

Take Serial Verb Constructions in Fon*

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0 Introduction

The aim of this paper is to provide an account of Take serial verb constructions through a detailed analysis of the properties of verbs which may combine in this construction. My proposal is that serial verbs are derived complex predicates which are formed prior to D-Structure by means of operations on the Lexical Conceptual Structure (LCS) of verbs (using the terminology of Hale and Keyser (1987)). More precisely, serialization consists in the association of the LCSs of two verbs yielding a derived Lexical Conceptual Structure. This proposal is in line with the avenues of research on serial verbs explored in Déchaine (1987, 1988), Lefebvre (1986, 1987) and Déchaine and Lefebvre (1986), which seek to characterize the lexical properties of verbs participating in serialization.

My proposal departs from traditional accounts of serial constructions in three basic ways. First, while previous analyses constitute attempts to account for the presence of serialization in the syntactic component of the grammar, I propose that serialization is basically lexical. I show that Take serial constructions analyzed in this paper are projected into the syntax from the lexicon¹. Second, while it is generally assumed that serial constructions present themselves as a succession of VPs in the syntax, I will propose an analysis in which serial verbs project bi-headed VPs (involving two V positions) in the syntax. Third, while it is generally believed that serialization is an unconstrained phenomenon, I show that serialization is lexically constrained with respect to both the classes of verbs that may participate in serialization,

and in the respective order in which they may occur at S-Structure. I will show that verbs which may combine to form complex predicates share specific semantic properties. When these properties are identified, they allow us to predict which verbs will be eligible to participate in Take serial constructions. The methodology, then, will consist in determining what the Lexical Conceptual Structure representations of verbs which participate in serialization have in common.

The theoretical framework used for the analysis is that developed by the participants to the Lexicon Project at MIT (e.g. Hale and Keyser, 1987, Levin and Rapaport, 1986, Guerssel, 1987, among others). This framework proves to be most useful to characterize in a precise way the verbs under study. As will become clear throughout the analysis, the accurate description of the semantic properties of verbs required for a precise account of serial constructions, cannot rely only on a list of Theta-roles assigned by individual verbs or on the number of arguments a given verb may take. The required information must include the following: a. the concept named by the verb, b. the participants in the action corresponding to the Theta-roles assigned to grammatical functions, and the relationship between the participants and the verb given by the syntactic representation of the lexical entry. I will show that in the syntax, serial verbs project a structure similar to the structure proposed by Larson (1988) for two place predicates in English. Hence, serial verb constructions constitute an independent set of data which supports Larson's proposal. Throughout the paper, I will assume the principles and subtheories provided in the Government and Binding general framework as they are defined in Chomsky (1981, 1986) and related work.

The data base used for the analysis is drawn from Fon, a language of the Kwa family spoken in Benin. I make the claim, however, that the analysis provided for Fon should account for similar constructions in other languages of the world. Moreover, I suggest that serial constructions reveal in a transparent way, universal properties of predicates, which in other languages such as English or French, are more obscure.

The paper is organized in the following way. Section 1 contains an overview of the properties of Take serial constructions of Fon. It is shown that previous analyses proposed to account for serial constructions cannot account for the lexical and syntactic properties of Take serial constructions under analysis. In section 2, I introduce the theoretical framework used for the analysis along with an introduction to types of predicates in Fon. Section 3

presents an account of Take serial constructions. Section 4 is a discussion of some predictions made by the analysis presented in this paper.

1 Overview of Take serial verb constructions in Fon

1.1 General characteristics of Take serial constructions

The sentences in (1) exemplify the Take serial verb constructions as they occur in Fon.

- (1) a. *Kòkú sɔ̀ à̀sɔ̀ yí/wá à̀xì.*
 Koku take crab go/come market
 'Koku brought (direction away/towards the speaker) the crab to the market.'
- b. *Kòkú sɔ̀ à̀sɔ̀ dɔ̀ távò-jí.*
 Koku take crab put table-on
 'Koku put the crab on the table.'
- c. *Kòkú sɔ̀ à̀sɔ̀ ná Àsibá.*
 Koku take crab give Asiba
 'Koku gave the crab to Asiba.'
- d. *Kòkú sɔ̀ à̀tí hɔ̀ Àsibá.*
 Koku take stick hit Asiba
 'Koku hit Asiba with a stick.'
- e. *Kòkú zé fɛ́sɛ hɛ́lé /kplɔ̀ Àsibá.*
 Koku take French (be) study /learn Asiba
 'Koku explained/taught French to Asiba.'

As illustrated in (1), serial constructions are characterized by a succession of verbs (e.g. Take and Go) and one subject. The first verb of the construction is a Take verb (either *sɔ̀* or *zé*). The second verb of the construction is a verb selected from an open class (e.g. Go, Come, Hit, etc.). The verb from the open class cannot be any verb, however, as is illustrated by the agrammaticality of (2):

- (2) **Kòkú sɔ̀ à̀sɔ̀ yí Àsibá.*
 Koku take crab receive Asiba

In the examples above, the respective order of the verbs is not free: the Take verb always comes first and the verb from the open class always comes

second. Sentence (3b) in which this order is reversed is not equivalent in meaning to (3a) presenting the correct order of serialization.

- (3) a. *Kòkú sɔ̀ àsɔ̀ yì àxì.*
 Koku take crab go market
 'Koku brought the crab to the market.'
 b. *Kòkú yì àxì sɔ̀ àsɔ̀.*
 Koku go market take crab
 'Koku went to the market and took a crab.'

Both the Take verb and the verb from the open class may occur separately as independent verbs, hence they can occur as main verbs in a clause and they can be coordinated with another verb. This is exemplified below.

- (4) *Kòkú sɔ̀ àsɔ̀.*
 Koku take crab
 'Koku took a crab.'
 (5) *Kòkú yì àxì.*
 Koku go market
 'Koku went to the market.'
 (6) *Kòkú sɔ̀ àsɔ̀ bɔ̀ é yì àxì.*
 Koku take crab and he go market
 'Koku took the crab and he went to the market.'

The examples in (1) show that verbs in a series may be separated by thematic material: in the sentences of (1), the theme of the construction intervenes between the two verbs; this property distinguishes serial constructions from restructuring which requires thematic adjacency (Lefebvre and Muysken, 1988). Furthermore, this fact shows that serial verbs are not words and hence may not be derived through word formation rules. Nonetheless, the verbs in a series are interpreted together as a unique predicate; 'Take something + Go somewhere' is interpreted as 'Bring something somewhere'. This is compatible with the fact that in these constructions, there is only one expression of Tense, Aspect and Negation which have scope over the two verbs. Furthermore, the two verbs share the same subject. Hence the sentences of (1) constitute one proposition: a subject co-indexed with a predicate, in this case a complex predicate comprised of two verbs.

The general characteristics listed above raise a set of questions that will be addressed in this paper:

- (7) a. what are the characteristics of the verbs which may combine in this construction?
 b. how can one account for the respective order of the verbs in a series?
 c. if serialization is in fact a means of forming complex predicates, what is the operation which accounts for complex predicate formation and in what module of the grammar does it take place?

1.2 Syntactic characteristics of Take serial constructions

In nominalization contexts (e.g. progressive clauses and predicate cleft constructions), the verbs involved in Take serial constructions occur next to each other, unlike in tensed clauses. Compare (8) with (3a). This data suggests that both verbs are heads of a single predicate. (This data is taken from the dialect of Abomey).

- (8) *Kòkú dɔ̀ àsɔ̀ sɔ̀ yì àxì-mè wè.* PROGRESSIVE
 Koku at crab taking going market-in be
 'Koku is bringing a crab to the market.'
 (9) *Àsɔ̀ sɔ̀ yì àxì-mè wè Kòkú dɛ.* CLEFT
 Crab taking going market in be Koku do-it
 'It is bringing a crab to the market that Koku is doing.'

Individually, the two verbs involved in Take serial constructions do not form a constituent with their object. This is evidenced by the fact that neither the Take verb nor the verb from the open class can be clefted together with their object.

- (10) a. **Àsɔ̀ sɔ̀ wè, Kòkú (dɛ) yì àxì.*
 b. **Àxì yì wè, Kòkú sɔ̀ àsɔ̀ (dɛ).*

The object of both verbs can be extracted :

- (11) *Àxì_j wè, Kòkú sɔ̀ àsɔ̀ yì [e]_j.*
 Market be, Koku take crab go
 'It is to the market that Koku brought the crab.'
 (12) *Àsɔ̀_j wè, Kòkú sɔ̀ [e]_j yì àxì.*
 Crab be Koku take go market
 'It is the crab that Koku took to the market.'

Finally, in some cases, Take serial constructions exhibit clitic climbing phenomena. In (13), the clitic corresponding to the object of the second verb is in the domain of the first verb.

- (13) a. *Kòkú sɔ̀ àsɔ̀ ná è.*
 Koku take crab give her
 'Koku gave her a crab.'
- b. *Kòkú sɔ̀ è àsɔ̀ ná (è).*
 Koku take her crab give (her)
 'Koku gives her a crab.'

The analysis proposed to account for Take serial verb constructions will hence have to account for the following facts:

- (14) a. Both verbs head the construction.
 b. Neither of the verbs form a constituent with their object.
 c. Both arguments of the predicate may be extracted.
 d. There is clitic climbing phenomena.

1.3 Previous studies

Previous analyses of serialization constitute various attempts to account for the presence of serial verbs through the syntactic component of the grammar. These analyses can be regrouped around two major theses: the coordination (e.g. Stahlke, 1970) and subordination proposals (e.g. Christaller, 1875, Stewart, 1963, Bamgbose, 1974, Li and Thompson, 1974, Bickerton, 1984), and the series of VPs proposal (Schachter, 1974; Jansen et al, 1978). These proposals are extensively discussed from various points of view in Déchaine (1986), on the basis of Haitian data, and in Sebba (1987) on the basis of Sranan data. In light of the basic characteristics of the Fon Take serial verbs discussed above, I shall briefly discuss these analyses from an empirical point of view.

The coordination subordination proposal is best illustrated by Williams' (1971) analysis which combines both the coordination and the subordination hypothesis. Williams proposes a transformational analysis of serial constructions in which the second verb and its object are part of a clause which is coordinate or subordinate to the higher clause headed by the first verb. Deletion under identity accounts for absence of coordinate / subordinate

markers, subject NP and Tense in the second clause. His proposal is schematically represented in (15).

- (15) NP Tense [V1 NP] COORD/SUB NP Tense [V2 NP]
 ↓ ↓ ↓
 Ø Ø Ø

The general properties of conjoined / subordinate adjunct clauses in Fon are listed in (16):

- (16) a. Any two verbs in any respective order can head the two clauses;
 b. A lexical subject may be expressed in each clause; each clause may contain independent Tense / Aspect / Negative markers ; hence, each clause constitutes a separate proposition;
 c. With respect to extraction, each clause constitutes an island.

The properties are quite distinct from those of Take serial constructions described in sections 1.1 and 1.2. First, while coordinate / subordinate clauses can involve any two verbs (hence two verbs selected from an open class of verbs), serial constructions cannot. As mentioned previously, serial constructions involve the selection of a verb from an open set and the selection of a verb from a closed set. Moreover, as will be demonstrated in this paper, the verbs from the open set constitute a specific class of verbs characterizable by specific semantic properties. It follows that while coordination / subordination is not lexically restricted, serialization is ; hence, serialization cannot be derived in the syntax simply through the reduction of coordinate / subordinate clauses, if the syntactic operations are to remain free from lexical specifications. Moreover, while the respective order of verbs is irrelevant in coordinate / subordinate constructions, it is fixed in serial constructions. Second in coordinate / subordinate constructions, the two verbs may bear different Tense / Aspect / Negation markers; they are interpreted as two separate predicates, and the clause involves two propositions. This follows from the fact that each verb heads a separate VP. In serial constructions, the two verbs are interpreted as a single predicate, there can be only one Tense / Aspect / Negation marker; the clause involves only one proposition. Third, while coordinate / subordinate clauses remain islands for extraction, serial constructions do not. As has been shown in section 1.2, it is always possible to extract the objects of both verbs in a series. In contrast, in coordinate / subordinate clauses, each verb forms a constituent with its object.

On the basis of these facts, I conclude that the coordination / subordination analysis of serial verbs is not supported by the Fon data, since it does not account for the lexical nor for the syntactic properties of Take serial constructions.

The other major proposal is that serialization consists in a series of base generated VPs. Schachter (1974) proposes a series of two independent VPs as in (17). Jansen et al (1978) propose that the second VP in a series is selected by the first verb of the construction, as shown in (18). Given the type of base rules that these authors use, their proposals account in a straightforward way for the fact that in serial constructions there is only one subject, one Tense / Aspect/Negation marker.

(17) $S \rightarrow NP VP_1 VP_2$ (Schachter, 1974)

(18) $VP_1 \rightarrow V_1 NP VP_2$ (Jansen et al, 1978)

These proposals, however, do not account for the extraction facts of Take serial constructions in Fon described in section 1.2. Note also that given the Projection Principle (Chomsky, 1981), we expect the thematic grids of these two verbs to be expressed in the syntax. The proposals in (17) and (18) do not explain why there are fewer arguments in serial constructions than when the two verbs are independent predicates.

From this discussion, I conclude that serialization cannot be accounted for along the lines of the coordination/subordination analysis nor along the lines of the successive VP analysis. Furthermore, the treatment of serialization as a purely syntactic fact fails to account for the lexical dimensions of serialization.

I now turn to the discussion of my own proposal according to which serialization is primarily an operation taking place in the lexical component of the grammar.

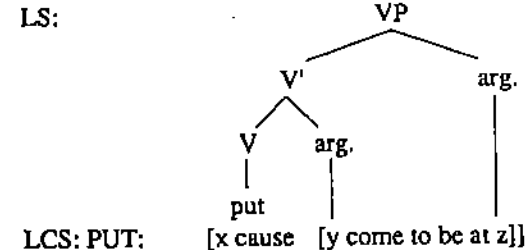
2 Theoretical framework

2.1 Lexical Conceptual Structures

With Hale and Laughren (1983) and Hale and Keyser (1987), I will assume that the Predicate Argument Structure (PAS) consists in a Lexical Conceptual Structure (LCS) and a Lexical Structure (LS). The LCS "is a representation of the concept named by the verb, and the "participants" in the

action, represented by "variables", corresponding to the TH-roles assigned to grammatical functions." (p.5). The LCS of the verb PUT (along the lines of Hale and Laughren, 1983) given in (19), illustrates this general definition. PUT describes an Agent (represented by the variable x in the LCS) causing a change in location of an entity represented by the variable y; the z variable indicates the Goal of this change of location. The LS consists in the syntactic representation which will be projected by the lexical entry. It is hence limited to the domain of internal arguments. The LS defines the notion of lexical projection and specifies obligatory thematic roles. The properties registered at this level persist in syntactic derivations in accordance with the Projection Principle of Chomsky (1981).

(19) PAS of 'put':



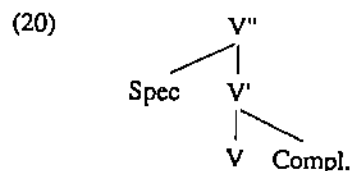
Thematic roles are assigned to grammatical functions by linking rules associating variables to syntactic positions as in (19). The variable y is associated with the position of the internal argument, the position sister to the verb. The external argument, corresponding to the x variable will be assigned to the subject position external to VP by predication. The variable z will be assigned to the argument associated with the appropriate preposition.

In discussing the formation of complex predicates, I will adopt this general conception of PAS. However, as a consequence of adopting the revised version of the X' Theory (Chomsky, 1986) and the Unique Complement Hypothesis of Larson (1988) (section 2.2.), I will depart from specifics of the framework with respect to the components defining the LS and with respect to the format of the linking rules (section 2.3).

2.2 The revised X' Theory and the Unique Complement Hypothesis

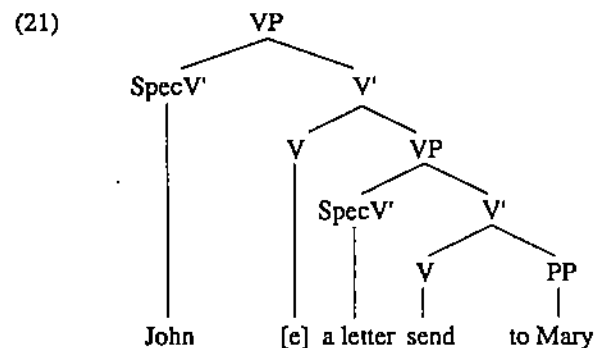
Following the revised version of the X' theory (Chomsky, 1986), I will assume that, like other heads, V projects a two level projection. With Larson

(1988), I will assume that just as there can be at most one subject per maximal projection, there can be at most one complement (Single Complement Hypothesis). Hence, the projection of V will be as in (20)².



The complement position is the position for the direct argument of the verb. The specifier position is filled by the argument which will normally be externalized in the syntax: the subject. That the specifier of VP is the position where subjects are base generated has been argued in recent analyses by Kuroda (1985), Speas and Fukui (1986), Kitagawa (1986), Sportiche (1986), among others. In this way, all arguments of a verb are base generated within its maximal projection (Larson, 1988), and are governed by the verb. The fact that both the Theme of change of location, as in 'John went somewhere' and the Agent in 'John sees Mary' are base generated in the specifier position accounts for their similar syntactic behavior. Both are assigned a theta role through predication (achieved by co-indexation of the specifier position with the V' node). Both will be externalized in the syntax (presumably to the specifier position of INFL).

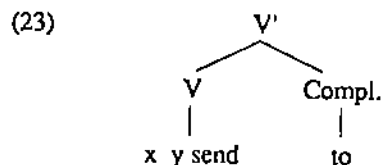
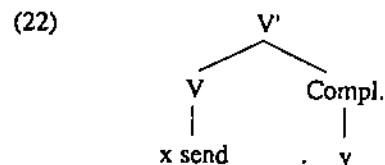
In (20) there is only one complement position available. Then, what will be the syntactic projection of two place predicates? Larson (1988) provides a means of accounting for the projection of two place predicates without departing from what he refers to as the Unique Complement Hypothesis. According to his proposal, the syntactic representation of two place predicates is as follows: the indirect object forms a constituent with the verb, a constituent which excludes the direct object. The direct object is base generated in the position of the Specifier of VP. The direct object and the V' are in a relationship of predication. The subject is base generated in the Spec of the higher VP node headed by an empty V node at D-Structure.



The arguments in specifier positions, hence the subject and the direct object, will be assigned a Theta-role under predication. Verb raising in the syntax from the lower V position to the higher V position will insure that the V position governed by INFL will be filled at some point in the derivation, and that the verb will be in the right position to assign Case to the direct object. Note that in Larson's structure the upper V position is empty at D-Structure; the consequence of that is that at D-Structure the upper predicate is defective since it does not have a lexical head. If we posit with Chomsky (1981: 91) "the existence of D-Structure as a representation of GF- θ ", Theta assignment has to take place at D-Structure. It is not clear from Larson's proposal how the Theta-role which is assigned to the x variable can reach the upper specifier position given that the upper V position is empty at D-Structure³. In section 4 I propose a solution to this problem. For the moment, I will assume without further discussion, that the projection of two place predicates is of type (21). As will be evident from data presented in section 3, Fon presents direct evidence which independently validates this proposal.

2.3 Revising the format of the Lexical Structure and of the Linking rules

The adoption of the V projection as in 2.2. requires some modifications of Hale's and associates' framework. First, the Unique Complement Hypothesis entails that only one argument of a LCS will be associated with the complement position in the LS. Hence, either a direct object NP or an indirect object PP will be associated with the complement position of the verb, as in (22) and (23) respectively.



Consequently, all other variables will not be linked in the Lexical Structure; in the syntax, the unlinked variables will be associated with specifier positions, as in (21) above, and will be assigned a Theta-role under predication. According to this proposal, V' (rather than V") defines the domain of internal arguments, and hence, it is the maximal projection of the Lexical Structure. In the syntax, the external arguments will be those arguments base generated outside of V', the maximal projection of the Lexical Structure, rather than the arguments generated outside of the V projection, as is proposed in Hale and associates. In (21), the external argument is base generated within the maximal syntactic projection of the predicate (thus satisfying the principle that all arguments of a verb must be base generated within its syntactic projection), but it is outside the maximal projection of the Lexical Structure.

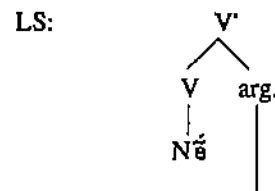
This view of the V projection forces a modification of the format of the linking rules proposed by Hale and associates. As shown in (23), the direct object is not always linked to the position which is sister to V'. This being the case, any variable may be linked to the one complement position in the Lexical Structure. In order to limit the type of variables which will be associated with this complement position, I propose to define the linking operation with respect to the Case feature of verbs (inspired by an idea developed somewhat differently by Massam, 1987).

Verbs are either [+/- Case]. [+ Case] can further be specified as [+/- Inherent] where [+ Inherent] requires a Case marker / preposition (e.g. Dative, Locative, Instrumental, etc. in Fon), and [- Inherent] is structural Case (Accusative in Fon). Following Lumsden (1987), I will assume that the Case associated with a given verb is registered in the lexical representation of verbs. I will further assume that the variable linked to the direct argument position of the verb in the LS must conform to the Case specification of verbs. The linking operation can thus be defined along the lines of (24):

- (24) Link a variable (to the direct argument position of the verb) which is compatible with the Case features of the verb.

Hence, for a verb specified for [+/- Inherent], the rule allows for the linking of either one of two variables. For example, the verb *Nǎ* 'borrow / loan' is such a verb. Either the Theme or the Goal will be allowed to be linked to the direct object position, as is illustrated in (25) and (26):

- (25) a. PAS of *Nǎ* 'borrow' :

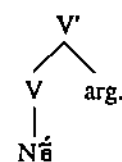


LCS: [y undergo change of location (possession) to z]

- b. *Kǎkú Nǎ ákwé.*

'Koku borrowed money.'

- (26) a. PAS of *Nǎ* 'Loan' :



[x cause [y undergo a change of location (possession) to z]]

- b. *Ásibá Nǎ ákwé nú Kǎkú.*

'Asiba loaned money to Koku.'

In (25) the linked variable is compatible with the Case feature of *Nǎ*, [-Inherent], and in (26) the linked variable is compatible with the Case feature of *Nǎ* [+Inherent] (e.g. Dative).

Since in their [- Case] use verbs like *yí* 'go', *wá* 'come' (see section 2.4.) do not assign Case to their Theme, there will be no argument position available in the LS of these verbs. Consequently, the variable corresponding to the Theme argument will remain unlinked. Hence, the Theme will have to be assigned to the specifier position of VP in the syntax and will have to be externalized in the syntax yielding (27).

(27) a. PAS of *yì/wá*: 'go'/'come':

LS:



LCS: [*y* undergo change of location ...]

b. *Kòkú yì/wá*.

Koku go/come

'Koku left/came.'

Assuming this analysis, we can dispense with the rule $\text{move } \alpha$ — applying in the lexicon — proposed by Hale and Keyser (1987). This rule amounts to deleting the argument node sister of V for unaccusative verbs. As a result of this operation, the *y* variable (Theme) remains unlinked to an argument position in the LS of a verb and as a consequence, it has to be externalized in the syntax. The definition of the linking rule in terms of the Case specification of verbs proposed in (24) dispenses with this operation.

2.4 Types of PAS in Fon

The framework proposed in 2.3. allows for a straightforward preliminary classification of types of predicates in Fon.

There are no true intransitives in Fon, in the sense that no verb exhibits only a monadic use. All verbs which have an intransitive use also have a transitive use. Consequently, there are no verbs which are exclusively specified for the feature [- Case]. Hence, verbs which exhibit these properties are identified as [+/- Case]. Moreover, in Fon, all verbs, in one of their uses, can assign a structural Case ([- Inherent] / Accusative); most verbs are also specified for a [+ Inherent] Case.

Verbs which have a [- Case] use have a PAS of type (28), containing one variable, which remains unlinked:

(28) PAS of [-Case] verbs:



[*y* VERB]

(28) describes the format of the PASs of verbs like *yì* 'go', and of some middles like *gbà* 'break' as in (29).

(29) a. *Kòkú yì*.

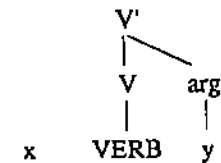
'Koku left.'

b. *Kòfú gbà*.

'The glass broke.'

The PASs of [+ Case, - Inherent] verbs are of type (30), where the variable corresponding to the direct object is linked to the complement position of the verb in the LS.

(30) PASs of [+ Case, - Inherent] verbs:



(30) describes the format of PASs of transitive verbs which fall into three categories: transitive verbs with an inherent object as in (31), transitive verbs with a non inherent object as in (32), and motion verbs taking a direct object as in (33).

(31) *Kòkú ðù nǎ*.

Koku eat something

'Koku ate.'

(32) *Kòkú sɔ̀ ǎsɔ̀*.

Koku take crab

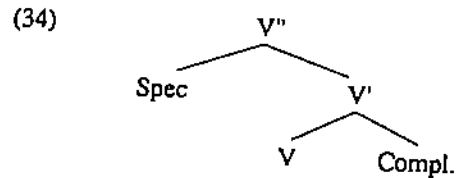
'Koku took a crab.'

(33) *Kòkú yì ǎxì*.

Koku go market

'Koku went to the market.'

In all three cases, the variable corresponding to the Theme of the verb will be linked to the direct argument position in the LS; the verb will assign its structural Case to the argument in this position. The variable corresponding to the subject will remain unlinked. In the syntax, these verbs will project a basic structure of type (34), where the subjects of (31)–(33) will be associated with the specifier position.



(30) also describes the format of PASs of middles containing two variables. These verbs are wide-spread in Fon as is exhibited in the examples below. (36) provides examples of Theme / Goal pairs of argument corresponding to the verbs in (35); (37) contains examples of Goal / Theme pairs of arguments for the same verbs (the latter examples would best translate as 'se' middle constructions in French). Finally, (38) contains pairs of Agent / Goal pairs. Note that the examples in (35) and (37) may be ambiguous.

(35) Agent/Theme (Goal implicit)

- a. *Kòkú n ǎ àkwé.*
'Koku gave money.'
- b. *Kòkú hélé flǎsé.*
'Koku teaches French.'
- c. *Kòkú kplí flǎsé.*
'Koku shows French.'

(36) Theme/Goal (Agent implicit)

- a. *Àkwé n ǎ Kòkú.*
'Money (was) passed-on-to Koku.'
- b. *Flǎsé hélé Kòkú.*
'French (is) taught to Koku.'
- c. *Flǎsé kplí Àsfbá.*
'French (is) shown to Asiba.'

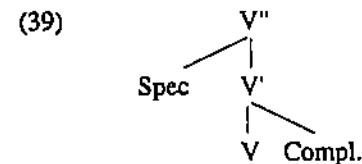
(37) Goal/Theme (Agent implicit)

- a. *Àsfbá n ǎ àkwé.*
'Asiba exchanges money.'
- b. *Àsfbá hélé flǎsé.*
'Asiba learned French.'
- c. *Àsfbá kplí flǎsé.*
'Asiba studied French.'

(38) Agent/Goal (Theme implicit)

- a. *Kòkú n ǎ Àsfbá.*
'Koku gave to Asiba.'
- b. *Kòkú hélé Àsfbá.*
'Koku teaches Asiba.'
- c. *Kòkú kplí Àsfbá.*
'Koku shows Asiba.'

The facts of (35)–(38) are derivable in a straightforward way from the framework elaborated in section 2.3. Consider a verb like *n ǎ* 'give'. This verb selects three Theta-roles: Agent, Theme, Goal. The variables corresponding to either the Theme or the Goal can be linked to the direct argument position, both being compatible with the Case feature of the verb. By hypothesis, *n ǎ* may assign accusative Case to either its Theme or its Goal. If the variable corresponding to the Goal is linked to the direct argument position of the verb, the Agent or the Theme will be assigned in the syntax to the specifier position and it will be externalized, yielding (36) and (38) respectively. If the Theme is linked to the direct argument position of the verb, either the Agent or the Goal will be assigned to the specifier position in the syntax and will be externalized yielding (35) and (37) respectively. In all three cases the projection of the verb in the syntax is as in (39):

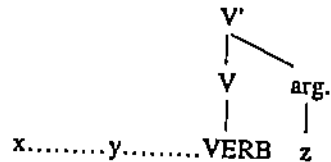


In (35)–(38) one of the arguments is implicit and in fact, each of them can be implicit. I believe these arguments are implicit from a pragmatic point of view rather than from a linguistic point of view and hence they do not need to be specified further. Why does Fon allow for that much freedom in allowing pragmatically implicit arguments? Why do some languages allow for that much freedom and others don't? These questions will be taken up in section 4. Finally, the data in (36)–(37) show that the Agent may be implicit. This argues against the idea that subject Theta-role is assigned according to a hierarchy (cf. Jackendoff, 1972).

The surface realization of all three Thematic roles of *n ǎ* 'give' yields a two place predicate. In this case, the Goal is realized as a PP and the Goal

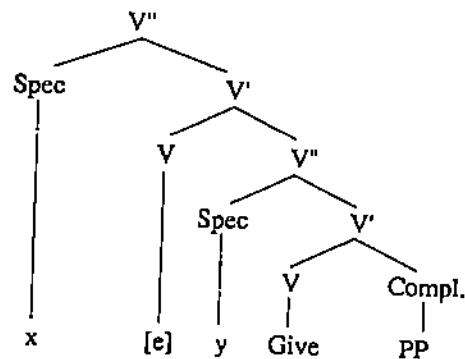
variable is linked to the appropriate preposition; this follows from our formulation of the linking rule in terms of the Case features of the verb. Indeed, the Goal argument will receive its Case from the preposition. The Theme and the Agent remain unlinked and will have to be associated with specifier positions in the syntax. The format of this PAS is described in (40):

(40) PASs of verbs containing three variables:



In the syntax, the verb projects a structure à la Larson, in which the Agent and the Theme are associated with specifier positions as in (41).

(41)



Note here that the Goal argument has to be linked to the argument position inside the PP for Case assignment purposes since, the verb will assign its structural Case to the Theme after raising has applied in the syntax. This is compatible with Chomsky's (1986) theory that structural but not inherent Case is assigned at S-Structure. I return to the discussion of two place predicates in section 4. (Fon also has double object constructions which will not be discussed in this paper; cf. Lefebvre, in preparation).

In light of this preliminary classification of predicate argument structures of Fon, I now turn to the discussion of serialization, a productive process for forming complex (two places) predicates.

3 TAKE serial verb constructions

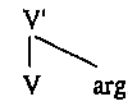
3.1 Lexical properties of TAKE verbs (closed class)

In Fon there are two TAKE verbs which enter in serial constructions: *só* and *zé*. They both mean TAKE and require an object that is transportable in one's hands (hence excluding human objects unless the intended meaning is to take someone in someone's hands). In addition, *zé*, but not *só*, can take an abstract Theme such as 'French'. Hence, while the meaning of these two verbs is similar, they differ in selectional properties. These verbs share the following properties: they are active verbs which require an Agent and a Theme. I will assume the Theme to be a Theme of change of location, or Locatum (following the terminology of Hale and Laughren, 1983); this is derivable from the semantics of the verb which involves a change of location. Simply holding something is not 'taking it'. Since the subject of the verb is an Agent performing an action which causes the Theme to undergo a change of location, I propose that the Take-verbs have a causation component. The properties of the Take-verbs participating in serialization are stated in (42):

- (42) a. active verbs having a causation component and requiring an Agent
b. they require a Theme of change of location

The PAS of the TAKE verbs is as in (43).

(43) PAS of *só* and *zé* 'Take':



[x cause [y undergo change of location]]/TAKE

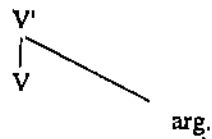
Examples are given in (44) and (45):

- (44) *Kòkú só àkwé/ àsǎ/ nǔ.*
Koku take money/ crab/ something
'Koku took money/a crab/something.'
- (45) *Kòkú zé àkwé/ àsǎ/ nǔ/ flǎsé.*
Koku take money/ crab/ something/ French
'Koku took money/a crab/ something/French.'

3.2 *Lexical properties of verbs of the open class which combine with TAKE verbs.*

The verbs which combine with Take-verbs in serial constructions are motion verbs such as *yi* 'go', *wá* 'come', or verbs like *nǎ* 'give', *hélé* 'teach study', *kplǎ* 'show / learn', *xò* 'hit', etc. Is the LCS of these verbs characterizable in a unified way? Let us consider first the PAS of *yi* and *wá*, represented in (46):

- (46) PAS of *yi/wá*, 'Go/Come':
LS :



LCS : [y undergo a change of location in a direction away from/towards the speaker to (a location) z]

In (46), the z variable is linked to the argument position in the LS; the y variable is unlinked and will be externalized in the syntax yielding (47):

- (47) *Kòkú yi/ wá àxì.*
Koku went/ came market
'Koku went/came to the market.'

The LCS in (46) describes a participant, undergoing a change of location; the central event described by the verb is autonomous in the sense that it can be realized without the participation of an Agent. Assuming that the class of verbs which combine with Take-verbs has to be characterizable in a unified way, are the other verbs which combine with Take-verbs in Fon characterizable in terms of (46)?

The following data show that the verbs of the open class which may combine with Take-verbs are all describable by a LSC of type (46). The PASs of a sample of verbs which may combine with Take-verbs are given in (48)-(52). Note that in all the examples given below, the variable linked to the direct argument position is a variable which can be assigned Case by the verb. The y variable corresponding to the Theme undergoing the change of location is not linked and will have to be base generated in a specifier position in the syntax.

- (48) a. PAS of *nǎ* 'Give' :



LCS: [y undergo change of location (come into possession of) z]
/BE PASSED ON TO

- b. *Àkwé nǎ Àsfbá.*
Money pass-on Asiba
'The money was passed on to Asiba.'

- (49) a. PAS of *kplǎ/hélé* 'Study/Learn' :



LCS: [y undergo change of location (come into knowledge of) z]
/BE SHOWN/TAUGHT

- b. *Flǎsé kplǎ/ hélé Àsfbá.*
French shown/ taught Asiba
'French is shown/taught to Asiba.'

- (50) a. PAS of *ǎó* 'Place/Put':

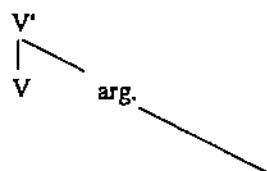


LCS: [y undergo change of location (come to be placed on) z]
/BE PLACED ON

- b. *Àsǎ ǎó távò jí.*
Crab be-placed table on
'The crab is placed on the table.'

- (51) a. PAS of
- xò*
- 'Hit':

LS :



LCS: [y undergo change of location (come into contact with) z]

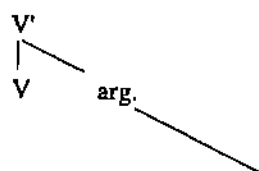
- b.
- Àtí xò Àsibá.*

Stick hit Asiba

'The stick hit Asiba.'

- (52) a. PAS of
- mē*
- 'Cut':

LS :



LCS: y undergo change of location (come through) z]

- b.
- ǝívf mē ǝhúhú.*

Knife cut bread

'The knife cut the bread.'

The LCSs above all describe a Theme participant undergoing a change of location in a physical sense, or for verbs like *nē* 'give', *xò* 'hit' and *kplǝ* 'show', a Theme undergoing a change of location which can be characterized in various ways: change of possession, etc.; the central event described by the verb is autonomous in the sense that it can be realized without the participation of an overt Agent. Hence, the LCS of the verbs which combine with a Take verb is of type (53) :

- (53) [y undergo change of location to z]

Given the above discussion, I propose that the verbs of the open class which can combine with Take-verbs have the specific characteristics listed in (54):

- (54) a. They are verbs of change of location lacking a causation component;
 b. They require no participation of an overt Agent or Actor;
 c. The variable corresponding to the Theme of change of location has to be unlinked in the LS;

- d. They may involve an additional participant: a Goal/Recipient or a Locative which is linked to the direct object position in the LS.

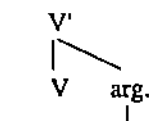
I will return to these characteristics after discussing the operation of serialization.

3.3 The operation of Serialization

Serialization consists in the association of the PASs of two verbs, one selected from a closed class (in this case a Take-verb), and one selected from an open class which has the precise characteristics enumerated in (54). What are the formal properties of the operation?

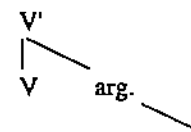
Consider simultaneously the PASs of *só* 'Take' and *yí* 'Go' :

- (55)
- só*
- 'Take' :



[x cause [y undergo change of location]]

- yí*
- 'Go' :



[y undergo a change of location to z]

In (55), the two y variables correspond to a Theme of change of location. But two themes are not realized in the syntax. In the operation of serialization, one of the two y variables will not be realized. Evidence that it is the first one that is not realized, the one related to the Take-verb, comes from the following data. While both *só* and *zé* can combine with *hélé* 'teach / study' in serial constructions, as shown in (56), *só* cannot select an abstract complement like *flǝsé*, as mentioned in 3.1. Hence, in (56), *flǝsé* has to be selected by *hélé* and not by the Take-verb.

- (56) *Kòkú só/zé flǝsé hélé Àsibá.*
 Koku take French teach Asiba
 'Koku teaches French to Asiba.'

Another effect of serialization is embedding. Somehow, the LCS of the verb from the open class has to be embedded within that of the Take-verb in order for the two verbs to form a complex predicate. The operation of serialization hence has to account for the properties listed in (57):

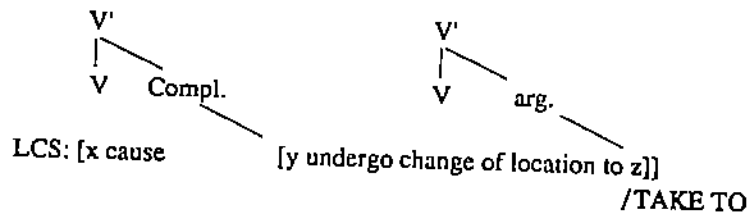
- (57) a. Two *y* variables referring to a single Theme of location;
 b. Only one argument represented by a *y* variable is realized;
 c. Embedding of the LCS of the verb of the open class within that of the Take verb.

These three properties can be accounted for if we assume that serialization is an operation of substitution⁵ which substitutes a LCS of type [y undergo change of location to z] for the [y undergo change of location] of the Take-verb. This operation is made possible due to the fact that the two LCSs share [y undergo change of location]. Following this proposal then, serialization is formulated as (58).

- (58) Serialization: substitute the LCS [y undergo change of location to z] for [y undergo change of location].

This operation derives PASs of type (59):

- (59) a. Derived PAS resulting from the combination of *s5* 'Take' and *yl* 'Go':



- b. *Kòkú s5 às5 yl àxi.*
 Koku take crab go market
 'Koku take a crab to the market.'

In (59), the whole PAS of the verb of the open class is embedded within the Take verb, hence appearing in (59) as if it were the complement of Take. The *y* variable of the substituted LCS remains unlinked (recall that it is selected by the downstairs predicate). Furthermore, given the formulation of the linking rule assumed in section 2, only the *z* variable can be associated with an argument position in the LS of the derived PAS. It follows that the two other

variables will have to be assigned, in the syntax, to specifier positions and will be assigned a theta-role under predication. Each must be realized in the specifier position governed by the head which assigns the Theta role.

(60)-(63) exemplify other derived LCSs resulting from serialization.

- (60) a. Derived LCSs resulting from the association of *s5* 'Take' and *ná* 'Exchange':
 LCS: [x cause [y undergo a change of location (possession) to z]]
 /GIVE

- b. *Kòkú s5 às5 ná Àsibá.*
 Koku take crab give Asiba
 'Koku gave a crab to Asiba.'

- (61) a. Derived LCS resulting from the association of *s5* 'Take' and *qó* 'Put':
 LCS: [x cause [y undergo a change of location (come to be put on) to z]]/PUT

- b. *Kòkú s5 às5 qó hàsù mè.*
 Koku take crab place basket in
 'Koku put the crab in the basket.'

- (62) a. Derived LCS resulting from the combination of *s5/zé* and *hélé/kpl5* 'Study/Learn':
 LCS: [x cause [y undergo change of location (come into knowledge of) to z]]/SHOW/TEACH

- b. *Kòkú s5/zé fànsé hélé/kpl5 Àsibá.*
 Koku take French teach/show Asiba
 'Koku taught French to Asiba.'

- (63) a. Derived LCS resulting from the association of *s5* and *xò* 'hit':
 LCS: [x cause [y undergo change of location (come into contact with) z]]/HIT

- b. *Kòkú s5 àtí xò Àsibá.*
 Koku take stick hit Asiba
 'Koku hit Asiba with a stick.'

According to the proposal made in this section, serialization is an operation of substitution performed on the PAS of a Take-verb. More specifically, it is claimed that the operation of serialization is one of substitution. Specific claims were made in section 3.2. on the format of the

PAS of the verbs from the open class which may combine with Take. The very specific formulation of the operation of serialization proposed in this section together with the specific characteristics proposed for the verbs which may combine with Take-verbs make several predictions. I now turn to the discussion of these predictions.

3.4 Predictions of the analysis

Consider again the characteristics of the verbs of the open class repeated here for convenience:

- (54) a. They are verbs of change of location lacking a causation component;
 b. They require no participation of an overt Agent or Actor;
 c. They require a participant undergoing a change of location to which the Theta-role Theme of change of location or Locatum will be assigned; the variable corresponding to the Theme of location has to be unlinked in the LS.

(54a) specifies that verbs from the open class must be verbs of change of location. Hence, it excludes verbs of change of state or middles of type 'the glass broke' from participating in Take serialization of the type analyzed in this paper. Hence, (64c) is not grammatical.

- (64) a. PAS of *gbà* 'Break':

LS:

V'
|
V

LCS: [y undergo change of state]

- b. *Kòfù gbà*.

Glass break

'The glass broke.'

- c. **Kòkú s5 kòfù gbà*.

According to (54b), Take-verbs will not be able to associate with verbs which have an obligatory Agent. This prediction is born out by the data. The verbs 'Look' and 'See' in Fon, as well as in other languages (see Gruber, 1967), are active verbs which require an Agent as is shown by the ungrammaticality of (65b).

- (65) a. *Kòkú kpǎ/ mǎ Àsfbá/ hwè*.
 Koku look/ see Asiba/ house
 'Koku looked at/saw Asiba/house.'
 b. **Àsfbá/hwè kpǎ/mǎ Kòkú*.
 'Asiba/the house is looked at/seen by Koku.'

It is not possible to use these verbs in Take-serial constructions. Consider the grammatical sentence (66) which at first glance may look as a serial construction of the type analyzed in this section.

- (66) *Kòkú s5 cǐcǐ kpǎ xà*.
 Koku take glasses look house
 'Koku takes glasses and looks at the house.'
 'Koku takes glasses in order to look at the house.'

On the surface, (66) presents a sequence of verbs and objects which is identical to the sequence observed in Take serial constructions. However, as can be observed from the translation, this series does not refer to a single event, but rather to two successive events. In fact, sentence (66) may be derived in two ways. First, it can be derived from the subordinate-adjunct construction which allows for deletion of the subordinating conjunction *bó*⁶ when two events are taking place in sequence. This is illustrated in (66'):

- (66') *Kòkú s5 cǐcǐ (bó) kpǎ xà*.
 Koku take glasses and-he look house
 'Koku took glasses and looked at the house.'

Or it can be derived by an operation which forms purposive clauses (which will not be discussed in this paper)⁷.

Similarly, the verb *hù* 'kill' has a causation component and requires an obligatory Agent. In sentence (67), however, we find a sequence of 'Take' and 'kill' which resembles serial constructions. Notice, however, that the translation reflects the fact that two successive events are taking place.

- (67) *Kòkú s5 àtǐ hù Àsfbá*.
 Koku take stick kill Asiba
 'Koku took a stick and killed Asiba.'
 'Koku took a stick in order to kill Asiba.'

Like (66), (67) may be derived in two ways: from a subordinate-adjunct construction as in (68) or from an operation which forms purposive clauses.

- (68) *Kòkú sɔ àtʃ (bɔ) hù Ásfá.*
 Koku take stick (and-he) kill Asiba
 'Koku took a stick and he killed Asiba.'

Note that on the surface, (67) is similar to (63b) above. In the latter cases, the Theme of change of location is in fact the instrument of the verb *xò* 'hit', and it is interpreted as such, as is reflected in the translation. The surface similarity between (67) on the one hand and of (63) on the other hand (observed here for Fon and attested for other serializing languages) has misled a number of scholars (e.g. Jansen et al, 1978) who analyzed data comparable to (67) and involving 'kill' in the same class as those comparable to (63) involving 'hit'. This has led to the unfortunate conclusion that a verb like 'kill' which contains a causation component and hence an obligatory Agent could combine with a Take verb in the operation analyzed in this paper. The Fon data presented in (67) show, however, that this is not the case. The interpretation of (67) rather supports the proposals stated in (54a) and (54b).

Finally, property (54c) requires that the Theme of change of location of the verb of the open class be external, which amounts to saying that the variable corresponding to the Theme be unlinked in the LS. Verbs which do not allow for their Theme to be external (or unlinked) do not associate with a Take verb in serialization. Consider the verb *yí* 'to receive' which requires its Goal to be external and hence does not allow for its Theme to be external as is shown in (69):

- (69) a. *Kòkú yí àkwé.*
 'Koku received money.'
 b. **Àkwé yí Kòkú.*
 'Money is received by Koku.'

This verb cannot associate with a Take verb in serialization as is shown in (70).

- (70) **Kòkú sɔ àkwé yí Ásfá.*
 Koku take money receive Asiba
 'Koku gave money to Asiba.'

Hence, for serialization to take place, the Theme of the second verb has to be able to be its external argument, in other words, the verb has to allow for it to be unlinked. This is in line with the observation made by Voorhoeve (1975) that in Take serial constructions, the object of V1 is the subject of V2.

In this respect, the verb *yí* 'to receive' contrasts in an interesting way with the verb *Nǎ* 'to borrow'. Consider the data in (71):

- (71) a. *Kòkú Nǎ àkwé.*
 'Koku borrowed money.'
 b. *Àkwé Nǎ nú Kòkú.*
 'Money was loaned to Koku.'

The LCS of (b) corresponds to the appropriate format [y undergo change of location], and *Nǎ* can be combined with a Take verb in serialization:

- (72) *Ásfá sɔ àkwé Nǎ nú Kòkú.*
 Asiba take money loan to Koku
 'Asiba loaned money to Koku.'

The fact that the predictions made by the analysis are born out by the Fon data supports the proposal that the properties of the verb of the open class must be those listed in (54).

Assuming the properties of the Take-verb stated in (42), and those of the verb from the open class stated in (54) and the specific characterization of serialization as (58), it follows that 'cause to cause' predicates cannot be formed through serialization of the type analyzed in this paper. This conclusion supports Carter's (1976) suggestion that there are no 'cause to cause' words in natural languages. Furthermore, it follows that verbs which can combine with 'Take' are predicates which do not have a causation component. Hence, if Carter (1976) is right in proposing that 'walk' and 'run' in English are embedded under a cause predicate, Fon differs from English in this respect, since in Fon, these predicates can be embedded under Take in serial constructions, as is illustrated in (73).

- (73) a. *Kòkú sɔ àfɔ dò-wèzũ.*
 Koku take legs take-run
 'Koku ran.'
 b. *Kòkú sɔ àfɔ ði-žɔíɽ.*
 Koku take legs take-walk
 'Koku walked.'

Finally, the analysis in 3.1., 3.2., 3.3. predicts and accounts for the respective order of verbs involved in the series. First, from the characterization of serialization as an operation of substitution, it follows that the Take verb will be higher in the tree than the verb from the open class. This hierarchical order is also necessary since the Take verb contributes the Agent Theta-role to the derived predicate. Second, the fact that the Take-verb will occur to the left

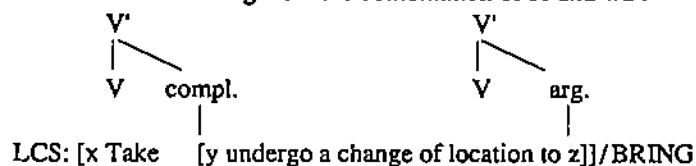
of the verb from the open class follows from directionality of Case assignment from left to right.

I now turn to the discussion of the syntactic projection of PASs derived through serialization.

3.5 Syntactic projection of derived complex predicates

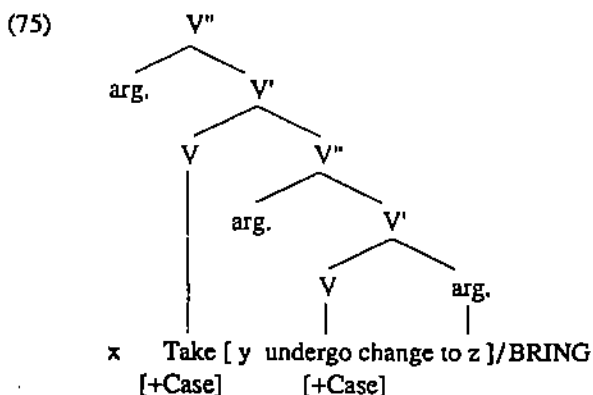
Consider again the derived PAS of BRING.

(74) a. Derived PAS resulting from the combination of *só* and *wá* :



b. *Kòkú só àsṣ wá àxì.*
 Koku take crab come market
 'Koku brought a crab to the market.'

The LCS of BRING contains three variables, only one of which is being linked to an argument position in the LS. Consequently, the two other variables will have to be assigned to argument positions in the syntax. They will be assigned to specifier positions to which a Theta-role is assigned by predication under government by X' rather than under government by a head. In building up the syntactic structure projected by the derived LCSs, I will register the Case specifications of verbs. The projection of the derived LCS illustrated in (75) reads from bottom up.



The derived LCSs project in the syntax a structure of the type proposed by Larson for complex predicates in English. The structure building operation consists in associating all the variables with an argument position. I assume that the projection of V has two levels depth and that in each projection there is a complement and a specifier position. The z variable is already linked to the argument position sister of the lower V. The next position up is the specifier of V. The y variable will be associated to that position. The lower VP is embedded within the Take-verb as if it were its complement. This structure makes it possible for the upper V to govern the argument position associated with the y variable. We continue building the tree creating another VP node on top of the upper V'. The x variable will be associated to the specifier of the upper VP. The structure built in this way creates a complex predicate with two heads. The x and y variables which were not linked in the LS, are here associated with argument positions that are in a predication relationship with a predicate. The y variable is associated with the subject position of the lower predicate formed by the lower verb and its direct object. The x variable is associated with the subject position of the upper predicate formed by the Take verb and the V' that is sister to it. Arguments supporting this structure will be brought forward below, after we discuss Theta-role and Case assignment.

Theta-role assignment is achieved by predication under government by V' or under government by a head. The variables x and y will be assigned Agent and Theme respectively under predication. The z variable linked to the direct argument position of the verb in the LS will be assigned Locative under government by the head.

The locative argument will be assigned structural Case by the verb y] under government. The Agent will be externalized, presumably to the position of Specifier of INFL, where it will be assigned Case. The Theme cannot be externalized since it is embedded within a complex VP. How will it be assigned Case? Recall that the operation of complex predicate formation entails substitution. This operation does not deprive the Take-verb from its Case feature. Hence this Case is available and will be assigned to the Theme argument in the specifier of the lower verb.

There are several arguments which speak in favor of this structure and of the way the various components of a derived complex predicate are distributed in it. I will discuss them in turn.

First, there is independent evidence that the direct argument of the construction is the locative argument. The locative argument delimits the event described by the lower verb in the sense of Tenny (1987) as the affected direct

object does. This can be observed when the locative is clefted as in (76). In this case, clefting of the direct argument triggers an event interpretation of the clefted constituent as if the whole predicate had been clefted. As is discussed at length in Lefebvre (1989) on the basis of similar data drawn from Haitian, this interpretation only occurs when a predicate is delimited by the direct object to which it assigns structural Case.

- (76) *Àxi wè, Kòkú sò àsò yi.*
 Market be Koku take crab go
 'It is bring the crab to the market that Koku did.'

Clefting of the Theme of the construction as in (77) yields the regular interpretation :

- (77) *Àsò wè, Kòkú sò yi àxi.*
 Crab be Koku take go market
 'It is a crab that Koku brought to the market.'

Second, evidence that the Theme or Locatum must be generated within the lower V projection is derivable, as we have seen earlier, from the fact that it obeys the selectional restrictions of the lower verb, not those of the upper verb (see (56)). Since the Specifier position of the verb is governed by the verb, the argument in this position is accessible to the verb, which it would not be if the argument were outside of the projection of the verb.

A further argument in favour of this analysis is provided by the analysis of tonal domains. I shall not discuss this argument in detail. Suffice to say that in simple clauses, the subject and the verb constitute a tonological domain. The direct object constitutes a domain of its own. In serial constructions of the type analyzed in this section, the subject of the clause forms a domain with the higher verb; the Theme of the construction forms a tonal domain with the lower verb as if it were its subject (cf. Brillon, in preparation).

Third, (75) presents a bi-headed structure where the two verbs of the construction fill a head position. That the Take -verb is a head follows from the theory of verb movement to INFL (Chomsky, 1986). In clauses involving only one verb, the verb moves to INFL. In serial constructions, the upper verb of the construction moves to INFL. Since verb Movement to INFL is a Head movement rule, the Take-verb must be a Head. That both verbs are heads can be argued for on the basis of data drawn from nominalization of the verbal head. Progressive constructions and predicate cleft constructions offer such a context. In these contexts both verbs may bear a nominalizing prefix, (Abomey

dialect) a fact which would be difficult to explain if both verbs were not heads in the construction.

- (78) *Kòkú dè àsò sòsò yiyi àxi wè.* PROGRESSIVE
 Koku ASP crab take go market be
 'Koku is going to the market.'
- (79) *Àsò sòsò yiyi àxi wè, Kòkú dè.* CLEFT
 Crab take go market it-is Koku is-doing-it
 'It is bringing crabs to the market that Koku is doing.'

Finally, this structure does account for constituency and extraction facts: each argument can be extracted separately (focused, questioned and relativized) as shown in (80) and (81). Neither of the verbs form a separate constituent with their object and hence extractions of V+NP are impossible, as shown in (82). The whole VP as projected in (75) may undergo predicate cleft, as in (79) above.

- (80) *Àxi_i wè, Kòkú sò àsò yi [e]_i.* EXTRACTION OF OBJ₂
 Market be, Koku take crab go
 'It is to the market that Koku brought the crab.'
- (81) *Àsò_i wè, Kòkú sò [e]_i yi àxi.* EXTRACTION OF OBJ₁
 Crab be Koku take go market
 'It is the crab that Koku took to the market.'
- (82) a. **Àsò sòsò wè, Kòkú (dè) yi àxi.* NO EXTRACTION OF V+NP
 b. **Àxi yiyi wè, Kòkú sò àsò (dè).*

3.6 Functions of the Take-verb

In light of the previous discussion it becomes easier to characterize the functions of the Take-verb in serialization. I suggest that the Take verb has the functions listed in (83) which I will discuss in turn below.

- (83) a. It allows for the internal realization of the Theme of the downstairs verb which is otherwise the argument that will be externalized in the syntax;
 b. It contributes an Agent external Theta-role to the derived predicate (not a Theme);

- c. It serves as a Case assigner for the Theme (Locatum) of the downstairs verb;
- d. It constitutes the Cause predicate under which a verb of change of location is embedded.

First, the Take-verb allows the internal realization of the Theme of change of location (in some cases the instrumental) of the downstairs verb, which otherwise would have to be externalized in the syntax. Hence, serialization involving Take-verbs appears to be an operation of transitivity which allows for the Theme of change of location to be the direct object of the construction.

Second, assuming that the operation proposed in 3.3. to account for serialization involving Take-verbs is correct, it is clear that the Take verb contributes an Agent external argument to the derived LCS. This operation was motivated on the basis of the characteristics of the LCSs of the two classes of verbs participating in the construction. Furthermore, deletion (by substitution) of the Theme of the Take verb was motivated independently on the basis of data involving selectional properties of verbs (see section 3.3.). This being the case, the proposal that the Take verb in serial constructions contributes a Theme to an otherwise intransitive verb such as 'go' (cf. Stewart, 1963; Sebba, 1967), is not borne out by the Fon data. If serialization is an operation of transitivity, and if this operation consists not in the addition of a direct object, but rather in the addition of an Agent external argument, then transitivity must be defined in terms of Agent (hence external argument) and not in terms of Patient (hence internal argument). This supports Guerssel's (1987) proposal according to which transitivity is an operation which should be defined with respect to Agent not with respect to Patient.

Third, as was proposed in section 3.5. the Take -verb serves as a Case assigner for the direct object of the construction. However, in light of the above observations, the Fon data do not support Roberts' analysis (1985) of Take-verbs in Gokona for which it is claimed that the function of the Take-verb reduces to assigning Case to the Theme of the downstairs verb.

Finally, it is claimed in this paper that the Take verbs involved in Fon serial constructions are Cause predicates. With respect to this latter point, I take issue with Sebba (1967) who suggests that "the frequency of the verb *take* in constructions like these may be explained by its lack of semantic specificity" (p.162). Furthermore, as a verb involving a causation component,

the Take-verb allows for the embedding of an autonomous 'y undergo change of location' predicate. Several examples were given in 3.3.

3.7 *Serialization is a lexical operation*

It should be clear from the above discussion that serialization consists in an operation taking place in the lexicon and that it cannot be accounted for only in the syntax.

First, serialization entails an operation on LCSs, which has to be performed in the lexicon since it determines the predicate argument structure and the Theta grid of the derived predicate. The operation is one of substitution as in (58), resulting in the embedding of the PAS of a verb selected from the open class within that of the cause predicate lexicalized as Take. The Take-verb allows for the internal realization of the Theme argument which otherwise would have to be externalized in the syntax. Finally, the Take verb contributes an Agent thematic role to the derived predicate. It follows from the Projection Principle that these aspects of serialization must be accounted for in the lexicon and could not be accounted for in the syntax.

Furthermore, the selectional restrictions imposed on the Take verbs constitutes a strong argument against an analysis where complex predicates would be formed in the syntax as is advocated in Baker (this volume). Recall from earlier sections that *só* 'Take' cannot select an abstract complement like *flãsé* 'French'. Thus, in (84), *flãsé* is selected by the second verb not by the Take verb.

- (84) *Jacques Cartier só flãsé yi Québec.*
 Jacques Cartier take French go Québec
 'Jacques Cartier brought French to Québec.'

Note that, in Fon, the verbs *yi* 'go' and *wá* 'come' may both take inanimate or abstract surface subjects as well as animate subjects, as is illustrated in (85) and (86).

- (85) *Flãsé yi Québec.*
 French come Québec
 'French come to Québec.'
- (86) *Bikl yi àzòm ě.*
 Pen go school
 'The pen is gone to school.' (somebody took it to school)

Second, some combinations of pairs of verbs involving a Theme and a Goal exhibit clitic climbing phenomena. In (87) and (88), the clitic corresponding to the object of the second verb in the series is in the domain of the first verb. The fact that this is possible follows if the two verbs have a common thematic grid (cf. Lefebvre and Muysken, 1988).

- (87) a. *Kòkú sɔ̀ àsɔ̀ nǎ̀ è.*
 Koku take crab give her
 'Koku gave her a crab.'
- b. *Kòkú sɔ̀ è àsɔ̀ ná (è).*
 Koku take her crab give
 'Koku gave her a crab.'
- (88) a. *Kòkú sɔ̀ àkwé Nǎ̀ Àsɔ̀bá.*
 Koku take money loan Asiba
 'Koku loaned money to Asiba.'
- b. *Kòkú sɔ̀ è àkwé Nǎ̀.*
 Koku take her money loan
 'Koku loaned her money.'

Note here that clitic climbing phenomena are restricted to cases involving a Goal and a Theme. This is derivable from the fact that both Goals and Themes may be assigned the same Case: Accusative.

The above facts support the analysis according to which serialization is achieved by means of an operation taking place in the lexicon. That some pairs of serial verbs may be reanalyzed as compound verbs or as double object verbs further reinforces this claim. The latter facts will be discussed elsewhere. (cf. Lefebvre, in preparation).

3.8 Conclusion

The analysis presented in this section accounts for the properties of Take serial constructions identified in section 1:

- A. It allows for a constrained account of types of verbs which may participate in Take serial constructions (sections 3.1, 3.2., 3.3, 3.4); the properties of the two classes of verbs are summarized in (89):

- | (89) Verbs of the closed class (Take) | Verbs of the open class |
|--|--|
| – active verb containing a causation component | – verb of change of location lacking a causation component |
| – Agent | – no overt Agent |
| – Theme of change of location | – Theme of change of location |
| – Theme linked in the LS | – Theme unlinked in the LS |
- B. It accounts for the respective order of the verbs involved in a series (section 3.4.).
- C. It provides a formal way to represent the formation of complex predicates achieved by means of serialization (section 3.3).
- D. It accounts for the fact that in the syntax, both verbs head the construction (e.g., nominalization contexts; sections 3.5., 3.6).
- E. It accounts for extraction facts: none of the verbs can be extracted with their respective objects; either one of the objects can be extracted separately; the whole predicate phrase can be focused (section 3.5).
- F. It accounts for clitic climbing phenomena (section 3.7.).

4 Discussion: Aspects of variation between PASs among languages

What is the difference between Fon and English predicates analyzed in this paper?

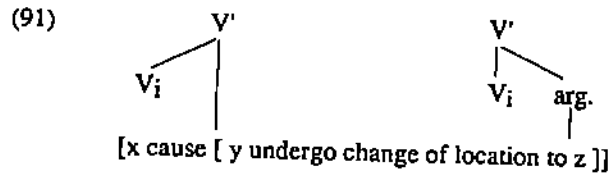
Consider the data in (90) which presents the PASs of complex predicates in both Fon and English:

- (90) a. LCS of 'Bring' and 'sɔ̀...yɪ' (Take....Go):
 [x cause [y undergo change of location to z]] /BRING
- b. LCS of 'Give' and 'sɔ̀...nǎ̀' (Take...Exchange/Transfer):
 [x cause [y undergo change of location (possession) to z]] /GIVE
- c. LCS of 'Teach' and 'sɔ̀...hélé' (Take...Learn):
 [x cause [y undergo change of location (...knowledge of) z]] /TEACH

Assuming that the LCS of the complex predicates of (90) is the same in Fon and in English, the difference between Fon and English appears to be that, while Fon requires two lexical verbs to produce a predicate having a causation component, English does not. In English, the meaning of 'Cause undergo change of location' is encoded in one lexical item. Hence, while predicates

such as 'give', 'teach', 'put', etc. are predicates having a causation component in English, in Fon they are not. (An alternative would be to say that in English as well as in Fon, predicates have a covert Take verb which never shows up.) This difference might explain why Fon allows for a great deal of freedom in the expression of three possible thematic roles that a verb can assign, as we have seen in section 2.4. Similarly, this difference might explain why English does not allow for the same freedom.

Assuming the LCSs of predicates to be as in (90), I would like to suggest that the PASs of English cause-predicates is of the same type as the derived counterpart PASs in Fon. Hence (91) would be the representation of a primitive complex PAS of English corresponding to a derived complex PAS of Fon.



As a result of the fact that in English there is only one lexical item to encode both the cause and the change predicate, the two V positions will have to be coindexed in the lexicon. In the syntax, (91) will project a structure à la Larson in which at D-Structure the two V positions are coindexed. The consequence of this is that at D-Structure, both V positions are filled even if the sole verb is assigned to the lower V position. This analysis solves the problem of Theta assignment (raised in 2.2.) to the x variable in the syntactic structure. Since the upper V is coindexed with the lower V at D-Structure, the upper V position is interpreted as if it contained lexical material. Hence at D-Structure, a thematic role can be assigned to the x variable under predication. Presumably, two place predicates which are not embedded within a cause predicate will be embedded within another primitive predicate (cf. Carter, 1976) and thus, in a structure projected by two place predicates, the upper V position will always be coindexed with the downstairs verb.

Another difference between Fon and English predicates which follows from the analysis presented in this paper, concerns the number of structural Cases available for each pair of predicates. As a consequence of the fact that complex predicates formed through serialization in Fon involve two verbs, there are two structural Cases available in Fon while there is only one in English⁸. It follows that in Fon, the direct argument of the lower verb will be able to receive the

structural Case of the verb from the open class, the Theme in specifier position being assigned Case by the Take-verb. This can be observed from the contrast between (92a) and (92b).

- (92) a. *Kòkú Nǝ nú Àsibá.*
 'Koku loaned to Asiba.'
 b. *Kòkú sǝ àkwé Nǝ Àsibá.*
 'Koku loaned money to Asiba.'

In English, however, the argument associated with the direct argument position of the verb will always have to be linked to a preposition in order to get Case, since the verb will move to the upper V position and will assign its structural Case to the Theme in specifier position.

ABBREVIATIONS

Arg.	argument	PAS	predicate argument structure
Compl.	complement		
COORD	coordinate	PP	prepositional phrase
INFL	inflection		
LS	lexical structure	S	sentence
LCS	lexical conceptual structure	SPEC	specifier
		SUB	subordinate
NP	nominal phrase	V	verb
OBJ	object	VP	verbal phrase

NOTES

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1. Note that this proposal does not necessarily extend to other types of serial construction.
2. While Chomsky's X' structure allows for several complements as in (i), Larson's allows for only one complement, as in (ii):
 - i) X' → X YP*
 - ii) X' → X YP
3. This problem was pointed out to me by Ken Safir and Afke Hulk.
4. This asymmetry is thoroughly discussed in Larson (1988) and I assume without further discussion that it predicts a number of syntactic facts which otherwise cannot be accounted for in a principled way.
5. The formulation of the operation of serialization as an operation of substitution (58) was suggested to me by John Lumsden.
6. The conjunction *bɔ* is the result of the contraction of *bɔ* 'and' and *ɛ* '3rd person pronoun'.
7. Formation of purposive clauses appears to involve co-indexation of Agents. (cf. Lefebvre, in preparation)
8. I am not considering the issue as to whether two structural Cases would be available in double object constructions in English.

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