

# Topics in Ewe Syntax

by

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(1985)

Submitted to the Department of Linguistics and Philosophy  
in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

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**ABSTRACT**

This thesis analyzes a number of problems in Ewe syntax. Its goal is to show how several difficult problems in Ewe syntax have natural treatments in the generative grammar framework, and how these problems bear on current theoretical issues.

Chapter one gives a brief overview of the assumptions that are adopted in this thesis. The assumptions of this thesis are largely those of Chomsky (1992) and Hale and Keyser (1993).

Chapter two gives an analysis of determiner doubling in Ewe. In this construction the third person singular object pronoun doubles a DP that does not have structural Case. Determiner doubling is analyzed as a kind of *default* Case assignment. Its precise distribution has important consequences for the grammar of Ewe, including the analysis of Serial Verb Constructions (SVCs), the verbal noun constructions, and A'-movement.

This system of default Case found in Ewe will be situated in a general theory of default Case, including Yoruba *ni* and Russian instrumental. The implications of default Case are drawn for the general theory of Case given in Chomsky (1992).

Chapter three gives a theory of Serial Verb Constructions (SVCs). The main assumptions that are made are that SVCs involve LF incorporation and that "argument sharing" is mediated by empty categories. These two assumptions lead to an account of many subtle phenomena concerning SVCs.

Chapter four gives an analysis of how the form of the third person singular subject pronoun depends on movement to Spec CP. The analysis is extended to successive cyclic movement, where it is shown that principles of economy of derivation play a role.

Thesis Supervisor:            Kenneth Hale



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## Chapter 1

### Introduction

In this thesis I will be concerned with the analysis of a number of problems in Ewe syntax. My goal is to show how several difficult problems in Ewe syntax have natural treatments in the generative grammar framework, and how these problems bear on current theoretical issues.

#### 1.1 Theoretical Framework

The framework that I adopt is generative grammar and developments of that theory, including Chomsky (1981, 1992). I will give a brief overview of the assumptions that I will be adopting here. The details of the theoretical framework that I will assume, and argue for, will be introduced in the course of the exposition.

##### 1.1.1. Minimalist Framework

The minimalist framework (Chomsky 1992) can be summarized in the following terms:

- (1) "Each linguistic expression is an *optimal* realization of *interface* conditions expressed in *elementary* terms." (MP pg. 27)

A linguistic expression is an optimal realization, since its derivation is constrained by the economy principles. These include Last Resort, Procrastinate and Relativized Minimality.

A linguistic expression is the realization of interface conditions since the only levels are LF and PF, and all conditions are stated at these levels.

Interface conditions are expressed in elementary terms to the extent that they are defined using only the terms of x-bar theory and the notion of chain-link (Chomsky 1992: 9). This means that any condition or operation stated in terms of indices, theta-roles, theta-role percolation, feature percolation, theta-grid percolation, Case-transmission, government, proper

head government, superscripting, co-superscripting, must be abandoned to the greatest extent possible. This program will generally not be possible at this stage of linguistic theory. Nevertheless, I will make several suggestions in this thesis as to how such a simplification can proceed.

I will summarize different parts of the minimalist program throughout the dissertation. Since I will use Last Resort (e.g., section 2.6.) in several places, I summarize it below:

(2) Last Resort

a step in a derivation is legitimate only if it is necessary for convergence" (MP pg. 46)

(3) Convergence

A derivation converges if its structural description (a pair of representations at LF and PF) contains only legitimate objects.

(4) Legitimacy

An object is legitimate iff

- a. it is a head, argument, modifier, or operator-variable pair, and
- b. all its morphological features have been satisfied (e.g., Case, +WH).

### 1.1.2. Hale and Keyser Framework:

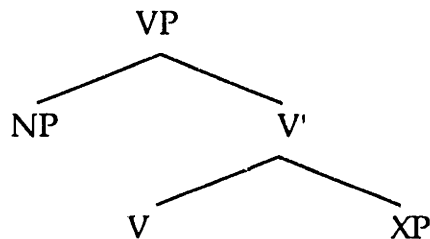
The goal of the framework put forth in Hale and Keyser (1992, 1993) is to give a purely structural account of argument structure. The questions addressed in that work are why the number of "theta-roles" is extremely limited and why these roles are "assigned" in a determined fashion across constructions and across languages.

This program to analyze argument structure is within the minimalist program to the extent that it can succeed without reference to the notions of theta-roles such as agent, experiencer, theme, instrument, goal and location or to the notions of theta-role assignment, or theta-role percolation.

I will show that the syntactic structure of SVCs correspond to the principles of argument structure put forth in Hale and Keyser (1992, 1993). In this way, I will show that the principles governing SVCs are the same as those governing the argument structure of lexical items.

The account of argument structure that I will adopt is modified from Hale and Keyser (1992, 1993) in several ways that I will make clear in the course of the exposition. I summarize the program below:

(5) Interpretation of VP



Given a VP such as (5):

- a. if XP is a predicate, Spec VP is licensed under predication
- b. if XP is not a predicate, Spec VP must be interpreted as a Causer
- c. V implicates XP

I will assume that the predicates are PP and AP, and that NP and VP are not predicates (see Hale and Keyser 1992, 1993 for an extensive discussion of this issue). In chapter 3, we will see that in SVCs, a VP can be converted into a predicate if one of the NPs contained in the VP is replaced by *pro*. I will assume the following simplistic notion of "implicate":

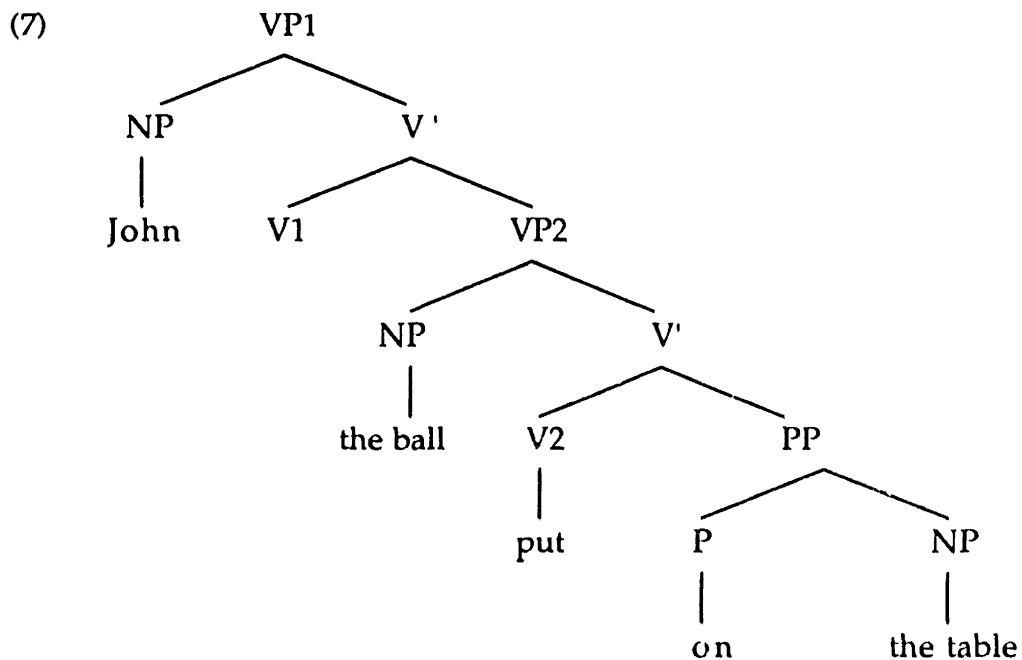
(6) V implicates XP iff

- a. the event or state denoted by XP (or XP together with the NP it is predicated of) is the result or consequence of the event denoted by V, or
- b. the event or state denoted by XP (or XP together with the NP it is predicated of) temporally follows the event denoted by V

I will not attempt to define any further the relations of "result or consequence" or "temporally follows" although ultimately a full theory of argument structure and SVCs will require such definitions.

Given the two general notions of "predicate" and "implicate", Hale and Keyser (1993) essentially eliminate the notion of "theta-role". It should be noted that Gruber (1990a,b) and (1992a,b) comes to roughly the same conclusion about argument structure, i.e., that "complex thematic structures" should be represented via the notions of predication and consequence or temporal succession.

I will briefly comment on these three principles. (5a) is the most common way that arguments are introduced into the structure. Consider the following partial representation of the sentence *John put the ball on the table*:



In this structure the P *on* denotes a relation. Therefore, the PP *on the table* denotes a predicate. Therefore, in order for this structure to satisfy Full Interpretation, it must be the case that a subject is projected for the VP2. The subject of VP2 is *John*.

In this structure V denotes an event, and the PP together with the NP of which it is predicated denote a state. V2 implicates the PP. Therefore, the state of the ball being on the table is a result of the event of putting.

Since VP2 does not denote a predicate, the relevant clause for interpreting the subject of VP1 is (5b), and so *John* is interpreted as a causer. Lastly, V1 must implicate V2. Since V1 does not have any lexical content, I will assume that V1 is translated as existential quantification over events. Thus the interpretation of [V1' V1 VP2 ] is that the event of the ball coming to be on the table is the result of some other event (see Hale and Keyser 1992: 41). This effectively encodes the causative part of the verb *put*.

It should be noted that all the cases that Hale and Keyser (1993) consider only employ relation in (6a), as can be seen from our discussion of *John put the ball on the table*. One reason that I am extending the notion of implicate to involve the relation in (6b), is that the relation between V1 and V2 in some SVCs involves only temporal succession and not consequence (see chapter 3, section 5.2). A question that naturally arises is whether there are any verbs in English that must be analyzed in terms of the relation of temporal succession, and not consequence. I refer the reader to Collins and Gruber (1993) for some possible examples.

I will assume that there is a structural constraint on predication of the following sort (this is a version of the c-command condition on predication proposed by Williams 1980):

(8) Local C-Command Condition on Predication

XP can be predicated of NP iff

- a. NP c-commands XP, and
- b. NP and XP are in the same minimal domain of some head, and
- c. There is no YP, such that NP c-commands YP and YP c-commands XP.

One goal of this thesis is to show how the same principles that are at work in English argument structure are at work in SVCs, especially the notion of predication.

## 1.2. Language Background

The dialect of Ewe that will be the focus of this thesis is Kpele-gbe. This dialect is spoken north of Kpalime, in Togo. Kpele-gbe differs from standard

Ewe in ways that will be made clear throughout the thesis. Ewe is a SVO language, with both prepositions and nominal postpositions.

I will for the most part follow the orthography of standard Ewe, written so as to reflect the Kpele pronunciation and, in some cases, to make morpheme boundaries more transparent. Tones will not be marked unless relevant to the argumentation. The convention that I will adopt is the following: high tone é, low tone è, mid tone e, rising tone (including mid-high and low-high) ě. I will use the following abbreviations:

A,N,P,V	adjective, noun, preposition, verb
acc	accusative
appl	applicative suffix
asp	aspect
ben	benefactive
C,D,T	complementizer, determiner, tense
def	definite
dem	demonstrative
ec	empty category
foc	focus
fut	future
gen	genitive connector
indef	indefinite
instr	instrumental
loc	general locative preposition
neg	negative
nom	nominative
perf	perfective aspect
pl	plural
prt	sentence final particle (e.g., for negation)
Q	sentence final interrogative particle
rel-perf	relative perfective
sp	subject prefix
subjn	subjunctive

## Chapter 2

### Determiner Doubling and the Theory of Default Case

#### 2.1. Introduction

In Ewe, the morpheme *yi* has a complex distribution, appearing in a wide variety of contexts. In one use it serves as the third person singular indirect object pronoun, see (1) below. In other uses, it is not immediately clear what its syntactic status is. These contexts are illustrated below:

- (1) me na agbo yi  
I gave ram 3sg  
"I gave him a ram"
- (2) Kofi zɔ efiɛ-tɔ (yi)  
Kofi walked king-like
- (3) Kofi fo Yao (\*yi)  
Kofi hit Yao
- (4) me na kuku-ɔ Yao (\*yi)  
I gave hat-def Yao  
"I gave the hat to Yao"
- (5) Yao ε me na kuku-ɔ (yi)  
Yao foc I gave hat-def  
"It is to Yao that I gave a hat"
- (6) Kofi tsɔ ati-ε fo Yao (yi)  
Kofi took stick-def hit Yao  
"Kofi took the stick and hit Yao with it"

Sentence (1) illustrates that *yi* occurs as the indirect object pronoun (it also occurs as direct object pronoun). Sentence (2) shows that *yi* optionally appears with certain nominal adverbs. Likewise, *yi* can appear with various

nominal secondary predicates. Sentence (3) shows that *yi* cannot appear with a direct object. Sentences (4) and (5) show that *yi* can appear with an indirect object, but only if it has been extracted. Sentence (6) shows that *yi* can appear after certain serial verb constructions (SVCs). In other SVCs, *yi* is not possible.

There is some literature on the distribution of *yi* in various constructions in Ewe. Agbadza (1983) discusses nominal adverbs. Ansre (1966), Clements (1971) and Lewis (1985) discuss serial verb constructions. Lewis (1985) discusses ditransitive verbs. None of these authors attempts to unify all these uses of *yi*. We will discuss these authors treatments of the various phenomena throughout this thesis.

In this chapter, I will show how the complex distribution of *yi* follows from simple assumptions concerning Case theory, and independently motivated assumptions about the constructions involved. The analysis of this chapter will have implications for the formulation of Case theory, as well as for many aspects of Ewe grammar.

In section, 2.10.2 I will show how the same basic system found in Ewe occurs in Yoruba and Russian as well. In that section, I will define and discuss the general notion of *default Case*, and postulate some general constraints on such a notion. I will show how such a notion fits in with a general theory of Case.

## 2.2. Theoretical Assumptions

The general assumptions that I will be adopting are those of Chomsky 1989, 1992 and Chomsky and Lasnik 1992. I will indicate during the presentation what parts of these theories are particularly important and where I deviate from them.

I will assume that nominal expressions are headed by determiners (see Abney 1987 and Stowell 1989):

(7) [D D NP]

I will furthermore assume that both referential and predicative nominal expressions have determiners. In addition, I will assume that all determiners have Case features, and that these Case features must be

"checked". This last condition is equivalent to the following formulation of the Case Filter:<sup>1</sup>

- (8) \*DP, if the Case features of D have not been checked.

Case features can be checked off in the Spec position of a functional category, or may be checked off by some type of inherent Case assignment. I will assume that if a functional head has Case or  $\phi$ -features that are not checked off in the course of a derivation, the result is an unacceptable structure.

The condition in (8) is just a special case of a much more general condition to the effect that if X has morphological features, they must be checked in the course of the derivation. Thus the tense and  $\phi$ -features of a verb must be checked as well.

The assumption that both referential and predicative expressions have Case features that need to be checked off goes against the visibility account of the Case Filter, which can be stated as follows:

- (9) An argument can receive a  $\theta$ -role only if it is PRO  
or it is assigned Case (Chomsky 1981, 1986, Stowell 1981)

The account that I adopt is closer to an account where the Case Filter is a kind of PF filter that can be stated in the following way:

- (10) \*NP, if NP has phonetic content and has no Case  
(Chomsky 1981: 49)

The only difference is that our account makes no provisions about "phonetic content." I will discuss more fully the implications of this view of Case in section 2.10. The assumption that all DPs have Case features (not just argumental DPs) also seems to be implicit in the minimalist framework

---

<sup>1</sup> We could just as easily regard Case a feature of N, and not D. This would have little consequence for the following analysis.

(Chomsky 1992: 41) where the Case Filter reduces to an essentially morphological condition on feature checking.<sup>2</sup>

### 2.3. The Object Pronoun

The most frequent occurrence of *yi* is as the third person singular indirect object pronoun. The following sentences illustrate this:

(11) me na agbo yi!  
I gave ram him  
"I gave him a ram"

(12) me na agbo-e  
I gave ram-him

(13) agbo, me ne (na + yi)  
ram I gave-him  
"Its the ram that I gave him"

In sentence (11), *yi* is an indirect object pronoun. Sentence (12) shows that *yi* can optionally cliticize to the previous noun. If *yi* cliticizes, it assimilates in height to the preceding vowel and loses its tone. Sentence (13) indicates that if the direct object is fronted, the indirect object pronoun must cliticize. We can state this effect by postulating the following phonological condition (i.e., a condition applying in the PF component).

(14) Obligatory Pronoun Cliticization

If a verb *V* is adjacent to the object pronoun *yi*,  
then *yi* must cliticize to *V*.

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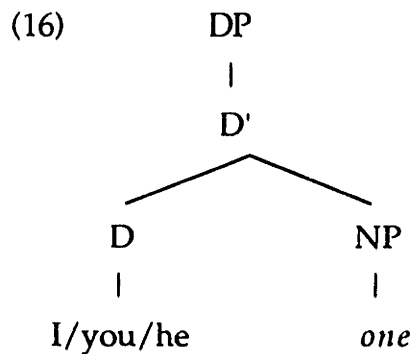
<sup>2</sup> The implication of this theoretical orientation for Icelandic quirky case is that there must be two sets of morphological features. Those responsible for licensing a DP and those responsible for the actual morphology that appears on the DP. I will be speaking of the former kind of feature in this chapter. I will comment on this distinction in section 10.3 in more detail.

The direct object pronoun always takes on the cliticized form, which is stated in the *Obligatory Pronoun Cliticization* condition.

- (15) a. \* me fo yi  
           I hit him
- b. me fo-e

Assuming that the *-e* in sentence (15b) is underlyingly *yi* accounts for the fact that the direct object pronoun displays exactly the same height assimilation and tone loss as the indirect object pronoun *yi*, in (12) above.<sup>3</sup>

Postal 1969 and Abney 1987 analyse pronouns as determiners. Given the assumption that determiners are *he..ds*, we have the following structure:




---

<sup>3</sup> When *yi* appears as an object pronoun it is obligatory (i.e., there is no unergative verb meaning "to eat" in Ewe), except in the case where there is a linguistically present non-specific DP that can serve as an antecedent. In this case, it is optional. This is illustrated in the following:

- (i) ne wo da nu, ma du (i)  
       If they cook thing I-fut eat (it)  
       "If they cook something, I will eat it"

The conditions on this null pronoun resemble those of VP-deletion in English. For example, the deletion does not obey island constraints. I will not comment on this construction in the rest of the paper.

In the analysis of Postal, *one* deletes, and the grammatical features of the determiner are spelled-out as the personal pronouns.<sup>4</sup> In Ewe the D would follow its NP complement, since determiners follow NPs. This structure will be important, when we differentiate pronoun structures from determiner doubling.<sup>5</sup>

The full set direct and indirect object pronouns is given as follows:

(17) Direct and Indirect Object Pronouns

	singular	plural
1st	m	mĩ
2nd	wo	mi
3rd	yí	wó
	(> e)	

This pronoun series is different from both the nominative pronoun series and the genitive pronoun series. Nonetheless, we will see that indirect objects behave differently from direct objects with regard to Case assignment. Indirect objects behave syntactically as though they receive an inherent Case and direct objects behave as though they receive a structural Case (in ways to be made explicit in section 2.7.). In order to capture the generalization that direct objects and indirect objects have the same pronominal series, while allowing them to be assigned Case in different ways, we can make the following morphological generalization:<sup>6</sup>

(18) Verbal Case Morphology

Any Case features checked in the minimal domain of V will be realized according to the series in (17).

---

<sup>4</sup> For some discussion of the fact that D is the site of  $\phi$ -features in a DP see Abney (1987: 283). It is irrelevant whether underlyingly *one* actually exists in (16), or whether there is a NP *pro* denoting the range of the definite determiner pronoun.

<sup>5</sup> Another piece of evidence for the general analysis of pronouns as determiners is that in the closely related Kwa language Akan the definite article and the third person singular pronoun are homophonous, *no*. This is not the case in Ewe where the definite article is *la*.

<sup>6</sup> Other languages do not have such a condition. In French the dative pronouns are different from the accusative in the third person.

## 2.4. *yi* in Determiner Doubling Constructions

### 2.4.1. The Structure of Determiner Doubling

The morpheme *yi* has another use in which it doubles a (overt) DP. I will call this use *doubling yi*, as opposed to *pronominal yi* discussed in the previous section. In this section, we will give a preliminary analysis of the structure of this doubling construction, where I will analyze doubling *yi* as a determiner D.

In sentence (19), an example of the nominal adverb<sup>7</sup> *efiɛ-tɔ* "king-like" is illustrated. Here we see that *yi* can appear optionally adjacent to *efiɛ-tɔ*.<sup>8</sup>

(19) Kofi zɔ efiɛ-tɔ (yi)  
Kofi walked king-like

(20) efiɛ-tɔ (? yi), Kofi zɔ  
king-like Kofi walked

(21) \*Kofi zɔ efiɛ-tɔ nyitsɔ yi  
Kofi walked king-like the-other-day

(22) \*Kofi zɔ yi efiɛ-tɔ  
Kofi walked king-like

---

<sup>7</sup> One reason for assuming that *efiɛ-tɔ* "king-like" is nominal is that the morpheme *-tɔ* which I have glossed as "like", is homophonous with the possessive pronoun *-tɔ* meaning "the one of", e.g., *Kofi-tɔ* means "the one of Kofi". The semantics of the possessive pronoun *-tɔ* and the suffix *-tɔ* "like" seem sufficiently parallel to postulate that they are either identical or historically related. Given this relation and the fact that the possessive pronoun is nominal, it follows that the adverbial suffix is also nominal.

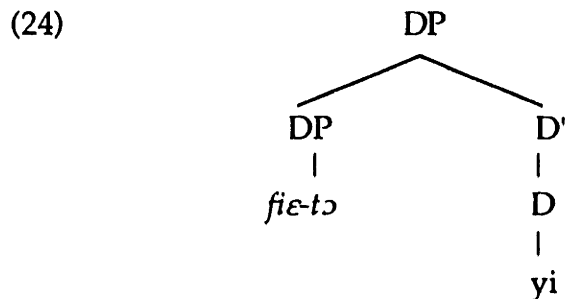
Additionally, CP, PP and most non-nominal adverbs do not undergo fronting easily, whereas nominal adverbs (in particular *efiɛ-tɔ* "king-like") do.

<sup>8</sup> The first analysis to deal with *yi* as separate morpheme for nominal adverbs is Agbadja (1983). In the dialect that Agbadja analyzes, *yi* undergoes obligatory assimilation.

- (23) Kofi zɔ efie-tɔ (yi) nyitsɔ  
 Kofi walked king-like the-other-day

Sentence (20) illustrates the fact that *yi* can be optionally preposed with the nominal adverb (constituent fronting gives rise to a focus interpretation). I take this as evidence that the DP and *yi* are in one constituent together. Further evidence for this assumption comes from sentences (21-23). In sentence (21) we see that a temporal adverb cannot intervene between the adverb *efie-tɔ* "king-like" and *yi*. In sentence (22), we see that the order of the nominal adverb and *yi* is fixed. Note that sentence (22) cannot be explained by saying that *yi* must appear at the end of a sentence, since (23) shows that this is not necessary.

These facts indicate that *yi* and the DP it appears with form a constituent with some internal structure. I will assume a structure for the phrases involving *yi* above analogous to the structure (16) proposed for pronouns. This analysis was also proposed for clitic doubling in Romance by Uriagereka (1988, 1991). My analysis can be seen as an attempt to work out the details of Uriagereka's analysis for a specific language. Adapting this idea to Ewe we have the following representation:

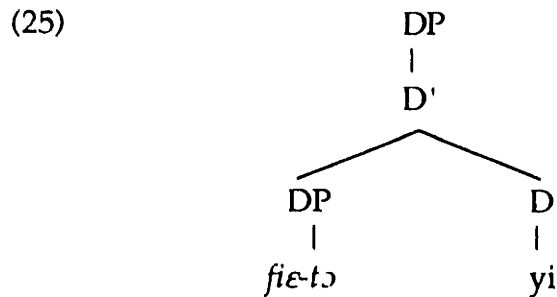


On this analysis, the predicative DP *efie-tɔ* "king-like" is in the Spec position of the D *yi*.<sup>9</sup> I will call determiners such as doubling *yi* in (24), *doubling determiners*. Note that there is an important difference between this structure and the structure that I assumed for the analysis of personal

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<sup>9</sup> There is no surface evidence that *efie-tɔ* "king-like" is a DP in Ewe. Note that nominal secondary predicates are mostly DPs in English in that they have an overt determiner "John left the school a good linguist."

pronouns in (16). In this structure the Spec of D is filled and the complement is empty, whereas with personal pronouns the Spec of D is empty and the complement is filled (with *ones*). I will return to a number of alternative analyses in the following sections. For the moment, I would simply like to motivate placing *efie-tɔ* in Spec D instead of in the complement position, as below:



One reason to reject this structure is that *efie-tɔ* can be extracted away from *yi*, as illustrated in the following:

- (26) *fiε-tɔ*, Kofi zɔ (yi)  
 king-like Kofi walked D  
 "regally, Kofi walked"

It is not possible with any other determiner to extract away its complement, as shown in the following examples:

- (27) a. me na [DP kuku la/dɛ] Kofi  
 I gave hat def/indef Kofi  
 "I gave the hat to Kofi"
- b. [DP kuku la/dɛ], me na Kofi  
 hat def/indef I gave Kofi
- c. \*kuku, me na [DP t<sub>NP</sub> la/dɛ] Kofi  
 hat I gave def/indef Kofi

This extraction constraint also holds of English determiners and C<sup>0</sup>, their complements cannot be extracted. The functional elements D<sup>0</sup> and C<sup>0</sup> do

not seem to be proper head governors (see Rizzi 1990: 32). This gives evidence that in (26) above, *efiε-tɔ* "king-like" is not the complement of  $D^0$ , since then it should not be extractable. On the other hand, if *efiε-tɔ* "king-like" is in the Spec of doubling  $D^0$ , then the verb itself can be the proper head governor.

We can approach this difference between doubling *yi* and the other determiners from another perspective, without relying on the notions of proper head government. If N raises to D at LF in (27a), then we would not expect NP to move before S-Structure, since there would then be no N to adjoin to D (see chapter 3, section 2.2. and Collins (1993). Therefore we might be able to explain the facts in (27), without resorting to head government. Then to explain why the DP that *yi* doubles can be extracted away (as in (26)), we would only have to stipulate that nothing raises to doubling *yi* at LF. If this is correct, the extraction facts no longer constitute a piece of evidence for the analysis where *yi* doubles a DP in its Spec, yet they are consistent with this analysis.

#### 2.4.2. Case Assignment and Determiner Doubling

The fact that doubling *yi* appears on nominal adverbs is part of the following (approximate) generalization:

- (28) Distribution of Doubling *yi*  
*yi* optionally doubles any nominal expression which is  
in the minimal domain of the verb and is not the direct object.

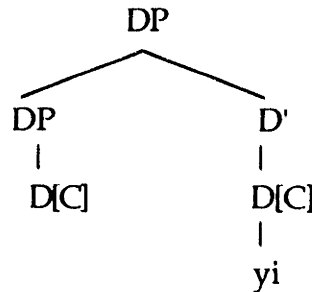
In this section I will give an analysis of doubling *yi* that explains this generalization. The basic idea will be to suppose that doubling *yi* assigns a Case of its own. Therefore, *yi* can only double DPs that are not already assigned Case, since otherwise there would be a kind of "case conflict" (although I do not assume this to be an independent notion). In this sense, doubling *yi* is a *default Case* assigner. We will come back to the notion of default Case in section 2.10.

We have up until this point shown the following: doubling *yi* heads a functional projection and its specifier can be filled by a DP. In the framework that I am assuming, feature checking (for example Case or +WH) takes place in the Spec position of a functional category. Given this framework, it is

natural to assume that *yi* is in a Case relation to its specifier. Let us make the following assumption:

(29) Case Checking by Doubling D

The doubling D checks off the Case features of its Spec.



Given this structure, the Case features of the Spec DP (written as C) are checked against those of doubling *yi*. The Case relation here is an example of structural Case, since there is no thematic relation between *yi* and its Spec. Sometimes I will say that *yi* assigns Case to its Spec, meaning that there is a Case feature shared by the D *yi* and its Spec that is checked off.

We will see in the discussion of ditransitive verbs and serial verb constructions, that there is no overt agreement between doubling D and the DP that it doubles in Ewe. In other words, for any choice of person/number features for the Spec of D, the determiner *yi* is constant.<sup>10</sup> Therefore it is natural to make the following assumption:

(30) Agreement Features of Doubling D

The  $\phi$ -features are not spelled out.

Now we are in a position to explain why the doubling D has the same morphological form as the accusative and dative third singular pronouns. Since the DP headed by doubling D occupies the position of a manner adverb in (19), it is in the minimal domain of V. Therefore the Case feature of doubling D will be checked off in the minimal domain of the verb. Now

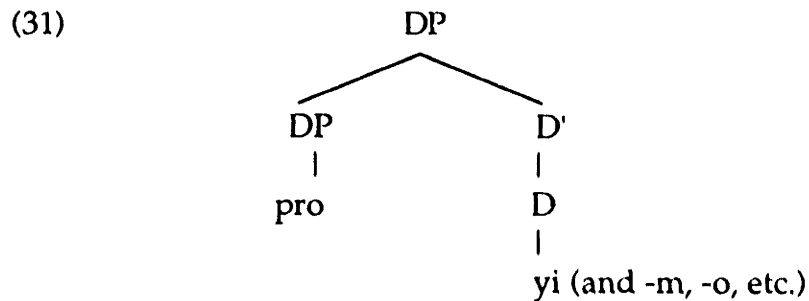
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<sup>10</sup> This situation is close to what we find with AGRs in Yoruba (Dechaine 1993), where one form of AGRs (HT) is used for subjects of all persons and numbers (for the strong pronominal forms). Similarly, in English and Ewe the possessive determiner does not show number agreement.

according to our generalization in (18) above, if a Case feature is checked in the minimal domain of the verb, it will be realized according to the morphological series (17). Therefore doubling D will be realized as *yi*.<sup>11</sup>

### 2.4.3. Relation of Doubling *yi* to Pronominal *yi*.

Given the above analysis of determiner doubling in Ewe, it may be asked if we can go back and reanalyze the personal pronouns as cases of determiner doubling, as illustrated in the following:



There are two problems with this account of the personal pronouns. First, the doubling *yi* is optional, whereas the personal pronouns are obligatorily present (except see footnote 3). Second, we noted that in determiner doubling constructions in Ewe there is no agreement between the determiner and the doubled DP (*yi* is used invariantly). Therefore, we would have to explain why only in the case of the personal pronouns a DP agrees with the doubling D (see the paradigm in (17)). If these problems can be overcome, then (31) would be a plausible representation for the personal pronouns.

An alternative possibility is that there is no relation at all between doubling *yi* and the third singular object pronoun *yi*. We have so far postulated that both pronominal *yi* and doubling *yi* head DPs and that they are both the realizations of the morphological paradigm in (17). It is conceivable that doubling *yi* is just some independent Case related

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<sup>11</sup> I take it that the third singular is a type of default person/number specification. This means both that a constituent not specified for person/number will trigger third singular agreement ("it bothers me that ..."), and that a head not specified for person/number features will be spelled out as third/singular (as in the case of the doubling D).

morpheme (perhaps a post-position of some type). There are a number of reasons reject this approach. First, the pronominal and doubling *yi* are identical in segmental, tonal and assimilation behavior. This makes it less likely that the two are accidentally homophonous. Second, doubling *yi* appears only in the minimal domain of *V*, as we will see in greater detail in section 2.5. If doubling *yi* were a postposition of some type, this restriction on its distribution would be unexpected. In other words pronominal *yi* and doubling *yi* are distributionally similar in that both must appear in the minimal domain of the verb, this is captured by the generalization *Verbal Case Morphology* in (18) above.

## 2.5. Predicative XPs

The theory given in section 2.4 predicts whether or not *yi* will appear on a wide range of predicative XPs: including adverbs, secondary predicates and the predicate of a small clause.

The following sentence illustrates a nominal adverb doubled by *yi*:

- (32) Kofi zɔ efie-tɔ (yi)  
 Kofi walked king-like D

Since we have assumed that all DPs have a Case feature, and since the Case feature of *efie-tɔ* "king-like" is not checked off in some other way, doubling *yi* can check off its Case feature.

I will also assume that the optionality of *yi* is a matter of morphological spell-out. In other words, doubling D is always present in (32), but is optionally spelled-out. Some evidence for the assertion that doubling *yi* is always present underlyingly comes from a consideration of other dialects. In the standard dialect of Ewe, *yi* is obligatorily present (and assimilates in height to the preceding vowel) for nominal adverbs in *-tɔ*. In the Agbessia dialect studied by Agbadja (1983), *yi* is optionally present, but obligatorily cliticizes.

- (33) a. dzidzɔ-tɛ (standard)  
 b. dzidzɔ-tɔ (yi) (Kpele)  
 c. dzidzɔ-tɔ (ɛ) (Agbessia)  
 "joy-like"

In fact Ansre (1966: 229) and Westermann (1930: 184) analyze *-tɔɛ* as an adverbializing suffix. The only problem with this analysis is that it is insufficiently general, and does not relate doubling *yi* as it appears with nominal adverbs to the other uses of doubling *yi*, which we analyze below (e.g., with secondary predicate, extracted indirect objects and SVCs).

I have no explanation for the differences between the dialects. It seems plausible to take the obligatoriness of doubling *yi* in standard Ewe, to indicate that doubling *yi* is underlyingly present even in Kpele-gbe.

It appears that *yi* can also double the trace of a moved constituent. Consider the following example of a fronted adverb:

(34) *efiɛ-tɔ*, Kofi *zɔ* (yi)  
king-like Kofi walked D  
"regally, Kofi walked"

(35) Kofi *zɔ* (\*yi)  
Kofi walked D

In the above sentence there is a *yi* which does not appear adjacent to any DP. If there is no fronted constituent as in (35) *yi* is not possible, which indicates that the presence of *yi* in (34) is linked to the presence of the fronted nominal adverbial. The most straightforward way to explain this correlation is to assume that the *yi* in (34) doubles the trace of the fronted *efiɛ-tɔ*. If it is possible for *yi* to double the trace of a moved DP, then it must be true that the trace has a Case feature to check off.<sup>12</sup>

Our theory predicts that *yi* will not be able to appear on non-nominal adverbs. We have assumed that Case is a property of DPs. If *yi* appeared on an adjectival adverb, it would not be able to check off its own Case features, and

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<sup>12</sup> It might seem as if a trace does not have determiner and therefore it should not have a Case feature to check off either. I will deal with this issue more explicitly in discussing the extraction of indirect objects, where I will assume the copy theory of movement.

One very common use of *yi*, in both speaking and writing, is with clauses introduced by *lama* (=How?) and *lexe* (=the way which). (These elements would be *aleke* and *alesi* respectively in standard Ewe.) This would follow on my account if *lama* and *lexe* were nominal adverbs, leaving traces.

the resulting representation would be unacceptable. This prediction is born out:

(36) me zɔ afɔ blewuu (\*yi)  
 I walked foot slowly D  
 "I walked slowly"

(37) e fu du sesedɛ (\*yi)  
 he beat course hard D  
 "He ran hard"

(38) e le sesedɛ  
 He is strong

In neither of the examples above is a *yi* possible. This correlates with the fact that neither *blewuu* nor *sesedɛ* are DPs. The adverb *blewuu* has final vowel lengthening that is characteristic of one class of adjectives and adverbs (see Westermann 1932: 186). The adverb *sesedɛ* ends with the *ɛ* derivational suffix, which forms predicate adjectives and adverbs from adjectives. This is illustrated for *sesedɛ* in (38), where *sesedɛ* is used as a predicate adjective.<sup>13</sup>

It might be claimed that APs have Case features, and so *yi* should double them as well. On this view, Case would not be a feature of D, but rather of the feature [+N]. This criticism is even stronger in light of the fact that we will be comparing doubling *yi* to Russian instrumental Case, which

<sup>13</sup> For an overview of adjective formation in Ewe, see Ameka (1991).

The distribution of *yi* thus gives us a sufficient condition for analyzing an adverb as nominal. Other manner adverbs that are not nominal in Ewe by this criterion are *kaba* (quickly), *baɖa* (badly), *sugbo* (a lot), *kakaka* (for a long time), and most ideaphones including *buu* (d'une facon béate)

In the standard dialect the equivalent of *yi* appears obligatorily on gerund adverbials, as in (i). For some reason, this is not always acceptable in Kpele, as shown in (ii):

- |     |  |      |                                |
|-----|--|------|--------------------------------|
| (i) | akpe-madamada-e<br>thanks-neg+giving-yi<br>ungratefully<br>(standard, Ansre: 1966) | (ii) | akpe-madamada (*yi)<br>(Kpele) |
|-----|--|------|--------------------------------|

can appear on adjectives. Note that the adjectives in question here (predicate adjectives, and those appearing as secondary predicates) appear with some type of derivational suffix. It may be that this derivational suffix is of the category [-N], and therefore neutralizes the [+N] feature of the adjectives to which it suffixes. I have no further evidence for this assertion right now.

Exactly the same sort of facts that we saw with adverbial expressions can be adduced in looking at resultative secondary predicates. Consider the following examples (I give several examples, as there are discussions of this construction in the linguistics literature):

(39) Kofi kpa ati-ε tati (yi)  
 Kofi carved stick-def pestle D  
 "Kofi carved the stick into a pestle"

(40) Kofi kpa ati-ε tsutsɔɛɔɛ (\*yi)  
 Kofi carved stick-def pointed D  
 "Kofi carved the stick sharp"

(41) e le tsutsɔɛɔɛ  
 it is pointed

(42) e me anyi-ε ame (yi)  
 he molded clay-def man D  
 "he molded the clay into a man"

(43) e dze ati-ε gbogblo (yi)  
 he cut tree-def plank D  
 "he cut the tree into a plank"

(44) wo ɔa ti-ε nukɔ (yi)  
 they cooked yam-def slices D  
 "they cooked the yam as slices"

(45) e wɔ ɔkoe-wo fiε (yi)  
 you make yourself king D  
 "you have made yourself a king"

- (46) wo    ɲɔ    wo    nya    ɖeka            -e  
they write them word one            D  
"they write them as one word"  
(standard Ewe, Gbekɔbu 1990: 13)
- (47) wo    ɲɔ    wo    nyakpe    vovovowo    -e  
they write them phrase    different    D  
"they write them as different phrases"  
(standard Ewe, Gbekɔbu 1990: 13)
- (48) ɖe    amɛ            aboyo            -e  
take person    loot            D  
"to kidnap somebody"  
(standard Ewe, Westerman 1973: 7)
- (49) me    me            la-la            yibɔɔ            (\*yi)  
I    grilled    meat-def    black

Sentence (39) illustrates an example of a resultative secondary predicate, where *yi* may occur. This is expected since *tati* is a DP whose Case features can be checked by *yi*. In (40) on the other hand, the secondary predicate *tsutsɔɖɛ* is not DP, rather it is a predicate adjective (see 41). Therefore *yi* cannot double it, since it would not be able to check off its own Case features. The other examples just illustrate the same phenomenon.

These facts argue against a pronominal analysis of doubling *yi*, where it is the controlled subject of the resultative predicate. This analysis is illustrated in the following example:

- (50) Kofi kpa    ati-ɛi    [DP tati    [DP yi]<sub>i</sub> ]  
Kofi carved stick-def    pestle    pron  
"Kofi carved the stick into a pestle"

On this view, *yi* is the subject of the secondary predicate *tati* and is coindexed with some argument. The problem with this view is that it would

not allow us to explain why *yi* does not appear with the predicate adjective secondary predicates, which would presumably need to have a subject as well.

Similarly, *yi* can appear on the nominal predicate of a small clause, as illustrated below:

- (51) wo nya Yao tsitsa (yi)  
 they knew Yao teacher D  
 "They know that Yao is a teacher"
- (52) wo bu Yao futɔ (yi)  
 they consider Yao enemy D  
 "They considered Yao an enemy"
- (53) wo kpɔ Yao alakpatɔ (yi)  
 they saw Yao liar D  
 "They saw Yao as a liar"
- (54) wo ɔɔ Yao fie (yi)  
 they elected Yao king D  
 "they elected Yao king"
- (55) wo me bu-i naneke-e o  
 they neg consider-it nothing-D prt  
 "they considered it as nothing"  
 (Westermann 1930: 147)

Our theory predicts that *yi* will not double CP or PP adverbial expressions. Since these categories do not bear Case features, they should not be doubled by *yi*, this appears to be true:<sup>14</sup>

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<sup>14</sup> The fact that *yi* cannot double CP parallels the fact that in English *of* is not used for the CP complement of an adjective:

- i. John is afraid \*(of) Mary
- ii. John is afraid \*(of) that Mary will leave him

In section 2.10., I will suggest that *of* in the domain of a N is the counterpart of *yi* in the domain of a V.

- (56) Kofi tsɔ ga na-ŋ [CP be ma yi Kpalime ] (\*yi)  
 Kofi take money gave-me [CP that I-subjn go Kpalime] D  
 "Kofi gave me money to go to Kpalime"

The same is illustrated for PP with the minimal pair below:

- (57) Kofi kpa ati-ε tati (yi)  
 Kofi carved stick-def pestle D  
 "Kofi carved the stick into a pestle"

- (58) me kpa ati-ε [pp sibe tati] (ene) (\*yi)  
 I carved stick-def like pestle prt D

The above two sentences are nearly synonymous, the only difference being that (58) involves the use of the preposition *sibe* (*like/as*). We see that *yi* cannot appear directly after the PP. This fact is the result of two factors. First, *yi* cannot double the PP itself, since a PP does not have Case features. Second, *yi* cannot double the complement of the PP, since the P already assigns inherent Case to the complement (the facts are a little more complicated, we will return to the problem of the object of PPs in section 7 on indirect objects). Other examples where *yi* cannot double a PP are the following:

- (59) ame de fi ga le xɔ-me (\*yi)  
 man indef stole money loc room-in D  
 "Somebody stole money in the room"

- (60) me wɔ dɔ ne Kofi (\*yi)  
 I did work for Kofi D  
 "I did work for Kofi"

- (61) me yi Sodo de nɔvi nye ta (\*yi)  
 I went Sodo loc brother my head D  
 "I went to Sodo because of my brother"

A conceivable alternative to explain the data in this section is to say that there is a categorial requirement on the Spec of doubling *yi* that it be a DP. I will assume that it is preferable to derive categorial requirements of this kind from Case theory. For a similar view relating to the subcategorization of verbs see Pesetsky (1983). The fact that Case distinguishes DP from other category types including CP and PP has been widely assumed (see Stowell 1981: chapter 3 for an extensive discussion).

An apparent counter-example to the claim that *yi* can double nominal adverbs comes from temporal adverbial expressions, which seem to be nominal but cannot be doubled by *yi*. This is illustrated below:

- (62) wo dzo nyitsɔ (\*yi)  
 They left the-other-day D  
 "They left the other day"
- (63) me yi Kpalime fidagbe (\*yi)  
 I went Kpalime Friday D  
 "I went to Kpalime Friday"

In the example *nyitsɔ* "the other day" and *fidagbe* "friday" are temporal adverbs. They seem to be nominal since they can appear in Spec NP and in the subject position. This is illustrated the following example:

- (64) nyitsɔ me dɔ  
 the-other-day gen work  
 "The work of the other day"

I will make the assumption that *nyitsɔ* "the other day" and *fidagbe* "friday" are the complements of a null preposition meaning something like

*at*. Given this assumption, the reason that *yi* cannot follow the temporal adverbs is the same reason *yi* cannot follow PPs in general.<sup>15</sup>

Other nominal expressions that can not be doubled by *yi* are the following:

(65) Kofi (\*yi), gane nɔvi-wo            ɔe  
       Kofi D,    where brother-your        Q  
       "Kofi,        where is your brother?"

(66) nyatefe (\*yi), me kpɔ Kofi  
       truthfully D,    I        saw    Kofi  
       "truthfully, I saw Kofi"

In (65), *Kofi* is a vocative DP (there is no overtly realized case morphology), that cannot be doubled by *yi*. In (66), *nyatefe* "truthfully" is a sentential level adverbial. In none of these cases can a *yi* appear, even though they both plausibly involve nominal constituents. At least in the case of (65), it is not plausible that the DP involved be the complement of a null preposition. These facts follow straightforwardly on the analysis we have given if we assume that *Kofi* in (48) and *nyatefe* "truthfully" in (66) are not in the minimal domain of the verb. Therefore the *yi* could not double these DPs, since doubling *yi* can only appear in the minimal domain of V, as discussed in section 2.4.2.

In conclusion, a large range of facts concerning the distribution of *yi* with XPs that are either adverbial or secondary predicates follows naturally from the theory that I am proposing.

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<sup>15</sup> . The assumption that certain adverbs (temporal and locative) are preceded by a null P is made by Huang 1982 to explain certain exceptions to the ECP. For an alternative see Larson (1985). I will discuss further the issue of "bare NP adverbs" in section 2.10., where I compare Ewe to Yoruba.

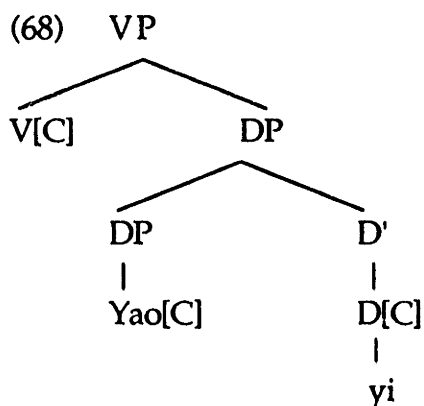
## 2.6. DPs with Structural Case

### 2.6.1. The Direct Object

A consequence of the above analysis is that *yi* will not be able to double any DP with structural Case. Consider first direct objects:

- (67) Kofi *fo* Yao (*\*yi*)  
Kofi hit Yao D

The basic reason that this structure is ruled out is that there are two Cases (accusative and the Case assigned by *yi*), and these are in conflict. To make this more precise, let us examine the structure in greater detail (some details have been suppressed):



In the above diagram I indicate the relevant Case features. The D *yi* has a Case feature, the verb *hit* has an accusative Case feature, and *Yao* has a Case feature (associated with a null determiner, if our general framework is right).

Since the Case feature of *Yao* is checked by *yi*, we might conclude that the above structure should be acceptable. But note that the verb has not checked off its Case feature, and it cannot since *Yao* has already checked off its Case feature. <sup>16</sup>

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<sup>16</sup> The following explanation would carry through equally on an AGRO based theory of Case assignment. We will see some evidence later for this kind of theory when discussing the progressive construction.

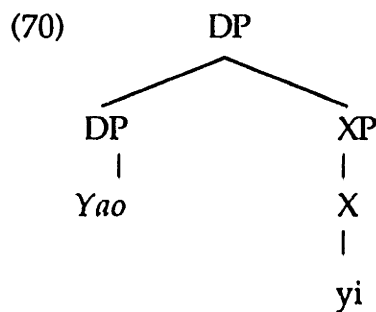
The same type of reasoning that ruled out *yi* on the direct object applies with the trace of A'-movement as well:

- (69) a. Kofi *fo* Yao (\**yi*)  
           Kofi hit Yao D
- b. Yao  $\epsilon$  Kofi *fo* (\**yi*)  
           Yao *foc* Kofi hit D

Sentence (b) is ruled out analogously to sentence (a). We must assume that the *wh*-trace bears a Case feature, just as a lexical DP does (a claim which I will return to in section 2.7. on the extraction of indirect objects).

Note that doubling *yi* in (69b) cannot be ruled out by stipulating that it does not appear on traces, since *yi* can double the trace of a A'-moved nominal adverb (see 34 above).

It is interesting to note that the facts presented so far are inconsistent with an adjunction analysis of the doubling *yi* structures. This is illustrated below:



In this structure, *yi* heads a maximal projection of some sort, and it is adjoined to the DP *Yao*. On this analysis, *yi* would be a kind of adverbial modifying particle. Since the DP *Yao* is not in a position of Case assignment with respect to *yi*, we would predict that *yi* could appear with direct objects as well as DP adverbial expressions, contrary to fact.

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Note that the preceding argument depends on the stipulation that the Case feature of a DP cannot be checked twice (so-called "case conflict"). On the AGRo based theory of Case assignment, no such stipulation is needed. DP could not raise to the Spec of AGRo to check the Case feature of the verb, since such a movement would violate Last Resort.

This analysis can be extended to the direct object trace of A-movement. In order to do this we must consider the examples of A-movement in the language.

### 2.6.2. A-Movement in Ewe and the Verbal Noun

In this section I will give some background on the progressive construction in Ewe, and show how it involves A-movement. On the basis of this construction I will investigate the possibility of *yi* doubling the trace of A-movement.

There have been many works that address specifically the syntax of the Ewe progressive and related constructions in related languages, these include Collins (1989) for Ewe, Clements (1972, 1975) for Ewe, Fabb (1992a,b) for Ewe and Fon and Kinyalolo (1992a,b) for Fon. In this section I will present an analysis which borrows from each of these sources.

This section will also provide additional support for the assumption made in section 2.6.1. that PP, CP and certain non-nominal adverbs do not need Case.

Consider the following paradigm of the Ewe progressive (all Ewe data is from the Kpele dialect unless otherwise indicated):

(71) me fo Kofi  
I hit Kofi

(72) me le Kofi fo  
I am Kofi hitting

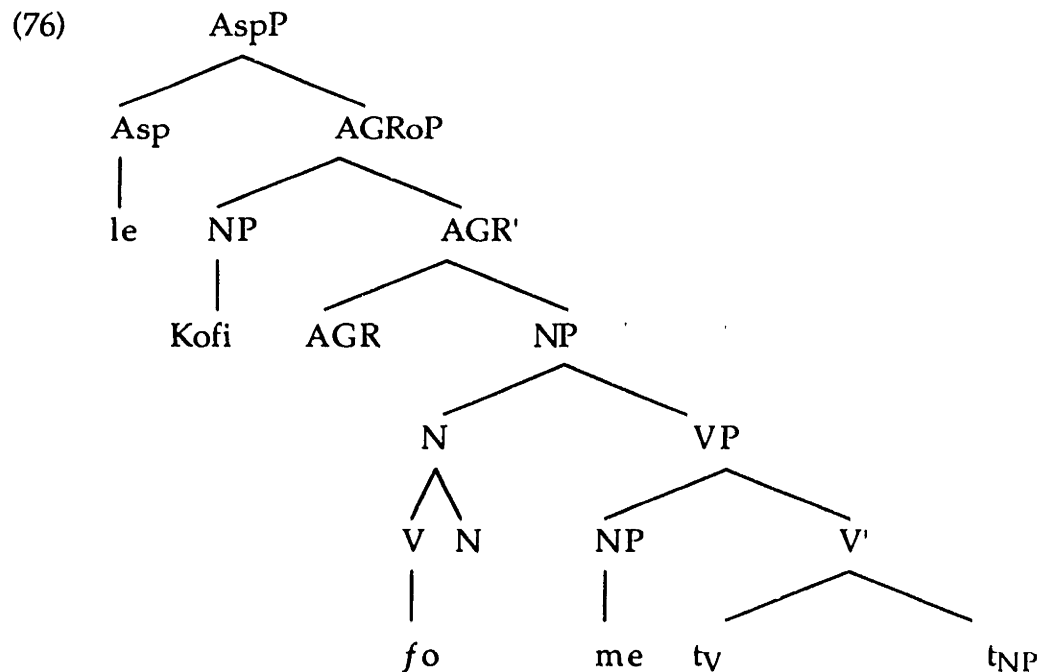
(73) me le Kpalime  
"I am in Kpalime"

(74) me le Kofi fo gbe  
I am Kofi hitting prt  
"I will hit Kofi"

(75) me le Kofi fo m (Anb)  
I am Kofi hitting prt

Sentence (71) illustrates the basic SVO word order of Ewe. In the progressive the direct object precedes the verb, as shown in (72). The verb has nominal characteristics (for example the object pronouns are genitive). The auxiliary is homophonous with the verb *le* "to be" (locative), as shown in (73). Sentence (74) shows that the inverted word order can also be used with a form of the future. The fact that the particle *gbe* is used after the future in (74) suggests that there is a particle in (72) underlyingly. This is consistent with the dialectal evidence in (75) where the progressive appears followed by the syllabic *m* (high tone), in standard Ewe.<sup>17</sup> I will ignore the syntactic analysis of the particle to simplify the analysis.

I will analyze the word order alternation in (72) as movement to Spec AGRoP for Case. This is shown in the following partial diagram:



This structure represents the fact that the verb has nominal characteristics (since it is incorporated into a N). The subject *me* "I" must still

<sup>17</sup> As a side note, the standard analysis of the particle *m* is that it is diachronically related to the morpheme *me* "in". Because of the tone difference, this seems to be to be suspect. A much more natural candidate for the diachronic source of the progressive *m* is the morpheme *fé* "place", given the frequent cross-dialectal shifts between the phonemes *f* and *m*.

be raised to Spec TP. Note that this movement will cross the filled Spec AGRo, thus violating relativized minimality. I will not address this problem here, nor justify other aspects of this structure. See Collins (1993a) for a detailed analysis.

One prediction that the above analysis of word order in the Ewe progressive makes is that only elements that get Case checked by the verb will be able to move. This turns out to be true. Consider the following paradigm, that contrasts CP and NP:

(77) Kofi le nya gblɔ  
 Kofi is word saying  
 "Kofi is saying something"

(78) Kofi le gbogblɔ be Yao dzo  
 Kofi is saying that Yao left  
 "Kofi is saying that Yao left"

If the complement of "say" is an NP, as in (11), then the NP moves into the preverbal position. If the complement of "say" is not an NP, as in (12), then no movement is possible, and the CP stays in-situ.

A similar paradigm can be given with prepositions. Consider the following paradigm:

(79) afi wo ge de xɔ-me  
 mouse pl fell loc room-in  
 "Some mice fell into the room"

(80) afi wo le gege de xɔ-me  
 mouse pl are falling loc room-in

(81) \*afi wo le de xɔ-me ge(ge)  
 mouse pl are loc room-in falling

(82) afi wo le xɔ-me dɔ  
 mouse pl are room-in entering



(85) Kofi zɔ fiɛ-zɔli (\*yi)  
 Kofi walked king-step D  
 "Kofi walked a king's walk" (= "Kofi walked like a king")

(86) Kofi le fiɛ-zɔli zɔ  
 Kofi is king-step walking

(87) Kofi zɔ efiɛ-tɔ (yi)  
 Kofi walked king-like D  
 "Kofi walked like a king"

(88) \*Kofi le efiɛ-tɔ zɔ  
 Kofi is king-like walking

Sentences (85) and (87) are nearly synonymous. The difference between them is structural. In (85), *fiɛ-zɔli* "king-step" is a cognate object, as reflected in the paraphrase. Sentence (86) shows that *fiɛ-zɔli* "king-step" is assigned accusative Case, since it is able to undergo A-movement. Correspondingly, *yi* cannot double *fiɛ-zɔli* "king-step" in (85).

On the other hand, the nominal adverb *efiɛ-tɔ* "king-like" can be doubled by *yi* in (87) indicating that it cannot be getting accusative Case from the verb. Correspondingly, *efiɛ-tɔ* "king-like" cannot undergo A-movement as shown in (88).

In addition to the correlation noted above, we also make the prediction that *yi* will not be able to double the trace of A-movement. This turns out to be correct:

(89) a. Kofi le nu<sub>i</sub> du [t<sub>i</sub> (\*yi)]  
 Kofi is thing eating D

b. \*Kofi le du nu yi  
 Kofi is eating thing D

We can explain (a) in the following way. Since *yi* checks Case, by Last Resort, it is not possible for the NP that *yi* doubles to undergo any further movement for Case.

Note that we can not explain the fact that *yi* cannot double the trace in (89) by stipulating that *yi* cannot double any traces, since in section 2.5. above we saw that *yi* can double the trace of a moved predicative NP (see (34)).

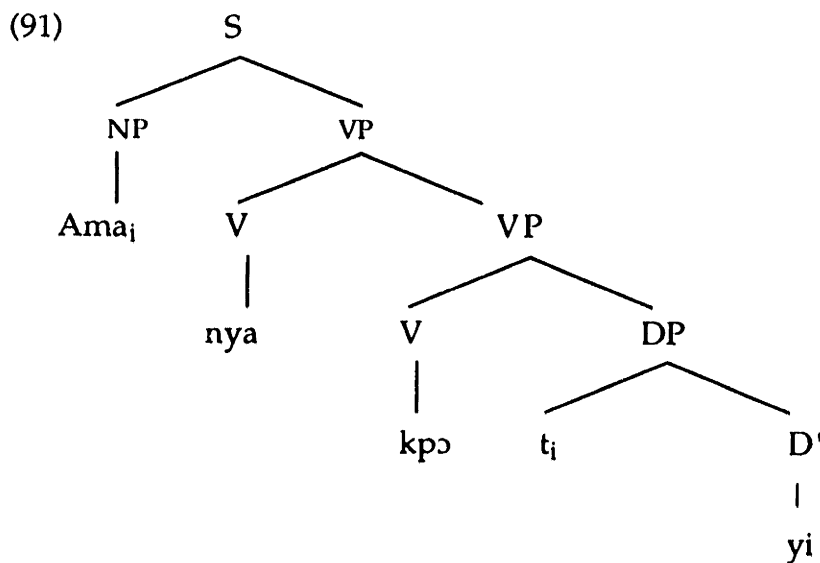
It might be expected that (b) is acceptable, since doubling *yi* now checks the Case of the object. The problem is that if *nu* "thing" does not raise to Spec AGRo, then the accusative Case features of the verb will not be checked.

### 2.6.3. The *nya*-Construction

The *nya*-construction is an additional construction that might be classified as an A-movement construction. Consider the following example:

- (90) Ama<sub>i</sub>nya    kpɔ    [ t<sub>i</sub> (\*yi)]  
 Ama    nya    see    D  
 "Ama is pretty" (= "Ama is nice to look at")

Let us assume that the *nya*-construction is structurally analogous to the passive in English.<sup>19</sup> The VP headed by *kpɔ* is embedded under *nya*, which absorbs the case of *kpɔ* and dethematizes the subject position (I will leave the exact mechanisms of these operations unspecified). This situation gives rise to A-movement:



<sup>19</sup> For a more systematic exposition of the properties of the *nya* construction see Ameka (1991).

We can now explain why *yi* cannot double the trace of the DP in (90). Before moving to Spec S, *Ama* is in a position to get structural Case from *yi*. Therefore, by Last Resort it cannot move to Spec IP to get Case features checked off.

Our general analysis is confirmed by the following data correlating DPs which can undergo A-movement in the *nya*-construction and DPs that cannot be doubled by *yi*. Consider the following paradigm (which is analogous to the paradigm given in (85-88) for the progressive):

(92) Kofi zɔ fiɛ-zɔli (\*yi)  
 Kofi walked king-step D  
 "Kofi walked a king's walk" (= "Kofi walked like a king")

(93) fiɛ-zɔli nya zɔ ne Kofi  
 king-step nya walked for Kofi  
 "It was nice for Kofi to walk like a king"

(94) Kofi zɔ efie-tɔ (yi)  
 Kofi walked king-like D  
 "Kofi walked like a king"

(95) \*efie-tɔ nya zɔ ne Kofi  
 king-like nya walked for Kofi

Sentences (92) and (94) are nearly synonymous. The difference between them is structural. In (92), *fiɛ-zɔli* "king-step" is a cognate object, as reflected in the paraphrase. Sentence (93) shows that *fiɛ-zɔli* "king-step" is assigned accusative Case, since it is able to undergo passive (I assume that a necessary condition of passivization is that some structural Case must be absorbed). Correspondingly, *yi* cannot double *fiɛ-zɔli* "king-step" (92).

On the other hand, the nominal adverb *efiɛ-tɔ* can be doubled by *yi* as in (94), indicating that it cannot be getting accusative Case. Correspondingly, *efiɛ-tɔ* "king-like" cannot undergo A-movement. <sup>20</sup>

#### 2.6.4. Other Structural Case Positions

We should note that doubling *yi* cannot appear with DPs in other positions where structural Case is assigned either, as illustrated below:

- (96) Kofi (\*yi) dzo  
       Kofi D left

In this example, we see that *yi* cannot double a DP that has nominative Case. There are two ways that we can explain this data. First we could appeal to reasoning similar to that used in preventing the direct object from being doubled by *yi*. Alternatively, we could appeal to the fact that *yi* never appears on a DP (or other nominal expression) that is not in the minimal domain of the verb, as in the Case of vocative DPs and sentential level adverbs discussed in section 2.5.<sup>21</sup>

---

<sup>20</sup> It is possible that the *nya*-construction really involves A'-movement. In this case the above results would could be derived as follows. Sentence (95) would be unacceptable, since *efiɛ-tɔ* "king-like" could not be the subject of the *nya*-construction for what ever reason adjuncts cannot be the subject in complex adjectival constructions in English:

i. \*yesterday was nice to have a picnic  
<sup>21</sup> Similarly, a genitive marked DP cannot be doubled by *yi*:

(i) Kofi (\*yi) me te  
       Kofi D POSS yam  
       "Kofi's yam"

## 2.7. Indirect Objects and A'-movement

A surprising example of the use of doubling *yi* is found for indirect objects. Consider the following paradigm:<sup>22</sup>

(97) me na kuku-ɔ Yao (\*yi)  
 I gave hat-def Yao D  
 "I gave the hat to Yao"

(98) me na kuku-ɔ (\*yi) Yao  
 I gave hat-def D Yao

(99) Yao ε me na kuku-ɔ (yi)  
 Yao foc I gave hat-def D  
 "It is to Yao that I gave a hat"

(100) kuku-ɔ ε me na (\*yi) Yao (\*yi)  
 hat-def foc I gave D Yao D

The following gives an example of the same phenomenon from the domain of questions:

(101) Kofi da tu Yao (\*yi)  
 Kofi shot gun Yao  
 "Kofi shot at Yao"

(102) me Kofi da tu (yi)  
 who Kofi shot gun D  
 "Who did Kofi shoot at"

---

<sup>22</sup> For an extensive and illuminating discussion of an element analogous to *yi* as it appears with indirect objects in Anlo Ewe, see Lewis (1985a,b). Data showing that *yi* does not agree in number with the antecedent of an indirect object trace was first noticed by Lewis. Lewis calls doubling *yi* in this environment "relative /e/." Lewis does not however equate this use of *yi* to any of the other uses that I discuss (adverbs or secondary predicates).

The sentences (97) and (98) show that *yi* cannot normally double the indirect objects or the direct objects of a ditransitive verb. If the indirect object is fronted, *yi* can appear, as shown in (99). Since *yi* cannot double direct objects, it follows that *yi* must double the trace of the indirect object in (99). If the direct object is extracted as in (100), *yi* cannot appear, either on the trace of the direct object (immediately following the verb) or after the indirect object.

Interestingly, if the indirect object is plural then it is still *yi* that doubles the trace and not *wo*, the third person plural pronoun. As illustrated in the following examples:

(103) ame xe wo Kofi da tu (yi/\*wo)  
 person which pl Kofi fire gun D  
 "the people who Kofi shot at"

(104) q̄evi wo e me na kuku-ɔ̄ (yi/\*wo)  
 child pl foc I gave hat-def D  
 "Its to the children that I gave the hat"

(105) Kofi fiε dzefefe q̄evi wo (\*yi)  
 Kofi showed toy child pl D  
 "Kofi showed the toy to the children"

(106) me wo Kofi fiε dzefefe (yi/\*wo)  
 who pl Kofi showed toy D

To account for this data, consider first the sentence in (97). I will assume that the indirect object is assigned inherent dative Case. If the indirect object is assigned inherent Case, then it follows that *yi* will not be able to double it, since *yi* would not be able to check off its own Case feature.

To explain why an extracted indirect object can be doubled by *yi* in (99), the basic idea is to assume that the fronted constituent pied-pipes the inherent dative Case. Therefore, the trace of the dative DP will not be assigned inherent Case and the Case feature of the trace can be checked off by *yi*. This is illustrated in the diagram below:

(107)	Yao	ε	me	na	kuku-ɔ	[DP ec]	yi
	Yao	foc	I	gave	hat-def		D
	C					C	

In the above diagram, C indicates the Case feature of a DP. The Case feature of *Yao* the head of the A'-chain, is checked off since *Yao* has inherent Case. The Case feature of the tail is checked off by *yi*.

A problem arises on this account. I am crucially assuming the checking theory of Case in order to explain the distribution of *yi*. If a dative DP can pied-pipe inherent Case, then the question arises how its trace also has a Case feature to check. If effect, both the head and tail would have Case features.

To answer this question, I will adopt the copy theory of movement (see Chomsky 1992). On this theory it is natural to say that both the head and the tail have Case features, since they are copies of one another. In addition, I will represent inherent Case as a KP, that takes a DP complement (this later assumption is completely arbitrary, and the following analysis would go through on a more feature based construal of inherent Case as well). Given these background assumptions, consider the following derivation of (99):

(108)	Before Movement					
	me	na	kuku-ɔ	[KP K	Yao]	yi
	I	gave	hat-def		Yao	D
					C	

(109)	After Movement <sup>23</sup>							
	[KP K	Yao]	ε	me	na	kuku-ɔ	[DP Yao ]	yi
		Yao	foc	I	gave	hat-def	Yao	D
		C					C	

---

<sup>23</sup> This representation feeds both LF and PF so I will not make the distinction between the two. If the Case feature of doubling *yi* is strong, Case checking will have to take place by PF, otherwise it can take place at LF.

The crucial assumption that I make is that the copy left in-situ does not have to be complete, therefore it is possible to not copy the inherent Case K onto the copy left in-situ. Since the tail does not get its Case feature checked off inherently (by K), its Case feature can be checked by *yi*.

In this analysis I have assumed that both the head and tail of an A'-chain have Case features. It remains to show that this does not block other types of A'-movement. Consider the following example:

(110) Yao  $\epsilon$  Kofi *fo*  
 Yao foc Kofi hit

(111) Yao  $\epsilon$  Kofi *fo* Yao  
 Yao foc Kofi hit Yao  
 | |  
 C C

If (110) is to be represented as in (111) the question arises as to how the Case feature of the head of the A'-chain could be checked off. The answer is to assume that Case features can be checked off derivationally, so that the representation in (111) is never formed.<sup>24</sup>

Another set of sentences that should be accounted for involve pied-piping of doubling *yi* itself, as illustrated below:

(112) kufie-to (?yi), wo fu du  
 laziness-like D he ran course  
 "Lazily he ran"

(113) Yao (\*yi), me na kuku  
 Yao D I gave hat  
 "to Yao, I gave a hat"

---

<sup>24</sup> On the theory of Case assumed here, this derivation crucially assumes going through Spec AGRo at S-Structure to check off Case and  $\phi$ -features. See Branigan 1992 for a discussion of this possibility in both French and English.

These sentences show that whereas a nominal adverb can marginally pied-pipe doubling *yi* when fronted, this is not at all possible for an indirect object. Consider the derivation of (113):

(114)	[ <sub>KP</sub> K	Yao]	<i>yi</i>	$\epsilon$	<i>me</i>	<i>na</i>	<i>kuku-tɔ</i>	[ <sub>DP</sub> Yao]	<i>yi</i>
		Yao	D	foc	I	gave	hat-def	Yao	D
		C						C	

We have assumed for convenience that the tail in (114), has been reduced, just as in the derivation in (109). Therefore, doubling *yi* can check off the Case of *Yao* the tail of the A'-chain. Whereas the tail poses no Case feature problems, the head still has two Case assigners (*yi* and K) and only one DP (*Yao*), so doubling *yi* will not be able to check off its own Case feature.

An alternative analysis might allow the head of the A'-chain to be reduced as well, thus allowing K to delete, and *yi* to appear, contrary to fact. In order to prevent this possibility, we must assume that during copy-movement, it is the tail that is a copy of the head, and not vice versa. Thus only the tail could be reduced.

The sentence in (112) does not pose the same sort of problems as that in (113), consider the post-movement representation:

(115)	<i>kufie-tɔ</i>	<i>yi</i>	<i>wo</i>	<i>fu</i>	<i>du</i>	<i>kufie-tɔ</i>	<i>yi</i>
	laziness-like	D	he	ran	course	laziness-like	D
	C					C	

In this representation the Case features of both the head and the tail can be checked off by doubling *yi*, and there will be no "Case clash".

Consider finally, the situation where a nominal temporal adverb is fronted, as illustrated below:

(116)	a.	<i>me</i>	<i>yi</i>	<i>Lome nyistɔ</i>	(* <i>yi</i> )
		I	went	Lome	the-other-day D
		"I went to Lome the other day"			

- b.    nyitsɔ                    ε        me yi    Lome    (\*yi)  
          the-other-day foc    I        went Lome    D

This sentence illustrates a difference between indirect objects and temporal adverbs, which otherwise behave similarly with respect to not being doubled by *yi*. Recall that we treated temporal adverbs as being the complements of null prepositions. If this is true we can explain the data in (116). If the null preposition that precedes the temporal adverb must be pied-piped<sup>25</sup> then the trace of the adverb will be a PP which can not be doubled by *yi*. Furthermore, since the preposition associated with the temporal adverb has a semantic role to play (perhaps similar to that of the English preposition *at*) it will not be able to be left out of the in-situ copy like the inherent Case in (109) was.

Lewis (1985a: 199, 1985b: 47) also shows that *yi* can appear with the trace of A'-movement from certain prepositional phrases (in Lewis' terminology: relative /e/ can occupy the positions) , for example, the object of *kple* (= *with*) or *wu* (= *more than*) in Anɔ Ewe. I illustrate this phenomenon below:

- (117) amedzro    si        wo    Kofi yi    Togo kpli-i  
          stranger    who pl    Kofi go    Togo with-D  
          "the strangers who Kofi went to Togo with"

- (118) amedzro    si        wo    Kofi du    nu    wu-(i)  
          stranger    who pl    Kofi ate    thing more-D  
          "The strangers who Kofi ate more than"

Note that although the relative pronoun is plural, the preposition takes the third singular object pronoun. Therefore we can conclude that we are in the presence of doubling *yi*.

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<sup>25</sup> Huang (1982: 538) attributes this to the CED for the adverbs *where* and *when* in English. It is not clear to me that the CED should apply here, since extraction away from temporal prepositions does not seem unacceptable in English: "What time did you arrive at?" I will simply assume that the null preposition associated with bare temporal and locative adverbs in English and Ewe must pied-pipe.

Lewis in fact claims that both *kple* "with" and *wu* "more than" are not prepositions. However, his reasons for asserting this are unconvincing. For example, he claims that the object of *kple* "with" has "subject affinities" while those of the other prepositions do not. This seems to me to show that the preposition *kple* "with" has a different meaning from the other prepositions, not that it is not a preposition.

Contrary to what Lewis (1985a: 200, 1985b: 47) claims, in standard Ewe *yi* can double the object of prepositions other than *kple* "with" or *wu* "more than". This is particularly clear with the preposition *tso* "from". I illustrate this in the following examples:

- (119) nyati si wo ju wo fo nu tso-e  
 theme which pl about they talked from-D  
 "themes which they discussed"  
 (La Nouvelle Marche, Nov. 27, 1990)

- (120) nu bubu si wo ju wo ga wo do tso-e  
 thing other which pl about they again did work from-D  
 "the other thing that they worked on"  
 (La Nouvelle Marche, Feb. 8, 1991)

These examples (which are very frequent in written text) are not as convincing as Lewis' since the antecedent of the A'-movement is the postpositional phrase headed by *ju* "about" which is singular. This makes it difficult to tell if *yi* is doubling the trace, or if the 3sg pronoun is acting as a resumptive pronoun.

I assume that the prepositional facts could be treated similarly to indirect object extraction, if we assume that certain prepositions assign inherent Case which can be left off of the in-situ tail of an A'-chain.<sup>26</sup>

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<sup>26</sup> In fact the data on the distribution of *yi* with prepositions is not entirely consistent across speakers, nor for given speakers at different occasions. There seem to be three classes of prepositions with respect to doubling *yi*. First, the locative prepositions *le* "in, at" and *de* "in, at, towards", the benefactive *ne* "for" and the comparative *sibe* "like" (see section 2.5) seem to resist doubling *yi* altogether. Second, other prepositions such as *tso* "from", *to* "via" seem to easily allow an A'-trace complement to be doubled by *yi*. Third, for the prepositions *ku* "with", *wu* "more than" the A'-trace

As an alternative to the analysis presented here, it might be claimed that *yi* is some sort of defective resumptive pronoun that appears optionally when the indirect object is extracted. As yet another alternative, Lewis (1985: 105) proposes that relative /e/ (doubling *yi*) can appear only for extraction out of "difficult" positions (in a sense he tries to make precise).

The main reason to reject this analysis is that the *yi* doubling the trace of an indirect object shares many of the properties of the other uses of *yi* (the doubling *yi* appearing with nominal adverbs and secondary predicates, and the *yi* appearing in SVCs to be analyzed below). First, the *yi* that doubles the trace of indirect objects is optional, like the other uses of doubling *yi*. Second, the *yi* that doubles the trace of an indirect object does not agree in person/number features with its antecedent, which we will also see in the case of SVCs in section 2.8. Third, and most importantly, all instances of doubling *yi* obey the *single yi constraint*, which we will discuss in greater detail in section 2.9. This constraint states that only one doubling *yi* can appear in each sentence, regardless of its origin. Pronominal *yi*, on the other hand, does not obey this constraint. If the *yi* that doubles indirect object traces obeys this constraint, then it is plausible that it should be analyzed like the other instances of doubling *yi* and not as a resumptive pronoun or a signal of extraction difficulty.

In conclusion, the data in this section suggest that our analysis of *yi* in terms of having Case to check is on the right track. In addition we have given strong support to the copy theory of movement and the feature theory of Case.

## 2.8. Empty Categories and Verb Serialization

### 2.8.1 Definition of SVC

In this section we will show that the distribution of doubling *yi* has an interesting implication for the analysis of Serial Verb Constructions. The full details of this analysis will be left until chapter 3. I define Serial Verb Construction below:

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complements cannot be so easily doubled by *yi*. It is even possible for some speakers to have doubling *yi* appear on an in-situ complement of the last two classes of prepositions. I have no explanation for this variation.

(121) Definition of SVC

A serial verb construction is a succession of verbs and their complements (if any) with one subject and one tense value that are not separated by any overt marker of coordination or subordination.

This definition is not meant to suffice as a theoretical definition, rather it serves to delimit the data. Its use lies in the fact that it correlates with another major generalization about SVCs that we will see in chapter 3. Here are three common examples of this type of construction:

(122) me    ɖa                    nu    ɖu  
I        cooked            thing ate  
"I cooked something and ate it"

(123) Kofi tsɔ    ati-ε        fo    Yao  
Kofi took stick-def hit Yao  
"Kofi took the stick and hit Yao with it"

(124) me    nya                    ɖevi-ε        dzo  
I        chased            child-def    leave  
"I chased the child away"

We will look into all these types of SVCs in far greater detail in chapter 3. For now, it is important to point out a generalization that has been made about SVCs.

(125) Argument Sharing in SVCs (Dechaine 1988, Baker 1989)

In a Serial Verb Construction, V<sub>1</sub> and V<sub>2</sub> must share an internal argument.

In (122), the direct object of *ɖa* (= *cook*) is understood as the direct object of *ɖu* (= *eat*). Since Ewe is an SVO language, in some sense it looks as if V<sub>2</sub> is

missing an object.<sup>27</sup> In addition, it is not possible to have an overt pronoun as the direct object of V<sub>2</sub> (unlike the English gloss). This effect is known as "argument sharing", since the object *nu* (= *thing*) is understood as the object of both V<sub>1</sub> and V<sub>2</sub>.<sup>28</sup>

The examples in (123) and (124) also involve argument sharing. In (124) the theme of V<sub>2</sub> is understood as the direct object of V<sub>1</sub>. And in (123) the instrument of V<sub>2</sub> is understood as the object of V<sub>1</sub>.

There are at least two possible ways of analyzing argument sharing. First, it could be assumed that there is an empty category following V<sub>2</sub> that is coindexed with the object of V<sub>1</sub>. On this analysis the representation of (124) would be as follows:

(126) me    nya            dɛvi-ɛ<sub>i</sub>        dzo            [ e<sub>c<sub>i</sub></sub> ]  
           I        chased        child-def    leave  
           "I chased the child away"

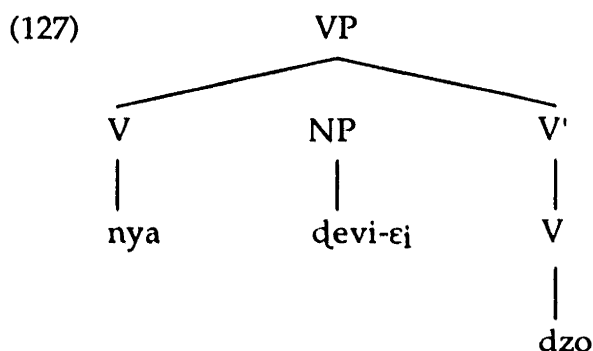
Examples of this kind of analysis include Carstens (1988), Campbell (1989) and in an older framework Bamgbose (1973, 1982). even though these two analyses differ as to the exact nature of the empty category that they postulate.

A number of authors have proposed analyses where object sharing is not mediated by an empty category. These include Lefebvre (1991), Dechaine, (1988, 1992), Baker (1989, 1991), Sebba (1987), Law and Veenstra (1992) (the later only for instrumental SVCs), and Schacter (1974). For example in Baker (1989), the V<sub>2</sub> in (124) takes the preceding object *nu* "thing" as argument, as illustrated below:

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<sup>27</sup> In a SVC with two verbs, I will refer to the first verb as V<sub>1</sub> and the second verb as V<sub>2</sub>.

<sup>28</sup> I will give an explanation for the generalization in (125) in the next chapter of this thesis. I will also discuss the fact that the subjects are shared in examples (122) and (123).



### 2.8.2. Existence of Empty Category in SVCs

We can use the distribution of doubling *yi* to diagnose the presence of an empty category in SVCs. Consider the following data, where V2 is unaccusative:<sup>29</sup>

- (128) me    nya            dɛvi-ɛ        dzo    (yi)        [dzoe]  
 I        chased        child-def    leave D  
 "I chased the child away"

In this example *dɛvi-ɛ* "the child" is the direct object of *nya* "chase", while at the same time it is the understood unaccusative object of *dzo* "leave". This example shows that it is possible for doubling *yi* to appear at the end of the SVC, even though there is no NP overtly present for it to double. In order to account for this, I will assume that there is an empty category that mediates the relationship between V<sub>2</sub> and the object of V<sub>1</sub> as in the following representation:

- (129) me    nya            dɛvi-ɛ<sub>i</sub>        [VP dzo        [ec<sub>i</sub>    (yi)]]  
 I        chased        child-def        leave            D  
 "I chased the child away"

Given the assumption that there is an empty category that mediates argument sharing, we can account for the presence of *yi* by postulating that it doubles the empty category.

<sup>29</sup> In the following example, *yi* obligatorily cliticizes to the preceding verb *dzo* to give the form *dzoe* (where *oe* is mono-moraic).



unlike other objects it has not been possible to establish that it operates as a complement in clause structure; 'object' because in all respects it is phonologically identical with the third person singular object pronoun." For us of course, the "redundant complement" does function as a complement of the second verb in the SVC in (128).

Let us now consider how *yi* checks the Case feature of the empty category in (128). Recall that we have shown that *yi* cannot double a direct object, since the direct object already has its Case checked by the verb. I repeat this below:

- (133) Kofi fo Yao (\*yi)  
 Kofi hit Yao D

Since *dzo* "leave" is unaccusative it does not assign accusative Case to its object. Therefore, *yi* can double the unaccusative object and check its Case features.<sup>30</sup> Other examples of this type of SVC include the following:

- (134) Atsufe he kekevi-ε<sub>i</sub> dzo [εc<sub>i</sub> (yi)]  
 Atsufe pulled bike-def leave D  
 "Atsufe pulled the bike away"

- (135) tsitsa yɔ mi<sub>i</sub> va (suku) [εc<sub>i</sub> (yi)]<sup>31</sup>  
 teacher called us come (school) D  
 "The teacher called us and we came (to school)"

Note that this last example shows that *yi* does not agree in either person or number with the [DP εc] that it doubles. Therefore, given the facts about *yi* doubling indirect object traces, we now have two cases where *yi* does not agree in φ-features with the DP it doubles.

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<sup>30</sup> In addition, unaccusative verbs of motion do not assign inherent "partitive Case" as shown by the fact that they do not occur in expletive constructions: \**e dzo ame-de* (= it left man-indef).

<sup>31</sup> In this example, *yi* obligatorily cliticizes to *va* to produce *ve*, if *suku* is not present.

### 2.8.3. Instrumental SVCs

We can make the same sort of argument for instrumental SVCs. Consider the following example:

(136) Kofi tsɔ ati-ε fo Yao (yi)  
Kofi took stick-def hit Yao D  
"Kofi took the stick and hit Yao with it"

(137) Kofi fo Yao (\*yi)  
Kofi hit Yao D

In (136), the SVC is followed by an optional *yi*. Given our analysis of *yi* as a determiner which doubles a DP, the question is what *yi* doubles in an instrumental SVC. Note that with a regular transitive verb *yi* cannot double the direct object, shown in (137). Therefore we can assume that the presence of *yi* depends on the fact that (136) is an SVC. Note that the direct object of  $V_1$  bears an instrumental thematic relation to  $V_2$ , i.e., *ati-ε* "the stick" is the instrument of *fo* "hit", as well as being the theme of *tsɔ* "take."

In order to structurally represent this thematic relation, I will assume that there is an empty category after  $V_2$  representing the shared argument:

(138) Kofi tsɔ ati-ε<sub>i</sub> fo Yao [ε<sub>i</sub> (yi)]  
Kofi took stick-def hit Yao D  
"Kofi took a stick and hit Yao with it"

Given this representation, we can now explain the presence of *yi*. The empty category following  $V_2$  does not receive accusative Case (since *Yao* as the direct object already receives the only accusative Case of  $V_2$ ). Therefore the empty category can be doubled by *yi*.

Additional evidence for the representation in (138) is that Ewe speakers will often gloss the *yi* in these instrumental phrases as meaning *with it*. We



We will come back to instrumental SVCs in much greater detail in chapter 3 of the thesis, where I will give a structural analysis of instrumental SVCs, and explain some further details of the construction. <sup>33</sup>

Before concluding this section, I will present Lewis' (1985: 197, 1985: 30, 34) account of doubling *yi* in SVCs. He claims that: "Just in case the DO of a VP in a SVC participates in the subjecthood of a following VP, the latter is (optionally) marked with S/E [doubling *yi* -c.c.]." Let us see how this accounts for the data so far. Consider the following sentences:

(143) me nya dɛvi-ɛ dzo (yi) [dzoe]  
 I chased child-def leave D  
 "I chased the child away"

(144) Kofi tsɔ ati-ɛ fo Yao (yi)  
 Kofi took stick-def hit Yao D  
 "Kofi took the stick and hit Yao with it"

In (143), the object of the first verb *nya* "chase" is the understood subject of the second verb *dzo* "leave". Therefore, this sentence satisfies Lewis' criterion. In (144), the object of the first verb *tsɔ* "take" is the instrument of the second verb *fo* "hit", and therefore participates in the "subjecthood" of the second verb.

The only criticism that I have of this approach is that it is insufficiently general. I would like to develop a theory where all the occurrences of doubling *yi* have the same analysis. This kind of semantic condition on SVCs does not

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<sup>33</sup> It is very possible that doubling *yi* in this use is related to the particle *ní* "with, by this means" that is found at the end of instrumental SVCs in Fongbe (da Cruz 1992: 257):

i. Kofi sɔ asyɔvi gbo atin ɔ na  
 Kofi took axe cut tree def with  
 "Kofi cut the tree with an axe"

I will leave this topic for further work.

extend easily to the doubling *yi* that appears with nominal adverbs, nor the doubling *yi* that appears with an extracted indirect object.

#### 2.8.4. Conclusion

In this section we saw that *yi* can appear in a wide variety of SVCs and deduced from this the presence of empty categories. This kind of probe for the presence of empty categories is parallel to that used by Sportiche (1988). Sportiche uses the presence of floated quantifiers which need to modify a DP to diagnose the presence of empty elements (e.g., the trace of A-movement). Similarly, since doubling *yi* must normally be in a highly constrained relation with the DP it doubles, it follows that if doubling *yi* appears in a SVC, then a DP for it to double must be present as well.

This result is of great importance for the theory of verb serialization. It places a limit on the form an analysis of verb serialization can take. Only those analyses that admit that internal argument sharing effects are mediated by empty categories are empirically viable. In chapter 3 we shall offer such an analysis.

We will return to the results of this section in section 2.10.2 when we look at instrumental Case marking cross-linguistically (in Ewe, Yoruba and Russian).

### 2.9. The Single *yi* Constraint

One assumption that I have made implicitly throughout this paper is that all of the occurrences of doubling *yi* involve the same analysis. In addition, I have assumed that this is not the case for pronouns, which I assumed do not double any DP in their specifiers. In this section I discuss the *single yi constraint* that offers support for these assumptions. I will also offer a tentative explanation of the constraint.

The central observation that we have to account for is that it is not possible for two or more constituents to be doubled simultaneously by *yi* in the sentence, no matter what their function. This is illustrated as follows:

- (145) e fo-e pətəpətə (yi) kufiɛ-tə  
 he hit-it ragout D laziness-like  
 "He beat it (the yam) into ragout lazily"
- (146) e fo-e pətəpətə kufiɛ-tə (yi)  
 he hit-it ragout laziness-like D
- (147) \*e fo-e pətəpətə yi kufiɛ-tə yi  
 he hit-it ragout D laziness-like D

Sentence (145) shows that *yi* can double the DP *pətəpətə* "ragout". Sentence (146) shows that *yi* can double the nominal adverb *kufiɛ-tə* "lazily" as well. Sentence (147), shows that both of these DPs cannot be doubled at the same time. We see the same pattern in sentences that involve an indirect object and a nominal adverb:

- (148) Yao ε me na ga (yi) nəvi-tə  
 Yao foc I gave money D brother-like  
 "It is to Yao that I gave money like a brother"
- (149) Yao ε me na ga nəvi-tə (yi)  
 Yao foc I gave money brother-like D  
 "It is to Yao that I gave money like a brother"
- (150) \*Yao ε me na ga yi nəvi-tə yi  
 Yao foc I gave money D brother-like D  
 "It is to Yao that I gave money like a brother"

These sentences show a pattern similar to those above. The *yi* can double either the trace of the indirect object (148), or the nominal adverb (149), but not both at the same time. We see the exact same behavior in serial verb constructions. Consider the following sentence:

- (151) \*wo kplə Yao yi sɔdza gbə yi dzikui-tə yi  
 they led Yao go soldier near D anger-like D  
 "They led Yao to a soldier angrily"

Although, the *yi* can double either the null object associated with the serial verb construction or it can double the nominal adverb, *yi* cannot double both the null object and the nominal adverb simultaneously.

Apparently, this constraint also applies even if the two doubling Ds are in different clauses:

- (152) \*Kofi gblɔ nunya-tɔ yi  
 Kofi said knowing-like D  
 "Kofi said knowingly  
 be ɖeviwo ε Yao na ga yi  
 that children foc Yao gave money D  
 that it is to the children hat Yao gave money"

This sentence indicates that even though the indirect object and nominal adverb are in different clauses they cannot both be doubled by *yi*. It is understood here that either the indirect object or the nominal adverb can be doubled by *yi* alone.

We see the same effect with serial verb constructions, as I indicate below:

- (153) \*Yao kplɔ ŋtsu xe me na ga yi  
 Yao led boy which I gave money D  
 "Yao led the boy who I gave money to Togo"
- yi Togo yi  
 went Togo D

This sentence shows that if an indirect object doubled by *yi* is in an embedded clause, it is no longer possible for *yi* to double the null object associated with the SVC.

The examples in (152) and (153) show that the two occurrence of doubling *yi* cannot be found in the same sentence, even if they are separated by an island (the focused phrase in (152) and the relative clause in (153)).

I will formalize the above restriction as follows:

(154) The Single *yi* Constraint

Only one DP per sentence may be doubled by *yi*.

The *single yi constraint* supports an important underlying assumption that I have been making throughout the paper. I have been assuming that all the occurrences of doubling *yi* (in nominal adverbs, secondary predicates, indirect objects, and serial verbs) are occurrences of the same morpheme. The fact that the distribution of *yi* in all these environments falls under the same constraint supports this claim. This is further supported by examples like the following:

- (155) Kofi da tu yi dzikui-to yi  
Kofi shot gun him anger-like D  
"Kofi shot him angrily"

The above sentence is acceptable even though *yi* has been repeated two times. The reason for this is that the first instance of *yi* is the indirect object pronoun, while the second is doubling *yi*. While these two elements share several characteristics, they are not identical and therefore there is no reason to expect them to come under the same constraint.<sup>34</sup>

I would like to claim tentatively that the facts above follow from a proper understanding of the semantic contribution of *yi* to the sentences. Following speakers suggestions, I will suggest that the presence of *yi* in a sentence adds emphasis so some aspect of the sentence. Consider the following sentences:

- (156) Kofi zo fie-to (yi)  
Kofi walked king-like D  
Kofi walked like a king

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<sup>34</sup> Another piece of evidence for unifying all of the uses of doubling *yi* is that dialects of Ewe seem to possess all the uses of doubling *yi* or none of them. In Kpele and standard Ewe we find doubling *yi* used with nominal adverbs and secondary predicates, indirect object extraction and SVCs. In the Waci dialect of Ewe and Gen we do not find any similar pronominal forms in any of these constructions.

(157) wo kpɔ Yao vɛnyitɔ (yi)  
 they see Yao liar D  
 "They see Yao as a liar"

(158) me Yao na ga (yi)  
 who Yao gave money D  
 "Who did Yao give money to"

In sentence (156), the presence of *yi* indicates that the way in which Kofi was walking like a king was visible and pronounced. In sentence (157), the presence of a *yi* indicates that not only do people think of Yao as a liar, but it is certainly true that he is one. In sentence (158), the presence of *yi* indicates that the speaker really wants to know the identity of the person that Yao gave money to. In a way, the semantics of *yi* mirrors the semantics of the word *really* in English when *really* is used to emphasize some aspect of a what a speaker is saying. Given this characterization, we can understand the constraint against having more than one *yi* in a phrase as a constraint against emphasizing two aspects of the same sentence.<sup>35</sup>

## 2.10. Implications for Case Theory

In this section, I will look at some of the broader implications that my analysis of doubling *yi* has for Case theory. First, I have repeatedly relied on the assumption that nominal predicates have a Case feature that needs to be checked. I will give further evidence for this assertion in section 2.10.1. Second, I have claimed that *yi* can double and check the Case of any DP in the minimal domain of V. In section 2.10.2., I will give some cross-linguistic evidence for this kind of analysis. Section 2.10.2. will also be a good place to discuss some alternative analyses to the Ewe data. In section 2.10.3., I will conclude by placing the notion of default Case in cross-linguistic perspective.

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<sup>35</sup> It is interesting to note that Westermann (1930: 146) gives several examples of what he calls "objective" stress: "In very many cases we find further that the third person singular pronoun is used to stress phrases, both subjectively and objectively." The examples that he gives of "objective" stressing are examples of doubling *yi*.

### 2.10.1. Predicates and Case Theory

In the above account of the distribution of doubling *yi* we have postulated that DP predicates have a Case feature that needs to be checked. The visibility account of the Case Filter explicitly denies this assumption (for example, see Chomsky (1986: 95)). There are several pieces of evidence that predicative DPs need to be assigned Case in general. First, consider the fact that a predicative DP can undergo A-movement in the future and the gerund:

- (159) a.    Kofi    zu                    tsitsa  
              Kofi    became            teacher  
              "Kofi became            a teacher"
- b.    Kofi    le        tsitsa            zu            gbe  
              Kofi    aux    teacher        become     fut  
              "Kofi will be a teacher"
- c.    tsitsa            nye-nye        sese  
              teacher        be-be is-difficult  
              "being a teacher is difficult"

We argued in section 2.6.2 that such A-movement was motivated by Case. This type of evidence is quite strong for the general assertion that predicates have Case features that need to be checked.<sup>36</sup>

We can see the same sort of evidence in English. Consider the following fact, noted by Stowell (1978: 462):

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<sup>36</sup> The progressive facts show that the predicate *tsitsa* "teacher" is being assigned Case by the copular verb *nye* "be." This predicts that post-copular DPs will not be able to be doubled by *yi*, since they already have their Case checked by the verb, this prediction is true:

- i.        Kofi    zu/nye            tsitsa            (\*yi)  
           Kofi    become/is        teacher            D

- (160) a. \*There were two long-haired groupies real nuisances  
at the party last night
- b. \*There will be a good actor a murderer in Hamlet tonight
- c. \*There was a Mexican woman a contestant in the game  
show

We can explain this in the same way that Bures (1992) rules out transitive expletives in English, on the assumption that the predicative DP (underlined in all three sentences) has a Case feature to be checked (see Bures for the complete analysis, see Branigan and Collins (1993) for an additional application of Bures' ideas). If on the other hand, predicative DPs did not need Case, like PPs, then the sentences in (160) should be as good as the following:

- (161) There was a Mexican woman in the game show last night

Therefore, we have evidence to show that predicative DPs have Case to be checked in general. This assumption poses no problems to the theory of doubling *yi* presented in this paper.<sup>37</sup>

### 2.10.2. Other Systems of Default Case

In the above analysis we have proposed that any DP in the minimal domain of V can have its Case features checked by doubling *yi*, as long as it does not have its Case features checked in some other way (e.g., by the verb). In this sense doubling *yi* is a kind of default Case assigner.<sup>38</sup> In this section, I

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<sup>37</sup> The immediate consequence of this proposal is that in English a small clauses of the form: "I believe John a good friend", the predicate DP needs Case. This could be an instance of default Case assignment, see below.

In the sentence "John is a man" the verb *be* will have Case feature to check, as the unacceptability of (160) shows.

<sup>38</sup> This use of "default Case" should not be confused with another use, where some NP gets some sort of morphologically default case. Consider the following example, where the conjuncts of the subject should get nominative (based on the fact that they are parts of the subject), yet at least the first conjunct is accusative:

- i. me and you will go to the store

would like to illustrate two other systems of this sort. The first is the instrumental in Russian, and the second is Yoruba *ni*. Both of these systems differ slightly from the situation found in Ewe, in ways that I will try to explain.

### 2.10.2.1. Russian

Consider first the Russian instrumental Case, as described by Pesetsky (1982: 158), Bailyn and Rubin (1991), Wierzbicka (1980), and Kilby (1986). These authors illustrate that the instrumental occurs on XPs (either DP or AP) with a wide range of semantic types. I indicate some of the most important below (all sentences are from Bailyn and Rubin (1991), unless otherwise indicated):<sup>39</sup>

(162)	Ja	ščitaju	Sašu	durakom
	I-nom	consider	Sashu-acc	fool-instr
	"I consider Sasha a fool"			
(163)	Saša	ubil	Borisa	nožom
	Sasha-nom	killed	Boris-acc	knife-instr
	"Sasha killed Boris with a knife"			
(164)	Večerinka	byla	ustrojena	(studentami)
	party-nom	was	organized	(students-instr)

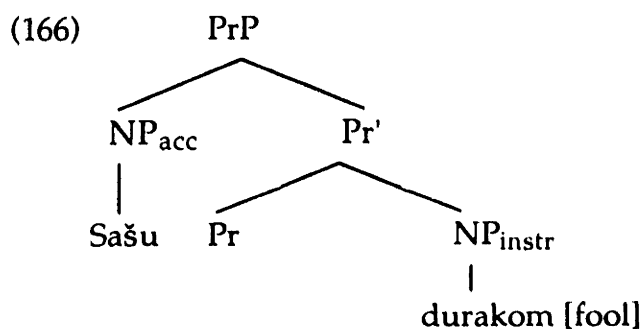
Bailyn and Rubin (1991) analyze all the examples above as a kind of predication. In doing so, they generalize the approach of Pesetsky (1982: 158) who gives the following principle:

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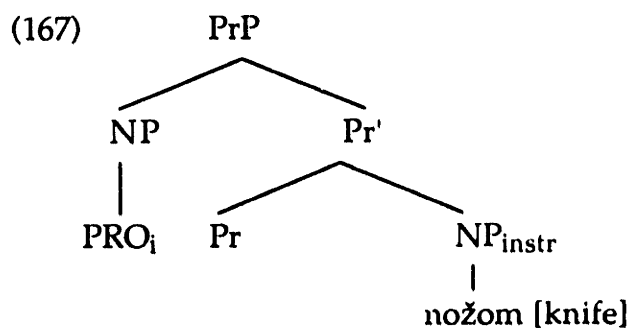
The default Case that I am describing is a kind of structural Case.  
<sup>39</sup> I follow Bailyn and Rubin (1991: 1) in excluding uses of the instrumental Case where it is "arbitrarily assigned by a lexical item (verb or a preposition) to its object."

- (165) Instrumental Case on Predicates  
 [+N] categories bear instrumental Case when they are  
 secondary predicates

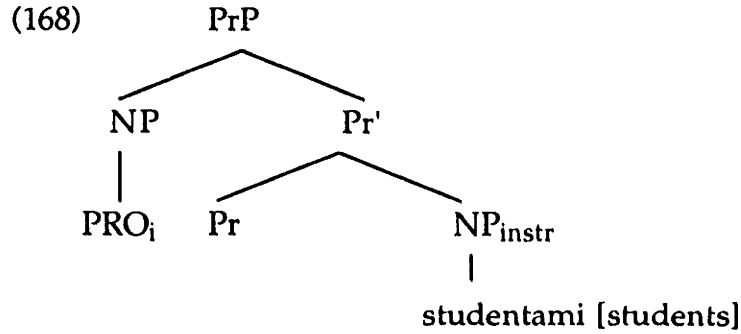
According to Bailyn and Rubin (1991), since (162-164) are instances of predication, they all involve a PrP (Predication phrase). Bailyn and Rubin (1991) postulate that the complement of the predication phrase is assigned instrumental (structural) Case. Therefore, the sentence in (162) would include a PrP embedded under the verb *ščitaju* "consider." I illustrate this below:



In all the other cases there is a predicate phrase (PrP) involved as well. In (163), the predicate phrase is controlled by the subject, and has a meaning such that the subject is understood as the being in an "operator-tool" relationship with the instrumental NP. The structure of this is given as follows, where PRO<sub>i</sub> is coindexed with the subject, *Saša*.



In the case of the agent of a passive, we have the the following predication phrase (PrP), in this case PRO is coindexed with the derived subject *Večerinka* "party."



The only real problem that this analysis faces is that unifying all the instances of instrumental along these lines seems to stretch the notion of predication, in a way that would require further justification.

It is possible to reanalyze the instrumental in Russian. Bailyn and Rubin (1991) take cases like (162) to be primary, and analyze all instances of instrumental as Case assignment by a predicating phrase (PrP). A different strategy is to assume that the reason the instrumental is assigned to such a thematically wide variety of DPs and APs is that it is really a kind of default structural Case, which applies to a [+N] XP that does not have its Case features checked in any other way. We can make this specific, and suppose that there is actually a null preposition that assigns the instrumental Case. This null preposition is inserted freely into the structure:

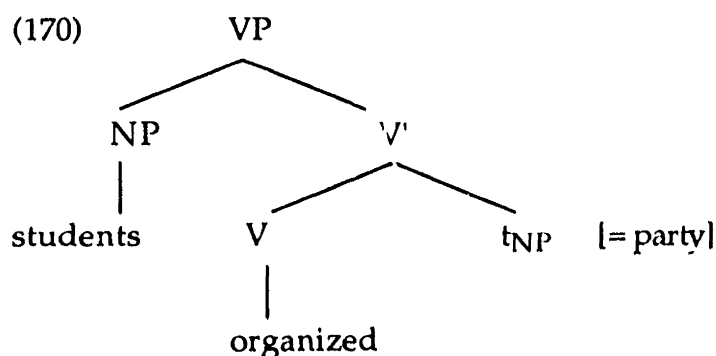
(169) Default Case in Russian

Any [+N] XP in the minimal domain of the V can be assigned Case by default through the insertion of a (dummy) preposition that assigns instrumental.

Thus we can analyze the Russian sentences as follows. In (162), *durakom* "fool" is not assigned structural accusative (there is already a direct object in the phrase of which *durakom* "fool" is being predicated of), nor is it assigned structural nominative since it is not in the checking domain of T. Since it is in the minimal domain of the verb, it gets the default instrumental.

The fact that instrumental appears on the demoted external argument in a passive construction follows from the default Case analysis, if we assume that the agent of a passive construction remains in its VP internal position.

This assumption essentially follows Watanabe (1993, section 4.2.3).<sup>40</sup> Under this kind of analysis, a partial representation of the passive in (164) would be:



Since the passive subject is in the Spec of VP, it is in the minimal domain of V, and therefore can receive default instrumental Case.

The fact that instruments receive instrumental default Case is more difficult to explain. A standard view of instruments is that they are adjuncts, illustrated in the following representation:

(171) Sasha [vp killed Boris ] [pp with a knife]

The syntactic and semantic implicit assumptions of the standard view are as follows. First, the PP is adjoined to the VP (an A'-position). Second, the PP acts as a predicate of the event denoted by the verb. The preposition "with" denotes a relation between events and instruments. While this view is attractive, it is inconsistent with the view of instrumental Case that I am developing here. Consider again (163) repeated below:

(172) Saša                      ubil              Borisa              nožom  
 Sasha-nom              killed              Boris-acc              knife-instr  
 "Sasha killed Boris with a knife"

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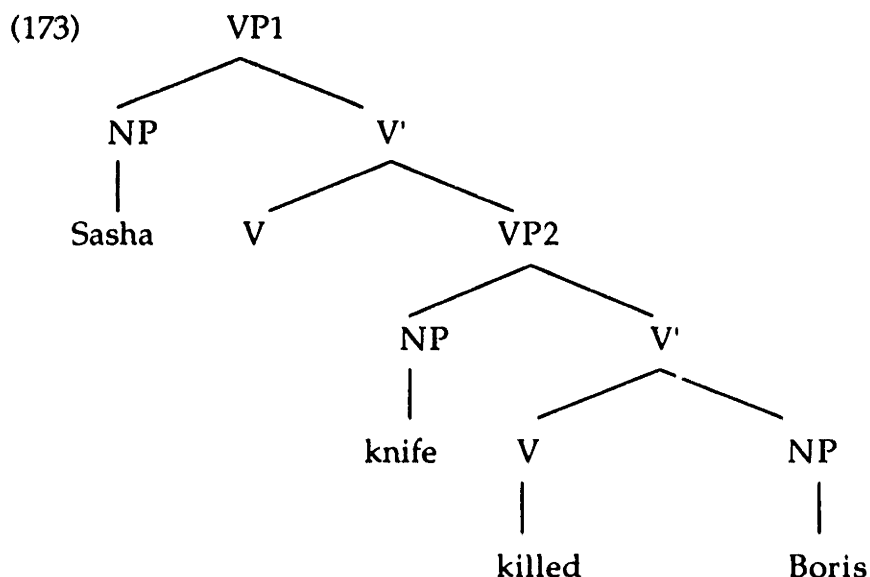
<sup>40</sup> Watanabe (1993: 4.2.3.) discusses the fact that the agent of a passive can bind a reflexive:

- i.      such privileges should be kept to oneself

These facts are consistent with a representation where the agent is in Spec VP in the passive.

On our view there is no meaningful preposition assigning instrumental Case to the instrument *nožom* "knife-instr". Rather there is a bare DP that receives instrumental by default.

It is thus necessary to abandon the traditional view. What we must show is that an instrument is a DP argument in the minimal domain of V that does not get structural Case. There is a growing body of work that argues that instruments can be an argument of the verb in some sort of Spec VP position (see Gruber (1990a) on English and SVCs, Marantz (1992) on applicatives, see also the chapter 3 of this dissertation on instrumental argument sharing). Therefore the representation of an instrument will be something like the that in (173).



On this view (which differs both from the view of Marantz (1992), and Gruber (1990a)), any sentence containing an instrument is a kind of causative. In other words, Sasha causes the knife to kill Boris. If this view (or the views of Gruber or Marantz) is correct, then the instrument is a bare DP in the minimal domain of a verb, that can be assigned Case by default.<sup>41</sup>

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<sup>41</sup> This is not meant to be a serious treatment of instruments, only illustrative of what such an account would have to look like under my analysis of instrumental Case. The questions that remain are the following: How does the object raise to AGRO in (173)? What happens with the instruments of undergative verbs (e.g., "talk with a microphone")? Should

Our analysis also makes the straightforward prediction that instrumental will never appear on direct objects. If the direct object received default instrumental Case, the accusative Case of the verb could not be discharged. Given this analysis, the following contrast discussed by Wierzbicka (1980: 15) is illuminating:

(174) Ivan           svyrjal                   kamnjami  
           Ivan-nom   was-throwing       stones-instr  
           "Ivan was throwing stones"

(175) Ivan           svyrjal                   kamni  
           Ivan-nom   was-throwing       stones-acc  
           "Ivan was throwing stones"

Wierzbicka describes the contrast above in the following terms: "...the instrumental case indicates the auxiliary and peripheral role of the object, and the accusative case indicates that the action is directed toward the object." She adds: "Verbs with 'instrumental objects' of the type under discussion here are felt to be, semantically and syntactically, intransitive." Lastly, she says that (174) and (175) are related by syntactic "demotion" of the direct object.

If Wierzbicka's characterization is correct, then the difference in Case assignment between (174) and (175) falls out from our theory. In (175), the verb is transitive, and assigns accusative Case to the object. Therefore the object cannot be assigned default instrumental. In (174), on the other hand, the verb is intransitive and has no accusative Case to assign to the the NP. Therefore this NP gets default instrumental Case.

This observation of Wierzbicka's will become important in looking at Ewe and Yoruba, where we will see that default Case can not appear on direct objects.

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*with*-phrases in English be analyzed in the same way, or as true adjuncts? If *with*-phrases in English are analyzed as arguments, how are the extraction differences between instrument arguments and direct objects going to be accounted for?

### 2.10.2.2. Ewe doubling *yi*

If we analyze Russian instrumental as a kind of default Case, then we see why it is used in roughly the same contexts doubling *yi* is used in Ewe. Consider the following Ewe sentences:

(176) wo nya Yao tsitsa (yi)  
they knew Yao teacher D  
"They know that Yao is a teacher"

(177) Kofi tsɔ ati-ɛ<sub>i</sub> fo Yao [ec<sub>i</sub> (yi)]  
Kofi took stick hit Yao D  
"Kofi hit Yao with a stick"

(178) me nya dɛvi-ɛ<sub>i</sub> dzo [ec<sub>i</sub> (yi)]  
I chased child-def leave D  
"I chased the child away"

(179) Kofi fo Yao (\*yi)  
Kofi hit Yao D

In (176), we have a case of a nominal predicate that is doubled by *yi*. In (177) we have an instrumental SVC. In section 2.8., I argued that the presence of the *yi* following the instrumental SVC should be analyzed as *yi* doubling the understood instrument of *fo* "hit". Since the empty category that represents the instrument of *fo* "hit" receives no structural Case (accusative or nominative), it is free to get its Case features checked by doubling *yi*.

A similar analysis holds for the argument sharing in resultative SVCs, such as (178). This case is analogous to the passive sentence in Russian. In both there is a argument DP that is left with no structural Case, and therefore gets its Case features checked by default (the instrumental in Russian, and doubling *yi* in Ewe).

Lastly, (179) cannot be doubled by *yi*, since it is already getting accusative from the verb, as in the Russian (175) above.

To summarize, we give the formulation of default Case assignment in Ewe below:

(180) Default Case in Ewe

Any DP in the minimal domain of the V<sup>+2</sup> can be assigned Case by default through the insertion of doubling *yi* that checks Case in its Spec.

It might be argued that doubling *yi* in Ewe, should actually be the head of the predicate phrase (PrP) postulated by Bailyn and Rubin (1991). The fact that *yi* can double an unaccusative object in a SVC argues against this alternative analysis of doubling *yi*.

To see this, let us consider the analysis of doubling *yi* in (178) again. It cannot be true that the resultative VP headed by *dzo* "leave" is being doubled by *yi*, since we saw that *yi* only doubles DPs, which we explained by the fact that *yi* assigns Case (this is similar to the fact that Russian instrumental only appears with [+N] XPs). In addition, it does not seem to be correct that the null object of the unaccusative V is a predicate, which would be necessary if *yi* were the head of a predicate phrase PrP. On the other hand, it can be claimed that this object does not receive structural Case or inherent Case, and therefore can get its Case checked by doubling *yi*.

There is one difference between the default Case system of Russian and that of Ewe which I will address here. Outside of SVCs, if a DP is to be understood as the instrument of a verb, it must occur with the preposition *ku* "with", I illustrate this below:

(181) Kofi            *fo*    Yao    *ku*    *ati-ε*  
         Kofi            hit    Yao    with   stick-def

(182) \*Kofi            *fo*    Yao    *ati-ε*            (*yi*)  
         Kofi            hit    Yao    stick-def        D

Since we are equating doubling *yi* with instrumental Case, sentence (182) should be as acceptable as the Russian (163). We will see that in Yoruba

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42 The fact that doubling *yi* sometimes appears in the domain of a preposition means that V in (180) will have to be changed to [-N].

the default Case assigner *ni* can also appear in sentences such as (182). Therefore, we must say something special about Ewe.

Note that (182) contrasts with SVCs, where the only form of Case assignment possible is by doubling *yi*, and an instrumental preposition can not occur:

(183) \*Kofi tsɔ̃ ati-ɛ̃i fo Yao ku ec̃i  
 Kofi took stick hit Yao with

(184) Kofi tsɔ̃ ati-ɛ̃i fo Yao [ec̃i (yi)]  
 Kofi took stick hit Yao D

I would like to claim that in Ewe, there is a special preposition that is used for instrumental arguments, just as in some languages there is a special preposition that is used for the demoted agent in a passive (e.g., *by* in English). We can account for the fact that the instrumental preposition is used obligatorily (instead of alternating with doubling *yi*) in terms of economy of derivation in the following way. The insertion of lexical material must be costless, otherwise we would not say anything. On the other hand, we know that the inserstion of "dummy" elements such as *do*-support and resumptive pronouns must not be costless, since otherwise we would get obligatory *do*-support in declarative sentences. Thus we have the following principle:

(185) Lexical Insertion

- a. costly insertions:  
     Dummy elements (*do*-support, resumptive pronouns)
- b. costless insertions  
     All other elements

This principle can be made to follow from the fact that the insertion of a dummy element is an operation that is purely internal to the computational component of the grammar, and therefore is subject to economy considerations as are all such operations.

Given this principle, if at a given step in the derivation the two possible operations are the insertion of an instrumental preposition, or the insertion of doubling *yi*, the preposition will be inserted.

This accounts for the difference between (181) and (182). Now we must account for the difference between the two SVCs (183) and (184). I will leave this dilemma for chapter 3, where I will develop a full theory of SVC.

There are many details which I am not addressing here. For example in Russian, in copular constructions, the predicate DP can appear with either nominative or instrumental Case (with important differences in meaning) (see Bailyn and Rubin 1991: 23). In Ewe, doubling *yi* never appears with the predicate DP in a copular construction. I will leave these important differences for further work.

#### 2.10.2.2. Yoruba *ni*

Another morpheme that I will analyze as an assigner of default Case is the Yoruba preposition *ni*, as described by Manfredi (1991), Gruber (1992), Oyelaran (1990), Madugu (1982), Rowlands (1969), Yusuf (1990). The approach that I will take to analyzing this preposition comes closest to that of Yusuf (1990) and Gruber (1992).

Yoruba *ni* behaves in a way similar to both doubling *yi* in Ewe, and Russian instrumental. Consider the following paradigm, which is analogous to the paradigms above:

(186) a      mọ̀n            ọ́ọ      ní      Ọba  
          we    know            you    P      King  
          "We know you to be king"  
          (Abraham 1958: 440)

(187) Nigeria      kọ            Awólọ̀wọ    ni    aarẹ  
          Nigerians    rejected                            P    President  
          "Nigerians rejected Awólọ̀wọ as President"  
          (Yusuf 1990)

(188) o lu mi ni kumọ  
 he hit me P stick  
 (Rowland 1969, pg. 85)

(189) mo ra (\*ni) bata  
 I bought P shoe  
 "I bought shoes"

(190) nwọn fun mi ni owo  
 they gave me P money  
 "They gave me money"  
 (Rowlands 1969, pg. 85)

This paradigm for the use of *ni* in Yoruba bears much similarity to the paradigms for both Ewe and Russian. Examples (186-187) show that *ni* is used to assign Case to predicative expressions. Example (188) shows that *ni* can assign Case to instruments.<sup>43</sup> Example (189), shows that *ni* cannot appear with an accusative direct object. These data already suggest that *ni* should be treated as a default Case assigner.

We showed in Russian that instrumental can appear with a demoted agent in a passive. This is not possible to show in Yoruba, since there is no passive. In Ewe, we showed that *yi* can appear with a shared unaccusative object. This is not possible to show in Yoruba, since we shall see that *ni* never appears in SVCs in Yoruba for principled reasons.

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<sup>43</sup> Not all instruments can be appear as the complement of *ni*. For example in (iib) below the preposition *kpelu* "with" must be used instead. We have the following contrast (Gruber 1992: 162). See Manfredi (1991: 138) for an alternative.

- |  |   |
|--|---|
| <p>i. a. Bade fi ọbẹ gun Tolu<br/>         Bade use knife stabbed Tolu<br/>         "Bade stabbed Tolu with a knife"</p> | <p>b. Bade gun Tolu ni ọbẹ<br/>         Bade stabbed Tolu knife<br/>         "Bade stabbed Tolu with a knife"</p>         |
| <p>ii. a. Dada fi ibọn pa ẹyẹ<br/>         Dada use gun kill bird<br/>         "Data killed a bird with a gun"</p>       | <p>b. Dada pa ẹyẹ pẹlu/*ni ibọn<br/>         Data kill bird with/*ni gun<br/>         "Dada killed a bird with a gun"</p> |

There is one case where an argument that does not appear to get structural Case, gets assigned Case by *ni*. Consider (190), here we see that the theme of the double object construction is the complement of *ni*. This contrasts to (189), where we see that the direct object cannot be the complement of *ni*. The fact that *ni* cannot appear on the direct object follows directly from the fact that *ni* is a Case assigner, and the direct object already has structural accusative Case. But this implies that in (190), the theme of the double object construction does not have accusative Case.

Indeed on Larson's (1988: 352) analysis, the theme in a double object construction is demoted (just as the agent external argument in a passive is): "the theta-role assigned to the subject of the VP (the direct object theta-role) undergoes demotion ... under Argument Demotion this theta-role must be assigned to a V' adjunct." He then claims that the demoted theme receives inherent Case. Let us say that just as Russian has no prepositional *by*-phrase for the demoted agent in a passive, in Yoruba there is no inherent Case for the demoted theme in a double object construction. It therefore receives default Case via the preposition *ni*.

Yusuf (1990) has independently come to the same conclusion about *ni*, analyzing it as a default Case assigner. He gives the following characterization of the contexts where *ni* can appear in Yoruba:

(191) Distribution of *ni* in Yoruba

Where *ni* appears, there is an NP needing Case, either because it is adjacent to an intransitive verb ... or there is an NP already assigned Objective Case blocking the assignment of any other Case from the verb ...

We can modify this somewhat to bring it into line with our characterizations of Russian and Ewe:

(192) Default Case in Yoruba

Any DP in the minimal domain of the V can be assigned Case by default through the insertion of the preposition *ni*.

There are three major differences between Yoruba *ni* and Ewe *yi* that I would like to consider here. They behave differently in SVC, with

instrumental arguments, and with locative arguments. I will consider each difference in turn.

As we saw above, one of the major contexts in which *yi* is found in Ewe is in SVCs. Yet in Yoruba an isolated *ni* never appears at the end of a SVC (even where you would expect *yi* in Ewe) (from Rowland 1969, pg. 85):

- (193) a.   o    lu    mi    ni    kumɔ  
           he   hit   me   P    stick
- b.   o    fi    kumɔ<sub>i</sub> lu    mi    [(\*ni) ec<sub>i</sub>]  
           he   used stick   hit   me    P

In the first sentence, we see *ni* assigning Case to an instrumental NP. Now if the main verb *lu* (= *hit*) is made into the second verb in a SVC, then *kumɔ* (= *stick*) in (193b) will be coindexed with a null object that follows *lu* (= *hit*). Yet it is not possible to have a *ni* appearing with this null object. This difference between Yoruba *ni* and Ewe *yi* is correlated to another very general difference between the two.

Whereas it is possible for Ewe *yi* to double empty elements of various sorts (A'-traces, shared objects). It is never possible for Yoruba *ni* to appear with any empty category. This is illustrated with A'-movement below:

- (194) nwɔn fun mi ni owo  
        they gave me P money  
        "They gave me money"
- (195) (\*ni) owo ni nwɔn fun mi (\*ni)  
        K money foc they gave me P  
        (Rowlands 1969, pg. 85)

Sentence (195) shows that *ni* cannot be stranded by A'-movement. This fact will be incorporated into the spell-out rules for P in Yoruba. Apparently, Yoruba has a condition that *ni* must govern phonologically overt material, a natural condition for a Case assigner.

Given this condition on *ni*, we can easily explain the fact that *ni* does not appear in the SVC in (193b). The object following *lu mi* "hit me" is null and *ni* cannot take a null constituent as a complement.

The absence of *ni* in SVCs in Yoruba actually bears directly on an issue that was brought up above with respect to the correct analysis of doubling *yi* in SVCs in Ewe. In section 2.8.2., I mentioned that there are two possibilities for the analysis of doubling *yi*. In one analysis *yi* doubles the ec that is involved in argument sharing (the DP doubling analysis). In the other analysis, *yi* doubles the VP predicate (the predicate doubling analysis). I rejected the latter analysis, since it seemed incompatible with the fact that outside SVCs, *yi* only appeared with DPs (see section 2.5.). We have very strong confirmation of this conclusion in the Yoruba facts. Consider the following Yoruba (a) and Ewe (b) SVCs (Akin Akinlabi, p.c.):

- (196) a. O mu iwe (\*ni) wa (\*ni) (Yoruba)  
 he take book P come P  
 "He brought the book"
- b. e tsɔ ga va yi [vɛ] (Ewe)  
 he took money come D
- (197) a. Olu le ɔmɔ naa (\*ni) wa ile (\*ni)  
 Olu drove child the P come home P  
 "Olu drove the child home" (Yoruba)
- b. me kplɔ Ama yi Lome [ec<sub>i</sub> (yi)]  
 I led Ama go Lome D  
 "I led Ama to Lome" (Ewe)
- (198) a. Olu fi ɔbɛ (\*ni) gun ɔba (\*ni) (Yoruba)  
 Olu use knife P stab chief  
 "The thief stabbed the chief with a knife"
- b. Kofi tsɔ ati-ɛ<sub>i</sub> fo Yao [ec<sub>i</sub> (yi)] (Ewe)  
 Kofi took stick-def hit Yao D  
 "Kofi took a stick and hit Yao with it!"

Suppose that both Ewe *yi* and Yoruba *ni* were markers of predication (at least in some uses). If Ewe *yi* in the (b) examples were doubling the second VP in the SVC, then this should also be possible for Yoruba *ni*, in the (a) examples. Since these are not possible, I conclude that Yoruba *ni* does not signal predication, but is rather a Case assigner. Since Yoruba *ni* cannot be analyzed as a marker of secondary predication, there is no reason why Ewe *yi*, should have this analysis either, in particular in SVCs.

There is one last large difference between Yoruba *ni* and Ewe *yi*. Yoruba *ni* can appear on a wide range of temporal and locative DPs, which is not possible with Ewe *yi*. This is illustrated below:

- (199) a.    mo    ri-i            ni    ana            [ l'ana ] (Yoruba)  
           I    saw-him    P    yesterday  
           (Rowlands 1969: 85)
- b.    me    yi    Lome        nyitsɔ        (\*yi)    (Ewe)  
           I    go    Lome        yesterday    D  
           "I went to Lome yesterday"

Without giving a full explanation, I would like to relate this difference between Yoruba *ni* and Ewe *yi* to another difference. The complement of the locative verb *le* "to be" in Ewe cannot be doubled *yi*, whereas such a complement must appear with *ni* in Yoruba, as illustrated below:

- (200) a.    nwɔn        wa    ni    Eko    [ l'Eko ]    (Yoruba)  
           they        are    P    Lagos  
           "They are at Lagos"
- b.    wɔ    le            Lome        (\*yi)        (Ewe)  
           they    are            Lome  
           "They are at Lome"

In order to related this to the facts about temporal adverbs in (199). Let us suppose that in Yoruba, the temporal adverb is preceded by a covert version of the locative verb *wa* "to be", and in Ewe the temporal adverb is

preceded by a covert version of the locative verb *le* "to be". This would analogize the sentences in (199) to the following Ewe sentence, where the locative verb optionally appears before the temporal adverb.

- (201)            e        va    (le)    za-me  
                   he    came be    night-in  
                   "He came at night"  
                   (Westermann 1930: 105)

Now, the difference in (199a,b) reduces to that of (200a,b) since in (199a) the complement of the covert version of *wa* "to be" will be assigned Case by *ni*, and in (199b) the complement of the covert version of *le* "to be" will not be doubled by *yi*.

It should be remarked that the difference between locative verbs in Ewe and Yoruba, illustrated in (200a,b) is probably related to another difference. The locative complement of most unaccusative verbs of motion cannot be doubled by *yi* in Ewe or be marked by any preposition. In Yoruba on the other hand, these complements are usually<sup>44</sup> preceded by either *ni* or *si* "to,towards":

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<sup>44</sup> There are some unaccusative verbs of motion that do not take a preposition in Yoruba, these include:

- |    |                          |     |                              |
|----|--------------------------|-----|------------------------------|
| i. | Ojo re oja               | ii. | Olu bọ oko                   |
|    | Ojo go market            |     | Olu return farm              |
|    | "Ojo went to the market" |     | "Olu returned from the farm" |
- (Ogunbowale 1970: 88)

Similarly in Ewe there is a sense of *yi* "to go" which takes a locative preposition following it:

- |    |   |
|----|---|
| i. | e        yi-ε        ɖe        Kpalime            |
|    | he    go-hab    toward    Kpalime                 |
|    | "he was going toward Kpalime (...when I saw him)" |

Thus what is crucial for our account is that the covert locative preposition in Yoruba found in (199a,b) fall in that class of verbs that must have a preposition marking the complement.

- (202) a. o wa si ile-iwe (Yoruba)  
 he come to school  
 "he came to the school"
- b. Kofi va suku (\*yi) (Ewe)  
 Kofi come school D  
 "Kofi came to school"
- (203) a. mo lɔ si oko (Yoruba)  
 I went to farm  
 "I went to the farm"
- b. Kofi yi Lome (\*yi) (Ewe)  
 Kofi go Lome D  
 "Kofi went to Lome"

Therefore, we have related all major differences between the two languages as far as default Case assignment goes, to other differences between the languages. This allows us to keep our optimal account of the distribution of Ewe *yi* and Yoruba *ni*. They are both just assigners of default Case.

### 2.10.2.3. English Post-Nominal *of*

We have so far examined systems of default Case that occur in the minimal domain of the verb. It might be that the Case assigner *of* should also be analyzed as an assigner of default Case. Under this analysis its distribution would be roughly as follows:

#### (204) Default Case in English NPs

Any DF in the minimal domain of the [+N] can be assigned Case by default through the insertion of the dummy preposition *of*.

This account of explains two general facts. First, *of* does not seem to be linked to any specific theta-roles.<sup>45</sup> Second, *of* cannot be used outside of the minimal domain of N:

(205) \*the belief [<sub>IP</sub> of John to be nice]

Since we have seen that a general constraint on default Case is that it take place within the minimal domain of a lexical head, and *John* is not in the minimal domain of *belief* in (205), it follows that *John* cannot be assigned default Case.

It may be asked whether English has a default Case system in the minimal domain of V as well, such as Ewe, Yoruba or Russian. This would allow us to explain how the DP predicate gets Case in the following example:

(206) I consider John a nice person

The minimal assumption would be that there is default Case in English. We will see some consequences of this in the next section.

### 2.10.3. Some General Remarks on Default Case

I would like to conclude this chapter with a number of general remarks on the nature of default Case. First, there are some natural reasons for treating default Case as kind of a structural Case. First, default Case is not linked to any theta-role assignment, unlike inherent Case in general. Second, default Case seems to compete with structural Case. In other words, default Case never appears on a DP that is assigned structural Case. This is not true for the morphological quirky cases of Icelandic.

The theory of structural Case has been applied to a number of paradigms. We may ask if the introduction of default Case into the system allows the overgeneration of sentences that contain DPs that should not pass the Case Filter. Let us first make the assumption that English possesses a system

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<sup>45</sup> The fact that *of* cannot in general go with goals as in \**the entrance of the room* and \**the letter of Mary* must now be analyzed in some other way. Perhaps these involve incorporation of a null dative preposition, which is not allowed in nominalizations.

of default case in the minimal domain of V. Given this assumption consider the following examples:

(207) \*it arrived a man

- (208) a. a man was told that John left  
b. \*it was told a man that John left

If there is default Case, then (207) should be acceptable. The DP *a man* cannot receive Case, since it cannot replace the expletive *it* at LF (*it* is a clausal expletive in English). But that should not pose a problem, since *a man* can receive Default Case by hypothesis. The problem is that *it* will not be replaced by anything at LF, and therefore *it* will be uninterpretable.

We can recreate the problem with (207) by introducing a verb with both a DP and a CP complement, as is shown in (208). The example in (208a) shows that *tell* can be passivized. Yet it is not possible to form an impersonal passive, with the subject being the expletive *it*. This sentence should be acceptable, since *a man* would receive default Case and the expletive *it* would be replaced by the CP complement at LF. Thus it appears that the introduction of default Case into the grammar has had an undesirable consequence. How can we explain the unacceptability of (208), if there is default Case in English.

The first thing to note is that *tell* is a ditransitive verb. Therefore it has two structural Cases to assign. If *tell* is passivized, then one of those Cases will be absorbed. Therefore, it might still be thought that (208b) should be acceptable. The CP raises to adjoin to *it* at LF, and the DP *a man* gets the structural Case assigned by *tell*. The problem is that the movements necessary to move *a man* to Spec AGRO, and to move CP to adjoin to *it* at LF, will necessarily violate relativized minimality, as can easily be verified.

In fact, it seems hard to create any example where default Case allows overgeneration. We may conclude that the introduction of the notion of default Case into the grammar does not change any previous explanation of various Case related phenomena, and allows a comparative treatment of Ewe *yi*, Yoruba *ni*, Russian instrumental and English *of*.

## **2.11. Conclusion**

In this chapter I have analyzed in depth the distribution of the determiner *yi* in Ewe. The analysis has shed light on the theory of Case, verb serialization, and various other aspects of Ewe grammar. In the next chapter we will use the facts ascertained in this chapter to give a full theory of verb serialization.

## Chapter 3

### Empty Categories and Serial Verb Constructions

#### 3.1. Introduction

The goal of this chapter is to account for the syntactic behavior of Serial Verb Constructions (SVCs) in Ewe and to set them apart from other types of VP sequencing constructions. The two main syntactic features that I would like to explain are the distribution of doubling *yi*, and the distribution of the future marker.

The kind of theory of these phenomena that I will give resembles most closely Baker's (1989) account, although several major revisions have to be made to handle the Ewe data. In addition, I will try to assimilate a large portion of the data to standard results concerning argument structure in English (e.g., constraints on resultative predicates).

#### 3.2. Preliminary Issues

##### 3.2.1. Range of Constructions

Recall the definition of SVC *Serial Verb Construction* given in chapter 2, section 2.8.):

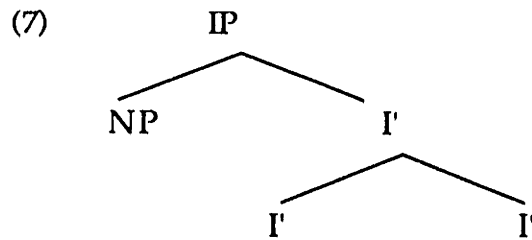
(1) Definition of SVC

A serial verb construction is a succession of verbs and their complements (if any) with one subject and one tense value that are not separated by any overt marker of coordination or subordination.

As I pointed out in chapter 2, this definition is not meant to suffice as a theoretical definition, rather it serves to delimit the data. Its use lies in the fact that it correlates with another major generalization about SVCs that we will see below. Consider the following examples in light of this definition:



on each verb separately.<sup>1</sup> This indicates that (4) is really a sequence of I's or I<sup>ps</sup>, and therefore not a single clause. To be concrete I will suppose that the structure of (6) is something like the following:



Therefore, only (3) counts as a SVC, since it only has one tense value for each of the two Vs.<sup>2</sup>

In this chapter, I will exclude discussion of all PPs and clausal coordination. One of the major goals of this chapter is to show that once this limitation is imposed on the data, SVC exhibit some very striking regularities.

### 3.2.2. LF Incorporation in SVCs

Let us return to the difference between VPs in SVCs and PPs. We have noted that there are researchers that have found systematic differences between VPs in SVCs and PPs, and that this is a reason to exclude PPs from consideration in building a theory of SVCs. In this section, I will address the primary difference between VPs in SVCs and PPs cross-linguistically. I will

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<sup>1</sup> Where it is not confusing, I will refer to the first verb that occurs in a SVC as V1 (e.g., *fo* "hit" in (5)), and the second verb as V2 (e.g., *gba* "break" in (5)).

<sup>2</sup> It is often remarked that SVCs have only one value for T, but there are only two places in the literature where this criterion is actually applied to the data systematically. These are Bole-Richard (1978: 40, 1983: 199) and Lewis (1989a, 1989b, 1991), both for Gen. Baker (1989: 547) notes that much of the SVC literature is obscured by the fact that "covert coordination" is not separated from SVCs. The future marking test eliminates most of this problem.

show how this difference follows from postulating that SVCs undergo LF incorporation.<sup>3</sup>

The main difference between PPs and VPs in SVCs is that PPs can be extracted in several languages, but there is no case where a VP in a SVC can be extracted. I illustrated this from Sranan (Jansen, Koopman, and Muysken 1978), Haitian (Dechaine 1988) and Fon (Lefebvre 1990):

- (8) a. \*bay ki moun Jam pran dlo  
 give which person Jean take water
- b. ba ki moun li te pote liv sa  
 ben which person 3sg PA carry book dem  
 "for whom did he carry this book"  
 (Dechaine 1988: 45, Haitian)
- (9) a. na nanga a nefa Kofi koti a brede  
 is with the knife Kofi cut the bread  
 "it is with a knife that Kofi cut the bread"
- b. \*na go na skola e tyari a pikin  
 is go to school he asp carry the child  
 "it is to school that he carried the child"  
 (Jansen, Koopman, Muysken 1978: 142)
- (10) a. Koku do ason na (Asiba) we (\*Asiba)  
 Koku is crab giving Asiba prt Asiba  
 "Koku is giving a crab to Asiba"

---

<sup>3</sup> The idea that there is LF incorporation of Vs in SVCs is originally due to Gruber (1990). Gruber presents evidence from predicate cleft for LF incorporation. Collins and Gruber (1992) give evidence on the basis of "splitting verbs" for LF incorporation. Collins (1992) gives essentially the same formulation that is presented below. The data that I will present below for LF incorporation is substantially different from Gruber's, but presented in the same spirit.

- b. Kɔku ɔo asɔn na we nu Asiba  
 Kɔku is crab giving prt for Asiba  
 "Koku is giving a crab for Asiba"  
 (Lefebvre 1992:17 for Fon)
- (11) b. Kɔku ɔo hwe wa (sin axi-me) we (sin axi-me)  
 Kɔku is house come from market prt from market
- c. Kɔku ɔo asɔn sɔ yi axi we (\*yi axi)  
 Kɔku is crab take go market prt go market  
 Lefebvre 1990:49,54 for Fon)

The examples from Haitian and Sranan show that PPs but not VPs can be fronted in a focus construction. The examples in (8) show that in Haitian a benefactive PP can be fronted, but the second VP in a SVC cannot be. The example in (9) shows that in Sranan an instrumental PP can be fronted, but not a directional VP in a SVC.

The remaining examples deal with word order in the progressive in Fon. Example (10) shows that all of the arguments of a verb must occur to the left of the progressive particle *wɛ*, but a benefactive PP can optionally be extraposed. Lastly, example (11) show that a directional PP meaning "from the market" can be optionally extraposed, but not a directional VP in a SVC.

Thus we have established the generalization that PPs but not VPs can be extracted in SVCs.<sup>4</sup> I propose to capture this difference by postulating that verbs in a SVC undergo LF incorporation, which I formulate below:

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<sup>4</sup> There are some caveats to this data. First, in Haitian it seems that the the directional VPs in a SVC are reanalyzing as PPs, since they can be extracted in some environments (Dechaine 1988: 44). Also, there seems to be another generalization in some languages that the object of a PP cannot be extracted, whereas the object of a VP can. I do not have an explanation of this fact.

This kind of fact is difficult to ascertain for Ewe, since the extraction of PPs is for the most part unacceptable. This seems to be part of a wider generalization that only nominal constituents can be fronted in Ewe:

- |    |  |     |   |
|----|--|-----|---|
| i. | *ku meni (ɛ) e fo Kofi<br>with what foc you hit Kofi<br>"What did you hit Kofi with" | ii. | *le gane e kpɔ Kofi<br>loc where you saw Kofi<br>"where did you see Kofi" |
|----|--|-----|---|

(12) LF Incorporation of SVCs

At LF, V2 incorporates into V1.<sup>5</sup>

To see how this captures the facts, consider again (9b). If VP2 has been fronted, then V2 will not be able to incorporate into V1 at LF.<sup>6</sup> The hypothesis that there is LF incorporation in SVCs will play a large role in our theory of SVCs. It should be noted that this type of explanation is quite general. Consider the following sentences from English:

- (13) a. \*[John to be nice], I considered  
b. \*How likely to be a storm was there  
c. ...and go the store, John \*(did)

All three of these sentences can be explained analogously to my explanation of the difference between VPs in a SVC and PPs. In (13a), *John* will not be able to raise to Spec AGRo at LF, since the IP has been fronted. In (13b), *a storm* will not be able to adjoin to *there*. Lastly, in (13c), the verb *go* will not be able to raise and check the N feature of T, so *do*-support is necessary. There are alternative accounts of the data in (13), but none with the generality of the LF movement analysis just given.

We must now ask how a condition such as the one in (12) can be derived. I will assume that every V must be in the checking domain of Tense at LF, I give this requirement as follows:

- (14) V must be in the checking domain of T at LF

---

<sup>5</sup> This analysis of SVCs recalls Stowell's (1991) analysis of small clause restructuring. He claims that in small clauses of the form "I consider John foolish" *foolish* incorporates into *consider* at LF. One motivation that Stowell gives for LF incorporation of a small clause head is close to mine. He states that a predicate head must be governed by a referential head (e.g., Tense).

<sup>6</sup> This explanation crucially assumes that LF head movement precedes reconstruction. Ultimately this should follow from the interpretive nature of reconstruction. See Collins (1993) for a detailed discussion of the effects of S-Structure movement on LF movement.

This requirement basically has the effect that *V* must move and adjoin to *T* at LF. In general, if a *VP*<sub>2</sub> is embedded under another *VP*<sub>1</sub>, then *V*<sub>2</sub> will have to adjoin to *V*<sub>1</sub> and the two together will have to move to *T* in order to satisfy (14).<sup>7</sup>

### 3.2.3. Argument Sharing and SVCs

The main empirical fact about SVCs (due to Dechaine (1986: 90), Foley and Van Valin (1985: 25, stated in terms of "core arguments") and Baker (1989)) is the following:

(15) Argument Sharing in SVCs

In a Serial Verb Construction, *V*<sub>1</sub> and *V*<sub>2</sub> must share an internal argument.

This is illustrated quite clearly in (5,6) above. When the direct object of the first verb is understood as the theme of the second verb, then only one future marker is used. When the direct object of the first verb is not understood to be an argument of the second verb, then the future must be marked twice. The primary goal of this chapter is to explain the correlation between the properties embodied in (1) and (15).

It should be noted that there are a number of researchers that reject (15) as a valid generalization. In particular Lewis (1991: 5) claims "The object-sharing property is only relevant to a small subset of the many types of SVC, so it cannot serve as a general diagnostic." Dechaine (1993: 269) states the results obtained by Baker (1989) with argument sharing can be captured better with an event structure template. I will be showing throughout this chapter that argument sharing plays a crucial role in SVCs.

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<sup>7</sup> This condition also has the effect that in sentences like "John would like an apple" *like* adjoins to *would* at LF explaining why movement of the object to Spec *AGRO* is possible at LF over the subject. We must ask how condition (14) is satisfied in the Case of VP fronting. I will simply assume that in English and Romance that there is an intervening functional projection (a type of infinitive) between the modals and *V*, and that *V* can raise to this node to satisfy (14).

### 3.2.4. Outline

In section 3.3. I will analyze in detail SVCs where the second verb is unaccusative. I will show that the syntactic characterization of these constructions is largely the same as that of resultative secondary predicates in English. This section serves as the foundation for the analysis of SVCs in the later sections.

In section 3.4. I will briefly look at instrumental SVCs, and show how they fit into the theory developed in section 3.3. In section 3.5, I show how the theory can be extended to direct object sharing, and that the general theory sheds light on the division of unaccusatives into two different classes discussed by Pesetsky (1992). Sections 3.6 and 3.7 show how our theory predicts certain types of complex argument sharing effects. In section 3.8, I give an account of the cross-linguistic variation that is found in SVCs, in terms of the level at which V2 incorporates into V1 (before S-Structure, before LF).

## 3.3. V<sub>2</sub> is Unaccusative

### 3.3.1. Existence and Position of an Empty Category

In this section, I will consider SVCs in which the second verb is unaccusative. The goal of this section is to give an analysis of these constructions that will be the basis for the analysis of the other SVCs. Consider the following sentences and partial underlying representations:

(16) me nya            d̥evi-ε<sub>i</sub>      dzo    [εc<sub>i</sub> (yi)]  
I      chased          child-def    leave            D  
"I chased the child away"

(17) Atsufe      he            kekevi-ε<sub>i</sub> dzo    [εc<sub>i</sub> (yi)]  
Atsufe      pulled      bike-def    leave            D  
"Atsufe pulled the bike away"

(18) tsitsa    yɔ          mi<sub>i</sub>    va      (suku)    [εc<sub>i</sub> (yi)]  
teacher    called    us      come    (school)            D  
"The teacher called us and we came (to school)"

- (19) Kofi trɔ Yao zu adzanta [ec<sub>i</sub> (yi)]  
 Kofi turn Yao become lion D  
 "Kofi turned Yao into a lion"

Recall (chapter 2, section 8) our analysis of the presence of doubling *yi* in (16). *ɔevi-ε* "child" is the direct object of *nya* "chase" while at the same time it is the understood unaccusative object of *dzo* "leave". Given our analysis of *yi* as a determiner which doubles a DP (see chapter 2), the question is what *yi* doubles in a SVC. Note that the direct object of  $V_1$  is understood as an argument of  $V_2$ . In order to structurally represent this, I will suppose that there is an empty category after  $V_2$  representing the shared argument. It is this empty category that *yi* doubles.<sup>8</sup> I propose that these examples should be assigned the following structure:

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<sup>8</sup> Not all unaccusatives can easily be the  $V_2$  in a resultative SVC. The following resultative SVC seems to be accepted by some speakers and rejected by others:

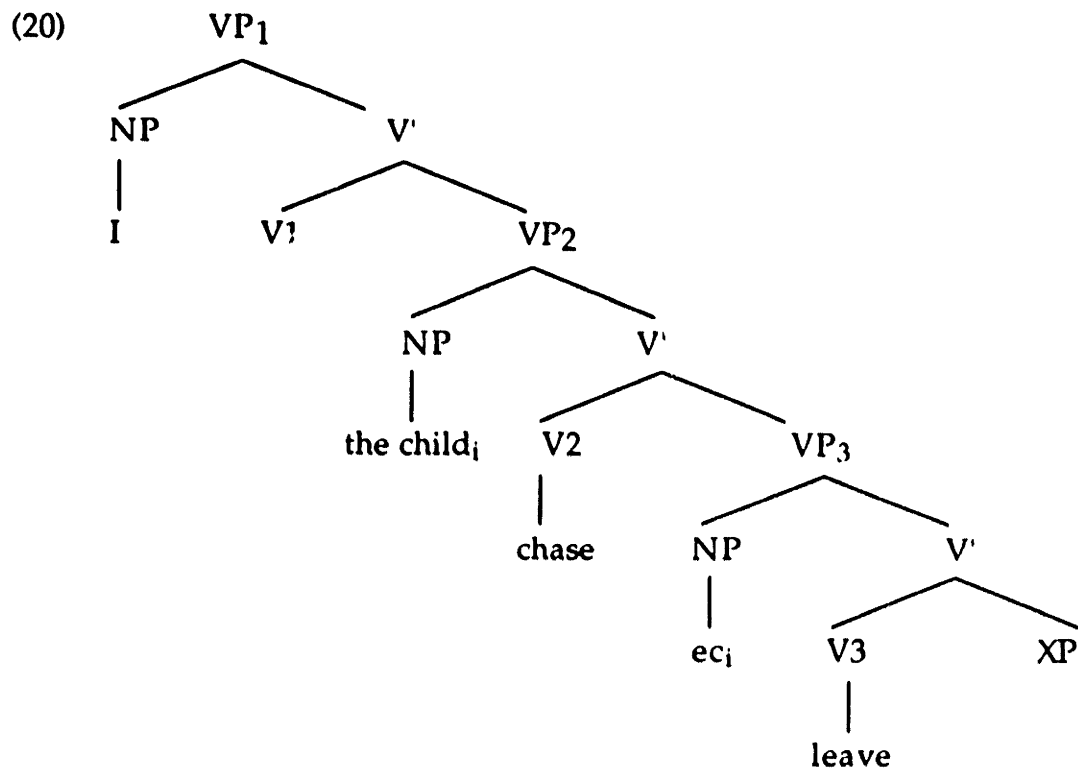
- i. me tutu Kofi dze anyi  
 I pushed Kofi fell ground  
 "I pushed Kofi down"

In Gen the sentence is also marginally acceptable (Lewis 1989: 16,) I have no explanation for the status of this example. See section 3.5 for another class of unaccusatives that cannot appear as  $V_2$  in a resultative SVC.

Similarly, consider the following sentence:

- ii. me fo Kofi \*(wo) ku  
 I hit Kofi he died  
 "I hit Kofi dead"

The verb *ku* "die" cannot be directly predicated of *Kofi*, rather the overlapping clause construction must be used. See Campbell (1992) for an explanation of this fact. Alternatively, it may be that *ku* "die" is not unaccusative in this language, see Rosen (1984: 61) for a discussion of the cross-linguistic variation of the set of unaccusative verbs.



One question that arises why is there<sup>9</sup> an empty category in the VP3. To explain this, I will assume that a VP (and perhaps NP) cannot act as a predicate unless it is made into a predicate by the presence of an empty category that acts as a kind of "free variable."<sup>10</sup> Note that the local c-command condition on predication is satisfied here.

There is an additional question of why VP3 in (20) has to be a predicate. In other words, why couldn't (16) mean "I chased the child, and as a result somebody went away." The representation underlying this reading would be something like the following:

<sup>9</sup> Since *yi* is optionally marked, it is not clear that the empty category is obligatory. I will assume that the empty category is obligatorily present on the grounds of simplicity.

<sup>10</sup> This use of the term "predicate" differs from that in traditional grammar. In the sentences "John went to Kpalime", *John* would be the subject, and *go to Kpalime* the predicate. In the kind of theory of lexical structure that I am talking about, *to Kpalime* is the predicate which forces the presence of the subject of the VP headed by *went*.

It is not clear if there is any additional sense in which *John* bears a "thematic relation" to *went*.

- (22) me nya             $\varphi_{\text{vi}}\text{-}\epsilon_1$     [VP<sub>3</sub> dzo    [e<sub>κ</sub> (yi)]]  
 I    chased    child-def    leave    D  
 "I chased the child away"

In this representation the empty category in VP<sub>3</sub> is not coindexed with any argument in the sentence. On this interpretation the VP headed by *dzo* "leave" is neither an argument of *nyu* "chase" or a predicate of anything. We can rule this out by appealing to the notion of FI (Full Interpretation) of Chomsky 1986, 1992. The legitimate LF objects on this view are argument chains, head chains, modifier chains, and operator-variable pairs. VP<sub>3</sub> in (22) does not correspond to any of these, and the structure therefore does not meet FI.

Now let us consider how the principles of interpretation that were given in chapter one apply to the structure in (20). First, the NP in the Spec of VP<sub>2</sub> is licensed, since VP<sub>3</sub> is a predicate. Second, the event denoted by V<sub>3</sub> is the result of the event denoted by V<sub>2</sub>. Third, the NP in the Spec of VP<sub>1</sub> is licensed by virtue of being a causer. Lastly, the event denoted by VP<sub>2</sub> is the result of some other event (the denotation of the null verb V<sub>1</sub>). Thus the interpretation of this kind of SVC proceeds in the same way as the interpretation of resultatives in English. <sup>11</sup>

A number of additional questions must be answered about the above structure. First, why does the *yi* that doubles the empty category appear VP finally (as is made especially clear in examples (18,19) where doubling *yi* appears after the complements)? Second, what is the nature of the empty category *ec*. Lastly, why is this kind of resultative possible in Ewe and not in English? This last question goes to the heart of SVC research. What is the property of a language that permits it to have SVCs or not? In other words, what accounts for the following facts:

- (21) a. I chased the child (away/\*leave)  
 b. Atsufe pulled the bike (away/\*leave)  
 c. The teacher called us (to/\*come to) the school

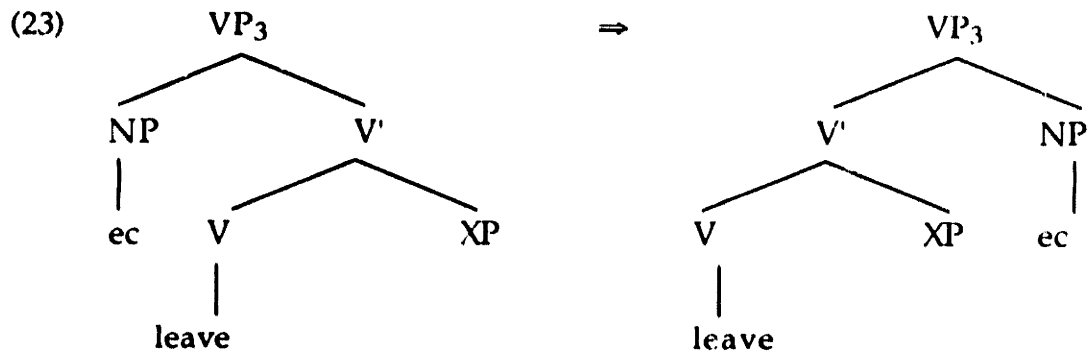
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<sup>11</sup> It might also be pointed out that the subject of VP<sub>3</sub> must be licensed by the presence of covert predicative XP which is the complement of *dzo* "leave". I will assume that this XP denotes an understood source.

d. Kofi turned Yao (into/\*become) a lion

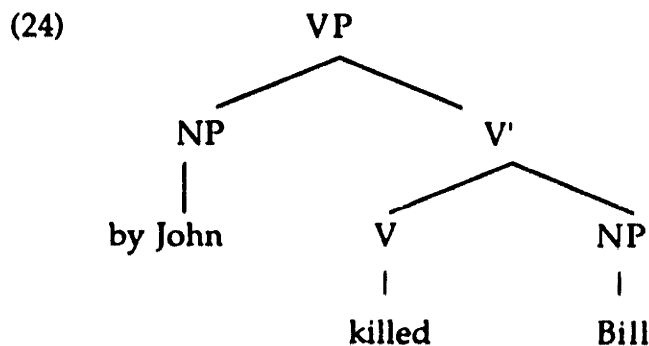
I will delay answering this question until section 3.8.

To answer the question of why *yi* has to be phrase final, we simply assume that the  $ec_i$  is extraposed in this case to the end of VP, as illustrated below:<sup>12</sup>



Given this rule it is clear that the empty category, and therefore the *yi* that doubles it will always appear to the right of the  $V'$ . I will leave it for further research as to why this rule takes place.

Note that the distribution of the *yi*-phrase is not unlike the distribution of the *by*-phrase in a passive in English (see chapter 2 for more evidence for this assertion from the distribution of Russian instrumental Case). Suppose that we give the *by*-phrase an analysis in English where it fills the Spec of VP in a passive sentence (following Watanabe 1993), as in the following partial representation of one step in the derivation of the sentence *Bill was killed by John* :

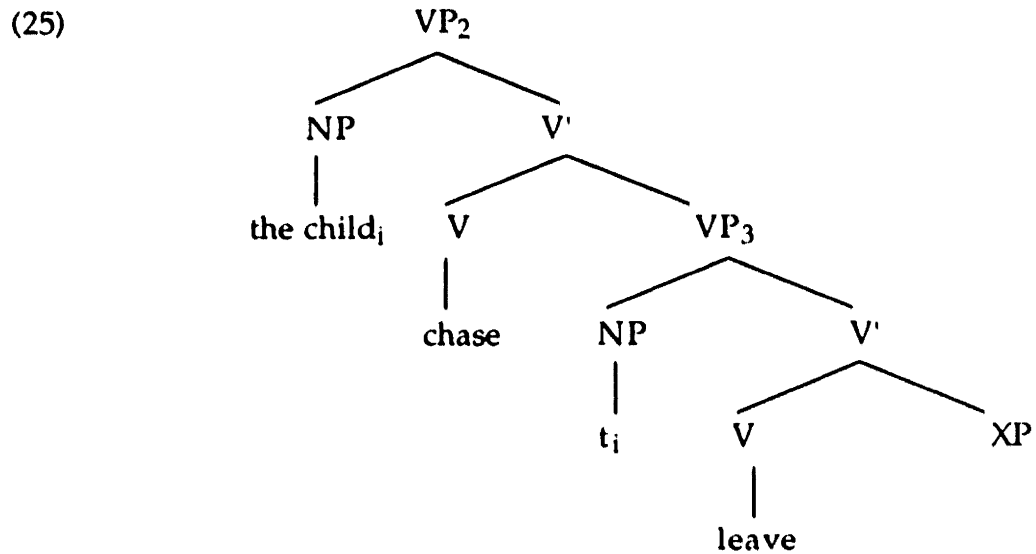


<sup>12</sup> An alternative approach to this would be to assume that Spec VP can appear to the right under certain circumstances. This would resemble the analysis of Spec VP given by Bures (1992) for English.

If this is the correct representation of the passive. Then it follows that there must be some rule extraposing *by John* to the end of the VP, since that is where it appears (this is particularly clear in sentences like "money was given to the men by John").

### 3.3.2. Nature of the Empty Category

As for the status of the empty category, there are four known possibilities: *pro*, *PRO*, A-t and A'-t.<sup>13</sup> It is easy to show that the ec cannot be A-t. I give a diagram of this type of analysis below (this kind of analysis resembles Campbell's (1989) analysis of resultative SVCs in Akan):



In this diagram the theme argument of *dzo* "leave" is linked to *devi-e* "child-def" by A-movement. But then the A-t should not be able to be doubled by *yi*, since *yi* checks Case, as we saw in the previous chapter when we analyzed A-movement in the verbal-noun constructions:

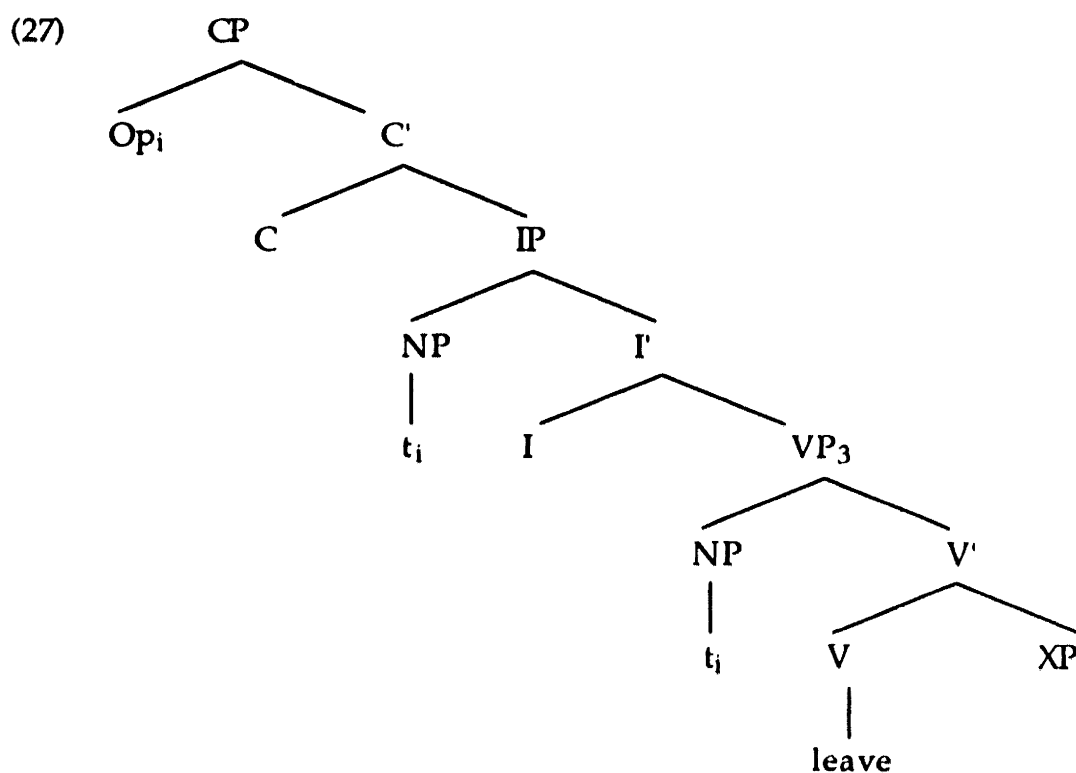
- (26) a. Kofi le nu<sub>i</sub> du [t<sub>i</sub> (\*yi)]  
 Kofi is thing eating D

<sup>13</sup> I introduce the abbreviation A-t to mean NP-t, and A'-t to mean the trace of A'-movement. The abbreviations A-t and A'-t are more perspicuous, and less language particular than NP-t and wh-t.

b. Kofi<sub>i</sub> dzo [ti (\*yi)] [dzoel]  
 Kofi left D

In (26a) *yi* is doubling the trace of A-movement in the progressive. In (26b), *yi* is doubling the trace of A-movement with an unaccusative verb. Since the ec in a SVC can be doubled by *yi*, I conclude that it is not A-t.

Let us suppose that the empty category is a A'-t. If it is A'-t it must be bound by an operator. There are two possibilities for the position of this operator. First the operator could occupy the Spec position of a covert CP:



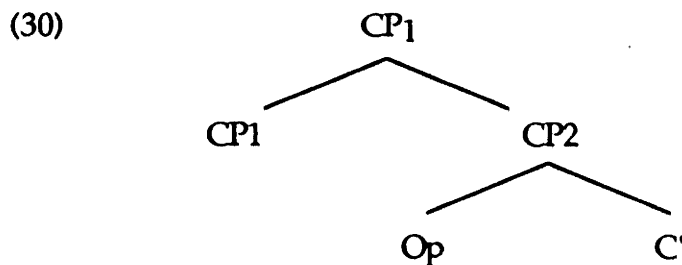
In this example the CP is acting as the resultative predicate VP3 in (20) (i.e., replace VP3 by CP in (20)). There are two problems with this analysis. First, there is no SVC language which I know of where any overt signs of *Op*, or CP show up in the resultative predicate. If this structure existed, it might be expected to surface in some language. Second, the above analysis makes the prediction that extraction from the embedded clause should be marginal or degraded in some way. This is illustrated in the next example:

- (28) gane Kofi nya                    Mana                    dzo le  
 where Kofi chased                    Mana                    leave from  
 "where did Kofi chase Mana from"

This sentence illustrates a resultative SVC where V2 has a source PP argument. As is shown there is no problem with extraction from this position. If there were a Op in Spec CP, there might be expected to be a problem. This data is further supported by the behavior of extraction in the so-called overlapping clauses

- (29) Kofi nya                    Mana                    wo                    dzo le                    suku                    xɔ-me  
 Kofi chased                    Mana                    she                    leave from school                    room-in  
 "Kofi chased Mana from the school room"

This example is roughly synonymous with the SVC in (28) above. It differs only in the presence of a the nominative pronoun *wo* "she". In chapter 4 of this thesis we will argue that the presence of *wo* "she" indicates the presence of a CP, filled by an operator meaning "then." Thus the structure of this clause will be something like the following:



Given this information we predict that extraction from the second clause should be marginal or degraded, since there is an operator occupying the Spec of CP:

- (31) ??gane Kofi nya                    Mana                    wo                    dzo le  
 where Kofi chased                    Mana<sub>i</sub>                    she<sub>i</sub>                    leave from

There are other facts that indicate that the empty category following V2 is not A'-bound by an operator in Spec CP. Consider the following paradigm illustrating the distribution of doubling *yi*:

(32) me nya            dɛvi-ɛ<sub>i</sub>    dzo    [ɛc<sub>i</sub> (yi)]    [dzoɛ]  
 I    chased    child-def    leave            D  
 "I chased the child away"

(33) me nya            dɛvi-ɛ        wo<sub>i</sub>    dzo    [t<sub>i</sub> (\*yi)]    [dzoɛ]  
 I    chased    child-def    he    left  
 "I chased the child and he left"

Sentence (32) illustrates that *yi* can double the empty category in an SVC, but it cannot double the trace of A-movement to Spec IP, as (33) shows. If (32) involved a CP, then A'-movement of the operator to Spec CP would necessarily be preceded by A-movement to Spec IP to check whatever Case is assigned in this type of embedded clause. But if there is A-movement, the doubling *yi* should not be possible, since *yi* cannot double the trace of A-movement (as shown in chapter 2 for A-movement in the verbal-noun construction).

This kind of evidence is extremely strong evidence for my claim that *yi* doubles the unaccusative object of V2 in example (32). If *yi* appears, the overt subject of V2 cannot. If the overt subject of V2 appears *yi* cannot. It appears that the two morphemes are mutually exclusive.

One more set of facts argues against an analysis of resultative SVCs, involving operator movement to Spec CP.<sup>14</sup> The sentence (34) with *wo* "he" is roughly synonymous to (34) without *wo* "he". Consider the following binding data:

(34) Kofi<sub>i</sub> yɔ    Yao<sub>k</sub> (wo<sub>k</sub>) va    yɛ<sub>i</sub>    me    xɔ-me  
 Kofi called Yao he    come his    gen    room-in  
 "Kofi called Yao into his room"

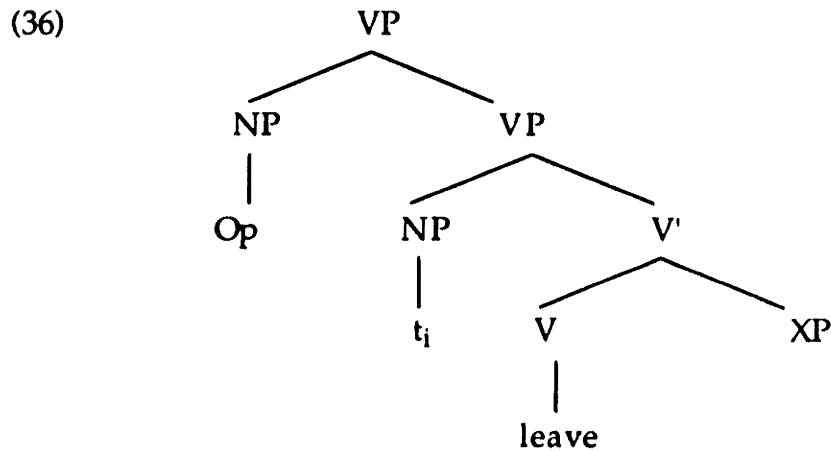
(35) Kofi<sub>i</sub> yɔ    Yao<sub>k</sub> (\*wo<sub>k</sub>) va    dɔkoe<sub>i</sub>    me    xɔ-me  
 Kofi called Yao he    come himself    gen    room-in  
 "Kofi called Yao into his own room"

---

<sup>14</sup> The reflexive *ɛdɔkoe* "himself" in Ewe has approximately the same distribution as that of English, except the Ewe reflexive can appear in a genitive case marked position, as the example in (35) shows. See Essegebe (1993) for more on reflexivization in Ewe.

In (34) we see that the pronoun *yεi* "his" can refer to the subject of the verb *yɔ* "call." If we replace this with a reflexive pronoun, then binding is only possible if the intervening subject *wo* "he" is not present.<sup>15</sup> We can describe these facts simply by saying that there is no long-distance reflexivization in Ewe, and that when *wo* "he" is present it indicates that the sentence involves a structure like (30) above. This has the implication that when *wo* "he" is not present, the structure involves no such extra CP.

There is another operator movement analysis of resultative SVCs that might be taken to avoid some of these problems. Suppose that instead of the operator moving to Spec CP it moves to an adjoined position, as indicated in the following diagram:



The problem with this is that Browning (1987) has argued that empty operators must occupy Spec CP (See pg. 75. She eventually adopts a different principle, but the Spec CP constraint still holds as a descriptive generalization)<sup>16</sup>. She gives the following condition:

(37) An empty category is an operator only if it is in the Spec of CP

<sup>15</sup> No condition B violation is expected in (34) if *wo* "he" is not present, since *yε* "his" is a genitive pronoun.

<sup>16</sup> We might assume that empty operators have a feature that can only be checked in the Spec of CP, or that there is a general interpretive principal that requires that operators have clausal scope.

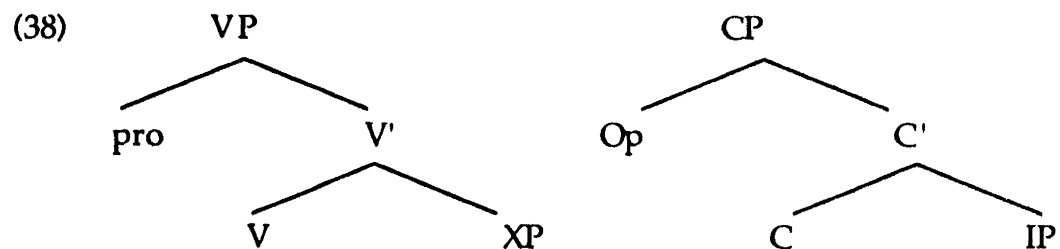
Whether (37) is true for all operators depends on the status of scrambling, which in some languages is A'-movement.

It is clear that the representation in (36) does not satisfy this principle. In addition, this representation does not obviously predict that extraction from the second VP in a SVC should be acceptable. Consider again the data in (28). Extraction of an A'-element would still cross the adjoined operator, which should at least give rise to a mild relativized minimality violation, which it does not.

Thus we have seen a number of arguments against an analysis where the empty category in SVCs is A'-bound. We will come across other arguments against the operator movement analysis in dealing with SVCs where V2 is ditransitive.

So far we have excluded A-t and A'-t as the empty category found in a SVC. This leaves us with PRO and pro. There is some evidence that the ec involved is pro. We will see the ec involved in SVCs can be assigned structural Case in a SVC (either by doubling *yi*, or by the verb). Since PRO has as one of its defining characteristics that it receives no Case or that it receives "null" Case from some minimal inflectional head (e.g., *to* or *-ing*), it cannot be that the ec in a SVC is PRO (see Chomsky and Lasnik (1992) for a discussion of the issue of Case assignment to PRO).

I will assume that the presence of this empty category turns the constituent it is part of into a predicate, that has all the standard conditions on predication associated with it (e.g., local c-command, see chapter 1 of this thesis for a discussion). This is analogous to the way in which an operator turns a CP into a predicate in relative clause constructions, purpose clause constructions, and complex adjectival constructions, the only difference is that in the case of the VP resultative expressions there has been no A'-movement. Here is the analogy:



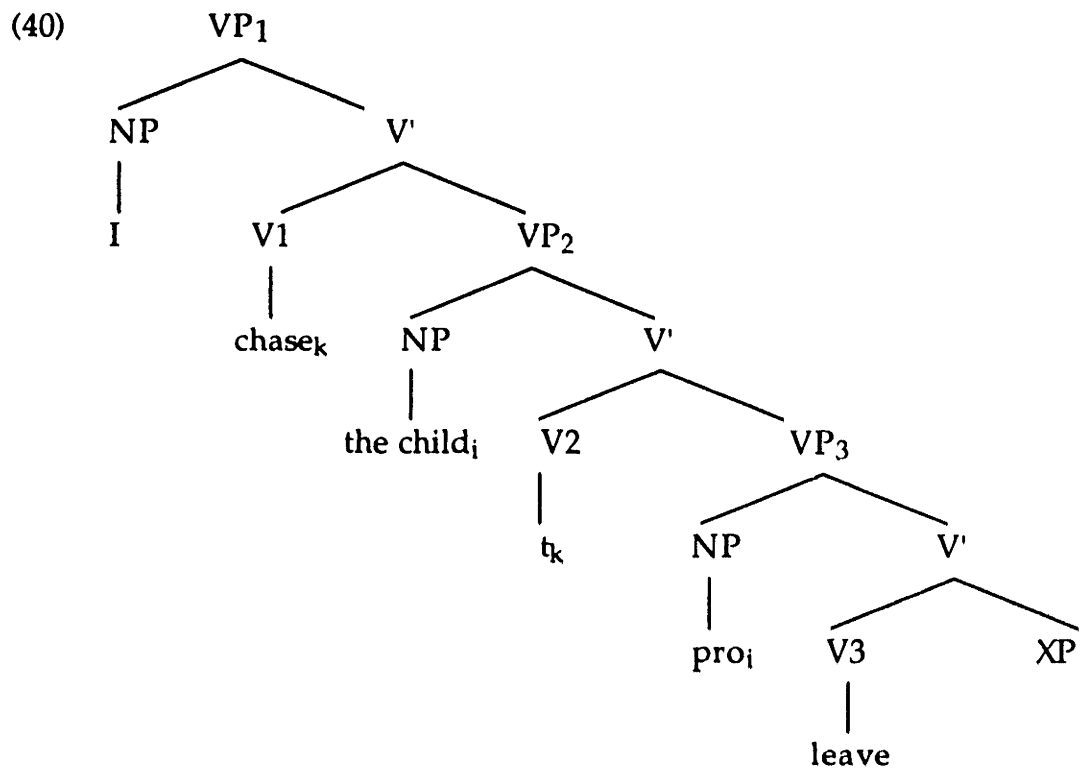
In fact Browning (1987: 125) analyzes null operators in general as occurrences of *pro*, so that the only difference between left and right hand

representations above is that one involves movement to Spec CP and the other does not.

### 3.3.3. Spec VP and the Empty Category

We will make one more assumption concerning the *pro* that appears in SVCs, that it must appear in the Spec of VP. I illustrate this below:

- (39) me    nya            ɖevi-ε<sub>i</sub>    dzo    [ε<sub>i</sub>    (yi)]  
 I    chased    child-def    leave    D  
 "I chased the child away"



In other words, the *pro* that converts VP3 into a predicate cannot be somewhere in the lower XP. This should follow from the fact that there is no operator movement involved in the formation of the predicative VP. I have no explanation for this fact in the present draft.

We will use this restriction in discussing argument sharing in with ditransitive verbs (section 3.5.4) and in discussing adjuncts (section 3.6).

### 3.3.4. Direct Object Restriction

One piece of evidence for the analysis given above, is that the resultative VPs in Ewe behave in certain crucial respects like resultative predicates in English. Simpson (1983) proposed the following generalization governing distribution of resultative predicates:

(41) Direct Object Restriction (DOR)

"The controller of a resultative attribute must be an OBJECT, whether that OBJECT is a surface OBJECT, as in transitive verbs, or an underlying OBJECT, as in passives and intransitive verbs of the unaccusative class, or whether the OBJECT is a fake reflexive, as in intransitive verbs of the unergative class."

(Simpson 1983: 142).

It is possible to show that this generalization holds of SVC resultatives as well, although the data is obscured by the presence of IP, or I' coordination, which we discussed in section 3.2.1. Consider the following paradigm:

- (42) ekpe fo kɔpo yi xɔ-me  
rock hit cup go room-in.  
a. "a rock hit a cup into the room", or  
b. "a rock hit a cup, and then went into the room"

This sentence is ambiguous. It can entail that either the rock or the cup entered the room. Therefore this seems to be a kind of counter-example to the DOR since if we call the VP headed by *yi* "go" a resultative, then it would follow that it could be predicated either of the subject or the object. The ambiguity of (42) is deceptive. When we put the sentence into the future, it is disambiguated:

- (43) a. ekpe a fo kɔpo yi xɔ-me  
rock fut hit cup go room-in  
"a rock will hit a cup into the room"

- b. ekpe a fo kɔpo a yi xɔ-me  
 rock fut hit cup fut go room-in  
 "a rock will hit a cup and then go into the room"

These sentence illustrate that when the SVC is put into the future, two meanings are distinguished by how the future is marked. If the future is marked one time on the first verb, then the resultative reading obtains (43a). If on the other hand, the future is marked separately on each of the Vs, then a I' coordination reading obtains, as in (43b).

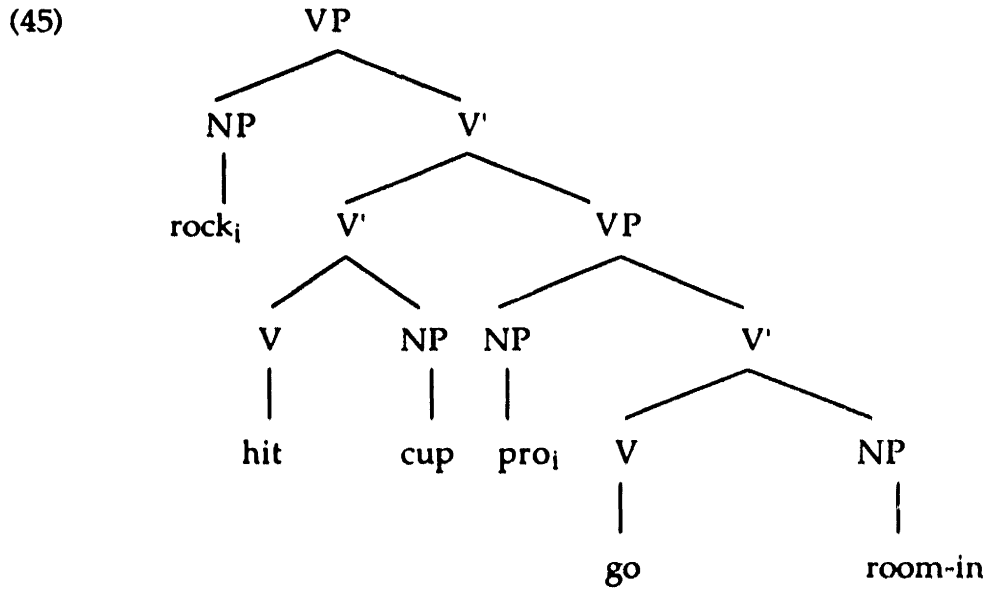
The same fact is demonstrated by the distribution of doubling *yi*, consider the following data:

- (44) ekpe fo kɔpo yi xɔ-me yi  
 rock hit cup go room-in D  
 a. "a rock hit a cup into the room" or  
 b. not: "a rock hit a cup, and then went into the room"

The sentence above illustrates the fact that if doubling *yi* is present, then the only interpretation is that where the cup enters the room. The data in (44) reduces to that of (43). In the case where the rock enters the room, we have a I'/IP coordination structure, in which the subject of the second VP will be structurally Case marked. Therefore, doubling *yi* will not be possible.

The central fact to explain is why (43a) is not ambiguous, with one of its readings as in (43b). Consider what the structure of (43a) would have to be if it had the reading of (43b), given in (45).

In this structure, *ekpe* "rock" is in a relation of local c-command to *yi xɔ-me* "go into the room", which I take to be a condition on predication (see the introduction to the thesis for a discussion). The problem is that this structure does not seem to be acceptable, since if it were it would be possible to have one of its readings be that of (43b).



In order to rule this out, recall the hypothesis about SVCs presented in section 3.2.2.

- (46) LF Incorporation of SVCs  
At LF, V2 incorporates into V1.

This condition will prohibit the attachment site given in (45), since the verb in the resultative VP would have to move out of an adjoined position (I am using the definition of ECP essentially as given in Baker 1988, see pgs. 86 and 160 for relevant discussion).<sup>17</sup> Thus we explain the DOR effect for SVCs

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<sup>17</sup> The one class of exceptions to the DOR generalization in Ewe is the class of manner of manner of motion verbs followed by an unaccusative verb of motion, as in the following example:

- i. Kofi fu du yi Lome  
Kofi beat course go Lome  
"Kofi ran to Lome"

According to the theory that I have presented this sentence should only be good if *du* "course" goes to Lome. It seems rather that the phrase *yi Lome* "go to Lome" is predicated of the subject. This question might be related to the issue of how manner of motion verbs such as *run* and *walk* become unaccusative cross-linguistically if they take a directional PP as a complement.

by a combination of the local c-command condition on predication (see chapter 1), and the fact that V2 must incorporate into V1 in a SVC.

We will see other evidence that SVCs involve LF incorporation in sections 3.4., 3.5. We will also see that in a language like Igbo the incorporation of V2 into V1 in resultative SVCs happens overtly.

There is one technical problem that must be overcome if we want to maintain an LF incorporation analysis. Consider again the structure in (40). The question is how *dzo* "leave" can incorporate into *nya* "chase" at LF, since the trace of *dzo* "leave" intervenes. I will assume that LF incorporation proceeds via adjunction to the trace, so that V3 adjoins to V2 (which is a trace), which adjoins to V1. The resulting complex moves and adjoins to T at LF satisfying (14), the condition that V be in the checking domain of T at LF.<sup>18</sup>

Note that I am assuming that there is some relation between V2 and VP3 in (40) that is strong enough to license incorporation out of VP3. This relation is consequence in the case of resultative SVCs. For SVCs in general (e.g., including instrumental SVCs) perhaps a more general relation of "implication" (Hale and Keyser 1993: 14) or perhaps just immediate temporal succession suffices. This relation is the natural extension of L-marking defined in Chomsky (1986: 15).

Data similar to those that I have just presented provides support for the DOR from Yoruba. These data were discussed by Baker (1989) to support his idea that verb serialization always needs argument sharing:

- (47) Olu lu maalu ku  
Olu beat cow die  
a. "Olu beat the cow dead"  
b. "Olu beat the cow and then died"

---

<sup>18</sup> It has sometimes been proposed that there should be a constraint disallowing adjunction to traces. It seems to me that the effects of this kind of constraint should be derivable from the strict cycle and economy of derivation. A constraint against adjunction to traces seems about as plausible as the Proper Binding Condition.

The question arises as to whether the trace of *nya* "chase" is needed in (40) for proper interpretation. This is not entirely clear under the rules of interpretation that I gave in chapter one, I will leave this question for further research.

Baker (1989) gives a number of properties that distinguish these two readings (he does not however discuss the distribution of future makers). On face value (47b) constitutes a kind of counter-example to the DOR, since a resultative VP *ku* "die" is being predicated of the subject. Baker cites predicate cleft data that distinguish these two readings:

- (48) li-lu-ku            ni            Olu lu    maalu        ku  
 nom-beat-die    that            Olu beat cow        die  
 a.        "Olu beat the cow dead"  
 b.        not: "Olu beat the cow and then died"

What this indicates, according to Baker, is that sentence (47), on the (b) reading is a covert coordination, which is why the two verbs cannot cleft at the same time. Reinterpreting Baker's observations into our framework of assumptions, I claim that (47b) is actually a I'/IP coordination.<sup>19</sup> (Baker does not actually give an explanation for why predicate clefting cannot cleft both verbs in a covert coordination).

Lastly, in Igbo we see the incorporation of V2 into V1 overtly. Consider the data below (from Ihionu 1993, see Gruber 1992 for similar data):

- (49) Eze    kwa-ra        Ike    da-a  
 Eze    push-asp    Ike    fall-?  
 "Eze pushed Ike and then Eke fell"

- (50) Eze    kwa-da-ra            Ike  
 Eze    pushed-fall-asp    Ike  
 "Eke pushed Ike down"

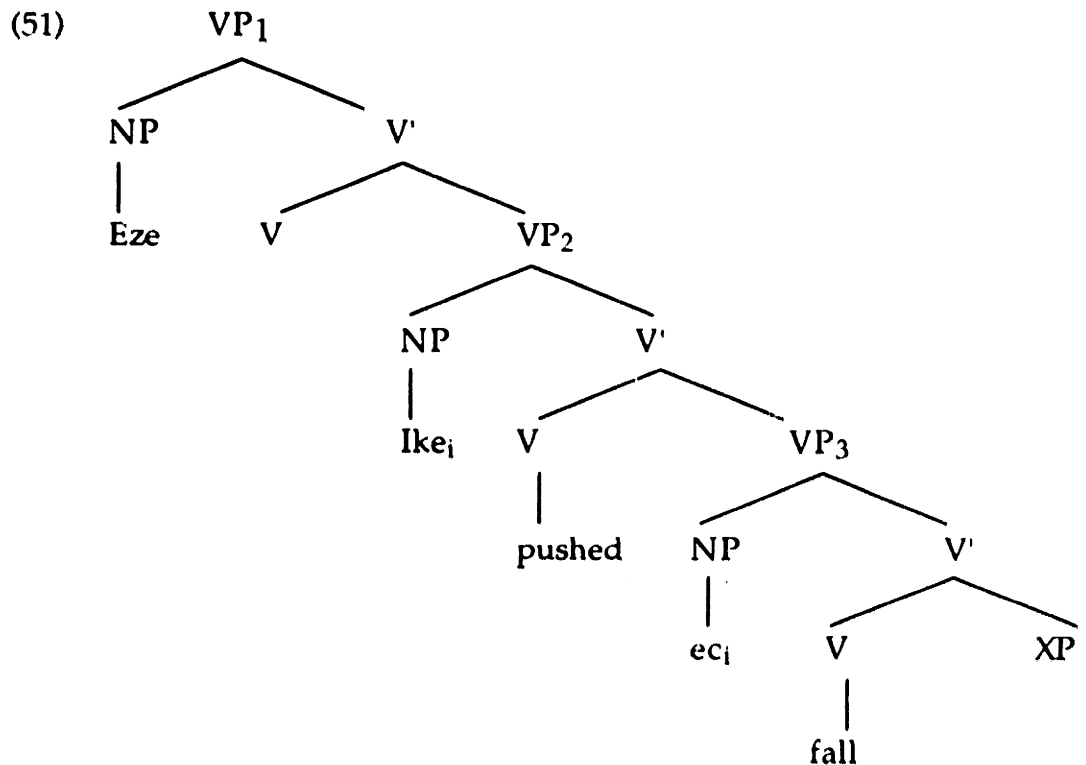
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<sup>19</sup> Gruber 1992: 144 give some evidence that seems to contradict the DOR. He notes that the following sentence is ambiguous in Yoruba:

- i.        okuta                            gba    ogiri    fo  
 stone                            hit    wall    break  
 a.        "the stone hit the wall and broke"  
 b.        "the stone hit the wall and the wall broke"

This pair seems very close to the pair given for Ewe in (42). Data in Gruber 1990 also seem to contradict the DOR.

Resultative SVCs undergo compounding before S-Structure in Igbo (I will come back to a classification of Igbo serial verbs). In (47), there has been no compounding, this corresponds to (43b) in Ewe above, where there the future must be marked twice. On the other hand, if the resultative VP is predicated of the object, then there is compounding. I will assume that the underlying structure of (50) is the following, loosely following Ihionu (1992) (see Dechaine 1993 for a similar analysis):



In this structure, the VP3 is acting as a resultative predicate of *Ike*. In Igbo, as opposed to Ewe and Yoruba, there is incorporation of V3 into V2 before S-S. There is subsequent movement of the complex [V2 V2 V3] to the head of V1. We will come back to the question of why V incorporation is obligatory before S-Structure in section 3.8. (see Dechaine (1993) for an analysis of this fact).

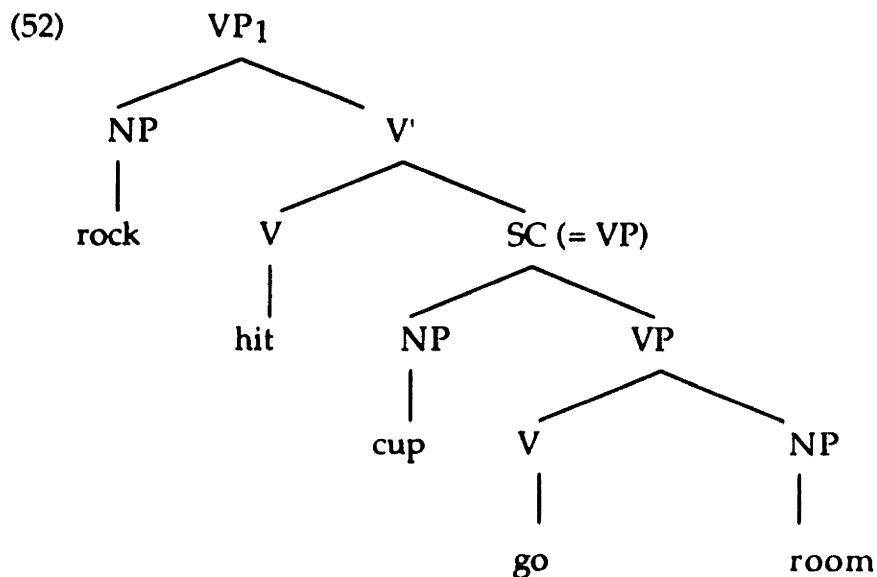
Given that resultative SVCs must incorporate at S-Structure in Igbo, it follows that (49) cannot be an instance of a resultative SVC. On the other hand, if (49) were an instance of I' coordination, we would not expect incorporation of V2 into V1 (at any level).

Therefore with a few simple assumptions we have characterized all the major properties of the resultative SVC in Ewe.

### 3.3.5. Implications for Resultatives

There are a number of other possible accounts of the data in (42-44). I will deal with two: Hoekstra (1989) and Levin and Rappaport (1993). I will show how Hoekstra's (1989) analysis cannot handle the serialization data, and that Levin and Rappaport's (1993) analysis is redundant.

In the spirit of Hoekstra (1989), consider the representation that Hoekstra (1989) might have given for the structure in (42a) if he were dealing with resultative SVCs:



We can see that there is no empty category in this structure, and therefore it is predicted that *yi* will not be able to appear, contrary to the fact. Therefore I reject this kind of analysis.

Now consider how Levin and Rappaport (1993) would draw the distinction between (43a) and (43b). They explain the DOC on resultative predicates in the following way. First they note that arguments that are themes are expressed as the direct object:<sup>20</sup>

<sup>20</sup> It is not clear how this formulation will account for verbs such as "learn" where the subject undergoes the change of state in the eventuality denoted by the verb.

(53) Direct Object Linking Rule

An NP that refers to the entity which undergoes the change of state in the eventuality denoted in the VP must be the direct object of the verb heading the VP.

(Levin and Rappaport 1993: 45)

Second they note that resultative XPs serve to specify the resultant state of an argument which is brought about as the result of the action denoted in the verb phrase.

From these two assumptions it follows that resultative XPs will be predicated of underlying objects. If the resultative XP were predicated of the underlying subject, then the subject would have undergone a change of state which is the result of the action denoted by the VP. Now if the subject undergoes a change of state, it should have been projected as the direct object by the Direct Object Linking Rule.

The only problem with this explanation is that it is redundant. If an argument is subject to the Direct Object Linking Rule, then it must undergo a change of state. Now if an argument undergoes a change of state, then it is probably associated with an *implicit resultative predicate* (for example if a cup breaks, it ends up broken).<sup>21</sup> But if this is true, then if we could explain the distribution of resultative predicates, we could have explained the Direct Object Linking Rule.

Given these problems with other accounts of the DOR, especially as it would apply to SVCs, we will adopt our own proposal that the DOR for SVCs is a result of the interplay of the fact that V2 must incorporate into V1 at LF, and the local c-command condition on predication.

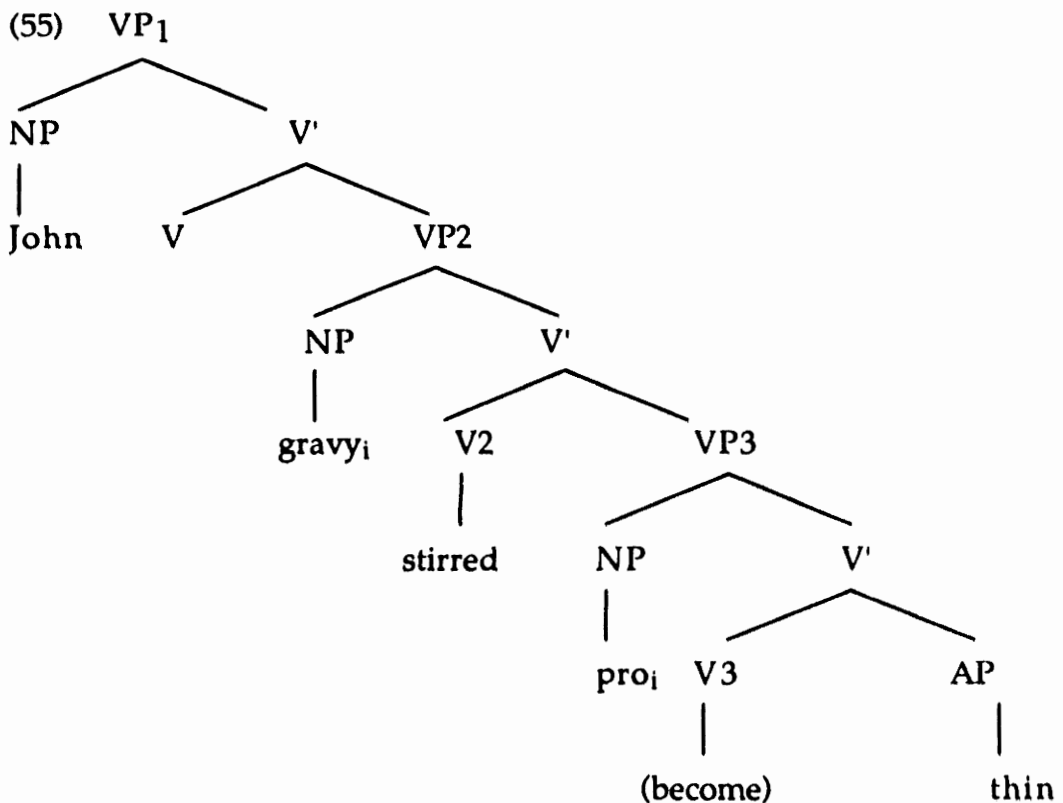
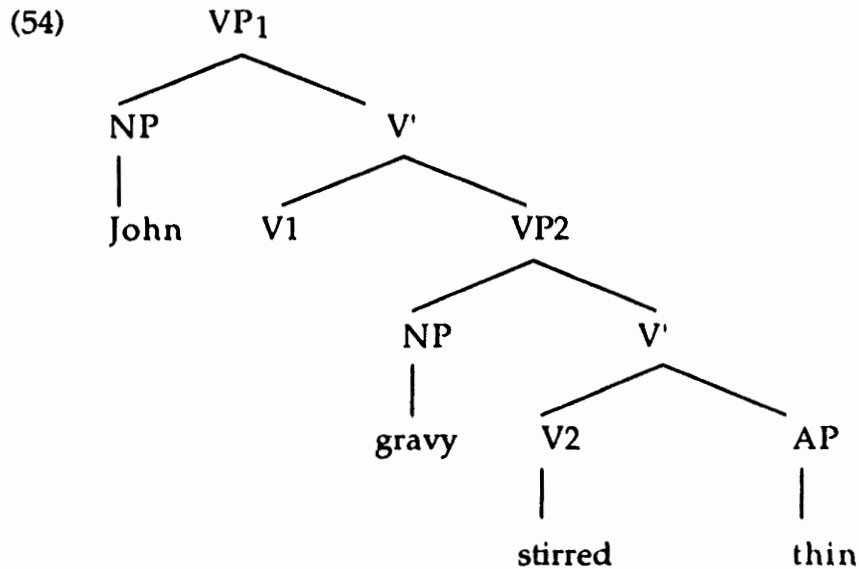
Now if it is the case that the DOR for SVCs follows from the fact that V2 must incorporate into V1 at LF, then we may ask why we get the DOR with resultative predicates in English (which are not obviously VPs). Consider the representation in (54) (based on Hale and Keyser (1993)).

This is the underlying form for "John stirred the gravy thin". In this sentence *thin* is a resultative predicate, and as a resultative predicate is

---

<sup>21</sup> The later formulation of the linking rule that Levin and Rappaport (1993: 124) give makes the presence of an implicit resultative even clearer: "The NP that refers to the entity which undergoes the directed change denoted in the VP is the direct object of the verb heading the VP."

restricted to modify the object. In other words the sentence cannot mean that John became thin as a result of stirring the gravy. Since AP is not a VP there seems to be no reason for *thin* to incorporate into *stir* at LF, mirroring the derivation that we have postulated for SVCs. Therefore I claim that the representation in (54) is not correct, the actual representation is in (55) below, where the AP *thin* is replaced by a VP headed by a covert verb meaning *become*.



We might ask why the AP *thin* in (55) cannot modify *John*. It could but it would be interpreted as a depictive and not a resultative. This approach to resultative predicates differs from that of Hale and Keyser (1992, 1993) in that they postulate no covert verb meaning "become" in their representations. Our approach still maintains the essential rules of interpretation of their approach given in chapter one. In other words, the NP *gravy* is licensed under predication by VP3, and the event which VP3 denotes is the result of the event that V2 denotes.

If this is in fact the representation of a resultative construction in English, then in fact English is a kind of SVC language (at least for resultative SVCs). We now have the question of why the following sentence is not acceptable: "John stirred the gravy become thin." I will come back to this question in section 3.8, where I will suggest that the answer is that incorporation of SVCs in English happens before S-Structure, at the same level that such "conflation" structures as "John thinned the gravy" are formed.

### 3.3.6. Object of V1 cannot be Agent of V2

A very constraint that has been noted on SVCs is that it is not possible for the agent or experiencer role of V2 to be assigned to the object of V1. This is illustrated in the following examples, I give the examples as minimal pairs with V2 unaccusative (without an agent or experiencer role to assign):<sup>22</sup>

- (56) a. Kofi trɔ Yao zu adzanta  
 Kofi turn Yao become lion  
 "Kofi turned Yao into a lion"
- b. \*Kofi trɔ Yao kpɔ dzidzɔ  
 Kofi turned Yao see joy  
 "Kofi made Yao happy"

---

<sup>22</sup> Sentence (56b) is modeled on sentence (60) of da Cruz (1992).

- (57) a. me tsɔ tsi zu aha  
 I took water become wine  
 "I transformed water into wine"
- b. \*me tsɔ Kɔsuɔ ko nu/ du wo  
 I took Kɔsuɔ laugh dance  
 "I made Kosua laugh/dance"

This fact is clearly the analogue of the fact that a unergative, or transitive cannot be lexically causativized in English.

Once again, facts about English argument structure and the permissible combinations of SVC align. Let us make the following assumptions about the projection of agents:

(58) Projection of Agents

If NP is interpreted as agent of the event denoted by VP, then NP must appear in the checking domain of the chain headed by V.<sup>23</sup>

Now consider the representation of (57b) after LF incorporation:<sup>24,25</sup>

- (59) me [v tsɔ + ko] Kɔsuɔ tv nu  
 I took + laugh Kɔsuɔ thing

Since V2 incorporates into V1 at LF, the agent of V2 *Kɔsuɔ* has not been projected high enough in the tree to be in the checking domain of the chain headed by *ko* "laugh", and the structure is unacceptable.<sup>26</sup> Therefore

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<sup>23</sup> We will complicate this rule in discussion instrumental SVCs in section 3.4 and object sharing by transitive verbs in section 3.5.1.

<sup>24</sup> Hale and Keyser (1993) actually say that the agentive subject appears outside of the VP, explaining why the causative of unergative verbs is not allowed in English.

<sup>25</sup> The examples in (57b) cannot be ruled out by the fact that V2 is transitive. The verbs of directed motion in (16-19) are all transitive as well, as shown by the fact that in the progressive their locative objects undergo A-movement (see chapter 2 of this thesis).

<sup>26</sup> In addition to SVCs and lexical verbs, there is a class of morphological causatives that do not allow downstairs agents (Baker 1993, Travis 1993). Our

the fact that transitives with agentive (or experiencer subjects) cannot appear as the V2 in a SVC and be predicated of the object of V1 follows from our theory of SVCs involving LF incorporation.

### 3.3.7. Double Unaccusatives

We have seen that if V1 is transitive and V2 is unaccusative, then *yi* doubles an empty category that follows VP2. Now when V1 and V2 are both unaccusative, then *yi* cannot appear, as illustrated below:

(60) a. Kofi trɔ Yao zu adzanta [ec<sub>i</sub> (yi)]  
 Kofi turn Yao become lion D  
 "Kofi turned Yao into a lion"

b. Yao trɔ zu adzanta [ec<sub>i</sub> (\*yi)]  
 Yao turn become lion \*D  
 "Yao became a lion"

(61) Kofi dzo yi Lome [ec<sub>i</sub> (\*yi)]  
 Kofi left go Lome \*D  
 "Kofi went to Lome"

Just for completeness, I include a few other examples of the double unaccusative type of SVC below. In all the examples the verbs are standard examples of unaccusative verbs.

(62) eda si dɔ do-me (56) Kofi sisi dzo  
 snake fled enter hole-in Kofi fled left  
 "the snake fled into the hole" "Kofi fled away"

(64) wo a do dzo yi asime  
 they fut go-out leave go market  
 "they will leave and go to the market"

---

explanation of the unacceptability of (56b-57b) should directly carry over to these cases as well. I will leave this for further research.

- (65) Kofi trɔ yi Lome  
 Kofi turned go Lome  
 "Kofi returned to Lome"

The question is what accounts for the minimal pair in (60), where in one case *yi* appears and in the other it does not. We could suppose that the reason that (60b) does not have a doubling *yi* is that it is in fact a I'/IP coordination structure just like what we postulated for (33b). Recall in those structures as well doubling *yi* could not appear, as was illustrated in (44). This solution will not work since if we put double unaccusatives into the future, the future is only marked once, on the first verb, as illustrated below:

- (66) a. Kofi a trɔ Yao zu adzanta  
 Kofi fut turn Yao become lion  
 "Kofi will turn Yao into a lion"

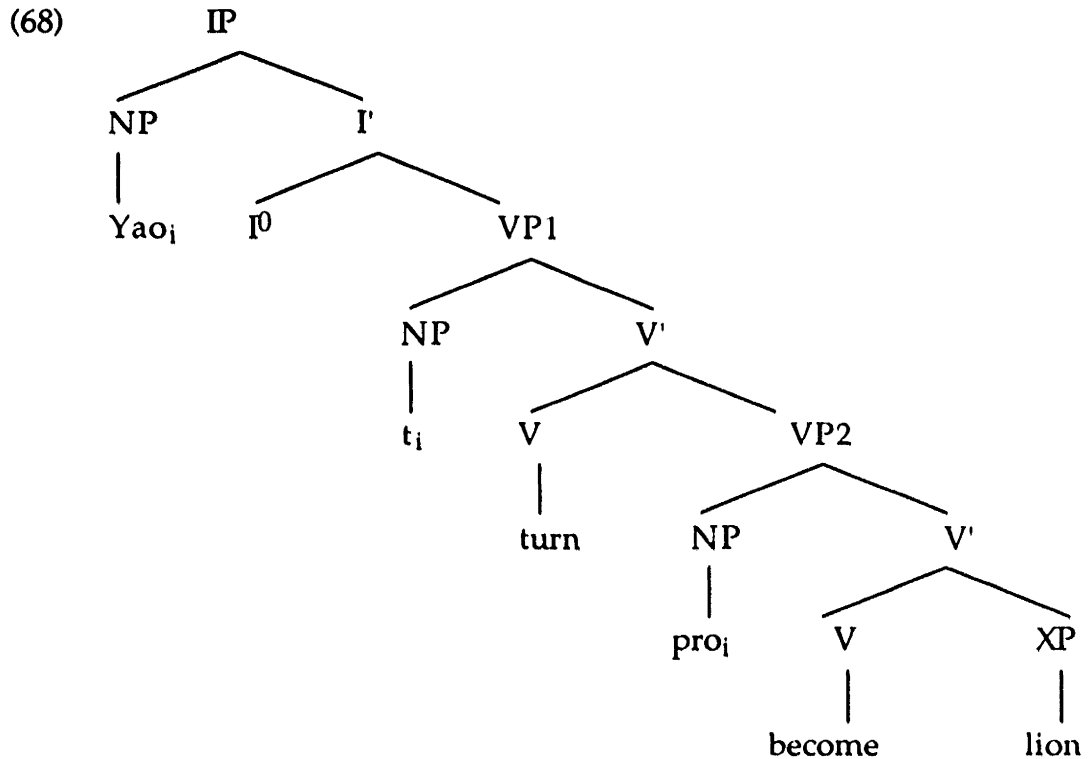
- b. Yao a trɔ zu adzanta  
 Yao fut turn become lion  
 "Yao will become a lion"

- (67) Kofi a dzo yi Lome  
 Kofi fut left go Lome  
 "Kofi will go to Lome"

In all three sentences above, only one future marker is used to mark the future. This indicates that we are not dealing with I'/IP coordination. Given the structures postulated for resultative SVCs, it is not clear how to explain the data in (60b). Consider the underlying structure:<sup>27</sup>

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<sup>27</sup> Note that the unaccusative object of *trɔ* "turn" is starting out in the Spec of VP, which seems to go against the unaccusative hypothesis. It could be that there is another VP above VP1 in the structure (68), that represents the implicit causer associated with the turning.



In this structure, *Yao* starts VP internally, and must raise for Case to the Spec of IP. I will suggest that the reason that *yi* cannot appear in this structure is a kind of Case agreement effect. This is formulated in the following principle:

(69) Case Agreement

If  $NP_i$  and  $pro_i$  are related via predication,  
 then if  $pro_i$  is doubled by *yi*,  $NP_i$  must have its Case checked by  
 a verb (as opposed to T).

Recall that doubling *yi* only appeared in the domain of V, as we saw in chapter 2. What the condition in (69) does is to extend this condition to the pair  $[NP_i, pro_i]$ , which are related via predication.

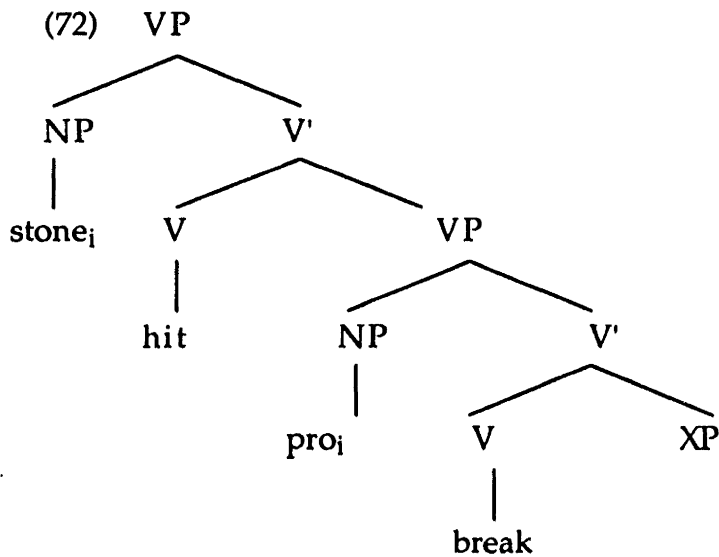
### 3.3.8. Double Unaccusatives and Gruber's Paradigm

The account given above of argument sharing in double unaccusative verbs allows us to account for the following paradigm from Igbo (See Gruber 199: 143, and Collins and Gruber 1992 for an alternative account):

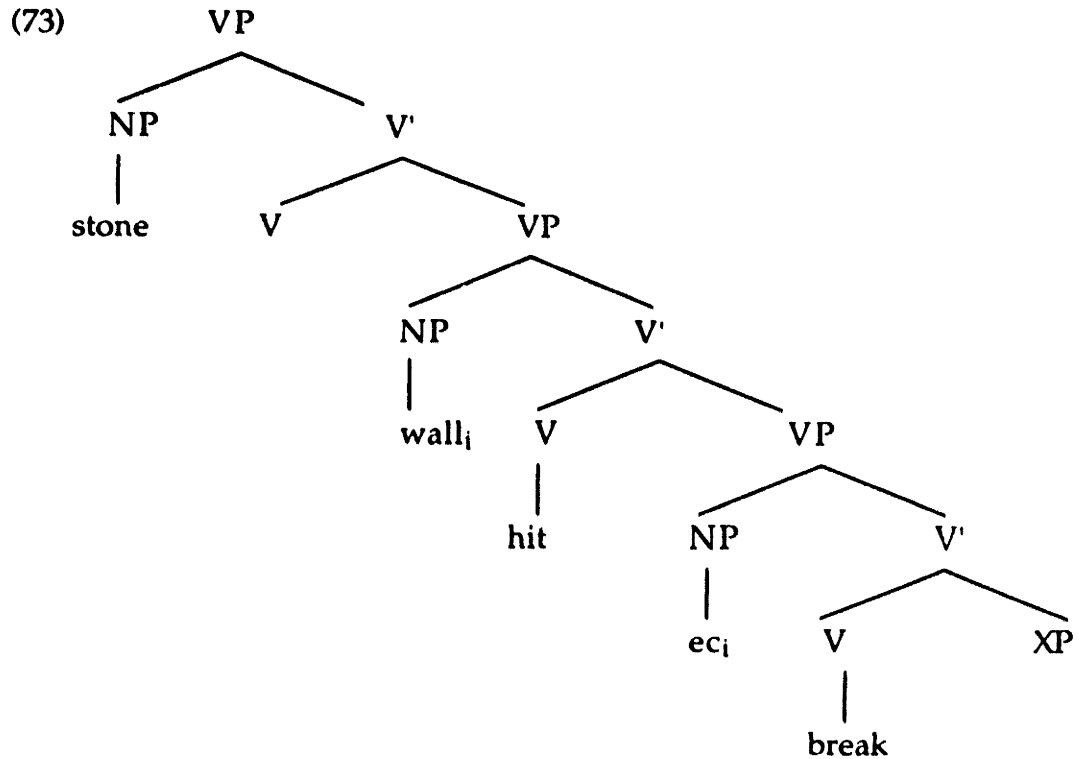
(70) okwute kɔ-wa-ra \*(na) aj'ɔɓ  
 stone hit-break-asp P wall  
 " the stone hit the wall and broke"

(71) okwute kɔ-wa-ra (\*na) aj'ɔɓ  
 stone hit-break-asp P wall  
 "the stone hit the wall and the wall broke"

The problem is to explain how the verb *-wa-* "break" in (70) can be predicated of the subject. This would seem to violate the DOR. I would like to suggest that this is an example of a double unaccusative structure. In other words, *ku-* "hit" in (70) is acting like an unaccusative verb, with the subject *okwute* "stone" being the D-Structure object. Thus we have the following partial structure:



The PP *na aj'ɔɓ* "loc wall", would be acting as an adjunct, specifying the location of the occurrence of the hit-breaking. On the other hand, *ku-* "hit" in (67) is acting as a transitive, and its structure is more like that of (40). I given a partial representation below:



Since *aj'ulɔ* "wall" is an argument that will receive structural Case, it is not possible for it to be the assigned Case by the locative preposition *na*.

### 3.4. Instrumental Argument Sharing

In the previous section, we analyzed Ewe resultative predicates in detail, and found that they pattern analogously to resultative expressions in English. The goal of this section is to show how the analysis of resultatives in Ewe can be extended to "instrumental" SVCs in Ewe.

(74) Kofi tsɔ ati-ɛ fo Yao (yi)  
 Kofi took stick-def hit Yao D  
 "Kofi took the stick and hit Yao with it"

(75) Kofi fo Yao (\*yi)  
 Kofi hit Yao D

Example (74) gives an example of an instrumental SVC. In this case the object of V1 is the instrument of the event denoted by V2. We see that in (74) a doubling *yi* can appear at the end of the SVC. In general, *yi* cannot double a direct object as (75) shows us. Therefore we conclude that there must be an empty category in the structure that represents the fact that the object of V1 is the instrument of V2. I illustrate this in the following examples:<sup>28</sup>

- (76) Kofi tsɔ ati-ε<sub>i</sub> fo Yao [ec<sub>i</sub> (yi)]  
 Kofi took stick-def hit Yao D  
 "Kofi took a stick and hit Yao with it"
- (77) Mana ɖe taku<sub>i</sub> bla ta [ec<sub>i</sub> (yi)]  
 Mana removed scarf wrapped head D  
 "Mana took a scarf out and wrapped her head with it"
- (78) e kle de-ε ɖa ami [ec<sub>i</sub> (yi)]  
 he plucked palm-nut-def prepared oil D  
 "he plucked the palm nut and prepared oil from it"
- (79) Kofi dze ati-ε kpa kplɔ [ec<sub>i</sub> (yi)]  
 Kofi sawed-down tree-def make table  
 "Kofi sawed down the tree and made a table"
- (80) me kplɔ Ama yi Lome [ec<sub>i</sub> (yi)]  
 I led Ama go Lome D  
 "I led Ama to Lome"

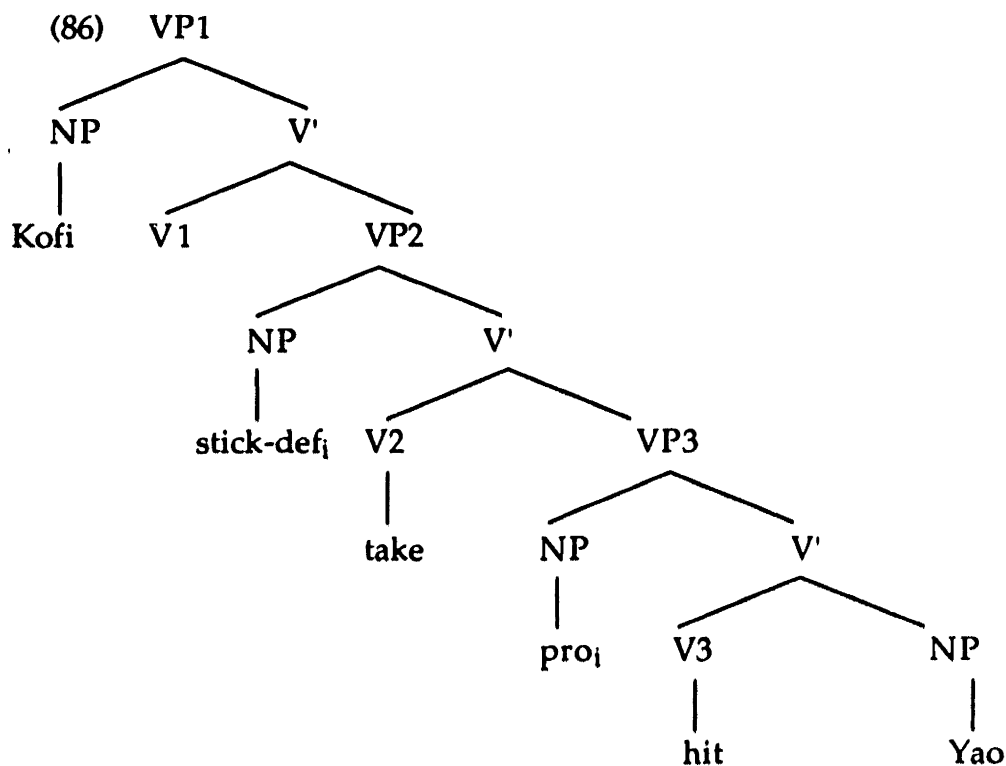
This type of SVC encompasses a wide range of relations, from pure instruments (76) to accompaniment type of expressions (80). If these examples are put into the future, they take the single future form. This indicates that these forms should not be treated as I'/IP conjunction:

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<sup>28</sup> Examples (77-79) are perceived to be marginal, and are ameliorated in the verb *kɔ* "take" is inserted between second verb and the object of the first verb.

- (81) Kofi a tsɔ ati-ε<sub>i</sub> fo Yao  
 Kofi fut took stick-def hit Yao
- (82) Mana a de taku<sub>i</sub> bla ta  
 Mana fut removed scarf wrapped head
- (83) e a kle de-ε da ami  
 he fut plucked palm-nut prepared oil
- (84) Kofi a dze ati-ε kpa kplɔ  
 Kofi fut sawed-down tree-def make table
- (85) me a kplɔ Ama yi Lome  
 I fut led Ama go Lome

Given the doubling *yi* data, we can infer that there is an empty category somewhere in the structure. Given the future marking data we can infer that we are not dealing with some type of I'/IP coordination. Therefore, I propose the following structure for the instrumental SVCs:



There are several points to make about this structure. First, since VP3 is the complement of V2, it will be possible for V3 *fo* "hit" to incorporate into V2 *tsɔ* "take" at LF. Second, we may ask why the pro subject of VP3 must be coindexed with *ati-ε* "stick-def". If it were not, the VP3 headed by *fo* "hit" would neither be an argument of *tsɔ* "take" nor a predicate of anything. We can rule this out by appealing to the notion of FI (Full Interpretation) of Chomsky 1986, 1992. The legitimate LF objects on this view are argument chains, head chains, modifier chains, and operator-variable pairs. VP3 would not correspond to any of these, and the structure therefore would not meet FI.

Now let us consider how the principles of interpretation that were given in chapter one apply to the structure in (86). First, the NP in the Spec of VP2 is licensed, since VP3 is a predicate. Second, the event denoted by V3 is the temporally follows the event denoted by V2 (i.e., the hitting follows the taking). Third, the NP in the Spec of VP1 is licensed by virtue of being a causer, since VP2 is not a predicate. Lastly, the event denoted by VP2 is the result of some other event (the denotation of the null verb V1). Thus the interpretation of this kind of SVC proceeds in the same way as the interpretation of resultatives in English.<sup>29</sup>

Verbal incorporation in SVCs at LF will allow us to account for the following property of SVCs. Even though *ati-ε* "stick-def" is the Spec of the lowest VP in (86), the agent of the verb *fo* "hit" is still understood to be the NP in the Spec of VP1. This is especially important in that some of the verbs that appear as the second verb in the SVC actually require the presence of an external argument. I illustrate this below:<sup>30</sup>

- (87)    *ati-ε*            *fo*    Yao  
           *stick-def*        *hit*    Yao

---

<sup>29</sup> It might be asked how the subject of VP3 is licensed, since the object of *fo* "hit" does not seem to be a predicate. In the approach adopted here, it must be the case that *fo* "hit" actually takes a PP "goal" complement with a covert preposition. This PP is the predicate that licenses the subject of VP3.

<sup>30</sup> The readings of (87-91) are non-causative. There are some speakers who find this data acceptable if not a little marginal.

- (88) \*taku        bla        ta  
scarf        wrapped    head
- (89) ede-ε        ɖa        ami atukpa        ɖeka na-m  
palm-nut    prepared    oil    bottle one    for-me
- (90) ati-ε        kpa    kplɔ    ɖeka    na-m  
tree-def     make table one    for-me
- (91) Ama yi        Lome  
Ama go        Lome

Examples (87) and (91) show that some verbs which appear in SVCs can appear without an agent. Example (88) shows that *bla* "wrap" cannot appear without an agent. Examples (89) and (90) can only be used without an agent under a specific interpretation. For example, in (89) means that the palm nuts in question were sufficient to produce one bottle of oil. Since this interpretation is somewhat different than that in (84), we can infer that in (84) the verb *ɖa* "cook" is not agentless.

To account for the fact that the second verb in a SVC can be used agentively, we will use the fact that LF incorporation takes place. In section 3.3.6, we postulated the following rule for the projection of agents:

(92) Projection of Agents

If NP is interpreted as agent of the event denoted by VP, then NP must appear in the checking domain of the chain headed by V.

Consider again the representation in (86). At LF V3 *hit* will raise to adjoin to *take* by first adjoining to V2 (the trace of *take*). Next the complex [<sub>V2</sub> V3 V2 ] will adjoin to V1 forming [<sub>V1</sub> [<sub>V2</sub> V3 V2 ] V1 ]. Strictly speaking, in this derived configuration the subject *Kofi* will not be in the checking domain of V3 *hit*, nor the chain headed by V3 *hit* (see definitions in Chomsky 1993: 17 concerning the derivational interpretation of checking domains). If we want to retain the formulation of subject projection in (92), we can do one of two things. First, we can say that adjunction to a trace is equivalent to

substitution as far as head movement goes, so that when [ $V_2$   $V_3$   $V_2$ ] adjoins to  $V_1$  at LF, the resulting adjunction structure is equivalent to [ $V_1$   $V_3$   $V_1$ ].

The alternative is to loosen up the agent projection rule in the following way: if an NP is interpreted as agent of the event denoted by VP, then the NP must appear in the checking domain of the chain headed by V or V must be in the checking domain of another verb  $V^*$  that takes NP as an agent. Consider again the structure in (86), since  $V_1$  takes *Kofi* as an agent, and  $V_3$  is in the checking domain of  $V_1$  at LF, then *Kofi* can be understood as the agent of  $V_3$ .

The mechanism of LF incorporation thus allows us to solve the problem of how the embedded verbs in an SVC can have as their external argument the subject of the sentence. This mechanism supplants the "percolation" mechanisms adopted by Baker (1989: 520, 1991: 87) and others. We might suppose in general that the syntactic percolation mechanisms should be replaced by the more restrictive LF head movement.

We will see in the discussion concerning SVCs with three verbs that the second solution to the problem of agent projection in instrumental SVCs is preferable.

### 3.4.1. The Projection of *ku* "with" in SVCs

Above I mentioned that instrumental SVCs encompass a wide range of relations. The only thing that seems to run through all these examples is that they can usually be paraphrased by an alternative sentence involving *ku* "with" (standard Ewe: *kple*). This is illustrated as follows:

(93) *Kofi fo Yao ku ati-e*  
Kofi hit Yao with stick-def  
"Kofi hit Yao with the stick"

(94) *Mana bla ta ku taku*  
Mana wrapped head with scarf  
"Mana wrapped her head with a scarf"

(95) e    da   ami   ku   de-ε  
       he prepared oil   with   palm-nut-def  
       "he prepared oil with the palm nuts"

(96) Kofi kpa kplɔ ku ati-ε  
       Kofi make table with tree-def  
       "he made a table with the tree"

(97) me   yi   Lome       ku   Ama  
       I    go   Lome       with Ama

I already noted in chapter 2, Clements (1972: 215) proposed that doubling *yi* in examples like (76-80) and the phrase headed by *ku* "with" in (93-97) have the same underlying source. In other words Clements is advocating a view whereby *yi* doubles the shared instrumental object in the examples in (76-80).

In chapter 2 we discussed the difference between Russian and Ewe with respect to the assigning of Case to an instrumental argument. The basic point was that Ewe needed an instrumental preposition, *ku* "with", I illustrate this below:

(98) Kofi           fo   Yao   ku   ati-ε  
       Kofi           hit   Yao   with stick-def

(99) \*Kofi                   fo   Yao   ati-ε           (yi)  
       Kofi           hit   Yao   stick-def       D

I claimed in chapter 2, there is a special preposition that is used for instrumental arguments. This preposition is used obligatorily in the tree, where it can be used for reasons of economy of derivation. This solution left the following data mysterious:

(100) \*Kofi tsɔ   ati-ε<sub>i</sub>           fo   Yao   ku   pro<sub>i</sub>  
       Kofi took stick           hit   Yao   with

- (101) Kofi tsɔ ati-ε<sub>i</sub> fo Yao [ pro<sub>i</sub> (yi) ]  
 Kofi took stick hit Yao D

Why can't the empty category in an instrumental SVC be the object of the preposition *ku* "with". This question is all the more mysterious since it is apparently possible to (marginally) extract away the complement of the preposition *ku* "with" (extraction of a comitative object seems to be preferred overall to extraction of an instrumental object):

- (102) ??tati xe me to fufu ku  
 pestle which I pounded fufu with  
 "the pestle that I pounded the fufu with"

- (103) ame xe me yi Sodo ku  
 man which I went Sodo with  
 "the man who I went to Sodo with"

We are now in a position to answer this question. In the SVC in (100) the *pro* that we have postulated in SVCs to mediated argument sharing would be contained inside the PP headed by *ku* "with". This PP would then be a predicate, and not the VP *fo Yao* "hit Yao". But then the VP *fo Yao* "hit Yao" would have no interpretation.

### 3.4.2. The Status of Instruments as Arguments

The above analysis assumes that instruments are indeed arguments of the verb, since they are appearing in the Spec VP, a core A-position. There is some evidence from serialization which show that instruments are not necessarily arguments. Consider the following paradigm (first pointed out by Law and Veenstra (1992)):

- (104) a. me tsɔ he tso la  
 I took knife cut meat  
 "I took a knife and cut meat"

b. me tso la tso ku he  
 I took meat cut with knife  
 "I took the meat and cut it with a knife"

Interestingly, both of these forms take the single future (see chapter 2 for an analysis of the future particle *-gbe*):

(105) a. me le he tso gbe tso la  
 I am knife take fut cut meat  
 "I will take the knife and cut meat"

b. me le la tso gbe tso ku he  
 I am meat take fut cut with knife  
 "I will take meat and cut it with the knife"

Now the problem is that if instruments are projected as arguments of the *V*, then they should be projected in a unique position (although see Marantz (1992) for a different view). In order to explain why both patterns of argument sharing are possible (object of *V1* is object of *V2*, and object of *V1* is instrument of *V2*). I would like to claim that in (104a), the instrument is an argument and in (104b) it is an adjunct. Given this (104a) will be treated exactly as other types of instrument argument sharing, and (104b) will be treated as a case of direct object sharing (see section 5 below).<sup>31</sup>

### 3.5. Direct Object Argument Sharing

#### 3.5.1. *V2* Undergoes Causative/Inchoative Alternation

In (16-19), I gave a list of SVCs for which *V2* heads a resultative VP. There is another class of unaccusative verbs, which show a different behavior in SVCs. Consider the following examples:

---

<sup>31</sup> Baker (1989) gives evidence that instruments in instrumental applicatives in Bantu can either receive structural or inherent Case. Perhaps this ambiguity of Case marking in instrumental applicatives is related to the two different structural representations of instrumentals that are needed to describe the SVCs facts.

- (106) ekpe fo kɔpo gba (wuliwuli)  
 rock hit cup break (into pieces)  
 a. "a rock hit a cup and the cup broke"  
 b. "a rock hit a cup and then broke"

We might want to say that the ambiguity of this example results from the same factors as the ambiguity in (42) above, repeated below:

- (107) ekpe fo kɔpo yi xɔ-me  
 rock hit cup go room-in  
 a. "a rock hit a cup into the room"  
 b. "a rock hit a cup, and then went into the room"

The problem with this analysis is that there is an important difference between (106) and (107). Whereas the reading (107a) can be used with doubling *yi*, as we saw in (44), this is not possible with (106a), as shown below:

- (108) \* ekpe fo kɔpo gba (wuliwuli) yi  
 rock hit cup break into-pieces D  
 "a rock hit and broke a cup into pieces"

The crucial difference between *gba* "break" and *yi* "go", is that the former but not the latter participates in a causative/inchoative alternation. In other words we have the following contrast:

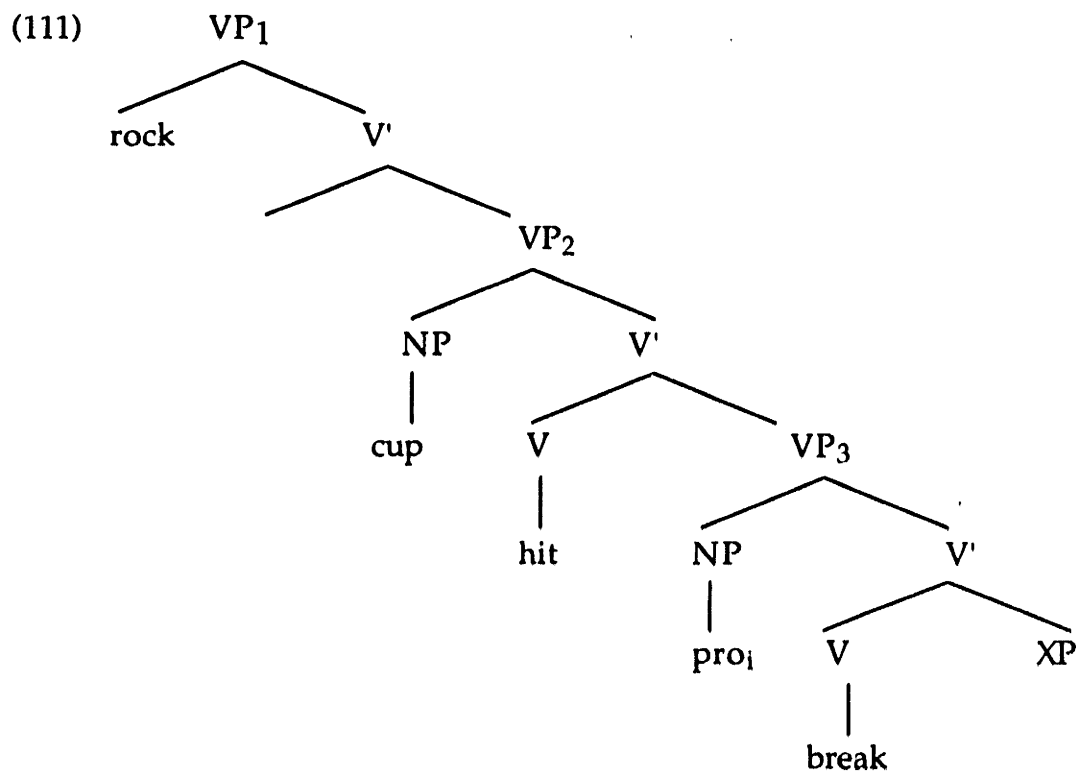
- (109) a. kɔpo gba kɔpo yi xɔ-me  
 cup break cup go room-in  
 "a cup broke" "a cup went into the room"
- b. me gba kɔpo \* me yi kɔpo xɔ-me  
 I break cup I go cup room-in

Similarly, none of the unaccusative verbs in (16-19) have transitive variants. We can see the same lack of doubling *yi* with other unaccusatives

that undergo the causative/inchoative alternation. Consider the following verb:

- (110) a.    me/eya    ho            ati-ε  
               I/wind    uproot       tree-def  
               "I/wind uprooted the tree"
- b.    ati-ε        ho  
               tree-def    uproot  
               "the tree uprooted"
- c.    eya    a    fo    ati-ε        ho    (\*-e/\*yi)  
               wind fut   hit   tree-def    uproot    D  
               "wind will hit and uproot the tree"

The sentences in (110a,b) show that *ho* "uproot" undergoes the causative/inchoative alternation. Because *ho* "uproot" is unaccusative, we might expect it to be followed by a doubling *yi* in a resultative SVC. The expectation is not born out. In other words, *yi* should be able to double the *pro* in the structure below:



To summarize, there is a class of unaccusatives that can be followed by *yi* when they are V2 in a SVC, and there is a class that cannot. The former include:

(112) *dzo* "leave", *va* "come" *zu* "become", *yi* "go."

The later class includes:

(113) *gba* "break," *ho* "uproot."

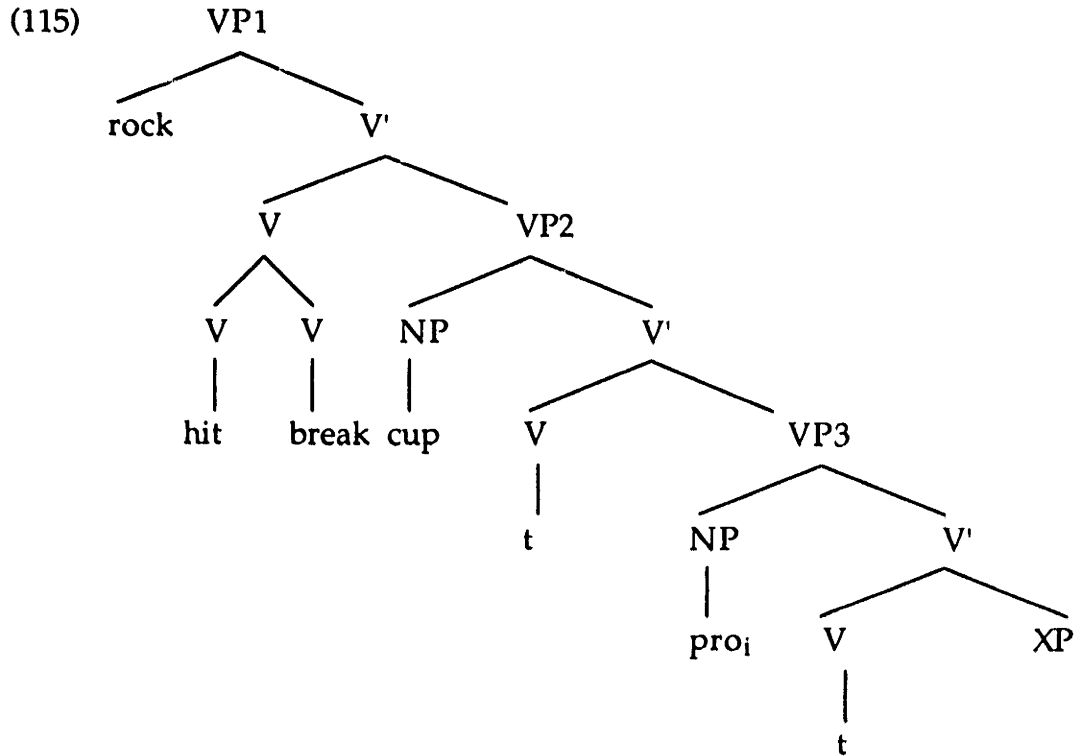
Let us suppose that the Ewe unaccusatives that have transitive alternants are always causative, in their transitive or intransitive uses. In the intransitive version they have an additional argument which, following Pesetsky (1993), we will call the A-causer (Ambient Causer). An ambient-causer is a special kind of argument, resembling weather-it. Thus the argument structure of the causative/inchoative verbs in Ewe is actually:

(114) a. inchoative *gba* "break" : (A-Causer, Theme)  
 b. causative *gba* : (Causer, Theme)

In romance, the A-causer argument of an unaccusative verb is spelled out as the reflexive clitic (e.g., "Pierre a fermé la porte" vs. "la porte s'est fermé") . In English the A-causer has no overt realization. If the verb undergoes causativization, then the A-Causer argument is "removed." The important part of Pesetsky's analysis that I will retain here is that some unaccusative verbs have an "external argument."

Pesetsky claims that the A-causer in the inchoative form of *break* absorbs the accusative Case associated with the verb, just as the passivize morpheme *-en* does in English (I will not detail how the A-causer absorbs the accusative Case of the verb here).

Given these assumptions we can now explain the restrictions on the distribution of *yi* after unaccusative verbs in SVCs in Ewe. We have assumed that the verb undergoes incorporation at LF, thus the structure of (111) will be as follows at LF:



Now recall our rule of argument projection:

(116) Projection of Agents

If NP is interpreted as agent of the event denoted by VP, then NP must appear in the checking domain of the chain headed by V.

If we interpret (116) as applying to the projection of causer argument in general, then in the representation (115), it must be the case that the causer of the event denoted by the VP headed by *gba* "break" is *ekpe* "rock". But then it follows that the causer cannot be the A-causer. But if the verb *gba* "break" is not being understood as having an A-causer, it must be being used in its causative sense (114b). Therefore, it follows that *gba* "break" will have accusative Case to assign. Therefore the *pro* in representation (115) will be a Case marked *pro*. We saw above in chapter 3 that *yi* cannot double a DP with accusative Case, as illustrated in the following examples:

- (117) Kofi fo Yao (\*yi)  
 Kofi hit Yao D

From this it follows that it is not possible that *yi* appear after verbs such as *gbà* "break" that have causative forms, since as the second verb of a SVC these verbs will always be used in their causative versions.<sup>32</sup>

The paradigm in (106-108) provides a particularly striking example of how my assumptions of LF incorporation in SVCs and the existence of empty categories in SVCs combine to predict the complex distribution of the doubling *yi* following SVCs.

It is instructive to analyze the list of verbs that Ansre (1966: 71, 235) gives as being followed by the "redundant complement" (our doubling *yi*) in standard Ewe. He gives the following list:<sup>33</sup>

(118)	a.	bú	"be lost"	f.	tsa	"wander"
	b.	ɔ̀	"arrive"	g.	vá	"come"
	c.	dzó	"depart"	h.	yi	"go"
	d.	sí	"escape"	i.	zɔ	"walk"
	e.	tó	"pass"			

It should be noted that only two of these verbs have apparent causative counterparts in Ewe, *ɔ̀* "arrive" and *bu* "be lost." The transitive version of *ɔ̀* meaning "send" is used in the following kind of sentence:

---

<sup>32</sup> Lord (1974: 198) claims that there are "indeterminate" SVCs in Yoruba, such as the following:

- |     |                             |        |      |      |
|-----|-----------------------------|--------|------|------|
| i.  | Fẹmi fa                     | ilẹkun | naa  | ɕi   |
|     | Femi pull                   | door   | the  | open |
|     | "Femi pulled the door open" |        |      |      |
| ii. | a. Fẹmi ɕi                  | ilẹkun | naa  |      |
|     | Femi open                   | door   | the  |      |
|     | b. ilẹkun                   | naa    | ɕi   |      |
|     | door                        | the    | open |      |

In principle the second verb in (i) could be transitive (as in (iia)), with direct object sharing. Alternatively, it could be intransitive (as in (iib)). I am claiming that in Ewe there are no "indeterminate" SVCs.

<sup>33</sup> He left out the following verbs: *zu* "become", *gbɔ* "return", *do* "exit". I assume that Ansre is implicitly excluding the instrumental (comitative, accompaniment) class of SVCs, which would also be followed by a doubling *yi*.

(119) me    ɔ̃    ga                    ɔ̃    Kofi  
           I     sent money            loc   Kofi

This is not the same as the causativization of *ɔ̃* "arrive". For example, (119) does not imply that the money actually reached Kofi:

(120) ..., vo            me            tu-i            o  
           ..., but        it-neg        reach-him    prt

The verb *bu* "be lost" would constitute a genuine counter example to my analysis of the class of unaccusative verbs which can be followed by doubling *yi* in standard Ewe. One possible explanation of this counter-example is that Ansre did not control for whether or not he was dealing with I' conjunction. The informants that I have asked do not like the form with doubling *yi* following:

(121) Kofi    tsɔ    ga        la    bu    (\*yi) [bui]  
           Kofi    took    money    def    lost    D  
           "Kofi lost the money"

Perhaps, Ansre was really dealing with a non-SVC, which had the following analysis:

(122) Kofi [I'    tsɔ    ga-la ]    [I'    bu-i ]  
           Kofi            took    money-def            lost-it  
           "Kofi took the money and lost it"

Since there is no overwhelming evidence to the contrary, I will assume that there are no counter-examples to my hypothesis.

### 3.5.3. Other Examples of V2 Transitive

We can extend the analysis in the previous section to other cases where V2 is transitive. In these cases as well V2 represents a kind of subsequent action. Here are some examples:

- (123) a. Kofi a fo Ama wu  
 Kofi fut hit Ama kill  
 "Kofi will strike Ama dead"
- b. \*Kofi fo Ama ku  
 Kofi hit Ama die  
 "Kofi hit Ama dead"
- (124) a. Kofi no aha mu  
 Kofi drank drink got-drunk  
 "Kofi drank till he got drunk"
- b. Kofi mu (aha)  
 Kofi got-drunk drink
- (125) e ka akple mi  
 he break-off dumpling swallow  
 "he took some dumpling and swallowed it"
- (126) wo da fufu du  
 they cooked fufu eat  
 "They cooked fufu and ate it"

In these examples the V2 ranges from being a result of V1, as in (123,124), to just being close temporal succession, both relations that fall under the rules of interpretation that I gave in chapter 1. I propose that despite this meaning range, all the examples should essentially be analyzed as in (115) above.

Long-distance direct object sharing is never possible:

- (127) \*me wlo ga la gblo be Kofi bu  
 I hid money def said that Kofi lost  
 "I hid the money and said that Kofi lost it"

In this sentence V1 is *wlɔ* "hide", V2 is *gblɔ* "say", and the shared object is "money". If the gap after the verb *bu* "lose" was the trace of an empty operator, there is no reason why the shared object could not be an unbounded distance away. Since this is not possible, I conclude that there is no operator movement in SVCs.

### 3.5.2. More Evidence for Object Sharing as Predication

There are additional pieces of evidence for object sharing as a kind of predication. First, if object sharing is predication, then it should obey the mutual local c-command condition on predication. We can see this to be true with the following example:

- (128) *Beɖi (dzo)            dze   kɔpo            dzi   \*(wo) gba*  
 Betty jump            fell cup            on it break  
 "Betty (jumped and ) fell on the cup and it broke"

In this example, it is the cup that broke. We see that cup cannot be understood directly as the object of break. Since *kɔpo dzi* is a postpositional phrase, "cup" does not c-command *pro*. Therefore, predication is not possible. In order to express the intended sense, a subject pronoun *wo* must be used.

Another piece of evidence that supports our general theory of object sharing as a kind of predication is that sentences with meaning similar to these resultatives, but without object sharing, have significantly different syntactic behaviour. Consider the following data:

- (129) *me    a    fo    kaɖegbe    gba*  
 I    fut   hit   lamp    break  
 "I will hit the lamp and break it"
- (130) *me    a    fo    kaɖegbe    \*(a) gba    (yeme ) tsimini*  
 I    fut   hit   lamp fut   break   its   glass  
 "I will hit the lamp and break its glass"

The data above show that if there is no argument sharing in the sense of coindexation with a *pro* in the second VP, then the structure has to be a

I'/IP coordination (as indicated by repetition of the future). This clearly indicates that argument sharing is not some semantic effect of having coreference between some argument contained in both VPs, rather there is a principle of predication at work.

Another example showing the same point is the following:

(131) m-a    d̩a                    nu    d̩u  
 I-fut   cooked            thing ate  
 "I will cook something and eat it"

(132) m-a    d̩u    nu    \*(a)    no    tsi  
 I-fut   ate    thing fut   drank   water  
 "I will eat something and drink water"

In the example in (131), the object of *d̩u* "eat" is understood to be the same as the object of *d̩a* "cook", and we see that the future is marked only once. On the other hand, in example (132) no argument of *no* "drink" is understood as the same as an argument of *d̩u* "eat" and the future must be marked twice.

#### 3.5.4. V2 is Ditransitive

Dechaine (1988) and Baker (1989) note that when V2 is ditransitive it appears that the only possibility for argument sharing is that the theme/direct object of V2 be the shared object. This is illustrated below:

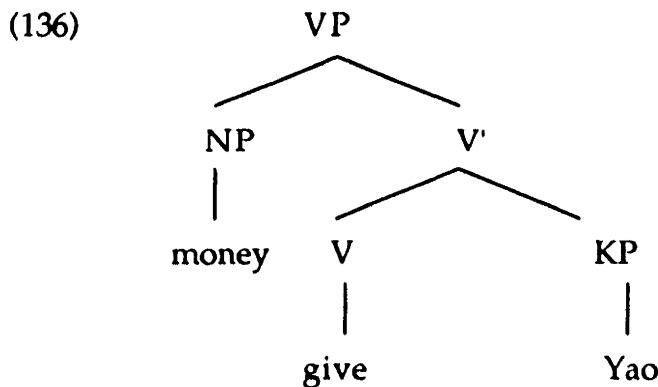
(133) \*e    tu/yɔ            kofi   ne    ga  
 he   met/called   kofi   give   money  
 "He met/called Kofi and gave him money"

(134) e    tsɔ    ga            ne    kofi  
 he   took   money            give   kofi  
 "He took money and gave it to Kofi"

These examples show that the goal of the V2 cannot be shared, but that the theme of the V2 can be shared. The meaning of (133) can be expressed with a I'/IP coordination, if a pronoun is used:<sup>34</sup>

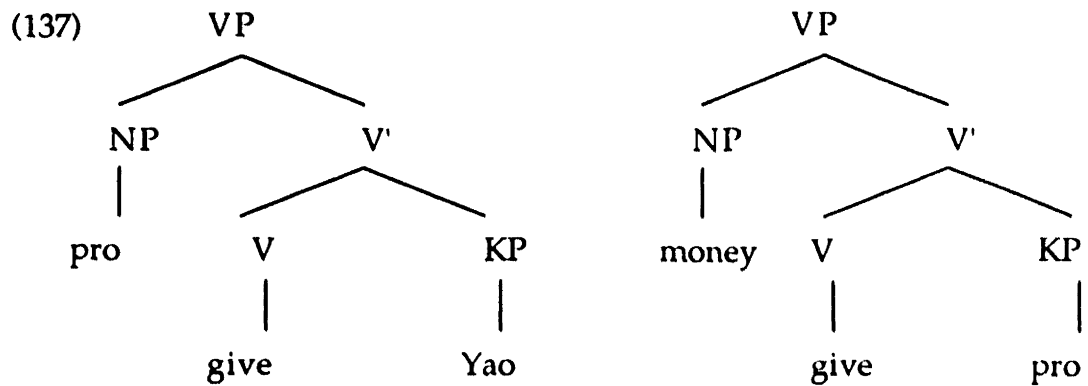
- (135) me    yɔ                    kofi<sub>i</sub> na    ga                    yi<sub>i</sub>  
           I    called                Kofi gave money        him  
           "I called Kofi and gave him money"

The constraint illustrated in (133) follows immediately from the considerations given above, if we assume that it must be the Spec of VP that is pro, if the VP is to become a predicate. Consider the following representations (recall the discussion of Case assignment in ditransitives from chapter 2):




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<sup>34</sup> There is one counter-example in the literature to the generalization that the goal of V2 cannot be the shared object. Law and Veenstra (1992) claim that sentences such as (133) are possible in Haitian, contra the data reported in Dechaine (1988). I have no account of Law and Veenstra's data. It should be noted that they gloss some of their other examples as purpose clauses, a construction distinctly different from a SVC, as many authors have noted.



In the underlying representation of a ditransitive verb, the theme c-commands the goal. Therefore it must be the case that the theme and not the goal is in Spec VP, and is able to be pro in a SVC.

Note that an operator movement analysis of the empty category in SVCs would have a hard time capturing this asymmetry between themes and goals, since A'-movement from either position should be acceptable.<sup>35</sup>

### 3.6. Object Sharing and Adjuncts

Our analysis predicts that the object of V1 will not be able to be construed as an adjunct of V2, since adjuncts would not occupy Spec VP<sup>36</sup>, and therefore would not be able to convert the VP into a predicate. This prediction is born out. Consider the following examples:

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<sup>35</sup> The Kpele dialect of Ewe has no double object construction for ditransitive verbs. Other languages, such as Fon and Haitian, have both double object verbs and serialization. But in no language that I know of is it possible for the goal argument of V2 to be the shared argument in a SVC. I have no account of this for the moment.

<sup>36</sup> David Pesetsky points out the following data that might indicate that temporal adjuncts are a kind of argument:

- i. 1981 saw the publication of LGB

I do not have an analysis of the thematic structure of this kind of verb.

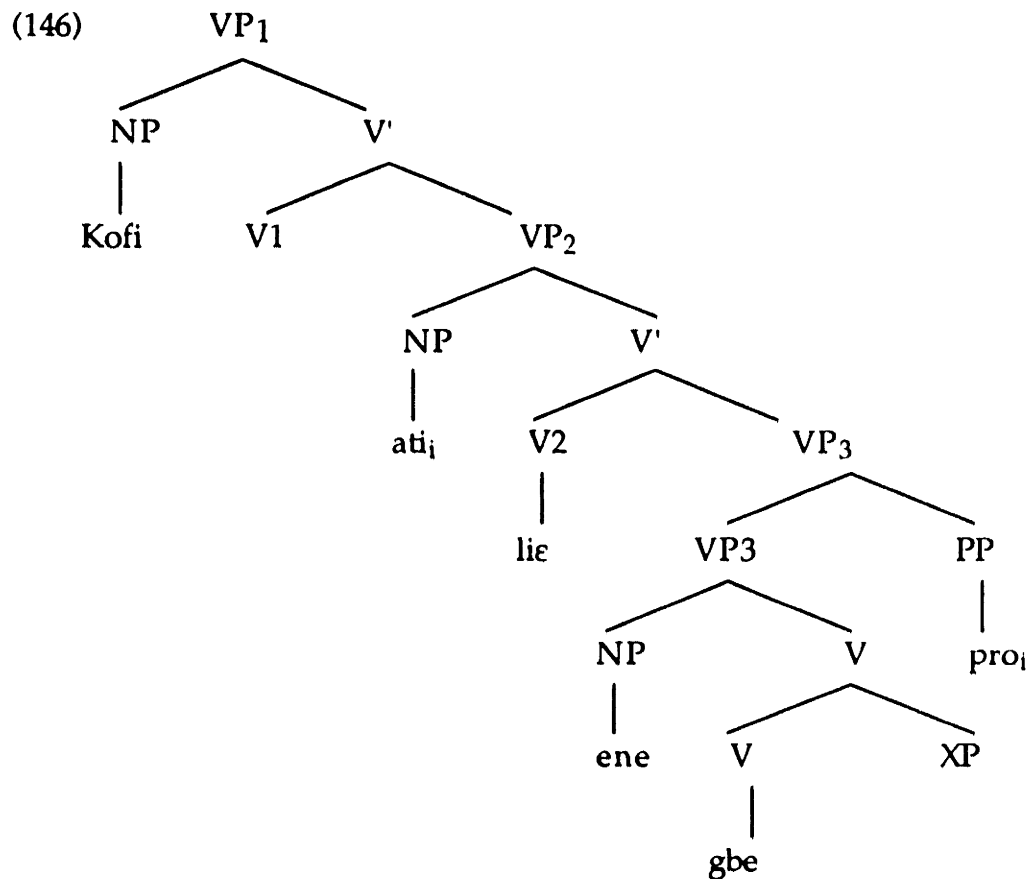
- (138) wo dze klo do gbe da [ec<sub>i</sub> (\*yi)]  
 They fell knee pray D  
 "They got on their knees and prayed"
- (139) e fo ave fa blafo [ec<sub>i</sub> (\*yi)]  
 he cleared forest planted corn D  
 "He cleared the forest and planted corn"
- (140) wo xa to tso aseye [ec<sub>i</sub> (\*yi)]  
 they formed circle shouted D  
 "They formed a circle and shouted"
- (141) Kofi lie ati gbe ne [ec<sub>i</sub> (\*yi)]  
 Kofi climbed tree picked coconut D  
 "Kofi climbed a tree and picked a coconut"

Some initial support for the hypothesis that no argument sharing is involved in these examples is that doubling *yi* cannot appear after any of the these sequences. If there was any empty category involved in argument sharing in these structures, then we might expect doubling *yi* to appear (if no other Case considerations intervened).

Another piece of evidence that the above examples do not involve argument sharing is that if they are put into the future both verbs must be marked with the future, this is illustrated below:

- (142) wo a dze klo \*(a) do gbe da  
 They fut fall knee fut pray
- (143) a fo ave \*(a) fa blafo  
 he fut cleared forest fut planted corn
- (144) wo a xa to \*(a) tso aseye  
 they fut formed circle fut shouted
- (145) Kofi a lie ati \*(a) gbe ne  
 Kofi fut climbed tree fut picked coconut

This data indicates that the VP sequences are being treated as I'/IP coordination. Now we have noted many times throughout this chapter that there is an inverse correlation between multiple future marking and argument sharing. Therefore, we conclude that the examples above do not involve argument sharing.<sup>37</sup> The structure of (141) would be something like the following:



<sup>37</sup> Another example that would be amenable to the same analysis is the following:

Yao	yi	asime	fle	te
Yao	went	market	bought	yam

Lewis(1989a: 7, 1989c: 14) correctly notes that this is not a serial verb construction, and explains this by saying that V1 cannot take a goal as its complement. The restriction that I have given also excludes this example and is more general.

If we assume the above structure, we see that the empty category in VP3 that would act to turn VP3 into a predicate is not in the Spec VP3, but is rather in an adjoined position (or whatever position adjuncts are found in). Since we stipulated (in section 3.3.3) that the pro that converts a VP into a predicate must be in Spec, it follows that the above representation is not legitimate. Therefore the only possible analysis of the sentences in (138-141) is as a I'/IP conjunction.

### 3.7. SVCs with Three Verbs

Another piece of evidence that supports our analysis of SVCs as a type of predication are the possibilities for argument sharing in SVCs with three verbs. Consider the following examples:

(147) me tsɔ he tsɔ la tso  
I took knife took meat cut

This string is two ways ambiguous, in a way that is brought out when the sentence is put into the future. Consider the following sentence where the future is marked twice.

(148) me le he tsɔ gbe a tsɔ la tso  
I am knife take fut fut take meat cut  
"I will take the knife, and take the meat and cut it"

What this sentence means is that I will take the knife with my hand, then take the meat with my hand, and then cut the meat. It is understood that the cutting is with the knife that was taken. Now if the future is only marked once, then the sense of the sentence changes in an interesting way:

(149) me le he tsɔ gbe<sup>38</sup> tsɔ la tso  
I am knife take fut take meat cut  
"I will take the knife, and take the meat with the knife and cut it"

---

38 See chapter two for an analysis of this kind of future maker.

The difference in meaning between this sentence and the previous one is that it must be the case that the meat was taken with the knife (e.g., by skewering it). In addition, there is no implication that the cutting was done with the knife that was used to skewer the meat. In other words, "cut" does not take "knife" as an argument in this sentence. This sentence thus shows two things. First, that if the single future form is used, object sharing is enforced between between the first and the second verbs (the object of the first verb become the instrument of the second). Second, this example shows that object sharing is pairwise. In other words, each sequence of two consecutive verbs must share an object. This is a fairly direct prediction of our analysis, since the operative principle is predication.

There are other examples of the same type, illustrated below:

- (150) a      tsɔ      gatsi-ε      fo      detsi kplɔ  
           he-will take spoon-def    make sauce drink  
           "he will take the spoon, make the sauce with it, and drink"

In this example, note that the future is being marked only one time, therefore we are sure that we are in the presence of a true SVC and not a case of I'/IP coordination.

The important point to note about this example, is that although it is necessarily the case that the spoon is used to make the sauce, it is not necessarily the case that the spoon is used to drink the sauce. In other words the internal object sharing seems to occur pairwise: "take" and "make" share an object, and "make" and "drink" share one.

The pairwise object sharing seen in the above examples is also demonstrated in the following examples, where the relations between objects are potentially ambiguous:<sup>39</sup>

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<sup>39</sup> These examples are marginal for two reasons. First, they are complex containing three actions in immediate temporal sequence. Second, instrumental SVCs are more acceptable if the verb *kɔ* "take" is inserted after NP1, but before V2, as discussed in section 3.4. For some speakers these sentences may be unacceptable.

- (151) Kofi dze ati kpa kplɔ dzra  
 Kofi felled tree carved table sold  
 "Kofi felled a tree, carved a table with it and sold it"
- (152) Kofi fi ga dze aha no/\*ɖu  
 Kofi stole money bought drink drank/\*ate  
 "Kofi stole money, bought a drink, and drank it/and spent it"

This examples show that the object of V3 must be understood as the same as the object of V2, and not V1. In (151), it must be the case that the table that was produced was sold, and not the wood itself. In (152), it is possible that V3 is *no* "drink", where the object of V3 would be understood as the same as the object of V2. On the other hand, it is not possible that V3 is *ɖu* "eat, spend" since in that case the object of V3 would be the object of V1.

In addition to supporting my general analysis of object sharing as a type of predication, this type of example is important since it conflicts with the conclusion of many researchers, including Baker (1989: 550), who have claimed that every object, must be shared by all subsequent verbs in the sentence: "For each other argument [than the subject -c.c.]  $\alpha$  in the SVC... $\alpha$  must be  $\theta$ -marked by all the verbs that follow it." The only examples Baker gives of this constraint are in footnote 28. None of the examples given are examples of ungrammatical sentences that violate this constraint. In other words, Baker does not show that examples such as my Ewe examples in (149-152) are unacceptable.

Since this statement of Baker's is a direct prediction of his theory, and it is false, I conclude that Baker's theory in its pure form is false. The theory where SVC is a kind of predication does not have this problem.

### 3.8. Cross-linguistic Variation

In this section I will address the issue of cross-linguistic variation in SVCs. The main point that I would like to make is that much of the perceived cross-linguistic variation in SVCs can be characterized in terms of the level at which head movement takes place. This section should be regarded as tentative.

### 3.8.1. Ewe vs. Igbo

In Igbo, in resultative (and dative and benefactive) SVCs V2 incorporates into V1 before S-Structure, but for other SVCs V2 incorporates into V1 at LF. I illustrate the contrasts between Ewe and Igbo below (data from Collins and Gruber (1993)):

- (153) a. ukwute kɔ̃-ji-ri aja (Igbo)  
stone hit-break-asp wall  
"the stone smashed the wall"
- b. ekpe fo kɔ̃po yi xɔ̃-me (Ewe)  
rock hit cup go room-in  
"a rock hit a cup into the room"
- (154) a. o ji mma bha-a ji (Igbo)  
3sg hold knife peel-asp yam  
"he peeled yam with a knife"
- b. Kofi tsɔ̃ ati-ε fo Yao (Ewe)  
Kofi took stick-def hit Yao  
"Kofi took the stick and hit Yao"
- (155) a. Adha si-ri anɔ̃ ri-e (Igbo)  
Ada cook-asp meat eat-asp  
"Ada cooked the meat and ate it"
- b. m-a ɖa nu ɖu (Ewe)  
I-fut cooked thing ate  
"I will cook something and eat it"

Dechaine (1992: 320) claims that in the instrumental SVCs V2 is the syntactic head, and in the resultative SVCs V1 is the head. She claims that if V2 is the head (instrumental SVC) then V2 cannot incorporate into V1 since the trace of V2 would be "ungoverned" (V1 not being the head).

Since we have assumed that there is always incorporation of V2 into V1, we cannot adopt Dechaine's line of reasoning. Let us reinterpret Dechaine's claims that V1 is the syntactic head in resultatives as a claim that V1 is semantically dominant. In instrumental SVCs V2 will be semantically dominant. We can then postulate the following morphological condition (that is nonetheless semantically motivated):

(156) Igbo SVCs

In Igbo SVCs, if V is not semantically dominant, it is invisible for head movement at LF.

Since the V2 in resultative SVCs is not semantically dominant, it is invisible for head movement at LF, and must be moved by S-Structure, resulting in incorporation before S-Structure. Note that this mode of explanation resembles Chomsky's (1992) account of the fact that auxiliaries must move before S-Structure in English, since they are invisible at LF. It is important to note that it is necessary to parameterize the notion of LF invisibility for auxiliaries, since in Mainland Scandinavian auxiliaries do not move before LF. As pointed out by Watanabe (1993, chapter 3: 13), this difference between English and Mainland Scandinavian is related to the fact that English auxiliaries have a richer agreement paradigm than Mainland Scandinavian auxiliaries.

Just as LF invisibility is parameterized for auxiliaries it is also parameterized for resultatives. In Ewe, they are visible at LF, and in Igbo they are invisible.

### 3.8.2. Kwa vs. Bantu

Baker (1991) and Givon (1971) analyze the applicative suffixes in Bantu as underlying SVCs. This is illustrated as follows (data from Baker (1991)):

- (157) a.      mo    fi      ada                      ge    igi    naa  
                  I      used machete      cut    tree    the  
                  (I cut down the tree with a machete)  
                  (Yoruba)

b. Mavuto a-na-un.b-ir-a mpeni mtsuko  
 Mavuto sp-past-mold-appl-asp knife waterpot  
 "Mavuto molded a waterpot with a knife"  
 (Chichewa)

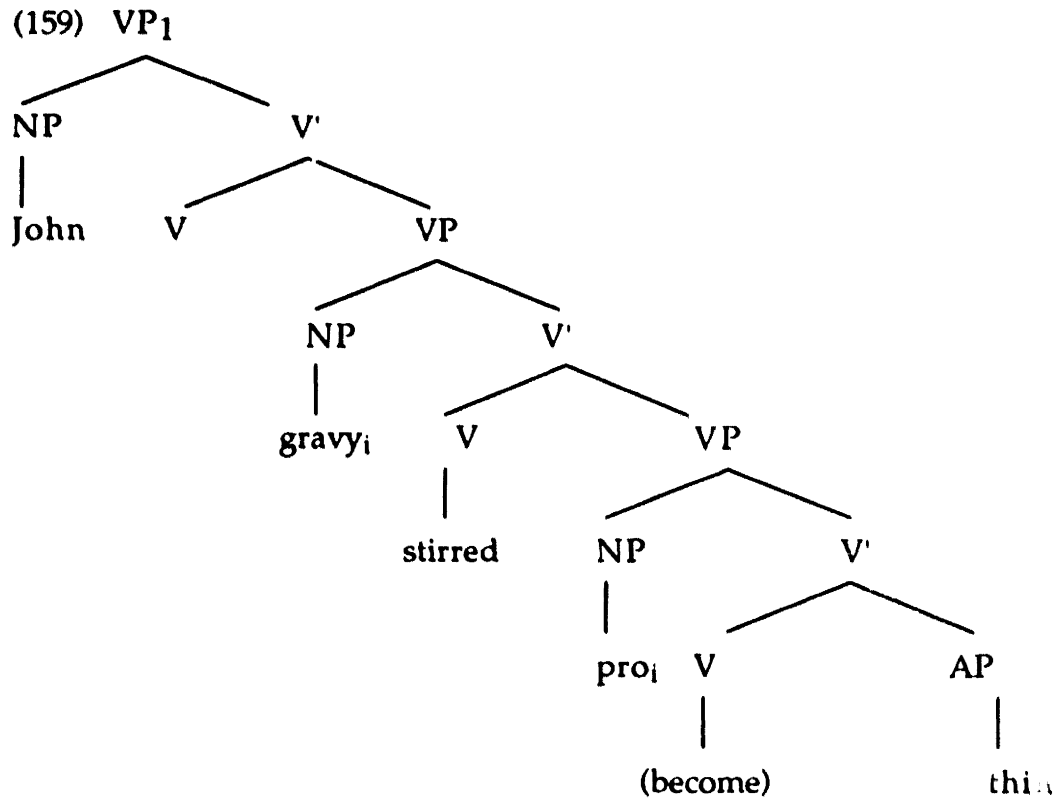
(158) a. Oye mu iwe wa fun mi  
 Oye took book came give me  
 "Oye brought the book to me"  
 (Yoruba)

b. Mavuto a-na-unb-ir-a mfumu mtsuko  
 Mavuto sp-past-mold-appl-asp chief waterpot  
 "Mavuto molded the waterpot for the chief"  
 (Chichewa)

If it is true that applicative constructions are SVCs, then it can be seen that V2 has incorporated into V1 for all SVCs before S-Structure. As Baker states: "The absolute minimum difference that one could say about the two is that formatives which are independent verb roots in Kwa are affixes in Bantu." Thus Bantu illustrates a language where V2 always incorporates into V1 in SVCs (as a result of a very general strategy of verb incorporation in the language).

### 3.8.3. Ewe vs. English

English appears on the surface not to have any SVCs. I would like to claim that this is illusory, and that English has a large class of SVCs underlyingly. Consider the resultative construction which I postulated in section 3.3.5. had the following structure:



We can account for the fact English does not have overt SVCs with the following condition:

(160) English SVCs

In English SVCs, V2 must incorporate into V1 before S-Structure.

Now there is one more point that must be made about English. It appears that there is a condition on the complexes formed by incorporation into a verb before S-Structure that only one of the heads can be spelled out (except for some cases of derivational morphology, such as *-en*, *-ify*). For example in the denominal V<sub>s</sub> discussed by Hale and Keyser (1993: 16) typically only the noun spells out, this is illustrated below:

- (161) a. John shelved the book  
 b. John put the book on the shelf  
 c. \*John put-(on)-shelf the book

(162) English

In the incorporation structure: [v X V Y]

Only one of the lexical heads can be morphologically realized. <sup>40</sup>

This sort of condition makes it difficult to verify the underlying status of English as a SVC language. Fortunately, there is no such condition in Igbo.

### 3.9. Conclusion

In this chapter, I have shown how a large range of facts concerning SVCs fall under simple principles. I reiterate the main claims of this chapter below:

- (163) a. SVCs are distinguished from other types of VP sequencing by the presence of argument sharing. The operational test for this difference is the distribution of the future tense markers.
- b. Argument sharing is a type of predication, mediated by the presence of an empty category in Spec VP. The presence of this empty category is in many cases revealed by the presence of doubling *yi*.
- c. LF incorporation of V2 into V1 is necessary in all SVC, this device accounts for the following phenomena:
- i. The VPs in SVCs cannot be extracted (section 3.2.2.)
  - ii. only objects can be shared (section 3.3.4.)
  - iii. the object of V1 cannot be understood as the agentive subject of V2 (section 3.3.6.)
  - iv. all the verbs in a SVC can share the same external argument (section 3.4.)
  - v. unaccusative verbs that undergo the causative/

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<sup>40</sup> This condition has the implication that structures such as "I threw away my toys" do not represent the incorporation of "away" into "threw."

inchoative alternation, can only appear in a SVC in their causative form (section 3.5.1.)

- d. Cross-linguistic variation in SVCs can be reduced to variation in the syntactic level at which V2 incorporates into V1.

These principles have allowed me to account for a large number of SVC constructions. It is to be hoped that the study of SVCs will play a much larger role in the theory of argument structure in the future.



## Chapter 4

### The 3sg Subject Pronoun and Successive Cyclicity

#### 4.1. Introduction

The basic third person singular subject pronoun in Ewe is *é*. In a variety of embedded contexts *wò* is used instead, depending on a variety of factors that I will try to clarify in this chapter. This is illustrated below (throughout the paper I separate the alternatives by "/" and give the acceptability judgements for each alternative. I will mark tone on the pronouns, since this will be relevant for the final analysis. The marking convention outlined in chapter one of this thesis will be used):

- (1) *é/\*wò*      *f*o      Kɔsi  
he            hit      Kosi  
"He hit Kosi"
- (2) Kofi gblɔ be *é/\*wò*      *f*o      Kɔsi  
Kofi said C he            hit      Kosi  
"Kofi said that he hit Kosi"
- (3) Kofi biɛ be lamata      \**é/wò*      *f*o      Kɔsi  
Kofi asked C why            he            hit      Kosi  
"Kofi asked why he hit Kosi"

Sentence (1) shows that in matrix clauses the pronoun *é* is used instead of *wò*. Sentence (2) shows that in embedded clauses with an empty Spec CP, *é* is used and not *wò*. Sentence (3), shows that if Spec CP is filled by an operator *wò* is used and not *é*. Since *wò* occurs when the Spec CP is filled by an operator, I will call *wò* the 3sg-Op. I will refer to the process by which *wò* is selected as the 3sg subject pronoun as *wò*-selection.

The goal of this chapter is explain the distribution of *wò*-selection. There are two aspects of the distribution. The first concerns the exact syntactic mechanisms by which *wò*-selection takes place. This aspect we will address in sections 4.2 and 4.3. Our basic idea is to relate *wò*-selection to the unique

status of the 3sg subject pronoun in Ewe. The second concerns the distribution of *wɔ̀* when successive cyclic movement has taken place. We will address this aspect in section 4.4.

In order to give the syntactic mechanisms underlying *wɔ̀*-selection, I will have to clarify several features of Ewe syntax, including the nature of the subject pronouns, nominative Case assignment and the structure of COMP. I do this in the next section.

## 4.2. Preliminaries

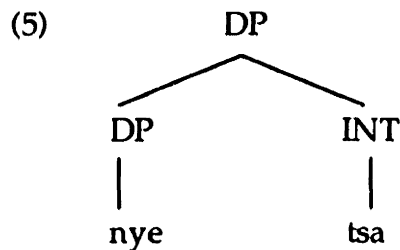
### 4.2.1. The Status of Subject Pronouns

In order to address the mechanisms behind *wɔ̀*-selection, we will have to give an analysis of the subject pronouns. We will start with an observation by Clements (1972: 129) (the data is from Kpele-gbe):

- |     |    |                         |     |          |    |         |
|-----|----|-------------------------|-----|----------|----|---------|
| (4) | a. | nye                     | tɕa | *(me)    | yi | Kpalime |
|     |    | I                       | too | I        | go | Kpalime |
|     |    | "I too went to Kpalime" |     |          |    |         |
|     | b. | wo                      | tɕa | *(e)     | yi | Kpalime |
|     |    | you                     | too | you      | go | Kpalime |
|     | c. | yɛ                      | tɕa | (*é/*wò) | yi | Kpalime |
|     |    | he                      | too | he       | go | Kpalime |
|     | d. | miɛ-wo                  | tɕa | *(mì)    | yi | Kpalime |
|     |    | we-pl                   | too | we       | go | Kpalime |
|     | e. | mie-wo                  | tɕa | *(mì)    | yi | Kpalime |
|     |    | you-pl                  | too | you      | go | Kpalime |
|     | f. | yɛ-wo                   | tɕa | (wó)     | yi | Kpalime |
|     |    | he-pl                   | too | they     | go | Kpalime |

g.	Kofi	(tsa)	yi	Kpalime
	Kofi	too	go	Kpalime
h.	Kofi ku Ama	(tsa) ??(wó)	yi	Kpalime
	Kofi and Ama	too they	go	Kpalime <sup>1</sup>

In the above data a strong pronoun<sup>2</sup> modified by *tsa* "also" is used as the subject. I will assume the following constituent structure (the particles such as *tsa* and *ko* are called intensifiers in the Ewe literature, I will abbreviate them with INT):



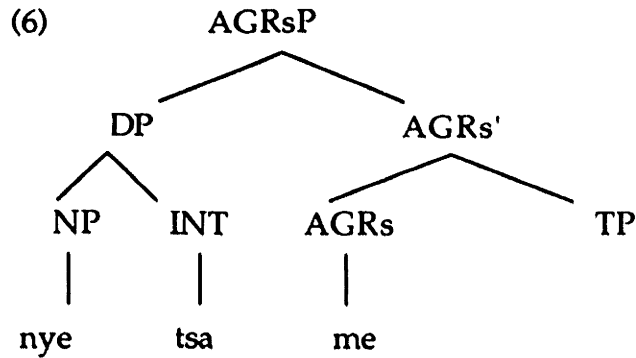
The data indicate if a strong pronoun is modified by *tsa*, then it must obligatorily be doubled by a weak pronoun for the 1st and 2nd person pronouns. This subject doubling is optional for the 3rd pl pronoun. No such doubling is possible for the 3rd singular. In addition, as (4g) shows the strong third person pronouns function like lexical NPs in this respect.

As we will see this paradigm correlates to other differences between the personal pronouns. Therefore it is necessary to draw a structural difference between 3sg and the others. Let us first suppose on the basis of the non 3sg person data, that the subject pronouns occupy AGRs, this is illustrated in the following diagram:

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1 I will make the simplifying assumption that 3pl behaves like the non-3sg pronouns in necessarily doubling a lexical NP. I will leave the exact mechanisms behind its optionality for future work.

2 The strong form of the pronoun contrasts with the weak or reduced form. Descriptively, the strong form is used when the pronoun is modified, or fronted. I analyze it here as a full DP (see Clements 1971: 134 for an extended discussion).



In this representation, the pronominal form *me* "1sg" occupies AGRs, and checks off its phi-features against *nye tsa* "I too" which occupies Spec AGRs. We may ask whether T has raised to AGRs in (6). Since adverbs never appear clause internally (e.g., between the subject and the verb) it is hard to see exactly where T is located. I will assume for convenience that it does not raise to AGRs until LF.

This kind of representation for the subject pronouns is consistent with Dechaine's proposal for Yoruba (1993: 630), except that she puts the subject clitics in T, instead of having them head a separate node. If T and AGRs are regarded as separate nodes, it is not necessary to have the subject clitics placed in T. This representation is also that of Zribi-Hertz and Adopo (1992) for Attie (a related Kwa language). This is the representation reached by Rizzi (1986) for the subject clitics of some dialects of Italian.

From the above data we have the generalization that 3sg AGRs never doubles any element in Spec AGRs. Following Dechaine (1993) on Yoruba, I will analyze 3sg AGRs as a default agreement. In Ewe, this means that 3sg *é* appears in AGRs only if AGRs is not occupied by any person or number features (assuming 3sg can be understood as the absence of features).<sup>3</sup> In other words, the morphological form *é* is not the spell out of 3sg, but it is the spell out of an empty AGRs.<sup>4</sup>

<sup>3</sup> The phonological features of 3sg AGRs *é* are also very minimal. *e* is the underspecified vowel in the language (Abaglo and Archangeli (1989)). High tone is the tone you find find on the default 3sg AGRs in Yoruba as well.

<sup>4</sup> It might be possible to analyze the facts in a slightly different way. Perhaps the 3sg pronoun is in Spec AGRs, instead of AGRs. In this case as well, we would not expect 3sg to be present if a lexical NP was present.

In the case where a lexical NP occupies Spec AGRs, we can assume that AGRs is filled by a real 3sg feature (to be able to check the agreement features of the NP), and that therefore  $\acute{e}$  does not appear in the spell out.<sup>5</sup>

#### 4.2.2. Clause Structure

I will assume that subjunctive in the above examples is base generated in T, much as modals in English. I will assume for the moment that the future marker, and the aspectual particles are in lower aspectual heads (see Dechaine 1992 on the two classes of INFL heads in Yoruba). In addition, NEG follows AGRs, but precedes the subjunctive. Putting this all together we have the following surface forms (for non-negative and negative respectively):

- (7) a. ...bé me á dzó [bé mádzó]  
           that 1sg subjn leave AGRs-T-V
- b. ...bé mì mé gǎ dzó o  
           that 1pl neg subjn leave prt AGRs-NEG-T-V

Let us suppose that negation is a head. This is a very plausible assumption since there are in general no preverbal or pre-INFL adverbs in the language.

#### 4.2.3. Nominative Case Assignment

We may now ask what assigns nominative Case in (6). I will assume that nominative Case is assigned by AGRs, in conjunction with the highest modal element present. I will furthermore assume that negation counts as a modal verb for this purpose (see Clements 1971: 172 for some morphological similarities between negation and subjunctive in Anglo Ewe). These

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<sup>5</sup> The Yoruba system is a little different from Ewe. In Yoruba, the 3sg AGRs is  $\acute{o}$ , which appears in AGRs if no other subject pronoun appears there, and if there is no modal of the class AUX1 (which we can presume raises to AGRs at LF). Descriptively, 3sg AGRs  $\acute{o}$  works exactly like *do*-support in English. The 3sg  $\acute{o}$  does not appear if there is a lexical NP in Spec AGRs, a HT appears.

assumptions entail that there will always be movement of some functional head to AGRs. I will assume that for the most part this movement takes place at LF (see section 4.3.5. for the exceptions).

#### 4.2.4. The Structure of COMP

In this section I will give an analysis of the complementizer system in Ewe in order to set the stage for my eventual analysis of *wɔ̀*-selection. I will assume that *be* "say, that" is a complementizer and discuss a few problems that arise with that assumption. The first problem is that *be* seems to be homophonous with the verb *be* "say", as the following paradigm indicates:

- (8)    *me*    *be*    *Kofi*    *dzo*  
          *I*     *said*   *Kofi*   *left*

This paradigm is misleading, since if *be* was in fact the verb *say* in the above sentences we would expect it to participate in the full paradigm of verbal conjugation. In fact it does not.

- (9)    a.    *me*    *le*    *gbogblo*    *be*    *Kofi*    *dzo*  
             *I*     *am*    *saying*     *that*   *Kofi*   *left*
- b.    \**me*    *le*    *bebe* (*be*)   *Kofi*   *dzo*  
             *I*     *am*    *saying*   *that*   *Kofi*   *left*

I will adopt rather Clement's (1975:186) suggestion that in examples like (10) the verb *gblo* "say" has been deleted:

- (10)   *me*     $\emptyset_V$     *be*    *Kofi*    *dzo*  
          *I*     *say*    *that*   *Kofi*   *left*

The second problem with supposing that *be* is a complementizer is that it appears with embedded questions:

- (11) me be lamata Kofi dzo  
 I ask that why Kofi left  
 "I asked why Kofi left"

If *be* were a complementizer, then this type of embedding would not be expected. Although I do not have an explanation of this embedding, I would like to claim that this does not argue that *be* is not a complementizer. In order to see this, note first that the distribution of *be* in embedded clauses is not uniform. For some embedded questions no *be* appears:

- (12) nye me nya lamata Kofi dzo  
 I neg know why Kofi left  
 "I didn't know why Kofi left"

It therefore appears that this phenomenon is exactly the same as the phenomenon found in the Spanish (see Suner 1991). Following Suner (1991), we can analyze this as a type of CP-recursion, rather than a new form of complementation altogether.

It is interesting to note that if *nya* "know" is not followed by an embedded question, then *be* "that" is obligatory. In Spanish, *que* "that" appears with non-interrogative complements as well (Suner 1991):

- (13) me nya \*(be) Kofi dzo  
 I know that Kofi left  
 "I know that Kofi left"

I conclude that there are no objections to *be* being a complementizer, although its properties are somewhat special.<sup>6</sup>

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<sup>6</sup> Here I disagree with Kinyalolo's (1992) analysis of Fongbe. He states "The strongest argument against the analysis of *do* as a COMP is provided by the fact that [+wh] CPs are systematically barred from occurring after Fon counterparts of verbs such as ask, wonder, etc." In Ewe, there are two patterns of questions, and that these two patterns are exactly what are found in Spanish, where the status of the morphemes in question as complementizers is more sure.

### 4.3. *wò*-Selection

Given these preliminary assumptions we can now come to the main topic of this chapter, *wò*-selection. Consider again the paradigm with which we started the section:

(14) *é/\*wò*      *fo*    *Kɔsi*  
3sg            hit    Kosi  
"He hit Kosi"

(15) Kofi *gblɔ* *be*    *é/\*wò*      *fo*    *Kɔsi*  
Kofi said P    3sg            hit    Kosi  
"Kofi said that he hit Kosi"

(16) Kofi *bie*    *be*    *lamata*      *\*é/wò*      *fo*    *Kɔsi*  
Kofi asked C    why            3sg            hit    Kosi  
"Kofi asked why he hit Kosi"

The main fact that we have to account for is why the pronominal form *wò* is used only when there is a filled Spec CP.

#### 4.3.1. T to C at LF

I will start from the assumption that if there is something in Spec CP, then there will have to be movement of T to C at some level.<sup>7</sup> I will suppose that this level is LF, since there is no overt inversion of AGR-T with the subject, either in matrix or embedded clauses, as the following sentences show:

(17) Kofi *bie*    *be*    *lamata*      *nye tsa*      *me*    *fo*    *Kɔsi*  
Kofi asked C    why            I too          I    hit    Kosi

---

<sup>7</sup> This assumption differs from that of Watanabe (1993), who argues that T raises to C in all clauses. This assumption also differs from that of Tuller (1986: 71) who claims that T always raises to C at LF to satisfy the scope properties of T.

- (18) Lamata      wo tsa      e      fo      Kɔsi  
       why        you too    you    hit    Kɔsi

Evidence for the claim that T raises to C at LF comes from Hausa. In Hausa, there is a special element of T that appears when Spec CP is occupied. Consider the following examples (Tuller 1986: 108):

- (19) yaaraa      sun/\*suka      ci      tuwoo  
       children    perf/rel-perf    eat    tuwo  
       "Did the children eat the tuwo?"

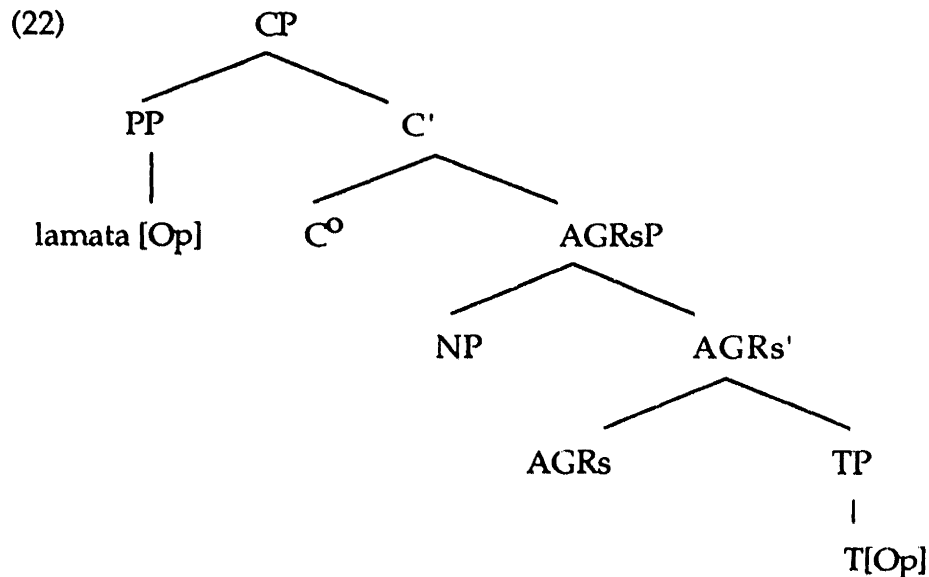
- (20) mee yaaraa      \*sun/suka      ci  
       what children    perf/rel-perf    eat  
       "what did the children eat"

- (21) \*mee sun/suka      yaaraa      ci  
       what perf/rel-perf    children    eat

The sentences in (19-21) indicate that *sun* is used when Spec CP is empty, and *suka* is used when Spec CP is filled. It appears that *ka* is the perfective auxiliary that is used when Spec CP is filled. In addition, it is not possible for the auxiliary to occupy COMP at S-Structure, as shown in (21) (the "\*" in (21) should be interpreted to mean that no such examples were given in Tuller 1986). We can account for the relation between filled Spec CP and T in Hausa by postulating movement from T to C at LF.

We can motivate this movement as follows. Suppose that a wh-element in Spec CP has a feature +Op that must be checked. If Spec CP is filled with a wh-element, then T will necessarily be based generated with a +Op feature that will check that +Op feature of the Spec of CP. I will call T-Op the element of T that must raise to C. If on the other hand, there is no element with an operator feature in Spec CP, then if T-Op is generated in T, the derivation will crash.

I diagram the assumptions that I have made in the following representation of the embedded clause in (17):



I give this proposal below:

(23) T to C

If Spec CP is filled, then T[Op] must raise to C at LF to check the Op feature of Spec CP.

**4.3.2. 3rd Person AGRs is Inert**

I propose that the 3sg pronoun is somehow blocking the feature checking of Op by T in C at LF. In particular, I propose that 3sg AGRs is inert for movement to COMP. I state this in (24) below:

(24) 3sg AGRs is inert for movement (at LF or S-S)

Recall that we analysed the 3sg pronoun *é* in section 4.2.1. as a default pronoun that appears only if there is no feature content to AGRs (person or number). The main reason we did this is that 3sg *é* (as opposed to all the other persons and numbers), does not show up if there is a lexical subject. I would like to claim that the default character of 3sg *é* is the reason that only

for 3sg does *wɔ*-selection take place. In other words, I am correlating the two exceptional properties of the 3sg pronoun in the language:<sup>8</sup>

(25) Visibility to Movement (Ewe)

In order for a head X to be visible to movement, it must have some morphological feature (e.g., person or number).

This is conceptually very close to Chomsky's (1992) proposal that auxiliaries are invisible to LF movement, since they have no semantic content. I am claiming that the default 3sg has no semantic or syntactic feature content, and therefore is not visible to syntactic operations (at LF or S-S).<sup>9</sup>

Consider how this assumption accounts for the data:

(26) Kofi biɛ be lamata \*é fo Kɔsi  
 Kofi asked C why 3sg hit Kosi

Since C must be filled at LF by T, this sentence will be unacceptable since the 3 sg AGRs is inert for movement to C. On the other hand, there will be no problem with wh-movement for other persons:

(27) Kofi biɛ be lamata me/e fo Kɔsi  
 Kofi asked C why 1sg/2sg hit Kosi

One clarification is in order, I am assuming that AGRs exists in the tree and is not empty (only inert). For example, it is filled with the phonological matrix é. Since it is not empty, it will not be possible to move right through it

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<sup>8</sup> A seemingly simpler possibility would be to assume that *wɔ* is simply the spell out of the AGRs that has T-Op moved into it at LF. This account would fail to capture the correlation between the two exceptional properties of 3sg AGRs in the language. It would also fail to link the morphological change in 3sg AGRs to any special property of 3sg AGRs cross-linguistically. I therefore reject this account.

<sup>9</sup> This is not to say that AGRs is invisible for feature checking at LF, since Case will have to assigned to the subject when T moves to AGRs at LF.

as NP can move through an A-position. If this were the case, we would not expect 3sg AGRs to block LF movement of T to AGRs to C.<sup>10</sup>

The statement in (25) will have to be parameterized, as it is clear that 3sg AGRs does not always block movement (e.g., *has* to C in English questions). In this respect it is like the LF visibility of auxiliaries to movement. Chomsky (class lectures 1992) proposed the auxiliary elements are invisible to LF movement, which is why they must move before S-Structure. Watanabe (1993, chapter 3: 13) points out that this is not exactly right, there is quite a bit of cross-linguistic variation with respect to whether auxiliaries are LF-invisible or not. For example, auxiliary verbs in Mainland Scandinavian do not raise at S-Structure.

My account of the difference between 1,2 persons and 3 person bears some resemblance to Kayne's (1993) account of auxiliary selection in Romance. He notes that certain dialects of Italian distinguish between 1,2 and 3 person with regard to auxiliary selection. In these dialects, all verbs select *be* as the auxiliary in "auxiliary + past participle" constructions in the 1 and 2 persons. In the 3rd person, the auxiliary *have* is used. Kayne gives the following analysis of these facts. The underlying structure of the past participle sentences is as follows:

(28)      *be*    [DP D    AGRs      T    AGRo    [vP NP V NP]]

Underlyingly the auxiliary *be* takes a DP which has internal clausal structure. Kayne assumes that Spec D must be assimilated to an A-position. This can happen in one of two ways. First, either D raises to *be* (and [*be* + D] spells out as *have*), or AGRs raises to D. Restricting ourselves to unergatives and transitives, Kayne assumes that in standard Italian D raises to *be*, and the two are spelled out as *have*. In other dialects, D does not raise to *be*, but rather AGRs raises to D, except in the 3 person, where D continues to raise to *be*

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<sup>10</sup> There is an alternative account to the data. It may be that in the case of 3sg, T never raises to AGRs (for lack of features checked). Then if T must raise to C (to check the Op feature), raising over AGRs would be blocked by the HMC.

This would roughly correspond to the asymmetry discussed by Alana Johns (1993) for Labrador Inuttut. In that language, in the 1,2 persons, the verb moves to AGRs, but not in the 3 person.

(spelling out as *have*). The important assumption is that only a certain class of AGRs can raise to D, those for 1st and 2nd person subjects. 3 person AGRs cannot raise to D, since it is inert.

The ultimate correctness of my proposal rests on finding other cases where it appears that 3 person AGRs is inert for syntactic processes. Until a theory of this kind is established, my proposal must rest somewhat tentative.

#### 4.3.3. Analysis of *wò*

Now consider the following sentence:

- (29) Kofi biɛ be lamata wò fo Kɔsi  
 Kofi asked C why 3sg hit Kosi

My proposal is that *wò* is an alternative non-inert form of 3sg that is used only if using the non-embedded 3sg *é* would lead to the +Op feature of T not being checked.

In this respect *wò*-selection is like *do*-support in English. The form *wò* is only selected to save a derivation from crashing. Furthermore, it is possible to analyze *wò* as morphologically complex. This conclusion will lend support to our claims about *wò*. Since *wò* is morphologically complex, it is more plausible that it is not invisible for movement. Since AGRs filled with *wò* is not invisible for movement, then when T adjoins to AGRs at LF, it will be possible for the complex [AGRs T AGRs ] to continue on to C.

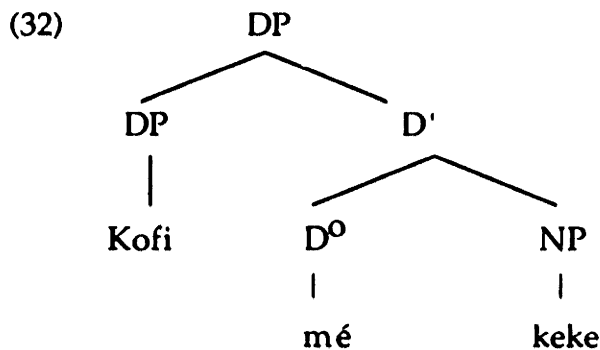
We will start by looking at the cross-linguistic variation of the 3sg pronoun and the genitive marker. I will show that both of these functional morphemes have the same kind of dialectal variation. Consider the following table (the inland data is taken from Westermann 1930: 191):

(30)	<u>Standard</u>	<u>Kpele</u>	<u>Waci</u>	<u>Gen</u>	<u>inland</u>
3sg	é	é	é	é	é
3sg-Op	wò	wò	è	bě	?
genitive	fé	mé	?	bé	wó

Considering first the genitive marker (corresponding to 's in English). I illustrate its use below:

- (31) Kofi mé keke  
 Kofi 's bike

I assume that the DP above should be syntactically represented as below. On this view [me,fe,be] are the head of DP, and they assign genitive Case to SPEC DP.



We see in all the dialects that the morpheme has a high tone and a labial consonant. There are some differences among the vowels. The standard orthography hides the fact that in Ewe, Kpele and Waci the 3sg non-embedded pronoun is really [´], and in Gen it is [e]. This difference is quite general between the dialects, and is not restricted to this particular form.

The other important difference in vowel quality is that in the inland dialect reported by Westermann *wó* is used as the genitive marker. This morpheme has a bilabial consonant but the vowel is *o*. We can bring this morpheme into the larger pattern if we note that there are no words in Ewe of the form [w´]. In fact there appear to be very few words of the form [w + [-round]]. This suggests that genitive in the inland dialect in (30) above is a derived form, with [w´] as the underlying representation. If we make these assumptions we see that all the genitive markers are basically a labial segment [m,f,b,w] followed by a high tone.

We can make a similar set of observations for 3sg-Op (e.g., *wò* in Kpele-gbe). In all dialects 3sg-Op starts with a labial consonant (except Waci which I

will assume is a simplification), and in all of the dialects the embedded pronoun is low toned (perhaps followed by a high tone as in Gen).

If we abstract away from the tone difference between the genitive and the 3sg-Op and we exclude Waci (where no labial initial consonant is found for 3sg-Op), we have the following generalization:<sup>11</sup>

(33) 3sg-Op and the genitive D have the form: [+labial]

Now to the extent that genitive D is a head that mediates genitive Case assignment, and that cross-dialectally it is [+labial], we can conclude that 3sg-Op is a head that mediates Case assignment as well. In other words, *wò* as opposed to *é* is not simply a spell out of an empty AGRs.<sup>12</sup>

#### 4.3.5. Lexical Subjects

One straightforward prediction of our system is the following. We saw in section 4.2.1. that *é* is not used with lexical subjects, since with lexical subject there must be a 3sg feature present to check the agreement features of the NP. Similarly, if there is a lexical subject present *wò* is not selected as AGRs. This is illustrated below:

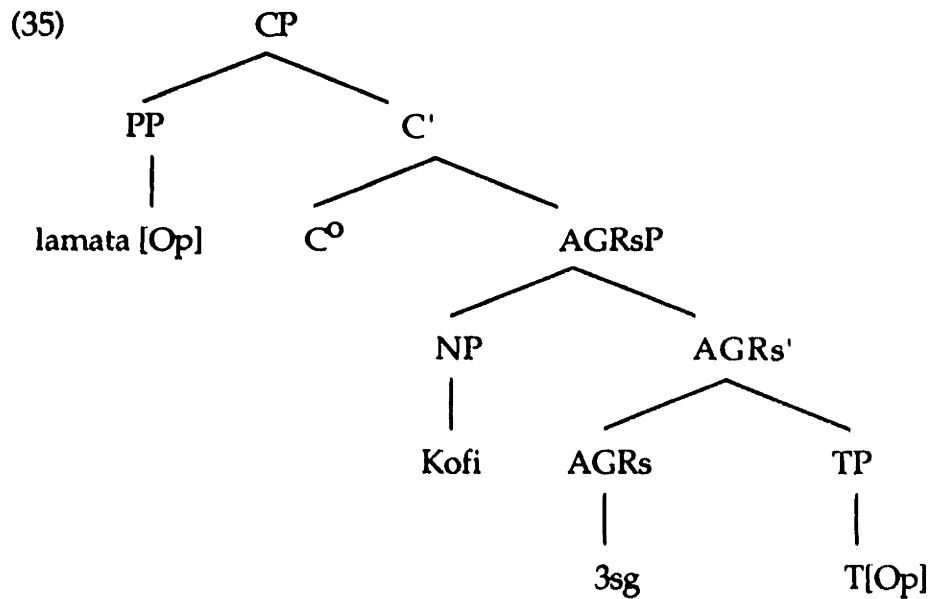
(34)	Lamata	Kofi	(* <i>wò</i> )	dzo
	why	Kofi	3sg	leave

If a lexical subject occupies Spec AGRs, I will assume that we have the situation represented in (35). Since this AGRs bears features, it is not inert for movement, and so *wò* is not selected.

---

11 This situation suggest Chamorro, where the verb is nominalized if an XP occupies the Spec of CP.

12 Another possibility would be to related to the labiality of *wò* "he/she" to that of the complementizer *be* "say, that." This seems less plausible, since the complementizer, as opposed to both 3sg-Op and genitive, shows no dialectal variation in Ewe.



#### 4.3.6. Negation and Future

##### 4.3.6.1. Negation

In our analysis we showed that if we assume that 3sg is inert for movement at LF, we can predict the distribution of *wò*-selection. I will now look at the interaction of *wò*-selection with the auxiliaries. We will look at negation and the future. We will see that they apparently behave very differently from each other with respect to *wò*-selection.

Consider first negation. We see that if negation is used in the clause, *wò* is never selected:

- |      |    |        |               |           |
|------|----|--------|---------------|-----------|
| (36) | a. | lamata | *é/ <i>wò</i> | dzo       |
|      |    | why    | 3sg           | leave     |
|      | b. | lamata | ∅/* <i>wò</i> | me dzo    |
|      |    | why    | 3sg           | not leave |

I propose that NEG moves to AGRs (sometimes in the syntax, and sometimes at LF). If NEG moves to AGRs before S-Structure, the clitics in AGRs are deleted in certain circumstances. Consider the following paradigm for the negation:

- (37) a. nyè mè ɖu te o  
           1sg neg eat yam prt
- b.           mè ɖu te o  
           neg eat yam prt
- c.           mé ɖu te o  
           neg eat yam prt
- d. mì me ɖu te o  
           we neg eat yam prt
- e. mi mé ɖu te o  
           you neg eat yam prt
- f. wó mé ɖu te o  
           they neg eat yam prt
- g. mé wó ɖu te o (Anlo dialect only)  
           they neg eat yam prt

In (a) we see that the strong form of the 1sg *nye* must be used in the sentence, instead the expected *me me*, which would correspond to the sequence: AGRs NEG. In the case of the 2sg *e* and 3sg *é*, the pronouns have been deleted altogether. Clements (1972: 172) postulates a rule of *pronoun permutation* to handle (37 b,c, and g). This rule permutes the 2sg, 3sg and 3pl pronouns with the negation marker. I propose that pronoun permutation is taking place in the case of 1sg a well. Therefore, pronoun permutation takes place for all persons in the singular, and for 3pl.

We can recast pronoun permutation in a different light given our assumption that the weak pronouns occupy AGRs. Suppose that there is a rule that raises NEG to AGRs before S-Structure for certain person and

number combinations.<sup>13</sup> Then to derive the forms in (37), all we must do is postulate the following rules:

(38)  $me$   $\Rightarrow$   $\emptyset /$   $me$  \_\_\_\_\_  
 1sg neg

(39)  $e$   $\Rightarrow$   $\emptyset /$   $me$  \_\_\_\_\_ (degemination)  
 2sg,3sg neg

The rule of degemination in (39) is a very general phonological rule, discussed by Clements (1972: 27).

My proposal for the lack of  $w\delta$ -selection with negation is that  $w\delta$  is actually present underlyingly, but just like the 1sg  $me$ ,  $w\delta$  is deleted in the following context:

(40)  $w\delta$   $\Rightarrow$   $\emptyset /$   $me$  \_\_\_\_\_  
 3sg neg

Thus we correlate the lack of  $w\delta$  in the negation with the fact that 1sg is deleted in the negation. Both of these deletions are related to the fact that movement of NEG to AGRs takes place before S-Structure.

#### 4.3.6.2. Future

In the future if there is a filled Spec CP, then  $w\delta$  is selected as AGRs. Consider the following paradigm:

(41)	a.	lamata	* $\acute{e}/w\delta$	dzo
		why	3sg	leave
	b.	lamata	* $\emptyset/*\acute{e}/w\delta$	á dzó [wòadzó]
		why	3sg	fut leave

---

<sup>13</sup> Note that in 4.2.3. we postulated that negation is a modal verb, and that it has Case to check. Therefore, NEG will always raise to AGRs by LF.

The question is what explains the difference between negation and future with respect to *wò*-selection. There are two related differences between negation and the future that will allow us to account for this difference, which are illustrated in the following paradigm:

(42)	a,	me	á	ɔu	te	[mà ɔu te]
		1sg	fut	eat	yam	
	b.	e	á	ɔu	te	[à ɔu te]
		2sg	fut	eat	yam	
	c.	é	á	ɔu	te	[á ɔu te]
		3sg	fut	eat	yam	
	d.	mì	á	ɔu	te	
		1pl	fut	eat	yam	
	e.	mi	á	ɔu	te	[mìa ɔu te]
		2pl	fut	eat	yam	
	f.	wó	á	ɔu	te	
		3pl	fut	eat	yam	
	g.	*á	wó	ɔu	te	
		fut	3pl	eat	yam	

First, unlike the negation there is no rule of FUT to AGRs before S-Structure in Ewe. This can be seen by the fact that the 1sg *me* is not deleted in the future (42a). In addition, in no dialect can the future marker appear before the 3pl (42g).

There are only two types of changes that occur to the subject pronouns in this paradigm. First, the future following a mid-toned subject AGRs becomes low:

(43)	á	⇒	à	/	M(mid)	—
	fut		fut		AGRs	

The second thing that happens is that the rules assimilation and degemination applies in (42a,b,c). This rules are general phonological rules (Clements 1972: 27).

Therefore, we see in the future that there is far less interaction between the element of AGRs and the future morpheme. This corresponds to the fact that the future is lower in the tree than the negation, as we can see from the following examples:

- (44) mi    mé    á    du    te    o  
       2pl  neg  fut  eat  yam prt

Given that there is no movement of FUT to AGRs, and that there is no deletion of 1sg AGRs, there is no reason to expect 3sg-Op *wò* to be deleted in the future.

#### 4.3.7. Sentential Connectives

The first person to comment systematically on the the different 3sg pronouns was Ansre (1966). He did this in the context of classifying sentential connectives into three classes on the basis of the 3sg subject pronoun that appears with each one. Class I contains sentential connectives for which the embedded clause has *é* as its 3sg subject pronoun. Class II connectives take *wò* and Class III connectives take either *é* or *wò*. Translating these connectives into the Kpele dialect of Ewe, we have the following classification (leaving class III for section 4.5):

(45) Classes of Clausal Connectives

Class I ( *é* only)

Class II (*wò* only)

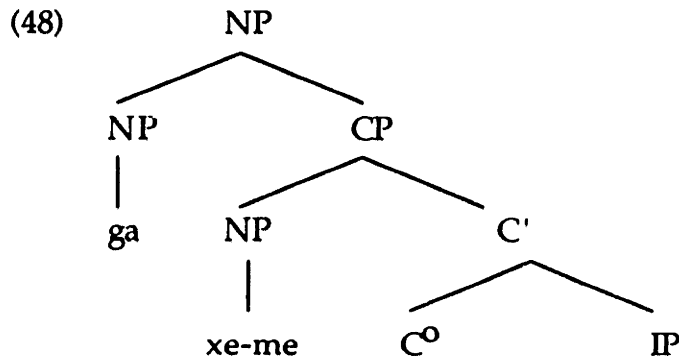
- |    |      |        |    |          |             |
|----|------|--------|----|----------|-------------|
| a. | gake | "but"  | a. | gaxeme   | "when"      |
| b. | abe  | "like" | b. | xe...ta  | "because"   |
| c. | ne   | "if"   | c. | xe       | "when"      |
|    |      |        | d. | abe lexe | "like"      |
|    |      |        | e. | abe de   | "like"      |
|    |      |        | f. | yeta     | "therefore" |
|    |      |        | g. | kafe     | "before"    |

Consider the following examples:<sup>14</sup>

(46) me    ɖa            nu    gake    é/\*wò    du    nu    vɔ  
 I        prepared thing    but    he        ate    thing already  
 "I cooked, but he had already eaten"

(47) ga-xe-me            \*é/wò            va  
 time-which-in        he                came  
 "when he came"

The fact that the 3sg subject pronoun is obligatorily *wò* after *ga-xe-me* follows from the fact that this connective is really a noun modified by a relative clause, as the gloss suggests. Therefore the structure of (42) is as follows:



In this structure the Op feature of Spec CP will have to be checked. This entails T to C at LF, which is only possible if AGRs is *wò*.

A similar analysis can be given for the connectives (b-d) in Class II (i.e., in terms of relative clauses). Connective (e) in Class II is composed of *abe* "like" and *ɖe* (predicate focus). In order to analyze the structural position of

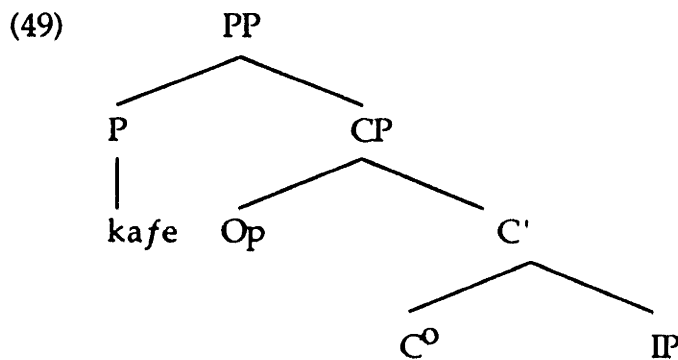
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14 There are a few differences between this classification and Ansre's that need comment. First, *elabena*, *kasiaa*, *tete* and *alebe* are either non-existent or rare in the Kpele dialect, so they are not included in my classification. Second, *ne* ("if, when") is in Class I in the Kpele dialect, whereas it is in Class III for Ansre. James Essegbey has informed me that in standard Ewe there is a difference of interpretation of *né + é* (conditional) and *né + wò* (temporal). This might be the basis for Ansre's classification.

*de*, note that in Ewe *de* as a predicate focus alternates freely with the copy-cleft construction. For example, *de me dzo* alternates with *dzo me dzo* "I left." The copy cleft construction evidently involves movement of a nominalization of the verb into Spec CP. I will therefore assume that *de* occupies Spec CP. Therefore, the *de* occupying Spec CP will have a Op feature that needs to be checked.

Connective (f) of Class II is composed of *ye* "that" and *ta* "because of". The simplest syntactic analysis of *yeta* is a preposed reason adverbial, which occupies Spec CP. The fact that *yeta* occupies Spec CP, means that T will have to move to C at LF

The only problematic connective in Class II is *kafe* "before" which is not obviously morphologically complex (as with the connectives (a-f)). I will simply assume that because of its temporal nature, it involves movement of a null operator as in the following structure:<sup>15</sup>



In this construction Op binds an adverbial trace in IP. The presence of Op gives rise to *wɔ* as the 3sg subject pronoun.

#### 4.4. Successive Cyclic Movement

##### 4.4.1. Position of WH-trace and *wɔ*

In embedded clauses without a filled C, *wɔ* is not used as the 3sg pronoun, as we have seen in section 4.3:

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<sup>15</sup> For a treatment of temporal connectives (such as "before" and "after") as involving operator movement, see Larson (1983).

- (50) Kofi gblɔ be é/\*wò fo Kɔsi  
 Kofi said C he hit Kosi  
 "Kofi said that he hit Kosi"

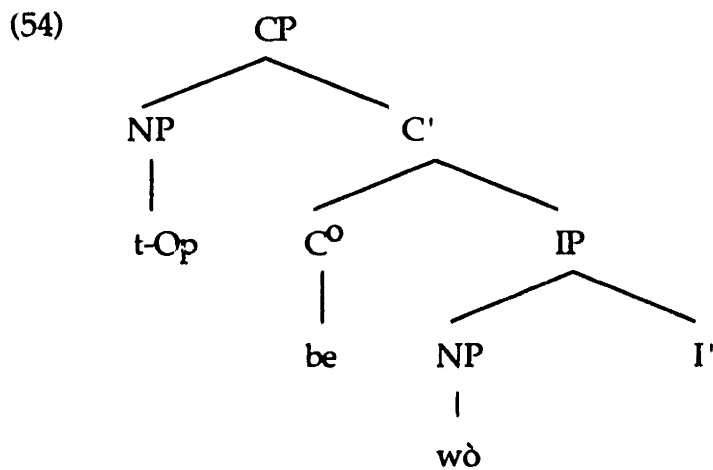
If the direct object of the embedded clause *Kɔsi* is fronted, *wò* becomes optional. Consider the following topicalized form of (50) and additional sentences illustrating the same phenomenon:

- (51) Kɔsi ε me gblɔ be é/wò fo  
 Kosi foc I said C he hit  
 "Kosi, I said that he hit"

- (52) me e gblɔ be é/wò fo  
 who you say C 3sg hit  
 "Who did you say that he hit?"

- (53) Kofi ε me se be é/wò fo  
 Kofi foc I heard C 3sg hit  
 "Kofi, I heard that he hit"

The facts above can be explained in terms of the analysis of section 4.3, if we assume successive cyclic movement. At some level a trace will occupy the embedded Spec CP position:



If we make the additional assumption that this trace bears the Op feature discussed in section 4.3, then the fact that *wò* appears will follow from the fact that there must be T to C at LF to check the Op features of Spec CP (we will return to the optionality of *wò*-selection in embedded clauses in section 4.4).<sup>16</sup>

One fact about the distribution of *wò*-selection is that it only appears in the following kind of contexts:

(55) Op<sub>i</sub>            *wò*            t<sub>i</sub>

This seems to be the case, as the following examples show (the unacceptable examples below vary between mildly unacceptable and totally unacceptable, for reasons not clear to me). The first set of examples involves the extraction of the matrix subject:

(56) Kofi  $\epsilon$     gblɔ    be    é/\*wò    fo    Kɔsi  
 Kofi foc say C    3sg            hit    Kosi'  
 "It is Kofi who said that he hit Kosi"

(57) ntsu    xe    se    be    é/\*wò    fo    Mana  
 boy    who heard C    3sg            hit    Mana  
 "the boy who heard that he hit Mana"

(58) Yao     $\epsilon$     bu            be    é/\*wò    dzo  
 Yao Foc thought C    3sg            left  
 "Its Yao who thought that he left"

The second set of examples involves extraction of the object out of a preposition in the matrix clause:

---

<sup>16</sup> The fact that intermediate traces can trigger T to C does not preclude an account of A'-movement where intermediate traces are deleted at LF (such as that of Chomsky and Lasnik (1992)). We must only say that trace deletion is a very late interpretive operation, following feature checking.

- (59) me se le Kofi gbɔ be Yao fo Kɔsi  
 : heard from Kofi near C Yao hit Kosi  
 "I heard from Kofi that Yao hit Kosi"
- (60) Kofi gbɔ ε me se le be é/\*wò fo Kɔsi  
 Kofi near foc I heard from C 3sg hit Kosi  
 "It is from Kofi that I heard that he hit Kosi"
- (61) ɲtsu xala gbɔ Kofi se le be é/\*wò fo Kɔsi  
 boy which near Kofi heard from C he hit Kosi  
 "From which boy did Kofi hear that he hit Kosi"
- (62) me gbɔ ne Kofi be Yao fo Kɔsi  
 I said to Kofi C Yao hit Kosi  
 "I said to Kofi that Yao hit Kosi"
- (63) Kofi ε me gbɔ na Kofi be é/\*wò fo Kɔsi  
 Kofi foc I said to Kofi C 3sg hit Kosi  
 "It was to Kofi that I said that he hit Kosi"

The examples in (56-58) all have the following configuration (pron stands for pronoun):

- (64) [CP Op<sub>i</sub> [IP t<sub>i</sub>                    pron

Examples (60-63) all have the following configuration:

- (65) [CP Op<sub>i</sub> [IP                    [PP t<sub>i</sub>]                    pron

In all instances of these two configurations *wò* is not permitted. The goal of this section is to explain this pattern of the pronoun alternation.

Another piece of evidence that supports the above generalization is that for relations that do not involve movement, such as the topic construction, *wò*-selection is not possible. Consider the following paradigm that shows that the topic construction does not involve movement:

- (66) a. Kofi  $\epsilon$  me fo  
 Kofi foc I hit
- b. Kofi  $\text{de}$  me fo-e  
 Kofi topic I hit-him
- (67) a. \* Kofi  $\epsilon$  me nya ame xe fo  
 Kofi foc I know person which hit
- b. Kofi  $\text{de}$  me nya ame xe fo-e  
 Kofi topic I know person which hit-him

The paradigm in (66b) illustrates the topic construction, it does not involve leaving a trace, as opposed to the focus construction illustrated in (66a). In (67), we see that the topic construction can cross an island, whereas the focus construction cannot be. Therefore, it follows that the topic construction does not involve A'-movement.

Now consider the following sentence. We see that *wò*-selection is not possible in topic constructions. This confirms the generalization in (55), since no movement operation is involved.

- (68) a. Kofi  $\text{de}$  me gblɔ be  $\acute{\epsilon}/\text{*wò}$  fo-e  
 Kofi topic I said that 3sg hit-him
- b. Kɔsi  $\epsilon$  me gblɔ be  $\acute{\epsilon}/\text{wò}$  fo  
 Kosi foc I said that 3sg hit

The kind of constraint in (55) is not limited to Ewe alone. In any language with overt reflexes of successive cyclic movement, there will be analogous sentences (see McCloskey 1979:151).

#### 4.4.2. Economy of Derivation

I propose that the notion of Economy of Derivation can be used to account for this constraint on *wò*-selection. Consider the following derivation of (63) (to simplify the exposition, I give only the glosses):

(69) Adjoin *wh*-phrase to the matrix VP

Kofi FOC [<sub>IP</sub> I [<sub>VP</sub> *who* [<sub>VP</sub> said [to t] [<sub>CP</sub> that [he hit Kosi]]]]  
| \_\_\_\_\_ |

In this step the trace of *who* will be  $\gamma$ -marked at the time of movement.

(70) Lower *wh*-phrase to the embedded Spec CP

Kofi FOC [<sub>IP</sub> I [<sub>VP</sub> t [<sub>VP</sub> said [to t] [<sub>CP</sub> *who* that [he hit Kosi]]]]  
| ----- |

Upon lowering<sup>17</sup> the trace from the position adjoined to VP, the trace will be deleted right away<sup>18</sup>, so that there is no violation of ECP. Furthermore, there is no violation of the Strict Cycle Condition<sup>19</sup>. Note that (70) violates the Generalized Proper Binding Condition (GPBC) of Lasnik and Saito (1992: 90). If the trace adjoined to the VP is deleted, the object of *to* will not be properly bound. I refer the reader to Collins (1993) for a discussion of why the GPBC should not be appealed to in his case. Here, I will show that this lowering is blocked by Economy of Derivation.

(71) Re-adjoin *wh*-phrase to matrix VP

After re-adjointing *who* to the matrix VP, a trace is left in the embedded Spec CP. This embedded trace then triggers *wh*-selection.

---

<sup>17</sup> The type of lowering derivation is not only admitted by the system of Lasnik and Saito 1992, but also resembles some of the actual derivations that they propose. This type of movement (downward followed by upward) has come to be called "yo-yo" movement.

<sup>18</sup> Trace deletion is allowed by both Chomsky (1986:21) and Lasnik and Saito (1992).

<sup>19</sup> The lowering in (70) would appear to violate Chomsky's (1992) extension condition. It must be remembered that on Chomsky's theory all the movements in (69-72) constitute one occurrence of Form Chain, and therefore the derivation (recast in terms of generalized transformations) would not violate the extension condition.

(72) Move *wh*-phrase to matrix Spec CP

Kofi foc [IP I [VP t [VP said [to t] [CP t that [he hit Kosi]]]]  
 |-----|-----|

Since sentence (63) is unacceptable with *wh* as the embedded subject pronoun, the above derivation (which I will call the lowering derivation) must be blocked. We can account for this in terms of Economy of Derivation by noting that alongside of the derivation proposed above, there is a shorter one where *who* moves directly from the object position of *to* to the matrix Spec CP (via adjunction to the matrix VP). The direct derivation takes two steps, while the derivation involving downward lowering takes four steps. The latter is therefore excluded by Economy of Derivation. This is illustrated below:

(73) Direct derivation

Kofi foc [IP I [VP t [VP said [to t] [CP t that [he hit Kosi]]]]  
 |-----|-----|

At this point, we have something of a dilemma. Clearly we would like to rule out the lowering derivation by Economy of Derivation. The problem is that all of the steps only constitute one instance of Form Chain. Therefore in one sense the derivation the lowering derivation is no longer that the direct derivation in (73), which only involves one instance of Form Chain as well. I would like to propose that internal to the operation of Form Chain, the length of the derivation be measured in terms of the number of nodes traversed during the derivation. The following paragraphs will make this proposal more explicit. First, we will define path as follows (this definition differs from the one used in Pesetsky 1982):<sup>20</sup>

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<sup>20</sup> The definition of path that Pesetsky gives is the following:  
 Suppose *t* is an empty category locally *A'*-bound by *b*. Then:  
 (i) for *a* = the first maximal projection dominating *t*  
 (ii) for *b* = the first maximal projection dominating *b*  
 (iii) the path between *t* and *b* is the set of nodes *P* such that  
 $P = \{ x \mid (x = a) \text{ or } (x = b) \text{ or } (x \text{ dominates } a \text{ and } x \text{ does not dominate } b) \}$

(74) **Path**

Let  $P_1$  and  $P_2$  be two categories<sup>21</sup> in a tree. Let  $S_1$  be the set of categories dominating  $P_1$  and let  $S_2$  be the set of categories dominating  $P_2$ . The path between  $P_1$  and  $P_2$  is defined as follows:

$$\text{Path}(P_1, P_2) = (S_1 \cup S_2) - (S_1 \cap S_2)$$

This definition has the effect of counting the nodes on the shortest "route" that goes from  $P_1$  to  $P_2$  in a tree. The number of nodes traversed in a derivation can now be defined in terms of the sum of the length of the links in the derivation, as follows:

(75) **Nodes Traversed**

Let  $D$  be a derivation, and  $\{L_i\}_D$  its links. Let  $p_i$  be the path associated with  $L_i$ , and  $N_i$  be the cardinality of  $p_i$ . The number of nodes traversed is defined as follows:

$$N_D = \text{the sum of } N_i \text{ for } L_i \text{ in } \{L_i\}_D$$

(76) **Revised Economy Framework**

(4') **Length of Derivation**

Derivation  $D_1$  is longer than derivation  $D_2$  if:

- (a)  $D_1$  involves more operations (e.g., Form Chain) than  $D_2$  or
- (b)  $D_1$  traverses more nodes than  $D_2$ .

If we consider the above derivations again we see that  $N_D$  for the lowering derivation in (69-72) is much larger than that of (73). To be concrete, for the derivation in (69-72) the nodes traversed are (in the order of traversal)  $\{PP, VP, VP, CP, CP, VP, I', IP, C'\}$ , and  $N_D = 9$ . For the direct derivation in (73) the

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This definition of path would not work for downward movement, since the length of the path for any link that involved downward movement would be two.

<sup>21</sup> "Category" is used in the sense of Chomsky 1986, in order to prevent segments from being counted in measuring the length of a derivation. If segments were counted, adjunction to  $XP$  would never be allowed by Economy of Derivation.

For the purposes of this definition, I will assume that categories do not dominate themselves, see Barss (1984) for a discussion of this assumption.



Not only does (79a) have more links, but it also traverses more nodes. The derivation represented in (79b) traverses the fewest number of nodes, and is therefore shorter than the derivation in (79a).

In addition to providing us evidence for the revised economy framework in (76), the type of example in (77) will also allow us to sharpen up the notion of Last Resort:

- (80) a.    *é*    *biɛ*    *be*    *lamata*    *Kofi*    *fo*    *Kɔsi*  
           3sg    asked C    why            Kofi    hit    Kosi  
           "He asked if Kofi hit Kosi"
- b.    *lamata*    *wò*    *biɛ*    *be*    *Kofi*    *fo*    *Kɔsi*  
           why            3sg    asked C    Kofi    hit    Kosi  
           "why did he ask if Kofi hit Kosi"

The question is why (80b) cannot have the interpretation of something like (80a). The easy answer is if *lamata* "why" is being interpreted as checking the Q feature of the lower CP, then it will not be able to move any further by Last Resort, as in (77) above.

This answer is not totally satisfactory, since in (80b) the matrix clause has a T with an Op feature (as indicated by the presence of *wò* as the 3sg pronoun). The Op feature of T must be checked or the derivation will crash. Apparently this is not enough to motivate the raising of *lamata* "why" to the matrix Spec CP.

Therefore examples like (80) illustrate one of the fundamental aspects of the principle of Last Resort. movement of an XP is driven strictly by the need to check the features of XP.

#### 4.4.4. Optional vs. Obligatory

One issue that we have not yet discussed is why *wò*-selection is optional in embedded clauses, but obligatory in matrix clauses. I illustrate this with the following sentences (repeated from above):

- (81) me wò fo  
 who 3sg hit  
 "who did he hit"
- (82) Kosi ε me gblɔ be é/wò fo  
 Kosi foc I said C he hit  
 "Kosi, I said that he hit"
- (83) me e gblɔ he é/wò fo  
 who you say C 3sg hit  
 "Who did you say that he hit?"
- (84) Kofi ε me se be é/wò fo  
 Kofi foc I heard C 3sg hit  
 "Kofi, I heard that he hit"

One reason that these facts are interesting is that the optionality of morphological reflexes of successive cyclicity seems to be very wide spread. Similar optionality can be found in Igbo (Tada 1991), Hausa (Tuller 1986), and French (Kayne and Pollock 1978).

#### 4.4.4.1. Possible Analyses

The easiest way of explaining this optionality is to say that the lowest Spec CP may be skipped during A'-movement. There have been two analyses in the literature that suggest this option. I will show that neither of these analyses is plausible for the Ewe data.

First, Torrego (1984) claims that the lowest Spec CP can be skipped in A'-movement. She uses this fact to explain why "inversion" is not obligatory in the lowest clause of a A'-movement construction. She supports this fact with her analysis of subjacency in Spanish. Apparently, A'-movement can cross the lowest island. Therefore, in Spanish there is a convergence of the "inversion" and subjacency data. In Ewe there is no such convergence. There are no cases where one island can be crossed without leading to a violation. I illustrated this with the following sentences (the first two of which are very close to Torrego's):

(85) me me nya menita Mana fo-\*(e) o  
 who you-not know why Mana hit-him prt  
 "Who did you not know why Mana hit"

(86) me yɔ ŋtsu xe ...  
 I called boy which

a. nye me nya meni nya me gblɔ na-\*(e) o  
 I neg know what word I said to -him prt  
 "I didn't know what I had said to him"

b. me bu be Mana gblɔ nya-de na-(e)  
 I thought that Mana said word-indef to-him  
 "I thought Mana said something to"

(87) sodabi xe Kofi bie be lamata Yao no-\*(e)  
 gin which Kofi asked C why Yao drank-it  
 "The gin which Kofi asked why Yao drank"

The example in (85) shows that extraction out of an island is not acceptable unless a resumptive pronoun is used. The same is shown in (86). In (86b), we see that a resumptive pronoun is not obligatory if there is no island involved. Sentence (87) illustrates the same facts with a verb that introduces the complementizer *be* (see section 4.2.4).

These sentences show that there are never any violations of island constraints, unlike Spanish. Therefore, it is quite unlikely that Torrego's (1984) analysis holds of Ewe.

Another possible analysis which would explain the optionality data in (82-84), is to say that the antecedents of the A'-movement in the above cases are D-linked, thus they do not have to move successive cyclically (this is essentially Chung's (1992) analysis of Chamorro). There are two problems with this account. First, if we control for D-linking in the situation, we still get the same optionality:

- (88) meni koŋ e gblɔ be é/wò wɔ  
 what exactly you say C 3sg did

This can be said in a situation where everybody is mad at Yao because Kofi said that Yao did some bad thing. I want to find out what Yao did, so I am instructed to ask Kofi. I have no idea what Yao did, so there are no contextual choices over which the question word is quantifying. This question does not involve D-linking, therefore movement through the lower Spec CP should be obligatory and *é* should not be possible.

Another problem with this account is that if we extract adjuncts, we still get the same optionality:

- (89) Lama e bu be é/wò dzra uu-ɔ ɔɔɔɔ  
 how you think C 3sg fix car-def prt  
 "How do you think that he fixed the car?"

In this sentence, *lama* (*aleke* in standard Ewe) is construed with the lower clause. Crucially, in many theories of extraction adjuncts pattern with non-D-linked *wh*-phrases in only allowing local extraction. Therefore, if we adopt a theory modelled on Chung's (1992) for sentences like (82-84), then we would predict that (89) should have obligatory *wò*-selection. Therefore I reject any approach whereby embedded Spec CPs can be skipped.

#### 4.4.4.2. Optional Copying

I will propose a simple analysis that does not depend on skipping the lowest Spec CP. We have used the fact that *wh*-element has a +Op feature that needs to be checked. Let us say that this feature is copied optionally from the antecedent to the trace. If it is copied, then there must be T to C at LF to check it off. If the +Op feature is not copied, then there is no T to C at LF. This is illustrated in the following partial representation:

- (90) me e gblɔ [CP t-Op be é/wò fo]  
 who you say C 3sg hit  
 "Who did you say that he hit?"

This analysis explains why *wɔ*-selection is only obligatory in the matrix clause of a A'-movement construction. Since the phrase occupying the matrix Spec CP will obligatorily have the +Op feature, it will have to be checked.

Under this analysis there is always a trace in Spec CP, but sometimes the operator feature has been copied and sometimes it has not.

In order for this type of optionality to be acceptable given economy considerations it must be the case that copying is costless. The ultimate test of the validity of this argument is if it turns out to be true that all copying and deletion operations do turn out to be costless.<sup>22</sup>

#### 4.4.5. Features of COMP

In the above analysis, I have postulated the presence of a feature Op that occurs in Spec CP and on a certain class of T. In this section, I would like to fit this feature in a broader framework of features. The main distinction that I will draw in this section is between relational and inherent features of XP. One property of this Op feature is that it can be copied and checked several times (as in Ewe, Hausa, Igbo and French).

This behavior is similar to that of AGR. In Swahili, the AGR-features of a DP can be checked several times during A-movement (which I assume results from copying and then checking the AGR features), as illustrated in the following sentence.

- (91) Juma a-li-kuwa a-ngali a-ki-pika chakula  
 Juma AGR-pst-be AGR-still AGR-asp-cook food

The fact that the AGR features of DP and the Op features of XP can be checked several times, sharply distinguish these features from other features in the grammar. First, as can be seen below, Case cannot be checked several times:

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<sup>22</sup> A problem for this analysis lies in the fact that there are a number of languages that appear to have obligatory reflexes of successive cyclicity. This include Irish (McCloskey 1979), Chamorro (at least for non-D-linked A'-elements, see Chung 1992), and Spanish (see Torrego 1984). I will not attempt a characterization of this data here. A natural solution would involve finding some feature of COMP in the languages that take obligatory reflexes.

(92) there seems to a man that John is nice

The fact that *a man* cannot raise to *there* at LF indicates Case cannot be checked once it is already checked. Similarly, the feature Q cannot be checked several times, as the following sentence shows:

(93) why did John wonder t Mary likes Bill

If Q could be checked several times, this sentence should mean something like "why did John wonder why Mary liked Bill?" Of course this reading is impossible. Based on these observations, we can set up the following feature classification:

(94) Feature Classification

Inherent Features:

A-movement: AGR-features

A'-movement: Operator (wh-element, focused, etc.)

Relational Features:

A-movement: Case

A'-movement: Q

I have not yet given a structural explanation of the difference between the two types of features. The only thing that I have done is to place the feature Op of Spec CP in a broader classification of features in the grammar.

#### 4.5. Other Contexts of *w* $\bar{o}$ -Selection

There are a number of other contexts in which *w* $\bar{o}$ -selection happens either optionally or obligatorily. In this section, I will merely list some of these environments and show how they can be fit into the analysis given so far.

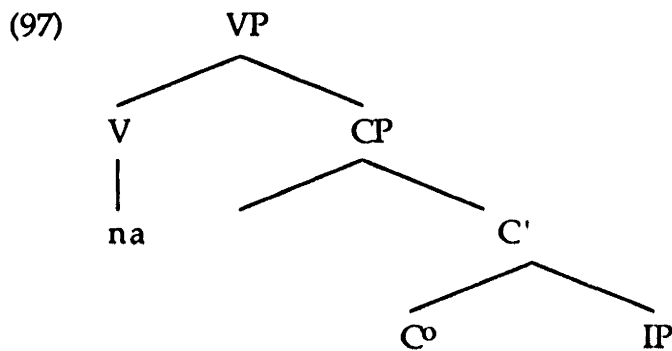
#### 4.5.1. Causatives

Ewe has a causative construction illustrated in the following examples:

(95) Kofi na be é/wò dzo  
 Kofi gave C 3sg left  
 "Kofi made him leave"

(96) Kofi na \*é/wò dzo  
 Kofi gave 3sg left

The sentences above show that if *be* is present, both *e* and *wò* can be the 3sg subject pronoun of the embedded clause (*wò* is preferred). On the other hand, if *be* is not present, only *wò* can be used (adding a pause after *na* in (96) and making the embedded clause longer seem to increase the acceptability of *é*. I will discuss sentences like (95) in section 5.3 (on contexts where *wò* is optional). To explain the data in (96) we can postulate the following representation:



If it is true that T must raise to C in the above representation, then it will follow that *wò* will be obligatory.

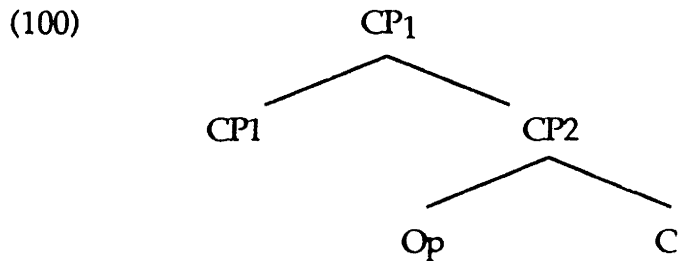
#### 4.5.2 Overlapping Clauses

The overlapping clause construction is a type of clausal parataxis (different from verb serialization), used when two clauses are closely related semantically:

(98) edɔ            ɛ        wu-i            wò    ku    fenyi  
 stomach    foc    kill-him        3sg   die    fainting  
 "He was hungry and fainted"

(99) Kofi   ɔ    aɔ    da    dzi    wò    ɔu-i  
 Kofi   put   foot   snake        on    3sg   ate-him  
 "Kofi stepped on the snake and it bit him"

The above sentences illustrate some of the characteristics of overlapping clauses. There is always coreference between an argument of each clause, usually the object of the first clause and the subject of the second. Usually the relation between the clauses is temporal and/or causal, but not always. In none of the above sentences, can *é* be used as the subject of the second clause. To explain this fact, I will postulate the following adjunction structure:



I will assume that CP2 is adjoined to CP1, and that *wò* is selected in the embedded clause because the Spec of CP is filled with an operator meaning "then".<sup>23</sup>

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<sup>23</sup> There are a number of potential problems. The following sentences do not seem to involve a temporal operator, although they are similar to the overlapping clause examples:

i.    *é*    ɔu    nu    wò    sugbɔ  
 3sg   ate   thing   3sg   was-a lot  
 "He ate a lot"

ii.    Kofi   kpɔ   Yao   \**é*/wò        le    du        fu  
 Kofi   saw   Yao   3sg        prog   course        strike  
 "Kofi saw Yao running"

### 4.5.3. Embedded Contexts Where *wò* is Optional

There are a number of contexts where *wò* is optionally used in place of *é* as 3sg subject pronoun: after the connective *togbòbe* and after the causative construction *na be*. Another context where *wò*-selection takes place optionally is after verbs of "emotional evaluation." Consider the following examples:

- (101) *togbòbe*      *é/wò*              *dzo*  
 although      3sg                      left  
 "although he left"
- (102) *Kofi na be ?é/wò*              *dzo*  
 Kofi gave C      3sg                      left  
 "Kofi made him leave"
- (103) *e nyo be é/wò*              *dzo*  
 it is-good C      3sg                      left  
 "it is good that he left"
- (104) *e dzɔ dzi na-ŋ be é/wò*              *dzo*  
 it straightens heart to-me C      3sg                      left  
 "it pleases me that he left"

Sentence (101) illustrates the sentential connective *togbòbe*. Sentence (102) illustrates one form of the causative. Sentences (103-104) illustrate what I have termed verbs of emotional evaluation. In all cases *wò* is optional as the 3sg subject pronoun. Unlike the analysis of A'-movement constructions, we cannot appeal to the presence of a trace in Spec CP to account for the use of *wò*, since no A'-movement has taken place.

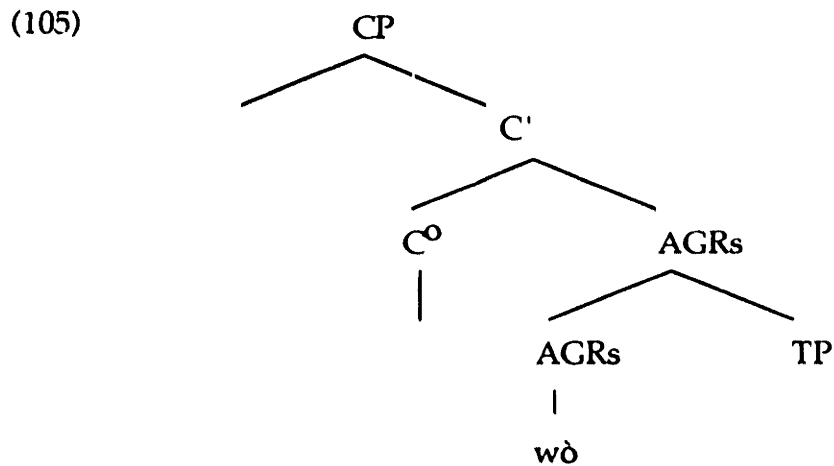
To explain these data I would like to propose that there is a special complementizer in Ewe that is selected optionally after certain connectives, in the causative, and after verbs of emotional evaluation. This complementizer

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I will leave these sentence for further work.

has the property that it must be replaced at LF (for reasons that are not entirely clear).

Given this analysis, all the embedded clauses in the above sentences will have the structure illustrated below. If we suppose that this complementizer necessitates T to C, then *wò* will have to be AGRs. Therefore the 3sg subject pronoun will have to be realized as *wò*.



#### 4.6. Conclusion

In this chapter I have analyzed some aspects of *wò*-selection in Ewe. I have given a theory of why the morphological form of AGRs only changes in the 3sg. In addition, I have discussed the relation of *wò*-selection to the theory of economy of derivation.

## References

- Abney, S. (1987) *The English Noun Phrase in its Sentential Aspect*, Doctoral Dissertation, MIT.
- Agbadja, K. (1983) "Pour Une Approche Nouvelle des Prétendus 'Adverbes' Ewe," *Afrique et Langage* 19, 32-51.
- Ameka, F. (1991) *Ewe: Its Grammatical and Illocutionary Devices*, Doctoral Dissertation, ANU, Canberra.
- Ansre, G. (1966) *The Grammatical Units of Ewe: A Study of Their Structure, Classes and Systems*, Doctoral Dissertation, University of London.
- Ansre, G. (1966) "The verbid - a caveat to 'serial verbs'," *JWAL* 3: 29-32.
- Baker, Mark. (1989) "Object Sharing in Serial Verb Constructions," *Linguistic Inquiry* 20, 513-553.
- Baker, Mark (1991) "On the Relation of Serialization to Verb Extensions," in *Serial Verbs: Grammatical, Comparative and Cognitive Approaches*, ed. Claire Lefebvre, 79-102. Amsterdam/Philadelphia: John Benjamins Publishing Company.
- Bailyn, John F. and Edward J. Rubin (1991) "The Unification of Instrumental Case Assignment in Russian," ms., Cornell.
- Bole-Richard, Rémy (1978) "Problématique des séries verbales avec application au gen," *Afrique et Langage* 10, 24-47.
- Bole-Richard, Rémy (1983) *Systematique Phonologique et Grammatical d'un Parler Ewe: Le Gen-Mina du Sud-Togo et Sud-Bénin*, Paris: Editions L'Harmattan.
- Branigan, Phil and Chris Collins (1993) "Verb Movement and the Quotative Construction in English," *Papers on Case and Agreement I, MITWPL* 18: 1-13.
- Bures, Anton (1992) "Re-Cycling Expletive (and other) Sentences," ms., MIT.
- Bures, Anton (1993) "There is an Argument for a Cycle at LF Here," *CLS* 28.
- Campbell, Richard (1989) *The Grammatical Structure of Verbal Predicates* Doctoral Dissertation. UCLA.
- Campbell, R. (1992) "Argument Sharing Serial Verbs in Akan," Unpublished ms., University of Pennsylvania.

Carstens, Vicki (1988) "Serial Verbs in Yoruba," paper presented at the Second Workshop in Niger-Congo Syntax and Semantics. MIT.

Chomsky, Noam (1989) "Some Notes on Economy of Derivation and Representation," in *MIT Working Papers in Linguistics* 10. Department of Linguistics and Philosophy, MIT, Cambridge, MA.

Chomsky, Noam (1992) "A Minimalist Program for Linguistic Theory," *MIT Occasional Papers in Linguistics* 1. Department of Linguistics and Philosophy, MIT, Cambridge, MA.

Chomsky, Noam and Howard Lasnik (1992) "Principles and Parameters Theory," in *Syntax: An International Handbook of Contemporary Research*, ed. J. Jacobs, A. van Stechow, W. Sternefeld, and T. Vennemann. Berlin: Walter de Gruyter.

Chung, Sandra (1992) "Wh-Agreement and Referentiality in Chamorro," ms., Syntax Research Center, UCSC.

Clements, G. Nick (1973) *The Verbal Syntax of Ewe*, Doctoral Dissertation, University of London.

Clements, George N. (1975) "Analogical Reanalysis in Syntax: The Case of Ewe Tree-Grafting," *Linguistic Inquiry* 6: 3-51.

Clements, George N. (1976) "The Logophoric Pronoun in Ewe: Its Role in Discourse," *Journal of West African Languages* 10: 141-177.

Clements, George N. (1978) "Tone and Syntax in Ewe," in *Elements of Tone, Stress and Intonation*, ed. Donna Jo Napoli. Georgetown University.

Collins, Chris (1989) "The Syntax of Reduplication in Ewe," ms., MIT.

Collins, Chris (1990) "Case in Ewe and Yoruba", *MIT Working Papers in Linguistics* 17.

Collins, Chris (1992) "Economy of Derivation and the Generalized Proper Binding Condition", *Linguistic Inquiry* (to appear).

Collins, Chris (1993a) "A-Movement in Verbal Noun Constructions in Ewe", ms., MIT.

Collins, Chris (1993b) "A Diagnostic of LF Movement", ms., MIT.

- Collins, Chris and Jeff Gruber (1992) "Argument Projection, Thematic Configurationality and Case Theory," ms., MIT.
- da Cruz, Maxime (1992) "ECP et l'alternance nu/na en fonngbe" La genese du créole haïtien, Rapport de Recherche Tome I. UQAM, Québec.
- Dechaine, R.-M. (1986) *Operations sur les structures d'argument: Le Cas des constructions sérielles en haïtien*, Master's thesis, Université du Québec à Montréal.
- Dechaine, Rose-Marie (1992) "Serial Verb Constructions," in *Syntax: an International Handbook of Contemporary Research*. Berlin: de Gruyter.
- Dechaine, Rose-Marie (1993) *Predicates Across Categories: Towards a Category-Neutral Syntax*, Doctoral Dissertation, University of Massachusetts.
- Fabb, Nigel (1992a) "Reduplication and Object Movement in Ewe and Fon," *Journal of African Languages and Linguistics* 13: 1-39.
- Fabb, Nigel (1992b) "The Licensing of Fon Verbs," *The Journal of West African Languages* 22: 27-34.
- Foley, W. and M. Olson (1985) "Clausehood and Verb Serialization," in J. Nichols and A. Woodbury, eds., *Grammar inside and outside the Clause*, Cambridge University Press, Cambridge.
- Givon, Talmy (1971) "On the Verbal Origin of the Bantu Verb Suffixes," *Studies in African Linguistics* 2: 145-163.
- Gruber, Jeff (1990a) "Complex Theta-Structures", ms., University of Benin, Nigeria.
- Gruber, Jeff (1990b) "Thematic Form and the Head Conflation Parameter," ms, University of Benin, Nigeria.
- Gruber, Jeff (1992a) "Thematic Configurational Constraints in Serial Verb Constructions," paper presented at ACAL.
- Gruber, Jeff (1992b) "Proper Argument Projection in Igbo and Yoruba," in Collins and Manfredi 1992: 139-164.
- Hale, Ken and Jay Keyser (1993) "On the Complex Nature of Simple Predicators," ms., MIT.
- Johns, Alana (1993) "Symmetry in Labrador Inuttut," *MIT Working Papers in Linguistics* 18.

Kayne, R. and J.-Y. Pollock (1978) "Sylistic Inversion, Successive Cyclicity, and Move NP in French," *Linguistic Inquiry* 12, 93-133.

Kayne, R. (1993) "Toward a Modular Theory of Auxiliary Selection," *Studia Linguistica* 47.

Kinyalolo, Kasangati (1992a) "A-Chains and Constituent Order in Fon," *La Genese du Creole Haitien, Rapport de Recherche pour l'Annee 1991-1992*: 109-150.

Kinyalolo, Kasangati (1992b) "A Note on Word Order in the Progressive and Prospective in Fon," *The Journal of West African Languages* 22: 35-52.

Larson, R. (1985) "Bare-NP Adverbs," *Linguistic Inquiry* 16.4, 595-621.

Law, Paul and Tonjes Veenstra (1992) "On Empty Operators in Serial Verb Constructions," in *Proceedings of the Kwa Comparative Syntax Workshop*, eds., Chris Collins and Victor Manfredi, 183-203.

Lefebvre, Claire (1990) "Establishing a Syntactic Category of P in Fon," *The Journal of West African Languages* 20: 45-63.

Lefebvre, Claire (1991) "Take Serial Verb Constructions in Fon," in *Serial Verbs: Grammatical, Comparative and Cognitive Approaches*, ed. Claire Lefebvre, 79-102. Amsterdam/Philadelphia: John Benjamins Publishing Company.

Lefebvre, Claire (1992) "Double Object Constructions in Fongbe," *Travaux de Recherche sur le Créole Haitien (QUAM)* 9, 1-34.

Lewis, Marshall (1985a) "Relative Clauses in Anlo Ewe," *Studies in African Linguistics*, Supplement 9, 196-202.

Lewis, Marshall (1985b) "Ewe Relativization, NP accessibility and Universal Grammar," ms., Indiana University.

Lewis, Marshall (1989a) "Aspect Marking in Gɛgbe Prepositions: A Cognitive Approach to Multi-Categoriality" *CLS*.

Lewis, Marshall (1989b) "Morphological Subclassification of Serial Verb Constructions in Gɛgbe," *20th Conference on African Linguistics*, Champaign-Urbana.

Lewis, Marshall (1989c) "Morphological Subclassification of Serial Verb Constructions in Gɛgbe," ms., Indiana University.

Lewis, Marshall (1991) "Morphological Variability in Verb Serialization and Event Structure," *BLS 17 Parassession on Event Structure*.

Lord, Carol (1974) "Causative Constructions in Yoruba." *Studies in African Linguistics*, Supplement 5, 195-205.

Madugu, Isaac (1982) "The Yoruba ni-Object Construction in Pragmatic Perspective," *Journal of African Languages and Linguistics* 4: 43-58.

McCloskey, James (1979) *Transformational Syntax and Model-Theoretic Semantics*, Reidel, Dordrecht.

Manfrédi, Víctor (1991) *Agbo and Ehugbo: Igbo linguistic consciousness, its origins and limits*, Doctoral Dissertation Harvard.

Marantz, Alec (1992) "Implications of Asymmetries in Double Object Constructions," ms., MIT.

Ogunbowale, P. (1970) *The Essentials of the Yoruba Language*, London: University of London Press.

Oyelaran, Olasope (1990) "Anti-Focus in Yoruba: Some Implications for Creoles." Conference on Focus and Grammatical Relations in Creoles, University of Chicago.

Pesetsky, David (1982) *Paths and Categories*, Doctoral Dissertation, MIT.

Postal, P. (1969) "On So-Called 'Pronouns' in English," in D. Reibel and S. Schane (eds.), *Modern Studies in English*, Prentice-Hall, Inc., New Jersey.

Rizzi, Luigi (1986) "On the Status of Subject Clitics in Romance", in O. Jaeggli and C. Silva-Corvalan (eds.), *Studies in Romance Linguistics*, Dordrecht: Foris.

Rizzi, Luigi (1990) *Relativized Minimality*, Cambridge, MIT press.

Rosen, C. (1984) "The Interface between Semantic Roles and Initial Grammatical Relations," in Perlmutter and Rosen, eds., *Studies in Relational Grammar 2*, University of Chicago Press, Chicago.

Sportiche, Dominique (1988) "A Theory of Floating Quantifiers and Its Corollaries for Constituent Structure," *Linguistic Inquiry* 19, 425-449.

Stowell, Timothy (1978) "What Was There Before There Was There," *CLS* 14, 458-471.

- Stowell, Timothy (1981) *Origins of Phrase Structure*, Doctoral Dissertation, MIT.
- Stowell, Timothy (1989) "Subjects, Specifiers, and X-Bar Theory, " in *Alternative Conceptions of Phrase Structure*, eds., Mark R. Baltin and Anthony S. Kroch, 232-262. Chicago: The University of Chicago Press.
- Tada, Hiroaki (1991) "Floating Tones and A'-Movement in Igbo," ms., MIT.
- Torrego, E. (1984) "On Inversion in Spanish and Some of Its Effects," *Linguistic Inquiry* 15, 103-129.
- Tuller, Laurice (1986) *Bijection Relations in Universal Grammar and the Syntax of Hausa*, Doctoral Dissertation, UCLA.
- Uriagereka, Juan (1988) *On Government*, Doctoral Dissertation, University of Connecticut.
- Uriagereka, Juan (1992) "Issues on Clitic Placement in Western Romance," ms.
- Watanabe, Akira (1993) *AGR-Based Case Theory and its Interaction with the A' System*, Doctoral Dissertation, MIT.
- Westermann, Diedrich (1930) *A Study of the Ewe Language*, London: Oxford University Press.
- Yusuf, O. (1990) "Participant Coding in Yoruba: The Syntactic Function of ni," *AAP* 23, 93-109.