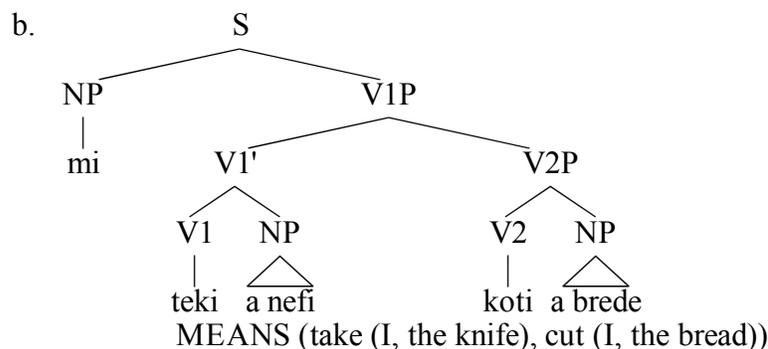
- (11) a. MEANS (e1, CUT (x1, x2))
 b. cut (e1, x1, x2) (“cut 2”)
 c. cut (x1, x2) (“cut 1”)

On Li’s view, the two predicates may be lexicalized together such that the event argument of MEANS is passed along to the resultant form (11b). This yields a nonserial verb *cut* taking two individual arguments and an event argument; the first two correspond to cutter and cuttee, whereas the third corresponds to an (optional) instrument argument, expressed in English via a *with*-PP:



Alternatively (11a) may be lexicalized in such a way that only the arguments of CUT are passed to the resulting form (11c). Assuming that MEANS is still present in “virtual” form, and given that its event argument “e1” must be satisfied, another event-denoting expression is required. This requirement, Li assumes, must be met by the presence of another verb such as “take”. Hence we derive serial constructions such as (13a) from Sranan, to which Li assigns the structure in (13b):

- (13) a. *Mi e teki a nefi koti a brede.*
 I ASP take the knife cut the bread
 ‘I cut the bread with the knife.’



In (13b) V1' and V2P provide the two event arguments of *means*, which is virtually present but not syntactically expressed. With V2P adjoined to V1', both the former and the latter are able to assign a thematic role to the subject noun phrase *mi*; the latter thus engages in both taking and cutting.

Li's analysis evidently resembles that of Lefebvre in using "merged" or "conflated" conceptual representations. It differs importantly from the latter, however, in its appeal to "prelexical representations" and in allowing substantial aspects of prelexical structure to remain "virtual" while still exercising syntactic effects. Thus while Lefebvre's view involves a merging of lexical argument structures whose various parts are realized discontinuously in the syntax, for Li merger occurs "prior" to the point at which lexical argument structures are formed, and serialization involves realizing only some part of the predicate structure. The remainder (Li's PRs) is left thematically active, but "invisible".

Li makes the interesting suggestion that virtual predicates like MEANS, CAUSE, etc. are iconic in the ordering of their event arguments; this requires, for example, that the temporal precedence of "taking" over "cutting" in (13a) be reflected in the linear ordering of V1' before V2P. Such iconicity has an important interaction with direction of headedness in his account. In VO languages, Li observes, iconicity and headedness will make compatible demands on structure; thus in serial causatives such as (14) (from Yoruba), the ordering of the predicates *ti* and *subu* satisfies iconicity ("pushing" notionally precedes "falling"), and it also satisfies X' theory (the language is VO):

- (14) *Femi ti Akin subu.*
 Femi push Akin fall
 'Femi pushed Akin down.'

In OV languages, however, iconicity and X' theory impose conflicting requirements, since the latter will require the (main) causal predicate to be ordered finally whereas the latter will require it to be ordered initially. Li takes this conflict to explain the apparent comparative rarity of serialization in verb-final languages⁸.

1.1.5. Givón. The fifth contributor, Givón, is concerned with a central issue that has arisen above a number of times: the sense in which the multiple verbs of serial verb constructions jointly make up a single event. But whereas the other authors approach this issue structurally, using syntactic diagnostics like extractability, or the distribution of inflection and agreement, Givón deploys very different methods involving elicitation of serial and non-serial constructions in discourse. The chief theoretical assumption underlying Givón's analysis is an iconicity principle relating sentence production to conceptual organization. This "Distance Principle" (DP) is given in (15):

- (15) The temporal-physical distance between chunks of linguistically-coded information correlates directly with the conceptual distance between them.

The specific form of DP that Givón is interested in involves the conceptual relatedness of events as reflected in the pause-separation of the units expressing them in discourse. The idea here is that pause separations dividing finite clauses (single event domains) in nonserial languages should be comparable to those separating verb sequences in serializing languages on the assumption that the latter define a single event.

The methodology employed by Givón involved presenting speakers of serializing and nonserializing languages with a short movie which they were asked to describe orally. Pause measurements are made on the recorded discourse, and probabilities were computed for pauses at various points in the clause. Tok Pisin (Neo-Melanesian Pidgin) together with two native Papuan languages (Kalam and Tairora) formed the data of the study. In brief, the results were that pause frequencies in serial constructions (i.e., those located between serial verbs) were very significantly lower than those associated with finite clause breaks; indeed the pause frequencies for serial verbs were no greater than, or lower than mid-clause pauses associated with lexical words. As one interpretation of the latter result, Givón suggests that serial verb stems are in fact co-lexicalized or grammaticalized — i.e., they have become part of a larger word.

1.2 *Serialization Parameters*

The issue of what factors govern the occurrence of serialization cross-linguistically is addressed explicitly by some of the contributors, and for others the general position is inferable.

Lefebvre, for example, defends an analysis in which serialization is a fundamentally lexical phenomenon, tied to the possibility of verb conflation with a small closed class of verbs such as ‘take’. In such an account, serialization parameters are presumably a matter of what general operations (like conflation) are available, what the constraints on them are, and how broadly they apply in a language which contains them. No explicit proposals of this kind are made by Lefebvre, and they clearly must wait upon further development of the theory of Lexical Conceptual Structure assumed by Lefebvre as the format for conflation operations.

Similar remarks apply to the analysis put forward by Li, in which serialization arises according to whether and how his Pre-lexical relations are incorporated into verb entries. Here again, an account of cross-linguistic variation would require a fuller theory of Pre-lexical relations and their lexical realization. One notable aspect of Li’s proposals is that he does not take

serialization to be a parameter in the current sense. In his discussion of Sranan, Li notes the presence of both serial and non-serial versions of instrumental constructions, and admits the possibility of alternate lexicalizations in the same language. The upshot is that for Li serialization is not a property characterizing languages as a whole, but rather a more piecemeal fact about the presence of certain lexical items with specific argument frames.

Baker departs sharply from both of the proposals above. For him, unlike Li, serialization is properly parametric phenomenon: serial languages are characterized by a specific dimension of difference. Furthermore, unlike both Lefebvre and Li, Baker takes the serialization parameter to be syntactic and not lexical. On Baker's view, as we have seen, serial languages result when a specific choice in X-bar theory is selected, viz.: (16), which allows an 1-bar projection to dominate a 1-bar projection, without adjunction:

$$(16) X' \rightarrow X \ YP \ X'$$

This allows a syntactic projection to have two heads.

The proposal in (16) evidently involves separating serial and nonserial languages in a very "deep" way, and has strong empirical and conceptual consequences. Note that without specific stipulations, (16) leads us to expect serial languages to show serialization in all categories, and not simply in V; that is, we predict serial nouns, serial determiners, serial prepositions, serial inflectional elements, and so on. To my knowledge, this result is not attested. Furthermore, since nonserial complements are available even in serial languages (recall Li's point about Sranan), it follows that alongside (16) we will have to also admit (17), where Z is potentially identical to X:

$$(17) X' \rightarrow X \ YP \ ZP$$

This will require learners to be able to distinguish secondary predication with a verbal secondary secondary predicate (17) from "true serialization" in which the structure is multi-headed (16). Finally, the profound difference separating serial and nonserial languages would lead us to expect profound historical discontinuity between them, with massive reorganization of the grammar. To my knowledge this is also unattested⁹.

The remaining contributor, Givón, makes no specific proposals as to what conditions serialization cross-linguistically; he does suggest, however, that his results show the basic parameters of difference to be grammatical and not cognitive. That is, the results with pause frequencies show no differences in the way that event relations are viewed cognitively, but only in the way in which these relations are "packaged by the grammar", to use his terms.

2 Serialization and Secondary Predication

Nearly all the contributions discussed above would appear to view verb serialization as something basically foreign to English, and without any clear analogies in its grammar. As it turns out, however, there are a number of interesting structural and semantic similarities between serial verb constructions and familiar English *secondary predication structures*. And these suggest some possible alternative approaches to the phenomenon.

2.1 Interpretation

We observed earlier in connection with (1-3) that serial constructions display conjunctive, modificatory, and causative readings. This kind of variation is also seen with secondary predicates. For example, *subject-oriented depictive predicates* like those in (18) display readings suggestive of conjunction; (18a), for instance, is roughly synonymous with the sentence ‘John left the party and he was angry’, and similarly (18c) is largely synonymous with ‘Alice drove home and she was happy’:

- (18) a. John left the party [angry]
 b. Max arrived [ready for trouble]
 c. Alice drove home [happy]

Object-oriented depictive predicates like those in (19) also show analogies to adverbial readings; for example, the bracketed item in (19a) can be understood equivalently to the temporal adverbial ‘when it was raw’; similarly for the bracketed string in (19b) and the temporal ‘when it was freshly painted’:

- (19) a. Jude ate the fish [raw]
 b. Felix bought the door [freshly painted]
 c. Edith drank her tea [cooled with ice]

Furthermore, *resultative secondary predicates* like (20a-c) are quite similar to causative serial verb constructions, and to adverbial adjuncts involving ‘until’ or expressing purpose. Compare (20a), for instance, with ‘Carol rubbed her finger until it was raw’, and compare (20c) with ‘John called us to come in’:

- (20) a. Carol rubbed her finger [raw]
 b. Black Flag kills bugs [dead]
 c. Lloyd called us [in]
 d. Oscar lured Eunice [away]

Much the same range in interpretation is thus found in the two construction types.

The semantics of serial and secondary predication structures are also analogous in aspects discussed recently by Awoyale (1987). In considering a variety of serial structures, Awoyale suggests that the semantic relations that hold between serial verbs can actually be reduced to just two: an “*inclusive*” relation and an “*exclusive*” one. In brief, the inclusion relation “...exists between two or more predicates when the action of one is taking place inside the domain of the other...the outer predicate delimits the action of the inner verb...” (p. 13). On the other hand, with the exclusion relation “the actions of the verbs are not included one inside another, but rather are separate events.” (p.17).

Awoyale illustrates these notions pictorially with the Yoruba examples in (21) and (22): verbs standing in the inclusion relation fall within the same circle; those standing in the exclusion do not. Thus in (21a), under the gloss given, we understand Aje’s swimming to have been bounded or delimited by his going/leaving; i.e., the swimming proceeded until Aje was gone. Similarly in (21b), Aje’s drinking of alcohol was bounded by his state of sobriety: the drinking proceeded until Aje was intoxicated:

- (21) a. Aje

wẹ	lọ
----	----

 Aje swam go/away
 ‘Aje swam away.’
- b. Aje

mu	ọtí	yó
----	-----	----

 Aje drank alcohol be full
 ‘Aje became intoxicated.’

By contrast, (22a) gives (21a) on its exclusive reading. Here the going/ leaving is not understood to bound Aje’s swimming; rather the two events bear a simple (iconic) sequential relation to each other: Aje swims and then he goes. Similarly, in (22b) there is no boundedness or delimitedness between the denoted events; Aje goes and does so to run¹⁰:

- (22) a. Aje

wẹ

lọ

 Aje swam go/away
 ‘Aje swam before leaving.’
- b. Aje

lọ

sára

 Aje go run
 ‘Aje went to run’
- c. Aje

jókòò

mu’tín

j≥e’un

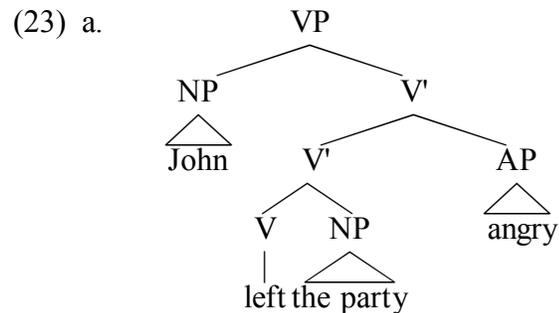
 Aje sat-down drank alcohol ate
 ‘Aje sat, and drank, and ate.’

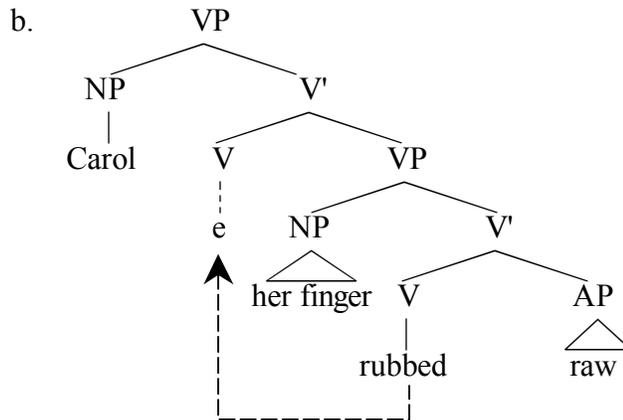
This central, two-fold distinction that Awoyale finds in serialization constructions is also observed with secondary predications, as discussed in recent work by Tenny (1987). Tenny points out that secondary predicates can

be divided into essentially two kinds: *delimiting* and *nondelimiting*. A delimiting predicate which the action of the main predicate, essentially telling you when it terminates. Resultative secondary predicates as in (20a-d) are thus delimiting in that the action continues (rubbing, calling, etc.) until the object attains the state specified by the predicate (the finger is raw, we come in, etc.). Non-delimiting predicates do not bound the action in this way, and are exemplified by depictive secondary predicates like those in (18-19). In (19a), for instance, the fish remains raw during the course of eating, and the extent of the eating is in no way determined by rawness of the fish. Evidently, the notion of an inclusively-related serial verb and a delimiting secondary predicate are quite similar. Likewise for the notion of an exclusively related serial verb and a non-delimiting predicate. Fundamentally the same aspectual distinction thus appears to characterize both construction types.

2.2 Structure

Recent views of the structure of secondary predications also appear to converge with the structures for serializations proposed by some contributors in this volume. In Larson (forthcoming) it is suggested that English secondary predicates are uniformly daughters of V', occurring in either of the two configurations shown in (23a,b). The former is the structure of subject-oriented depictive predicates. The latter is the structure of object-oriented depictive predicates ((23b) on the reading: 'Carol rubbed her finger *while* it was raw'), and of causative/resultative predicates ((23b) on the reading: 'Carol rubbed her finger *until* it was raw')¹¹:

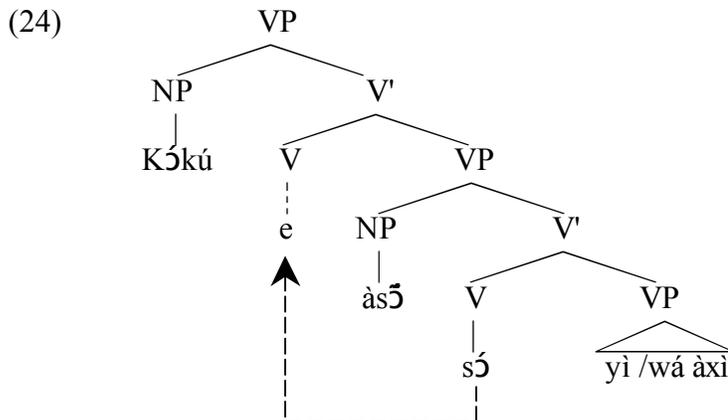




The intuitive idea here is that when NP receives a thematic role from a primary and secondary predicate, the two must appear as sisters and form a constituent that is itself sister to NP. Thus in (23a), *John* receives a thematic role from the primary V' *leave the party* and from the secondary AP *angry*, hence the two appear as sisters under a V' that is itself sister to NP. Likewise in (23b), *her finger* receives a theta-role from *rub* and a theta-role from *raw*, hence *rub* and *raw* appear as sisters under a V' that is predicated of *her finger*.

The analyses of Lefebvre and Baker can be recast directly in terms of structures like (23b). For example, a typical Fon *take* serial example like (7a) (repeated below) receives the structure in (24):

- (7) a. Kókú sɔ́ àsɛ́ yì / wá àxì.
 Koku take crab go/ come market
 'Koku brought (direction away / towards the speaker) the crab to the market.'



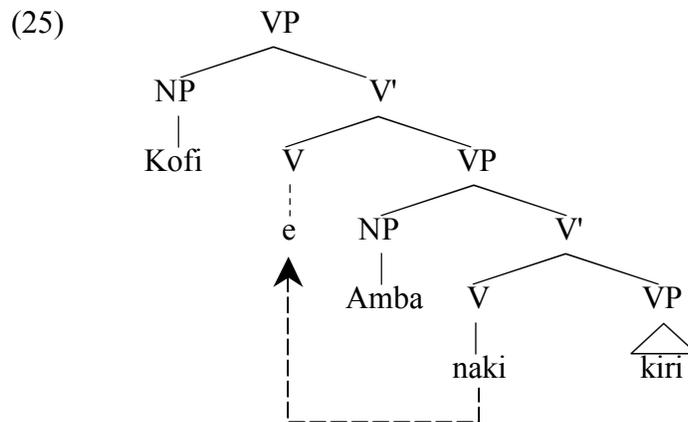
Here, much as in Lefebvre's own account, *sɛ́-yì/wá àxì* forms a complex predicate meaning 'cause to go away-from / toward the market'. This predicate selects the object *àsɛ́*, 'the crab', to form a VP predicate meaning 'cause crab to go away-from / toward the market'. The latter is then predicated of the

subject NP *Kɛ́kú*. The observed surface form results by the raising of a verbal head, just as in (23b) above (see Larson (forthcoming) for discussion).

This structure appears largely compatible with Lefebvre’s conflation proposal. Recall that on her view *sɪ*, ‘take’, selects an agentive subject and an object understood as undergoing a change of location. Recall further that *yì/wá àxì*, ‘away-from / toward the market’ selects a single argument understood as undergoing a change of location. The two sister predicates in (24) can thus be viewed as assigning a thematic role jointly to the object *àsĔ*, ‘crab’, much as the verb and AP in the object-oriented secondary predication structure (23b). Note moreover that (24) has a conceptual advantage over Lefebvre’s own (7c), in that the former reflects “thematic constituency relations” in D-structure — *sɪ-yì/wá àxì* forms an underlying phrase — whereas the latter does not.

A similar recasting of Baker’s proposal is possible. Thus Baker’s (10a) (repeated below) can be reanalyzed as having the VP in (25), where *naki kiri* form a complex predicate strongly analogous to ‘strike’ ‘dead’ in English causative secondary predication. Here again, *naki* and *kiri* are understood as jointly predicated of the NP sister of V’ — *Amba*:

- (10) a. *Kofi naki Amba kiri.*
 Kofi hit Amba kill
 ‘Kofi struck Amba dead.’

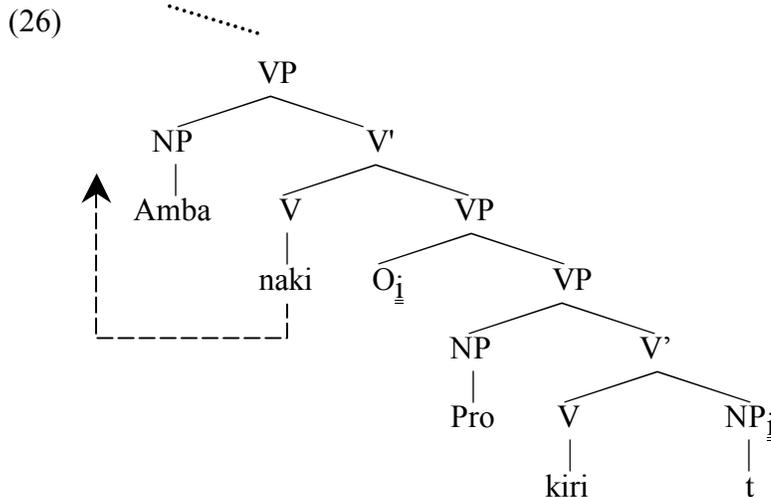


This proposal differs significantly from Baker’s in that, unlike (10b), (25) involves no dual-headedness, and hence no departure from standard X-bar theoretic assumptions. In the complex predicate *naki kiri*, *naki* is exclusively the head verb, and *kiri* is a full XP complement.

This proposal also differs from Baker’s and Lefebvre’s in its view of the relation between “event structure” and headedness. Recall that for these authors, the multi-headedness a serial verb construction is taken to correspond to the fact that the verbs in question express a single event. On the view sketched above, by contrast, the single-event status of serializations (at least

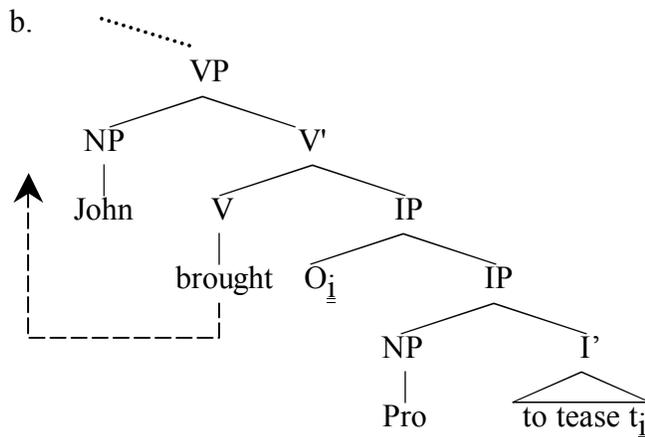
with causatives) can be attributed to the secondary predicate's standing in a delimiting, or "inclusive" relation to the event expressed by the main verb. Thus just as the adjectival secondary predicate *dead* delimits the action of swatting in 'John swatted the fly dead', so the verbal secondary predicate *kiri* delimits the action of hitting in *Kofi naki Amba kiri*. In both cases a single event is involved, but this no more results in (or requires) syntactic dual-headedness in the latter case than it does in the former.

The claim that *kiri* is a full VP in (25) raises a natural question as to its internal structure. Although I cannot defend the proposal in detail here, (26), based on proposals by Carstens (1988), represents one plausible answer:



Here [_{VP} *kiri*] heads a maximal projection with a specifier (Pro) corresponding to the subject of 'kill' and an object empty operator adjoined to the predicate. As discussed in Larson (forthcoming), this situation is analogous to English predications of purpose involving objects:

(27) a. Mary [_{VP} brought John to tease]



In both cases the object NP identifies the range of the empty operator, and hence ‘being killed’ and ‘being teased’ are understood as holding of *Amba* and *John*, respectively. Furthermore, both constructions involve some form of empty category (here labeled simply as ‘Pro’) that is understood as bound or linked to the subject NP (*Kofi* and *Mary*, respectively).

2.3 *The Serialization Parameter Revisited*

The structural and semantic analogies observed above suggest that verb serialization might actually be a form of secondary predication similar to what is found in English. This in turn suggests an interesting view of what the difference between serial and nonserial languages really amounts to. Notice first that while secondary predicates come in a variety of categories in English, one predicate category is conspicuously missing: VP. Simple verb phrases never serve as secondary predicates, no matter what their semantics:

- (28) a. *John left the party [hate martinis]
 b. *Alice drove the car [drink wine]
 c. *Jude caught the fish [swim in river]
 d. *Lloyd called us [come in]
 e. *Edith drove her car [go]

The situation in English is thus as in (29):

$$(29) \left[\underset{V}{V}(\text{NP}) \left\{ \begin{array}{l} \text{NP / PP / AP} \\ *VP \end{array} \right\} \right]$$

This pattern contrasts with that in serial languages in two important ways: first, in serializing languages, notions typically expressed by AP or PP are quite pervasively grammaticalized with intransitive verbs, hence these minor categories are largely assimilated to the category of VP. Second, NP secondary predicate constructions analogous to ‘John arrived a perfect wreck’ are (to my knowledge) entirely absent. The situation in serial languages can thus be put (somewhat tendentiously) as in (30), where ‘PP’ and ‘AP’ are understood as essentially a subcase of VP:

$$(30) \left[\underset{V}{V}(\text{NP}) \left\{ \begin{array}{l} \text{VP / PP / AP} \\ *NP \end{array} \right\} \right]$$

The point of contrast here seems clear-cut: assuming serial constructions to be a form of secondary predication, the chief difference between a “serializing language” like Yoruba and a “nonserializing language” like English reduces to a matter of what secondary predicate categories are allowed. More precisely, employing standard feature matrices for the lexical categories, serializing languages have secondary predicates that are either [-N] or [+V] (31a), whereas

difference in the availability of particular lexicalization rules (as for Lefebvre and Li), but instead a rather “shallow” difference in how the inflectional requirements on secondary predicates are to be met. Such a parameter could presumably be set on the basis of simple sentences involving agreement and inflection. Whatever the prospects for these specific views, it is worth emphasizing, in conclusion, that the general connection between serialization and secondary predication seems well worth pursuing. The correlations of form and interpretation noted above appear substantial, and strongly suggest an approach attempting to relate the two construction types.

ABBREVIATIONS

AP	adjectival phrase	P	phrase
I	inflection	PAST	past
INFL	inflection	PP	prepositional phrase
IP	inflectional phrase	Pro	pronoun
LCS	lexical conceptual structure	S	sentence
N	noun	SOV	subject object verb
NEG	negation	V	verb
NP	noun phrase	VO	verb object
OBV	obviative	VP	verbal phrase
OV	object verb	XP	maximal projection

NOTES

* This paper developed out of commentary presented at the Second Niger-Congo Syntax and Semantics Workshop. I am grateful to Claire Lefebvre, the Workshop’s organizer, for inviting me to participate, and to the members of the Workshop for stimulating and enjoyable discussion.

¹. For discussion of the coordination analysis of serial constructions see Schachter (1974a, 1974b), Bamgbose (1974), Collins (1987) and Lord (1974).

². For discussion of the modifier analysis of serial constructions see Stahlke (1974) and Schachter (1974).

³. For discussion of the complementation analysis of serial constructions see Stahlke (1970).

⁴. Extraction in other serializing languages raises a similar problem. In brief, while extraction is generally permissible from “true serializations”, in which the verbs designate a single event, extraction with “chaining” constructions is generally illicit. This difference is often attributed to the fact that the latter are coordinate, and hence fall under the coordinate structures

constraint, whereas the latter are non-coordinate and so allow extraction (see Sebba (1987) for recent discussion). Under a proposal that collapses chaining and serialization structurally, this explanation is lost.

⁵. See Hale and Keyser (1987) for discussion of Lexical Conceptual Structures.

⁶. The X-bar theory in (9), embodying a “Single Complement Hypothesis” is proposed in Larson (1988).

⁷. Muysken (1987) makes the similar proposal that serial languages are distinguished from nonserial languages in allowing only “atomic” predicates to be lexicalized.

⁸. Givón (this volume) discusses serializing languages from Papua that are SOV. He observes, however, that in these languages the serial clauses uniformly *precede* the main/finite verb, hence it is unclear to what extent they pose a problem for Li’s generalization.

⁹. See Givón (1971) and Lord (1973, 1982) for discussion of the historical development of serialization.

¹⁰. Awoyale (1987) provides very few glosses for his examples illustrating exclusion; that given in (22c) reflects his statement in the text that such sentences are to be understood as either a parallel/simultaneous set of events or a temporal/logical sequence of events. (see pp. 17–18)

¹¹. The VP structures in (23–25) are based on proposals in Larson (1988, forthcoming). The basic idea underlying them is that subjects and complements are all initially structured in the VP in subject-predicate form. The structural requirements on doing so (in particular, the requirement that maximal projections contain at most a single specifier and a single complement) forces the generation of empty head positions that are subsequently occupied by verb raising. The VP structures in (23–25) are all to be understood as embedded under functional category projections (inflectional elements); we ignore syntax above VP here for simplicity.

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